

Proposed Commercial and Hotel Development,
88 Walker Street & 77-81 Berry Street, Sydney
Traffic and Parking Report

Final



27 May 2009

Prepared for
Eastmark Holdings Pty Ltd

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Halcrow MWT

Suite 20, 809 Pacific Highway, Chatswood, NSW 2067 Australia
Tel +61 2 9410 4100 Fax +61 2 9410 4199
www.halcrow.com/australasia

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1 Introduction

Halcrow MWT has been commissioned by Eastmark Holdings Pty Ltd to provide traffic and parking advice in regard to a proposed commercial tower and hotel development at 88 Walker Street and 77-81 Berry Street, North Sydney.

The development proposal is as follows:

- demolition of existing building at 88 Walker Street and construction of a multi-level hotel on the site;
- demolition of the existing shopping centre and associated car parking at 77-81 Berry Street, and construction of a high rise office tower; and
- associated tunnel and a pedestrian bridge between proposed hotel and commercial development, a new mid-block through site link, and public domain and streetscape improvement works.

This report has been prepared to examine the traffic and parking impacts of the development proposal.

The remainder of the report is structured as follows:

- chapter 2 describes the existing conditions at the development site and describes the surrounding road network and examines the existing transport provisions;
- chapter 3 provides a description of the development proposal and details provision for transport modes associated with the development proposal;
- chapter 4 provides an analysis of likely traffic and parking impacts; and,
- chapter 5 summarises and concludes the study.

2 Existing Conditions

2.1 Site Location

The subject site includes two separate lots. One lot fronts onto and provides an address of 88 Walker Street. The second lot is Berry Square Shopping Centre and is bounded by existing residential/commercial development to the north and Little Spring Street, Spring Street and Denison Street on its other boundaries.

Figure 1 shows the site location.

2.2 Existing Site Uses

Currently the two separate sites provide the following mix of development uses and parking spaces:

- 88 Walker Street: commercial development providing 22 car parking spaces
- Berry Square: retail development and a public car park providing 117 car parking spaces

Currently vehicular access to the two sites is provided as follows:

- 88 Walker Street: two-way driveway on east side of Little Spring Street
- Berry Square: the public car park provides a two-way driveway on the west side of Little Spring Street. A reverse-in loading dock is located in Little Spring Street to the north of the public car park driveway.

2.3 Existing Site Traffic Generation

A count of vehicles entering and exiting the driveways at the two existing sites was undertaken to determine the current traffic generation associated with the site's usage. Table 1 identifies the site's exiting peak hour traffic generation.

Table 1 – Existing Site Traffic Generation

Site	AM Peak Hour (vehs/hr)			PM Peak Hour (vehs/hr)		
	Inbound	Outbound	Two-way	Inbound	Outbound	Two-way
Berry Square	35	0	35	5	24	29
88 Walker Street	4	0	4	0	5	5
Combined Total	39	0	39	5	29	34

This traffic generation estimates only include vehicles that entered and exited the two sites and does not account for any drop off/pick up activity on the surrounding road network. Appropriate allowances were made for this as detailed later within Chapter 4.

2.4 Existing Road Network

It is usual to classify roads according to a road hierarchy in order to determine their functional role within the road network. Changes to traffic flows on the roads can then be assessed within the context of the road hierarchy. Roads are classified according to the role they fulfil and the volume of traffic they should appropriately carry. The RTA has set down the following guidelines for the functional classification of roads.

- Arterial Road - typically a main road carrying over 15,000 vehicles per day and fulfilling a role as a major inter-regional link (over 1,500 vehicles per hour)
- Sub-arterial Road - defined as secondary inter-regional links, typically carrying volumes between 5,000 and 20,000 vehicles per day (500 to 2,000 vehicles per hour)
- Collector Road - provides a link between local roads and regional roads, typically carrying between 2,000 and 10,000 vehicles per day (250 to 1,000 vehicles per hour). At volumes greater than 5,000 vehicles per day, residential amenity begins to decline noticeably.
- Local Road - provides access to individual allotments, carrying low volumes, typically less than 2,000 vehicles per day (250 vehicles per hour).

Roads in the vicinity of the site are described below. A series of photographic images from an inspection of the site are included within Appendix A. Images are cross referenced in brackets below.

Streets in major urban centres do not fall easily into the traditional road hierarchy classifications because traffic volumes on lower order roads tend to be higher than would be suggested by strict application of the road hierarchy guidelines. Conversely, higher order

roads may be required to provide priority access functions and minor street access which would not normally be the case. Within the context of these qualifications road hierarchy classifications are included in the descriptions of each road.

Walker Street

Walker Street is a sub-arterial road (slide A1) which connects Pacific Highway at its southern extent to Ridge Street at its northern extent. It provides two traffic lanes in either direction within a kerb to kerb width of 13 metres. The kerbside traffic lanes in either direction are subject to clearway restrictions between the hours of 6.00am to 10.00 am and 3.00pm to 7.00pm. Sections of kerbside are available for 1 hour metered parking (10.00am to 3.00pm Monday to Friday) or 2 hour metered parking (7.00pm to midnight Monday to Friday). In Addition, motorcycle parking and a loading zone are installed on the eastern kerblane to the north of Mount Street.

In the vicinity of the site Walker Street is subject to 40kph speed limit and road signs warn of high pedestrian activity.

Walker Street provides traffic signal controlled intersections with Pacific Highway, Mount Street and Berry Street. All intersections provide full pedestrian crossing facilities.

Berry Street

Berry Street is a 13.0m wide sub-arterial road (slide A2) which links Pacific Highway to the Warringah Freeway (southbound movements proceed via Arthur Street). In the vicinity of the site Berry Street provides a three lane one-way eastbound road. The southern kerbside traffic lane between Little Spring Street and Denison Street, was recently converted to provide indented parallel parking bays which accommodate short term parking (1 hour) during business hours and a taxi zone outside of these periods.

Along its length Berry Street provides a number of traffic signal controlled intersections with full pedestrian crossing facilities at the following locations:

- Walker Street
- Miller Street
- Pacific Highway

Little Spring Street

Little Spring Street is a local road (slide A3) which links Berry Street to the north with Spring Street to the south. Its kerb to kerb width varies between 6.0m (at its northern end) to 7.5m at its southern end. It currently operates one-way southbound. Parallel kerbside parking bays (2 hours meter parking during business hours) are provided along its western side to the north and on both sides along its southern extent, where the additional kerb to kerb width permits (a combination of 2 hour meter parking during business hours, 5 minute drop off parking and loading zones). Figure 2 provides a summary of the existing on street parking controls.

Little Spring Street provides vehicular access to a number of commercial development car parks in addition to on and off-street loading areas.

Pedestrian footpaths which vary between 1.0m (southern section) to 2.7m (northern section) are provided along both sides.

A pedestrian connection is available between Little Spring Street and Walker Street via a laneway to the south of 110 Walker Street.

Spring Street

Spring Street is a local road (slide A4) which links Walker Street to the east with Denison Street to the west. Its kerb to kerb width varies between 3.7m (between Little Spring Street and Walker Street) and 6.2m (between Little Spring Street and Denison Street).

Little Spring Street, between Walker Street and Little Spring Street, is one-way westbound and provides a single traffic lane with a footpath to the south and a narrow 1.1m footpath to the north. Vehicle access to a commercial development and its associated loading dock and a public house loading area are provided along this section of Spring Street.

Spring Street between Little Spring Street and Denison Street widens to form two traffic lanes upon approach to the Spring Street / Denison Street stopline controlled intersection. The southern lane is for left turning vehicles heading for Mount Street whilst the right hand lane allows unopposed right turns into Denison Street. Footpaths adjoin on both sides.

Road signs indicate that Spring Street (to the west of Little Spring Street) is a shared zone subject to a 10kph speed limit. Spring Street does not provide any on-street parking.

Spring Street connects to Little Spring Street via a stopline controlled intersection with Spring Street the through route with vehicles on Little Spring Street having to stop and yield. No right turn is permitted from Spring Street into Little Spring Street due to the current one-way southbound operation of Little Spring Street.

Mount Street

Mount Street is a local road which links Denison Street at its western extent with Arthur Street at its eastern extent. Mount Street between Pacific Highway and Denison Street has been pedestrianised and as such is closed to vehicular traffic.

Mount Street is one-way eastbound and subject to a 10kph shared zone speed limit. Parallel kerbside parking is provided on the southern kerbline and angled parking provided to the north. Its approach to the Walker Street/Mount Street intersection provides two traffic lanes with left turn and through movements available from the northern kerbside lane and right turn from the southern kerbside traffic lane.

Observations undertaken of the Walker Street / Berry Street intersection operation indicate a significant degree of interference to left turning vehicle movements from Mount Street by pedestrians crossing Walker Street (north).

Denison Street

Denison Street is a local road (slides A5 & A6) which links Spring Street to Mount Street in the south and Berry Street in the north. It provides a kerb to kerb width of 7.4 metres and is subject to a 10kph shared zone speed limit.

To the north of its intersection with Spring Street it is one-way northbound and provides a single traffic lane and kerbside parking along both sides (generally 1 hour metered parking between 8.30am to 6.00pm Monday to Friday and 2 hour metered parking 6.00pm to midnight Monday to Friday). Sections of motorcycle parking and loading zones are also installed at various locations along its length.

