

Quest Serviced Apartments, Sydney Olympic Park Transport and Access Report



23 March 2009

Prepared for
SOPPROP Pty Ltd

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Contents

1	Introduction	1
2	Background Situation	2
2.1	Site Location	2
2.2	Road System	2
2.3	Existing Public Transport Facilities	3
2.4	Existing Pedestrian Facilities	4
2.5	Existing Traffic Volumes	4
2.6	Existing Intersection Operation	5
2.7	Relevant Policies and Guidelines	6
3	The Proposed Development	10
4	Traffic Generation and Impacts	11
4.1	Traffic Generation	11
4.2	Future Traffic Volumes on Surrounding Roads	11
4.3	Future Intersection Operation	13
4.4	Travel Information	14
5	Parking and Vehicle Access Arrangement	15
5.1	Car Parking Requirement	15
5.2	Carpark Layout	15
5.3	Service Vehicle Access	16
6	Traffic Management during Special Events	17
6.1	Major Events Implication on Operation	17
6.2	Major Events' Implication on Construction Activities	18
7	Summary and Conclusions	19
7.1	Summary	19
7.2	Conclusion	20

Appendix A	Existing Traffic Volumes	A.1
Appendix B	– Development Plans	B.1
Appendix C	– Vehicular Access to Basement Carpark	C.1
Appendix D	– Plans from Sydney Olympic Masterplan	D.1

1 Introduction

This report has been prepared on behalf of SOPPROP Pty Ltd to present the findings of a study of transport and access implications of a proposed serviced apartment development at Sydney Olympic Park. The serviced apartments are proposed to be operated by Quest which operates a chain of such apartments throughout Australia.

The proposal involves construction of 7 levels of serviced apartments plus ground level retail development on Site 22 which is currently used for coach and car parking. 46 carparking spaces including 6 at-grade parking spaces and 40 basement Carparking spaces are also proposed. Plans of the proposed development are provided in Appendix A.

This report examines the carparking layout, proposed vehicular access and the implications of the proposed development on traffic operations at the intersections in the vicinity of the development.

The remainder of this report is set out as follows:

- **Chapter 2** describes the site location and existing transport conditions.
- **Chapter 3** outlines the features of the proposed development
- **Chapter 4** examines the traffic implications for the surrounding road system
- **Chapter 5** examines the carparking and loading requirements of the proposed development and the suitability of the layout.
- **Chapter 6** discusses the traffic management during special events at the Sydney Olympic Park.
- **Chapter 7** provides a summary and presents the conclusions of the investigation.

2 Background Situation

An appreciation of the existing traffic conditions can be gained by examining the road network, traffic volumes and the operation of intersections. These aspects are discussed below.

2.1 *Site Location*

The subject site is located within Sydney Olympic Park. The site is currently used as an at-grade carpark for coaches. It is bounded on the north-west by Formule 1 Hotel and on the north and north-east by Edwin Flack Avenue. The site is bordered on the south and south-west by the boundary of the Sydney Olympic Park. A rear access lane called Coach Access Lane provides vehicular access to the site with entry from Uhrig Road and exit at Bernie Avenue. The site location is shown in **Figure 1**.

2.2 *Road System*

The roads surrounding the subject site are described briefly below.

Edwin Flack Avenue runs along the frontage of the site. Together with Sarah Durack Avenue, Majorie Jackson Parkway and Kevin Coombs Avenue, it forms a loop road around Sydney Olympic Park. It has two traffic lanes in each direction and provides access to the coach parking area via Uhrig Road.

Carter Street is a local road running parallel to the M4 and Parramatta Road between Hill Road and Birnie Avenue. Its intersections with Hill Road and Birnie Avenue are uncontrolled. It has one traffic and one parking lane in each direction.

Birnie Avenue runs north-south and provides a direct connection to Parramatta Road from the Sydney Olympic Park. Vehicles exiting from the coach parking area use Birnie Avenue to leave the Sydney Olympic Park area.

Hill Road is a collector road that runs north-south along the western boundary of the Sydney Olympic Park. Hill Road is connected to the M4 motorway via an on-ramp and

off-ramp. It has two northbound lanes and 3 southbound lanes in the vicinity of the site. Its intersection with Parramatta Road is signalised providing for turning movements in all directions.

2.3 Existing Public Transport Facilities

Buses

Sydney Buses provide a number of regular and peak hour bus services to the Sydney Olympic Park. Frequencies of the bus routes servicing Sydney Olympic Park are shown in Table 2.4.

Table 2-1 – Bus Services in Sydney Olympic Park

Route No.	Description	Frequency between 8am and 6pm
401	Lidcombe to Homebush Bay Wharf via Sydney Olympic Park	Every 30 minutes, Mon – Fri, every 1 hour on weekends
525	Burwood to Parramatta via Sydney Olympic Park	Every 20 minutes, Mon- Fri, every 30 mins on Saturday and every 1 hr on Sundays
533	Chatswood to Sydney Olympic Park via North Ryde	Peak hour services only – every 15 minutes
450	Hurstville to Sydney Olympic Park via Strathfield	Every 15 minutes, Mon-Fri, every 30 minutes on Saturday and every 1 hour on Sundays

From Table 2.4 it can be seen that there is a number of bus routes available which provide direct links to the Sydney Olympic Park.