Denison Street, to the south of its intersection with Spring Street, is one-way southbound and provides a single traffic lane with a motorcycle parking area capable of accommodating about 40 motorcycles on its eastern side.

Denison Street provides direct access to a number of public car parks and commercial/residential developments.

A zebra crossing is installed for pedestrian movement to the north of the Denison Street / Spring Street intersection. Speed control devices have been installed to assist in vehicle speed control through the area.

2.5 *Existing Traffic Volumes*

Traffic surveys were undertaken to determine the existing peak hour traffic volumes.

Analysis of the survey results identified that the AM peak hour occurred during 8.00am to 9.00am and the PM peak hour occurred during 5.00pm to 6.00pm.

Two-way existing peak flows are provided below in Table 2. Table 2 indicates that the existing road network accommodates traffic volumes appropriate to their hierarchical status.

Table 2 – Existing Peak Hour Traffic Volumes

Road	Section	Existing Weekday Two-Way Traffic Volume (vehicles/hour)	
		AM Peak	PM Peak
Walker Street	north of Mount Street	1,587	1,506
Walker Street	south of Mount Street	1,384	1,187
Mount Street	west of Walker Street ¹	62	156
Mount Street	east of Walker Street ¹	659	671
Miller Street	south of Berry Street	1,053	1,046
Miller Street	north of Berry Street	1,147	1,048
Berry Street	west of Miller Street ¹	1,176	1,079
Berry Street	east of Miller Street ¹	1,566	1,375
Walker Street	north of Berry Street	860	875
Walker Street	south of Berry Street	1,177	1,431
Berry Street	west of Walker Street ¹	1,275	1,895
Berry Street	east of Walker Street ¹	2,134	2,849
Little Spring Street	south of Berry Street ¹	241	69
Little Spring Street	north of Spring Street ¹	161	291
Spring Street	east of Little Spring Street ¹	313	116
Spring Street	west of Little Spring Street ¹	450	292
Denison Street	north of Spring Street ¹	366	163
Denison Street	south of Berry Street ¹	203	295

Note: 1) One-way section hence one-way volumes shown

2.6 Existing Intersection Performance

Road network capacity is determined by the capacity of its intersections.

The performance of the existing intersections were analysed using the intersection analysis computer program SIDRA. The results of the assessments provide performance criteria to assess whether the intersection is operating at an acceptable level. The performance criteria are shown in Table 3. A summary of the results of the intersection assessments are shown in Table 4.

Table 3 – Level of Service Criteria for Intersection

Level of Service	Average Delay per Vehicle (secs/veh)	Signals & Roundabouts	Give Way & Stop Signs
A	less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays & Spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays Roundabouts require other control mode	At capacity, requires other control mode
F	> 70	Extra capacity required	Extreme delay, traffic signals or other major treatment required

Adapted from RTA Guide to Traffic Generating Developments, 2002.

Table 4 – Existing Peak Hour Intersection Operation

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Average Delay (s)	Level Of Service	Average Delay (s)	Level Of Service
Walker Street /Mount Street	Signals	30.3	C	32.3	C
Walker Street /Berry Street	Signs	43.5	D	48.7	D
Berry Street / Miller Street	Signs	18.6	B	15.6	B
Berry Street / Denison Street	Priority		Not modelled		
Little Spring Street / Spring Street	Stop	8.9	A	5.7	A

Note: Average delay = Average delay (in seconds) per vehicle for whole intersection for signalised or for worst movement for priority and roundabout controlled intersections.

Table 4 indicates that the Walker Street / Berry Street intersection is operating close to its capacity with a level of service D. All other intersections provide an acceptable level of peak hour intersection operation.

It should be noted that intersection modelling for the Berry Street / Denison Street intersection has not been conducted. This is due to software limitations modelling the effects of queues extending across the minor arm. Observations indicate that the AM peak hour

operation is generally satisfactory (LoS B estimated). However, the PM peak hour performance is characterised by significant queues (in excess of 20 vehicles) and delays on the Denison Street approach. This is due to traffic extending back across the intersection from the Berry Street / Walker Street intersection and not providing sufficient gaps for traffic to exit from Denison Street. Once the traffic queue along Berry Street dissipates the traffic signals are coordinated such that a platoon of traffic from the Miller Street / Walker Street intersection then proceeds across the mouth of Denison Street further restricting the ability of exiting traffic to find suitable gaps in oncoming traffic to turn.

2.7 Existing Public Transport Services

North Sydney CBD provides access to a large range of public transport services as described in the following paragraphs.

Bus Services

Bus services in the area are operated by NSW State Transit Authority. A summary of the public transport services within a convenient walking distance of the site are shown in Figure 3.

Bus movement within North Sydney is focussed along the following main bus corridors:

- Pacific Highway
- Miller Street
- Blue Street (North Sydney rail station interchange)

North Sydney Rail Station, a 400m walk distance from the site provides access to the following bus services E50, 151, 168, 173, 175, 178, L78, 183, 184, L84, L87, 188, 190, 202, 203, 207, 208, 209, 252, 253, 254, 261, 262, 273, 286, 289, 290, 291 & 294

Bus stops on the western side of Miller Street provide access to bus service numbers E50, 151, 168, 173, 175, 178, 183, L84, L87, 188, 190, 202, 203, 207, 208, 209, 227, 228, 229, 230 and 247. The eastern side bus stops provide access to bus services to Milsons Point, City and Bondi Junction.

In combination the above services provide a high level of frequent bus services to a wide range of destinations within Greater Sydney.

Rail Services

The proposed development is located within a 400m straight line walk distance of North Sydney Rail Station. North Sydney Rail Station is located on the North Shore Line which provides local rail services and onward connections for regional rail services.

2.8 Existing Bicycle and Pedestrian Facilities

Pedestrian Facilities

As would be expected from the sites CBD location, pedestrian provision surrounding the site is good. Generally good width footpaths exist and pedestrian crossing facilities are provided at all traffic signal controlled intersections in the area. A marked zebra crossing is also installed on Denison Street to the north of Spring Street.

Pedestrian movement between the development sites and the public transport interchange at North Sydney Rail Station are available via the following routes:

- Blue Street / Miller Street / Mount Street
- Through Greenwood Plaza (grade separated crossing of Pacific Highway) and across the pedestrianised Mount Street section
- Blue Street / Walker Street

Bicycle Facilities

North Sydney Council publish details of cycle facilities on the North Sydney CBD area. These are shown in Figure 4.

In the vicinity of the site Miller Street provides on road marked cycle lanes in both directions and Pacific Highway provides an on road marked cycle lane in the northerly direction.

3 Proposed Development

The development proposal is for the construction of 57,265 sqm GFA of commercial development, 3,365 sqm GFA retail development and a 200 bed hotel with restaurant (455 sqm GFA), bar (410 sqm GFA) and conference facilities (435 sqm GFA). The hotel facilities will be open to the public.

In addition, public domain improvements along Denison Street are proposed that require its closure to vehicles north of Spring Street and as far north as the existing MLC building car park driveway / loading area.

To continue to provide similar levels of vehicular accessibility in the precinct area it is proposed to provide the following further complimentary road network changes:

- Creation of a new east-west link road between Little Spring Street and Denison Street. The proposed road will provide a single traffic lane and operate as one-way westbound. The southern section of kerbside will provide new on-street parking opportunities. Footpaths are proposed along both sides.
- A short section of Denison Street, to the south of the proposed East-West Link Road will be converted to two-way traffic operation to enable continued access to the MLC building car park and loading dock. The roadway in this area will be delineated by suitable controls to prevent pedestrian movement through what will effectively be an improvement to the manoeuvring space in front of the MLC building car park and loading area due to the removal of through traffic past the area.
- Conversion of Little Spring Street to provide two-way operation between Spring Street and the proposed East-west link. Due to visibility issues a reprioritisation of the Little Spring Street / Spring Street is proposed such that Little Spring Street (southbound) becomes the priority route and Spring Street has a stop line installed. Mount Street will continue to operate one-way westbound. Due to the existing narrow width of Little Spring Street the conversion to two-way operation will require its widening and the removal of all existing on-street parking spaces on Little Spring Street between the proposed east-west link road and Spring Street. This is in addition to the removal of all on-street spaces on the road closure section of Denison Street. Replacement of lost on-street spaces is discussed below.

- Formation of a set down pick / up zone to serve the hotel uses and to accommodate up to three vehicles on the eastern side of Spring Street immediately to the north of Spring Street. The formation of the set down pick / up zone, and the need to widen the road to accommodate two traffic lanes along the site frontage, will create a chicane type horizontal alignment of Little Spring Street. This would reinforce the shared zone nature of the road network and further assist in the control of vehicle speeds through this area.
- Kerb realignment of the northern kerblines in Spring Street in the vicinity of the proposed development to remove the redundant right turn lane into Denison Street and to achieve additional footpath width. Medium rigid vehicles (8.8m) will continue to be able to exit from the loading areas along the narrowed section of Spring Street.

Figure 5 presents a summary of the proposed changes to the road network system.

It is proposed that the east-west link road is installed as a shared use zone to complement the existing shared use nature of Little Spring Street, Spring Street and Mount Street. Consultations with North Sydney Council officers indicated support for the shared zone aspect of the proposal.

3.1 *Vehicular Access to the Development Site*

It is proposed to locate the entry/exit driveway to the proposed 77-81 Berry Street development site in close proximity to its existing vehicular access. The driveway (at the developments lower ground level) will provide the main entry to basement car parking and a single loading area to serve the two development sites.

The existing loading dock driveway for Berry Square and the driveway to 88 Walker Street will be removed which will provide benefits to traffic efficiency and safety along Little Spring Street due to the removal of turning movements and reversing loading dock practices.

The driveway will be shared with truck and cars and as such is appropriately designed (width, grades etc) to accord with the requirements of AS2890.1:2004 and AS2890.2:2002.

3.2 *Car Parking*

It is proposed to provide a total of 226 car parking spaces over four basement parking levels. The proposed parking provision is shown in Table 5.

Table 5 – Proposed Parking Provision

Parking Level	Number of Small Car Spaces	Number of Accessible Car spaces	Number of standard Car spaces	Total	Number of Motorcycle
B1	9	2	31	42	6
B2	14	1	35 & 6 (tandem)	56	6
B3	14 & 4 (tandem)	1	34 & 8 (tandem)	61	11
B4	13 & 2 (tandem)	1	37 & 14 (tandem)	67	10
TOTAL	56	5	165	226	33
Percentage of Total	25%	2%	73%	100%	N/A

It is proposed to allocate spaces on B1 for public parking which are to be operated and controlled by Council. Parking on levels B2 B3 & B4 will be for the exclusive use of commercial/retail and hotel parking.

A total of five spaces are proposed for mobility impaired persons. Additionally, a total of 56 small car spaces are proposed (25% of total) in accordance with the aims relating to Green Star rating of commercial buildings.

Car parking geometry for the public , hotel and retail parking spaces has been selected upon the basis of user class 2 (town centre parking) of AS2890.1 and provides generally 2.5m wide spaces, 5.4 metres in length with a 5.8m aisle. A number of spaces within the B1 and B2 layout are 2.4 metres wide and would be suitable to accommodate longer term parking. A number of small bays are provided on the basis of 2.3m wide bays and 5.0m length.

Commercial spaces provide user class 1A geometry and provide 2.4m wide bays, 5.4 metres in length and greater than 5.8m wide aisles. A number of small bays are provided on the basis of 2.3m wide bays and 5.0m length. Additionally, a number of commercial spaces will be tandem spaces with each tandem pair to be allocated to the same tenancy.

Ramp grades and geometry are in accordance with the requirements of AS2890.1. It is proposed to provide two straight ramps for circulation between basement levels lower than B1. This would require cars to turn through 180 degrees to circulate up or downwards. The

layout has been assessed on the basis of 99th percentile design vehicle turning on the outside of the curve with an 85th percentile turning on the inside of the system and satisfactory passing clearances are achievable at low speeds. To assist the turn is proposed to provide centrally located road markings to both act as a 0.6m separation strip and to provide a guideline for drivers to turn within.

It is proposed that the parking spaces on B1 are Council operated and controlled to provide public parking. To assist in the effectiveness of the public parking spaces, a car park management system is proposed so that drivers on Little Spring Street will be able to determine if spaces are available within the building prior to entering the development car park and to indicate where spaces are available within the public car parking levels. Vehicular control will be provided between basement level 1 and 2 prevent public car parkers accessing the commercial/retail & hotel spaces.

3.3 Motorcycle Parking

It is proposed to provide a total of 33 motorcycle parking spaces within the development.

3.4 Bicycle Parking

Secure cycle facilities capable of accommodating 161 bicycles are proposed to be located on basement level 1.

3.5 Service Vehicle Provision

A loading area has been designed capable of accommodating the type and number of vehicle identified in Table 6. Service vehicle entry and exit to the development will be in a forward manner.

The provision rates identified within Table 6 are based upon experience of the operation of similar facilities elsewhere and are considered to provide an appropriate level of service vehicle provision for the proposed development.

Table 6 – Service Vehicle Provisions

Development Component	Floorspace	Loading Dock Provision Rate	Number of bays	Design Vehicle
Commercial	57,265 sqm GFA	1 per 20,000 sqm	3	8.8m medium rigid vehicle
Commercial			7	5.2m car courier spaces
Retail	3,365 sqm GFA	1 per 1,500 sqm	1	8.8m medium rigid vehicle
Retail			1	10.7m heavy rigid vehicle
Hotel	200 beds	1 per hotel	1	10.7m heavy rigid vehicle

Additionally, a number of motorcycle courier bays will be provided within the loading area.

Table 6 notes a requirement to provide a retail docks at a rate of 1 per 1,500 sqm GFA. However for the 3,365 sqm retail only 1 medium rigid bays is proposed. A dock management plan will be provided detailing dock management operations and the potential to share dock spaces between different uses.

3.6 Taxi Provision

Taxi vehicles would be able to use the set down / pick up area on Little Spring Street to the rear of the proposed hotel.

3.7 Proposed East-West Link Road Geometry

The proposed east-west link road geometry has been designed to accommodate a 10.7 metre heavy rigid vehicle turns from both Little Spring Street (north and south directions). A wide footpath and on-street parking spaces capable of accommodating at least two vehicles are proposed to the south of the road link with a footpath to the north. The road is proposed to be included within a 10kph shared zone.

3.8 Pedestrian Movements

The creation of the Denison Street plaza will provide an opportunity for improved pedestrian accessibility between the development site and its surrounding pedestrian movement network.

The proposed East-West Link Road is located such that the southern footpath will line up with the existing pedestrian connection between Little Spring Street and Walker Street and continue through to the steps providing access to Tower Square Shopping Mall and its associated pedestrian connections to Miller Street.

Additional footpath width will be provided on Little Spring Street along the development frontage.

3.9 Consultations

During the production of this report consultations were undertaken with key transport stakeholders / agencies. A summary of the key considerations from the consultation meetings are summarised below.

RTA Meeting 19 February 2009

Comments made by RTA officers on the concept proposal as follows:

- The Walker Street / Mount Street traffic signal controlled intersection operates on a fixed time basis and changes to signal timings to provide additional green time for the Mount Street approach could be explored.
- Questioned if the one-way traffic circulation of the precinct road network could be reversed from the current clockwise direction to an anticlockwise direction. However, it was later recognised that a lack of the weave distance between Little Spring Street and Walker Street (for left turners into Walker Street particularly) would be a significant constraint.
- The RTA representative of the Local Traffic Committee confirmed that few complaints were received about the operation of the existing precinct road network.

North Sydney Council Meeting 26 March 2009

A meeting was held to discuss parking and traffic aspect of the development proposal. Minutes from the meeting are included within Appendix B.

4 Traffic and Parking Impacts

4.1 *Future Traffic Volumes*

The traffic impacts of development are normally greatest when traffic associated with the development coincides with the peak hour of traffic already on the road network. It is during these times that intersections which control the capacity of the road network provide the least capacity and the development related traffic impacts will be greatest. It is therefore these periods that are assessed.

Traffic generation calculations were undertaken to determine the peak hour traffic generation of the development proposal. The traffic generation for the proposal was determined having regard to the reduction in public parking plus on-street parking adjacent to the site and to the increase in tenant parking. In addition hotel parking traffic generation was based upon the number of hotel rooms.

For this assessment a rate of 0.4 trips per space for commercial tenant parking was adopted. This allows for potential additional on-street movements that might also arise.

The hotel traffic generation was assessed in the basis of 50% occupation of its spaces during the peak hours.

Surveyed peak hour rates at the Berry Square car park, which provide suitable traffic generation rates per space of public car parking, were as follows:

- AM Peak hour: 35 two-way movements for 117 spaces = 0.3 two-way movements per space
- PM Peak hour: 29 two-way movements for 117 spaces = 0.25 two-way movements per space

Table 7 summarises the traffic generation estimates. It is assumed that 20 spaces would be used for hotel parking during the peak hour periods and these are discounted from the number of public parking spaces appropriately.

Table 7 – Development Traffic Generation Estimates (2-way vehs/hr)

Parking	Existing	Proposed	Change	Trip Rate	AM peak hour	PM peak hour
Public spaces	117	42	-75	0.3 trips/space/hr (AM) 0.25 trips/space/hr (PM)	-22.5	-18.8
On-street spaces	17	2 (plus a further three assessed within commercial trip rate)	-15	0.3 vehs/space/hr (AM) 0.25 vehs/space/hr (PM)	-4.5	-3.7
Commercial spaces	22	152	+130	0.4 vehs/space/hr	+52.0	+52.0
Hotel spaces	N/A	20	+20	Assumed 20 spaces occupied during peak hours	+20.0	+20.0
Total					+45	+50

Future weekday AM and PM peak hour traffic flows were obtained by addition of the additional traffic generation, assigned in accordance with existing inbound precinct traffic splits and all outbound traffic using Mount Street, to the to the redistributed existing traffic volumes.

Table 8 provides a comparison of existing, redistributed existing and future traffic volumes.

Table 8 – Existing and Forecast Peak Hour Traffic Flows (2-way vehs/Hr)

Road	Section	Existing Flows		Redistributed Existing Flows		Future Flows	
		AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Walker Street	north of Mount Street	1,587	1,506	1,587	1,506	1,612	1,462
Walker Street	south of Mount Street	1,384	1,187	1,384	1,187	1,402	1,210
Mount Street	west of Walker Street ¹	62	156	62	156	75	184
Mount Street	east of Walker Street ¹	659	671	659	671	664	675
Miller Street	south of Berry Street	1,053	1,046	1,053	1,046	1,053	1,046
Miller Street	north of Berry Street	1,147	1,048	1,147	1,048	1,150	1,051
Berry Street	west of Miller Street ¹	1,176	1,079	1,176	1,079	1,185	1,082
Berry Street	east of Miller Street ¹	1,566	1,375	1,566	1,375	1,580	1,381
Walker Street	north of Berry Street	860	875	860	875	860	875
Walker Street	south of Berry Street	1,177	1,431	1,177	1,431	1,184	1,449
Berry Street	west of Walker Street ¹	1,275	1,895	1,275	1,895	1,275	1,895
Berry Street	east of Walker Street ¹	2,134	2,849	2,134	2,849	2,141	2,867
Little Spring Street	south of Berry Street ¹	241	69	241	69	255	75
Little Spring Street	north of Spring Street ¹	161	291	295	123	326	167
Spring Street	east of Little Spring Street ¹	313	116	313	116	321	126
Spring Street	west of Little Spring Street ¹	462	412	94	114	107	148
Denison Street	north of Spring Street ¹	366	163	0	0	0	0
Denison Street	South of Berry Street ¹	203	295	203	295	203	295
Proposed E-W Link Rd	West of Little Spring Street	N/A	N/A	388	121	388	121

Note: 1) One-way section hence one-way flows shown

Table 8 indicates that traffic increases resulting from the development proposal will be modest in the future scenario and would not create any adverse impacts on mid-block capacity.

It is further noted that the traffic volumes on the Proposed East-West Link Road and the southern section of Little Spring Street will be in excess of the 300 veh/hr maximum volume for shared zones as defined in the RTA Guidelines For Traffic Facilities: Part 7.3 Shared Traffic Zones (June 1987). However, it is noted that the guidelines general emphasis is on the use of shared zones in residential zones. Given,

the proximity of commercial / retail uses adjacent to the precinct road network it is considered that a slightly higher threshold may be applicable and that appropriate design treatments could be used to mitigate against this level of traffic volume.

In this regard it is noted that Spring Street which currently operates as a shared zone carries 450 vehicles per hour.

4.2 *Future Intersection Operation*

An assessment was made of the capability of the existing intersections to accommodate the future traffic flows. The results of the assessment are shown in Table 9.

The approach taken within this report is to consider that the Berry Street / Denison Street would not be used by drivers from the proposed development due to the existing queues and delays at the intersection. Accordingly the analysis assumes that all development related traffic will exit from the site to Mount Street. In reality some form of equilibrium in usage between the Denison Street and Mount Street egresses from the precinct will be reached.

Table 9 – Existing and Future Peak Hour Intersection Operation

Intersection	Scenario	Control	AM Peak Hour		PM Peak Hour	
			Average Delay (s)	Level Of Service	Average Delay (s)	Level Of Service
Walker Street / Mount Street	Existing	Signals	30.3	C	32.3	C
	Future	Signals	30.5	C	34.3	C
Walker Street / Berry Street	Existing	Signs	43.5	D	48.7	D
	Future	Signs	43.8	D	49.8	D
Berry Street / Miller Street	Existing	Signs	18.8	B	15.6	B
	Future	Signs	18.8	B	15.6	B
Berry Street / Denison Street	Existing	Priority	Not Modelled			
	Future	Priority	Assumed no change from existing			
Little Spring Street / Spring Street	Existing	Stop	8.9	A	5.7	A
	Future	Stop	4.4	A	3.5	A
Little Spring Street / East-West Link Road	Existing	N/A	N/A			
	Future	signs	8.5	A	6.7	A

Note: Average delay = Average delay (in seconds) per vehicle for whole intersection for signalised or for worst movement for priority and roundabout controlled intersections.

Table 9 indicates that all of the study area intersections assessed will be able to accommodate the forecast traffic flows as a result of the development with no change in the level of service of operation.

4.3 *Parking Assessment*

North Sydney Council Development Control Plan (DCP) 2002 provides the requirement for parking provision within North Sydney CBD.

Table 10 provides an assessment of development related parking needs in accordance with the Council's DCP.

Table 10 - Car Parking Requirements

Land Use	Value	Units	N. Sydney DCP parking rate (maximum)	No. of parking spaces
Commercial	57265	Sqm GFA	1/400 sqm	143.2
Hotel	200	rooms	1 per 5 bedrooms	40.0
Hotel -Restaurant	455	Sqm GFA	1/400 sqm	1.1
Hotel – Bar	410	Sqm GFA	1/100 sqm	4.1
Hotel - Conference	435	Sqm GFA	1/400 sqm	1.1
Retail	3365	Sqm GFA	1/400 sqm	8.4
Total				200

Table 10 indicates that the maximum parking level for the development in accordance with North Sydney DCP is 200 spaces. However this calculation does not account for the spaces which are to be provided for public uses.

The proposal seeks to provide a total of 226 spaces of which 152 would be commercial/retail parking spaces. For the proposed 60,630 sqm GFA commercial/retail floorspace the parking provision equates to 1 space per 400sqm GFA in compliance with DCP maximum requirements.

A total of 32 spaces are allocated for hotel parking which since it is less than the maximum number permitted under the DCP accordance, accords with its requirements.

Changes to the on-street parking situation are also proposed. A total of 13 time restricted metered kerbside parking spaces and four 5 minute duration kerbside spaces

are proposed to be removed in association with the proposed road network alterations. However the new design seeks to provide five on-street kerbside spaces. The balance of spaces removed will be provided within the development site as part of the Council controlled and operated parking spaces.

A total of five car parking spaces will be for the needs of drivers with mobility impairments are proposed appropriately positioned in close proximity to lift cores. This level of provision accords with the requirements of AS2890.1:2004 that 1-2% of the total number of spaces should be for the use of persons with a mobility impairment.

Motorcycle parking requirements under Council's DCP are for the provision of a minimum of one motorcycle spaces per 10 car spaces with geometry of 1.2 metres width and 3.0 metres length. The development proposal seeks 226 car parking spaces and therefore motorcycle parking requirements are calculated on the basis of 23 spaces minimum. A total of 33 spaces are proposed which exceeds Council's requirements. This is considered a desirable and acceptable level of provision.

The proposed development is generally consistent with the Council's DCP provisions with the exception of the proposed commercial parking rate which is slightly higher than that which is permitted. However as demonstrated in the traffic analysis, the additional parking spaces provided do not have any unacceptable impacts on the operation of the surrounding road network and as such are considered acceptable.

4.4 *Bicycle Parking*

Bicycle parking requirements for new developments in North Sydney LGA are defined within Council's DCP 2002 which identifies the following bicycle parking requirements for commercial development:

- 1 bicycle locker per 600 sqm GFA
- Visitor parking 1 bicycle rail per 2,500 sqm GFA

Application of the DCP to the proposed 57,265 sqm GFA commercial development would require the following levels of bicycle parking provision:

- 95 bicycle lockers
- 23 bicycle rails for visitors

It is proposed to provide a total of 161 bicycle lockers which is in excess of Council's requirements.

The number of bicycle parking spaces to be provided has been calculated on the basis of Green Star ratings for environmentally sustainable design (ESD). To achieve one Green Star point the development must provide parking for 5% of the building occupants. It is calculated by others that the building can accommodate 3,211 people. Therefore, a minimum number of bicycle spaces and lockers for 161 building occupants (5%) are required.

The required 23 bicycle rails for visitors to the proposed development will be provided at convenient locations within the public domain and its surrounds.

Bicycle parking provision is therefore compliant against Council's DCP.

4.5 *Access by Non-Car Modes*

As identified within Chapter 2, the development site is located within a 400 metre walking distance of a significant number of rail and bus services. Pedestrian routes to these facilities are available which do not require road crossing due to grade separated pedestrian connections through Greenwood Plaza.

The proposed development will provide through site pedestrian links (via the East-West Link Road) which will enhance existing pedestrian desire lines through the precinct area.

The existing cycle network and proposed cyclist changing facilities and bicycle lockers at trip end will assist in encouragement of cycle journeys at the proposed development.

Access by non-car modes to the proposed development site is therefore considered to be excellent.

4.6 *Review of Comments of Design Excellence Panel*

A presentation was made to the Design Excellence Panel on 17 February 2009 to outline the development proposal. A number of comments were provided in relation to

the traffic and parking aspects of the development proposal. A review of these comments is provided below.

Design Excellence Panel Comment

The option of creating a cul-de-sac at the southern end of Little Spring Street should be explored in this regard, together with replacing the pedestrian bridge over Little Spring Street with an at grade connection between the hotel and the shopping centre possibly with a canopy for weather protection.

Halcrow MWT Response

The creation of a Little Spring Street cul-de-sac would effectively mean that the proposed development and existing development would only be able to gain access to the precinct area via Little Spring Street and egress via the overcapacity Denison Street intersection. This would not provide an acceptable traffic outcome due to the inability of the Berry Street / Denison Street intersection to accommodate any traffic increase above its current levels. The through nature of Little Spring Street permits a second point of egress from the precinct to Mount Street to assist in dissipating future traffic demands across the road network rather than concentrating traffic at one constrained location.

Additionally, due to existing peak hour kerbside clearway restrictions along Walker Street the development proposal seeks the creation of a set down pick / up zone to access the hotel from Little Spring Street. Therefore, the set down pick / up zone location would limit opportunities for the creation of a safe pedestrian crossing at this location. Pedestrian crossing facilities are proposed on Little Spring Street which accord with general pedestrian desire lines through the area. This crossing could be utilised for movement between the hotel site and the shopping centre and provide good width footpaths capable of accommodating the potential number of pedestrian crossing movements.

Design Excellence Panel Comment

The need to cater for access to service docks and off-street parking on Little Spring Street and Spring Street was recognised, requiring careful attention to public domain treatment, and also the need to consider traffic circulation generally.

Halcrow MWT Response

Careful consideration of traffic circulation has been undertaken. The proposal seeks to maintain current levels of vehicular accessibility and traffic circulation within the precinct by the creation of two-way Little Spring Street operation and the formation of the proposed East-West Link Road. Denison Street to the south of the proposed East-West Link Road is proposed to be converted to two-way operation for MLC building car park and loading area access only. A suitable form of delineation will be provided to ensure that pedestrians and vehicles do not mix through this area.

5 Summary & Conclusions

Halcrow MWT has been commissioned by Eastmark Holdings Pty Ltd to provide traffic and parking advice in regard to a proposed commercial tower and hotel development at 88 Walker Street and 77-81 Berry Street, North Sydney.

This report has been prepared to examine the traffic and parking impacts of the development proposal.

The report is summarised as follows:

- The subject site includes two separate lots. One lot fronts onto and provides an address of 88 Walker Street with a total of 22 car parking spaces. The second lot is Berry Square Shopping Centre and is bounded by existing commercial development to the north and Little Spring Street, Spring Street and Denison Street on its other boundaries. It provides a total of 117 public car parking spaces.
- The existing sites traffic generation was identified through surveys and in combination was found to be 39 and 34 two-way off-street vehicle movements during the AM peak and PM peak hours respectively. These movements will be removed from the road network as a result of the redevelopment.
- The location of the development site permits a high level of accessibility to public transport services with origins/destinations available to the Greater Sydney area.
- Pedestrians and cycle movements currently benefit from the shared zone nature of the precinct local road network.
- Consultations were undertaken with key transport stakeholders on the development proposal.
- It is proposed to redevelop the two sites as follows:
 - o demolition of existing building at 88 Walker Street and construction of a multi-level hotel of this site,
 - o demolition of the existing shopping centre and associated car parking at 77-81 Berry Street, to accommodate a high rise office tower, and
 - o associated tunnel and pedestrian bridge between proposed hotel and retail podium, a new mid-block through site link, and public domain and streetscape improvement works.

- To accommodate improved public domain works it is proposed to close Denison Street to vehicular traffic to the north of Spring Street and as far north as the MLC building car park driveway / loading dock area. The MLC building car park and loading area will continue to be accessible from a short section of Denison Street that will be converted to two-way traffic operation and appropriately delineated from the plaza area.
- To maintain vehicle accessibility in the precinct it is proposed to widen and convert the southern section of Little Spring Street to two-way traffic operation. This will require the removal of the existing on-street parking spaces. A new East-West through site link will reconnect Little Spring Street to Denison Street. The link road will operate as one traffic lane wide and one-way westbound operation and provide on-street parking opportunities on its southern kerbline.
- An extension of the existing shared zone is sought to include the East-West Link road and approaches to it. Agreement will be needed with Council and North Sydney Council Local Traffic Committee on the construction form of the shared zone.
- Additional road network alterations are proposed to reprioritise Little Spring Street / Spring Street intersection such that the Spring Street traffic has to stop to Little Spring Street.
- A set down pick / up zone capable of accommodating three vehicles will be provided at the southern end of Little Spring Street to provide access to the hotel. Road widening will be achieved within the site area to facilitate the accommodation of the set down pick / up zone and two-way traffic operation.
- A combined driveway to serve the car parking and loading area will be provided in close proximity to the existing vehicle driveway to Berry Square public car park. This will provide a rationalisation of driveways on Little Spring Street with the removal of the 88 Walker Street driveway and the Berry Square Shopping Centre reverse in loading dock. This rationalisation alone will provide safety and efficiency benefits to the operation of Little Spring Street.
- An assessment of the impact that the additional development related traffic increase would have on the operation of the intersection surrounding the site indicates that there would be no change in the current level of intersection operation. These assessments assume that the constraints at the Berry Street/Denison Street

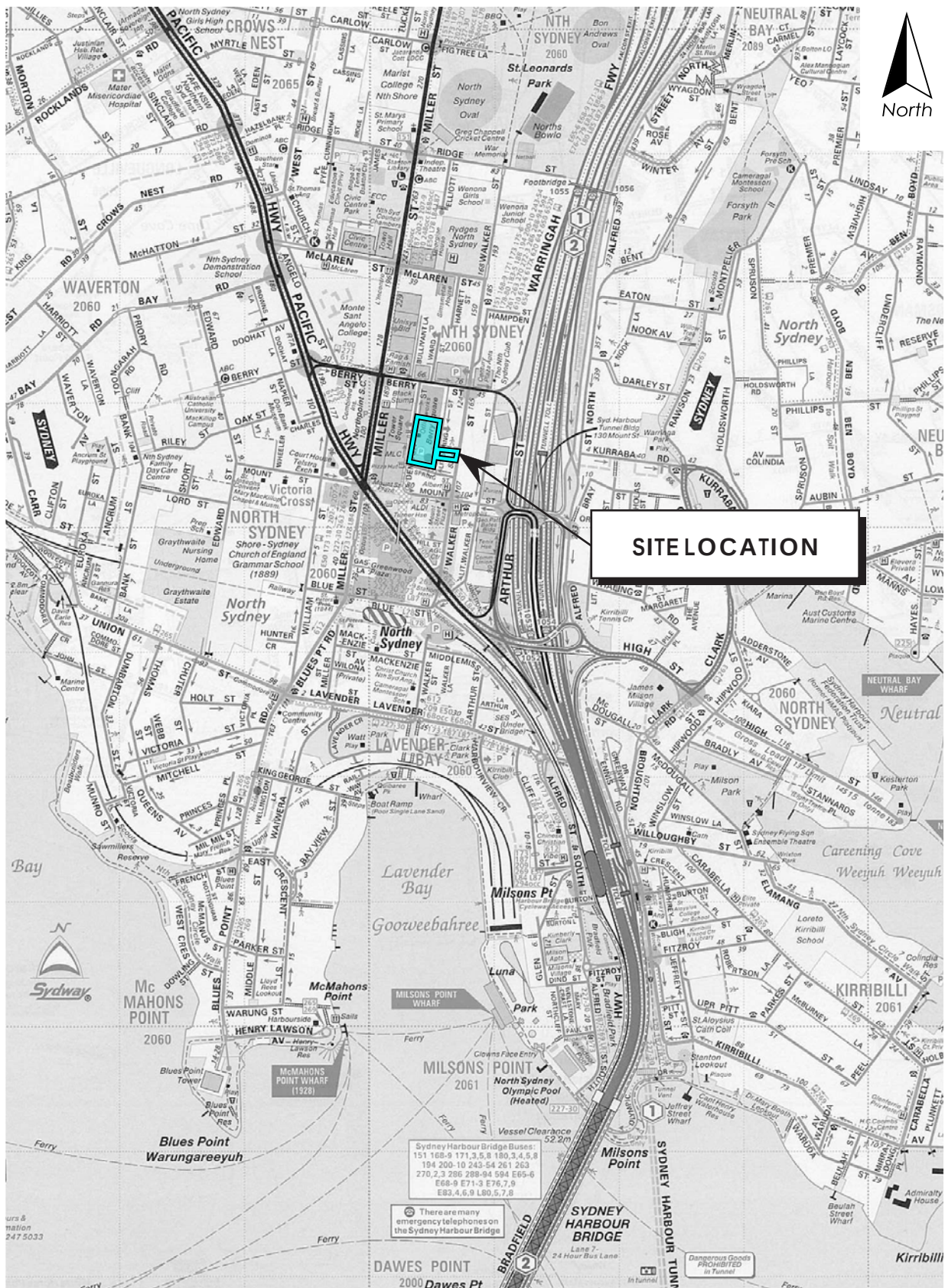
intersection would lead to the diversion of some traffic to Mount Street when exiting the local area.

- A total of 226 car parking spaces are proposed on site. This number includes the provision of 152 commercial/retail spaces, 32 hotel spaces and 42 public parking spaces. Proposed parking provision is in accordance with North Sydney Councils parking DCP. Public parking is proposed to be controlled and operated by Council.
- A total of 13 time restricted metered kerbside parking spaces and four 5 minute duration kerbside spaces are proposed to be removed in association with the proposed road network alterations. However the proposed design seeks to provide five new on-street kerbside spaces. The balance of spaces removed will be provided within the development site as part of the Council controlled and operated parking spaces.
- The geometric layout of car parking levels accords with the requirements of AS2890.1:2004.
- Parking spaces for the mobility impaired will be provided on the basis of 2% of total parking or five spaces for persons with mobility impairment.
- A total of 33 motorcycle parking spaces are proposed which is in excess of Council's minimum DCP requirements to provide 23 spaces.
- Bicycle parking for more than 5% of the building population, a total 161 bicycle spaces, is proposed to meet the Green Star criteria for environmentally sustainable development. Visitor parking spaces will be provided to accord with Council DCP requirements.
- An appropriate amount of service vehicle parking spaces is provided in accordance with experience of similar developments elsewhere. Service vehicle entry and exit to the development will be in a forward manner. Geometric provisions for service vehicles are in accordance with AS2890.2:2002.

The conclusion of the report is that the traffic and parking impacts of the development can be accommodated on the adjoining road network without detrimental impacts and are therefore satisfactory. Access by non-car modes to the proposed development is considered to be excellent.

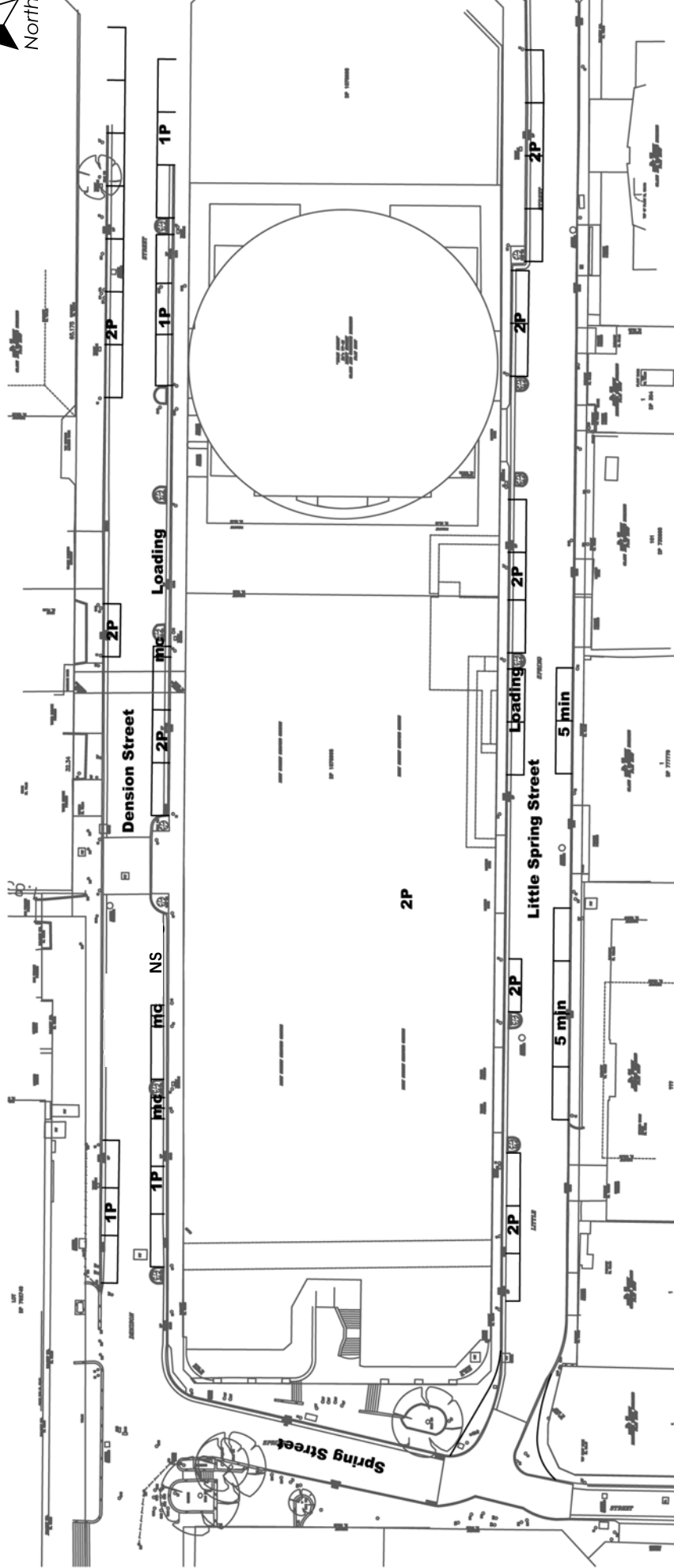
SITELLOCATION

88 WALKER STREET & 77-81 BERRY STREET, NORTH SYDNEY



EXISTING ON-STREET PARKING CONTROLS

88 WALKER STREET & 77-81 BERRY STREET, NORTH SYDNEY



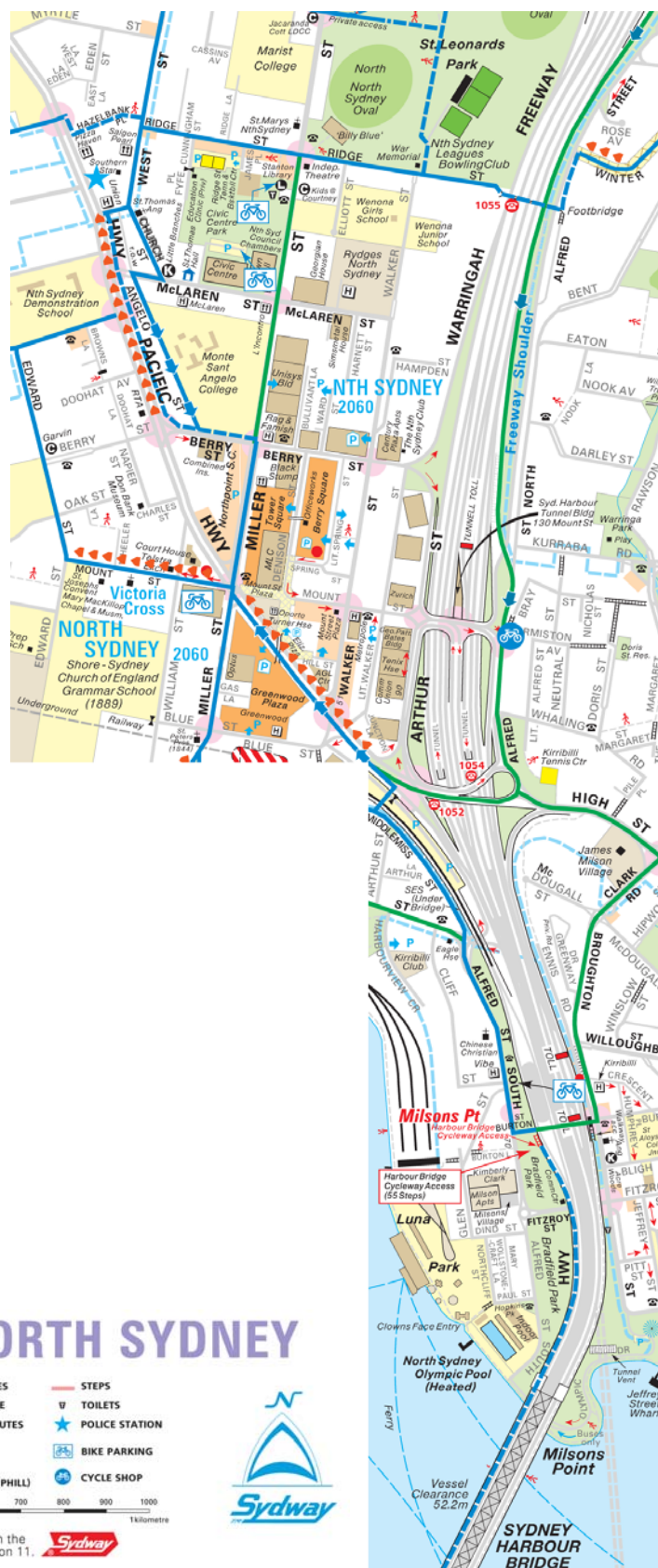
Key

2P: 2 Hour/Meter Parking (Business Hours)	1P: 1 Hour/Meter Parking (Business Hours)	5 Min: 5 Minute Parking (Business Hours)	mc: Motorcycle Parking	Loading: Loading Area	NS: No Stopping
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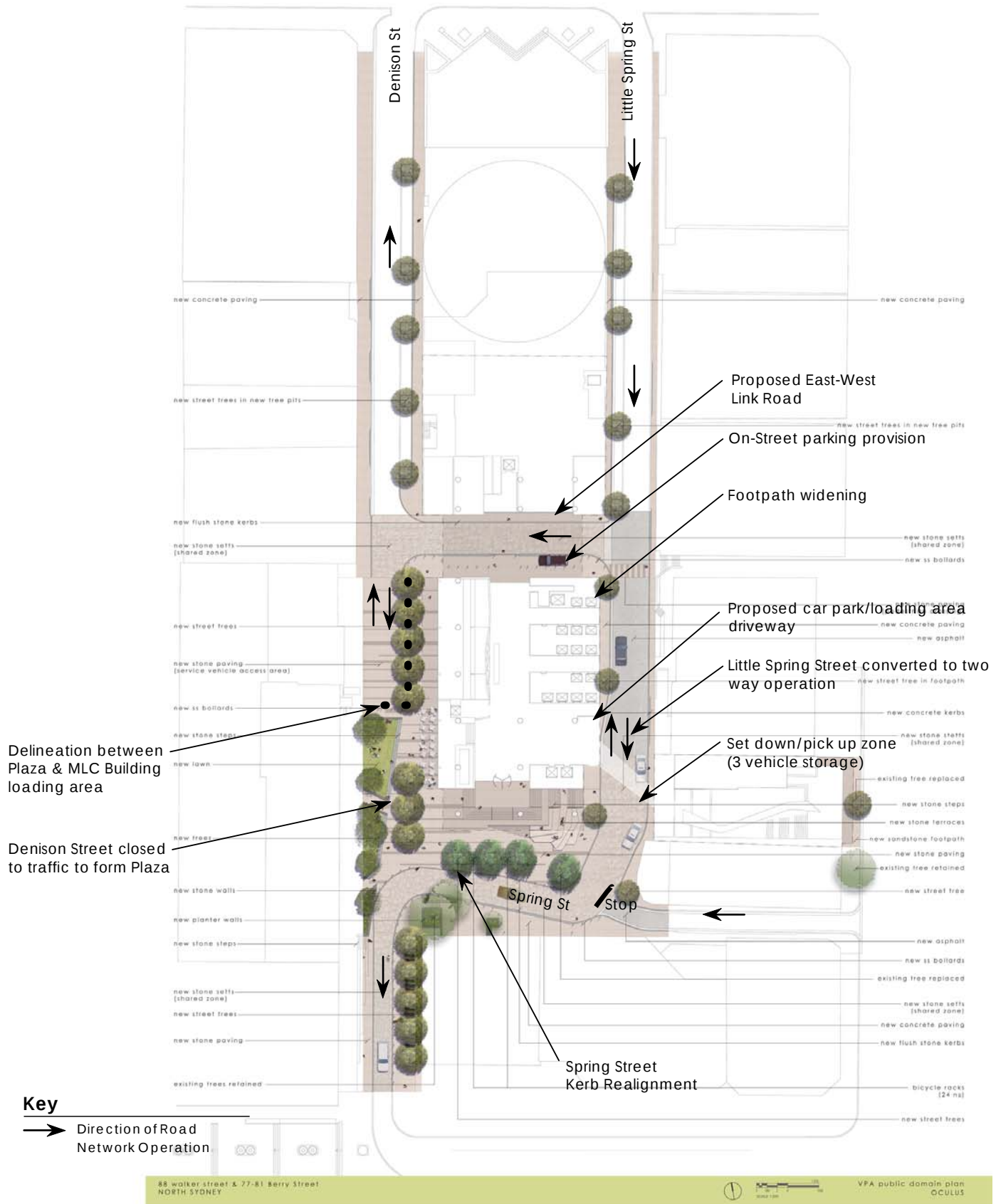
88 WALKER STREET & 77-81 BERRY STREET, NORTH SYDNEY



Source: City of Sydney Website

PROPOSED ROAD NETWORK ALTERATIONS

88 WALKER STREET & 77-81 BERRY STREET, NORTH SYDNEY



Appendix A Site Photographs

SITE INSPECTION

88 WALKER STREET & 77-81 BERRY STREET, NORTH SYDNEY



Walker Street looking south

A1



Berry Street looking west

A2

SITE INSPECTION

88 WALKER STREET & 77-81 BERRY STREET, NORTH SYDNEY



Little Spring Street looking north

A3



Spring Street looking west

A4

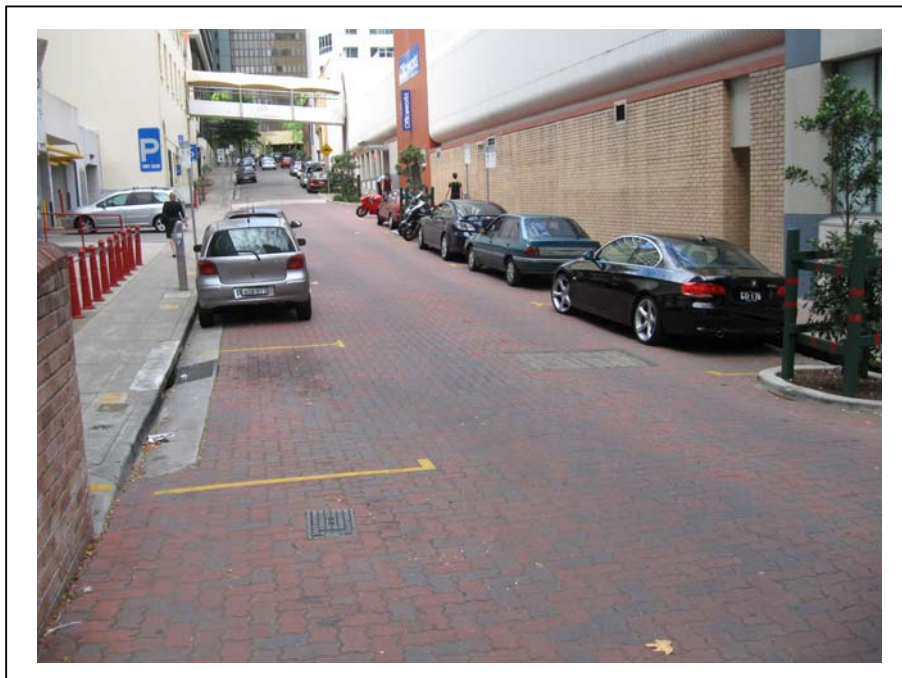
SITE INSPECTION

88 WALKER STREET & 77-81 BERRY STREET, NORTH SYDNEY



Denison Street (between Spring Street and Mount Street) looking south

A5



Denison Street looking north

A6

Appendix B Consultation Summary

Halcrow

Suite 20 Level 11 809 Pacific Highway Chatswood NSW 2067 Australia
Tel 02 9410 4100 Fax 02 9410 4199
halcrow.com

Record of meeting

Subject	Council Meeting on Traffic and Parking	Date	26 March 2009
Project	88 Walker Street	Re	
Venue	NSC Offices	Page	1 of 2
Date held	26 March 2009		
Present	Cathy Edwards Davies – North Sydney Council (NSC)		

Greg Cooper - North Sydney Council (NSC)

Andrew Nixey – North Sydney Council (NSC)

Bob Shin – Eastmark Holdings (EH)

Bruce Masson – Halcrow MWT (HMWT)

Adrian Bateman – Halcrow MWT (HMWT)

Apologies

Action

NSC identified concerns with the proposed basement car park layout. In particular the proposed two-way circulation and its awkwardness for public parking.

Note

NSC requested consideration be given to the use of a one directional split slab arrangement to provide operational efficiencies by the removal of vehicle conflicts (see attached interpretation sketch). To enable traffic circulation adjacent to the core widening underneath Denison Street could be achieved.

EH

NSC envisages such a layout would provide motorcycle parking in the vicinity of the ramps between the loading dock level and upper parking level. A rough sketch showing HMWT's interpretation of Council's suggestion is attached.

EH stated the need to incorporate Beau Monde interconnection ramp in any layout.

HMWT stated that due to imminent DA submission dates it may not be

Halcrow

Suite 20 Level 11 809 Pacific Highway Chatswood NSW 2067 Australia
Tel 02 9410 4100 Fax 02 9410 4199
halcrow.com

Record of meeting

possible to fully resolve the car park layout issues and questioned if an appropriately worded condition could be provided to any DA consent which identified the number of spaces to be provided but not necessarily the layout. NSC provided no formal response.

Loading dock geometry and principles were discussed. HMWT confirmed that all service vehicles could enter and exit in the forward direction. HMWT also stated that less than 4.5m clear headroom within the loading dock would not impact upon serviceability citing examples of other CBD non-compliant headroom dock areas which function effectively.

Note

NSC seeks operational management of the car park facility. NSC experience in the operation of other comparable car park facilities indicates that a shared parking arrangement provides the most efficient use of spaces. Allocated commercial tenant would be provided in combination with a managed pool of non allocated parking to be shared by other office, hotel, and public uses. Shared use for varying demands at different times of the day would afford the most efficient use of this parking.

EH

EH were due to discuss a proposal for the parking under a voluntary planning agreement during a later meeting with the planners.

Discussion was held regarding intersection operation. HMWT explained that technical assessments place no reliance upon the overcapacity Berry Street/Denison Street intersection. NSC considered merit in the exploring the implications of the introduction of a scramble phase pedestrian crossing at Walker Street/Mount Street intersection.

Note

The closure of Denison Street for the creation of public domain was welcomed by NSC.

Rice
Daubney
/Oculus

The extent of desired shared zones was also identified as shown on the attached plan. NSC requested removal of the marked pedestrian crossings indicated on the landscape plan within the shared zone areas since these would be upstand free areas (footpath and roadway at same level) using paving/texture delineation for roadway, footpath etc.

new concrete paving

new concrete paving

new street trees in new tree pits

new street trees in new tree pits

new stone kerbs

new stone paving (pedestrian crossing)

new stone paving (pedestrian crossing)

new stone setts

new ss bollards

new street tree in footpath

**SERVICE
VEHICLE
ACCESS
AREA**

new street trees

new stone paving

new concrete paving

new asphalt

new ss bollards

new concrete kerbs

new stone setts

new stone steps

new lawn

new stone paving

existing tree replaced

new stone steps

new stone terraces

new asphalt footpath

new stone paving

existing tree retained

new street tree

new trees

new stone walls

new planter walls

new stone steps

new stone setts

new street trees

new stone paving

existing trees retained

new asphalt

new ss bollards

existing tree replaced

new stone setts

new concrete paving

new stone kerbs

new street trees

ASPHALT

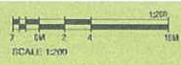
**AS EXISTING
EXTENT.**

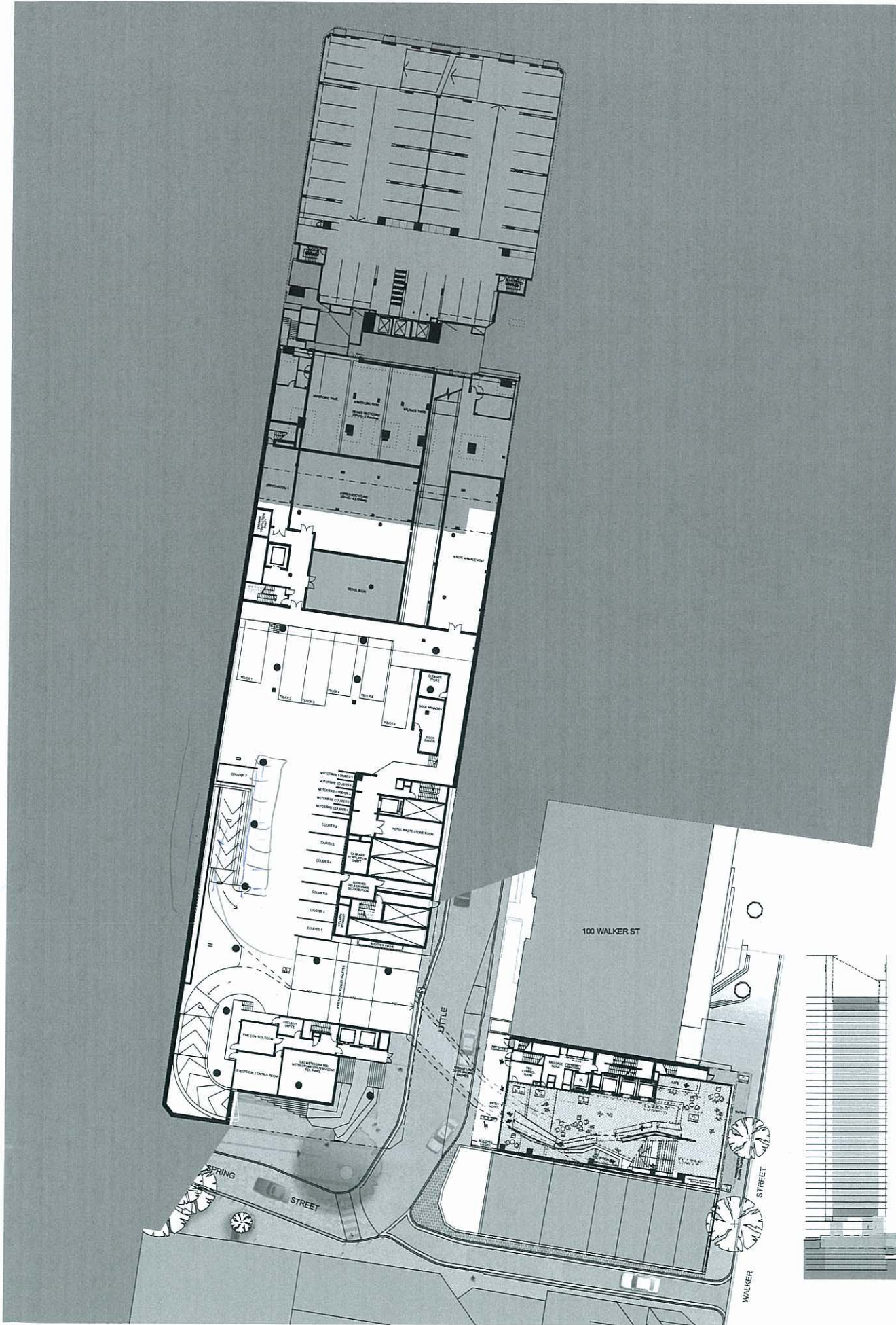


**SHARED ZONE
EXTENTS**

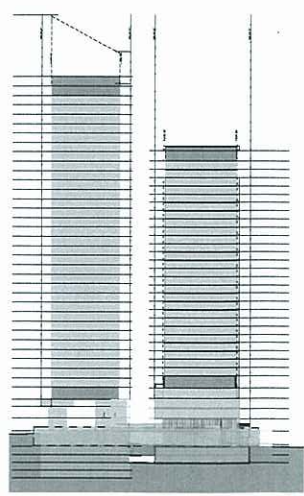


**REMOVE PEDESTRIAN
CROSSING**





LG
NO
CHANGE
Bt



DATE REVISION/DUE DETAILS	CLIENT EASTMARK HOLDINGS Pty. Ltd. 1. 02 3010 1021 1. 02 3010 1021	ARCHITECTS RICE DAUBNEY 1. 02 3010 1021 1. 02 3010 1021	PROJECT 88 WALKER STREET DEVELOPMENT North Sydney NSW 2060	DRAWING TITLE LOWER GROUND PLANS PLEASE NOTE: THESE ARE WORKING DOCUMENTS FOR DESIGN EXCELLENCE PANEL (NORTH SYDNEY COUNCIL) ONLY - NOT FOR PUBLIC DISTRIBUTION	SCALE 1:200 @ A1 DATE FEBRUARY 08 CHECKED PR PROJECT NUMBER 07001 DRAWING NUMBER DA 14
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X-SECTION

LG

B1A

B1B

B2A

B2B

ALL DISABLED
PARKING
ON 'B'
SPRIT DECK
FOR CORE
ACCESS

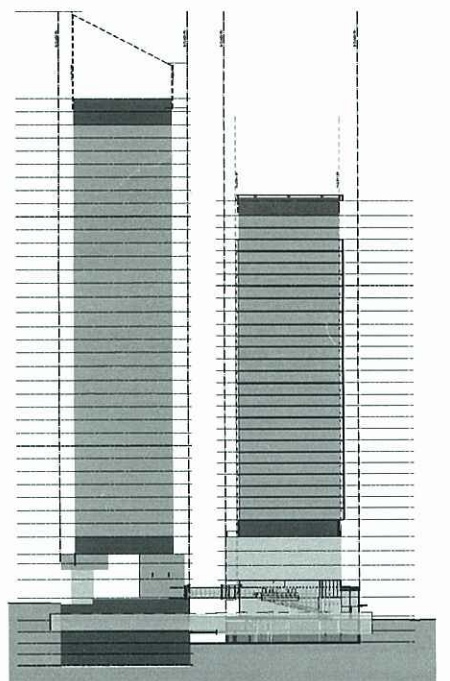
NSC
PREFERRED
CAR PARK
CIRCULATION

ASSUMES NO
STRUCTURAL
CONSTRAINTS.

B1

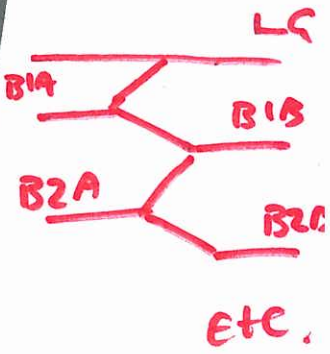
STAIRS
FOR
PED.
MOVEMENT

WIDENING
UNDER
DEVELOPMENT



		CLIENT EASTMARK HOLDINGS Pty. Ltd.	ARCHITECTS RICE DAUBNEY	PROJECT 88 WALKER STREET DEVELOPMENT	DRAWING TITLE BASEMENT 1	SCALE: 1:250 @ A1 DATE: FEBRUARY 09 CHECKED: PR PROJECT NUMBER: 07001 DRAWING NUMBER: DA 11
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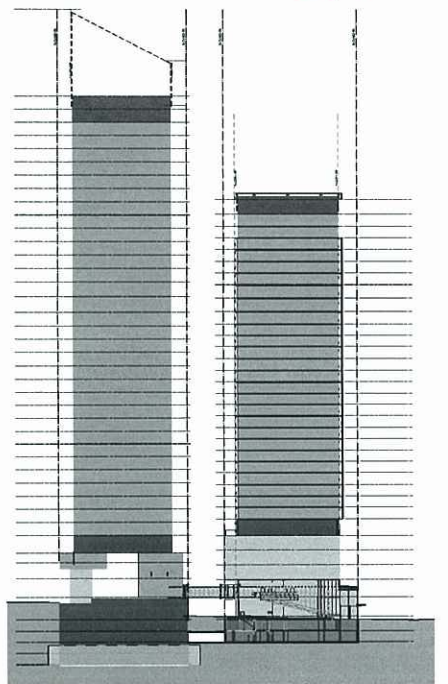
X-SECTION



NSC
PREFERRED
CAR PARK
CIRCULATION

ASSUMES
NO STRUCTURAL
CONSTRAINTS

B2/B3 etc



ACHIEVE NECESSARY
WIDENING FOR LAYOUT
AROUND CORE
UNDER DENISON ST.

No.	DATE	REVISION / ISSUE DETAILS		CLIENT	ARCHITECTS	PROJECT	DRAWING TITLE	SCALE	DATE	CHECKED
				EASTMARK HOLDINGS Pty. Ltd.	RICE DAUBNEY ANALYSING CREATING AND IMPLEMENTING ARCHITECTURE 	88 WALKER STREET DEVELOPMENT North Sydney NSW 2060	BASEMENT 4	1:250 @ A1	FEBRUARY 09	PR
				5 ROGERS AVENUE HAVERFIELD, NSW 2045	110 WALKER STREET (NORTH SYDNEY) 2060 T: 02 9556 2060 F: 02 9555 3015 info@rice-daubney.com.au www.rice-daubney.com.au the rice daubney group (pvt) Pty Ltd - abn 77 081 350 769 rice daubney trading trust - abn 55 695 304 993			PROJECT NUMBER	DRAWING NUMBER	REVISION
				P: 02 9791 1542 F: 02 9954 4277				07001	DA 08	
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