Train

The site is located approximately 200m from the Sydney Olympic Park Railway Station. Regular services to the Olympic Park are provided every 20 minutes on weekdays and every 10 minutes on weekends from Lidcombe Train Station. During major events additional services operate between Central Station and Sydney Olympic Park.

Ferry

The site is located approximately 4km to the Homebush Bay Ferry Wharf. Sydney bus route 401 connects Sydney Olympic Park to the Ferry Wharf. Ferries travelling from Parramatta Wharf to Circular Quay, Rydalmere Wharf and Drummoyne Ferry Wharf Stops at the Sydney Olympic Park Ferry Wharf.

From the above table it can be seen that there is a wide variety of public transport facilities available which provide direct links into and out of the Sydney Olympic Park. The availability of these facilities would encourage workers and visitors to use public transport.

2.4 *Existing Pedestrian Facilities*

Existing pedestrian facilities in the Sydney Olympic Park include wide footpaths on both sides of the roads in the Sydney Olympic Park including Edwin Flack Avenue, Uhrig Road, Carter Street and Birnie Avenue. Pedestrian refuge islands are also available at the intersection of Uhrig Road and Edwin Flack Avenue. It can be seen that adequate pedestrian facilities are already available in the vicinity of the site, due to its location in a major events zone

2.5 *Existing Traffic Volumes*

To examine traffic conditions in the morning and evening peak periods traffic counts were conducted on Thursday 26th February 2008 at the following intersections:

- Carter Street/ Hill Road
- Carter Street/ Birnie Avenue

Traffic Flows in Uhrig Road were obtained from the Transport Report for Formula 1 Hotel prepared by Colston Budd Hunt & Kafes¹.

The AM and PM peak hour volumes are shown in Appendix A of this report. The traffic volumes are summarised in **Table 2-2**.

Traffic Flows in Hill Road and Birnie Avenue exceed 1,000 vehicles per hour in the weekday morning peak periods. This suggests that these roads operate in the sub-arterial road range and are important cross district traffic routes with functions greater than that of just collector roads.

¹ Transport Report for Proposed Formule 1 Hotel, Sydney Olympic Park – Coston Budd Hunt & Kafes (2006)

Table 2-2 – Existing Peak Hour Traffic Flows (veh/hr)

Road	Location	Weekday AM Peak (8.00am to 9.00am)	Weekday PM Peak (5.00pm to 6.00pm)
Hill Road	South of Carter Street	2136	2224
Hill Road	North of Carter Street	1531	1506
Carter Street	East of Hill Road	817	822
Carter Street	West of Birnie Avenue	457	523
Birnie Avenue	South of Carter Street	1028	1157
Birnie Avenue	North of Carter Street	875	1006
Uhrig Road	South of Edwin Flack Avenue	185	165

Note: All figures are total volumes for both directions unless indicated otherwise.

2.6 Existing Intersection Operation

The intersections in the vicinity of the site were analysed using the SIDRA intersection analysis programme. SIDRA determines the average delay that vehicles encounter and the level of service. SIDRA provides analysis of the operating conditions which can be compared to the performance criteria set out in **Table 2-3**.

The results of the analysis are presented in **Table 2-4**. The results for each intersections are discussed below:

- The Uhrig Road/ Edwin Flack Avenue intersection operates at satisfactory level of service with spare capacity during weekday peak hours.
- The intersection of Carter Street/ Hill Road currently operates at unsatisfactory levels of service during the morning and evening peak hours with significant delays to traffic turning out of Carter Street and traffic making right turns into Carter Street. Traffic in Carter Street is delayed because it is required to give way to three lanes of southbound and two lanes of northbound traffic in Hill Road travelling to and from M4 Motorway and Parramatta Road. This intersection requires additional capacity and has already been identified for upgrading in the Sydney Olympic Park Masterplan 2030.
- The intersection of Carter Street/ Birnie Avenue operates at capacity in the morning and evening peak hours with significant delays to vehicles turning out of Carter Street. This intersection also requires additional capacity and has been identified for upgrading in the Sydney Olympic Park Masterplan 2030.
- It is anticipated that improvements to these two intersections will be undertaken as part of the works associated with the development of the Carter Street precinct.

Table 2-3 – Level of Service Criteria

Level of Service	Average Delay per Vehicle (sec/veh)	Traffic Signals and Roundabouts	Give Way and Stop Signs
A	less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity and 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	over 70	Extra capacity required	Extreme delay, traffic signal or other major treatment required

Adapted from Guide to Traffic Generating Developments, RTA October 2002

Table 2-4 – Existing Operation of Intersections

Intersection	Controls	Weekday AM Peak		Weekday PM Peak	
		Average Delay	Level of Service	Average Delay	Level of Service
Carter Street/Hill Road	Priority	365	F	780	F
Carter Street/ Birnie Avenue	Priority	65	E	515.0	F
Uhrig Road/ Edwin Flack Avenue	Stop	13	A	14	A

Note: Roundabout and priority intersection performance relates to the most disadvantaged approach whereas signalised intersection performance relates to the intersection as a whole.

2.7 Relevant Policies and Guidelines

2.7.1 Sydney Olympic Masterplan 2030

Sydney Olympic Master Plan 2030 establishes the planning principles and controls to manage and promote the development of Sydney Olympic Park (SOP). It includes principles and controls on various development issues including access and parking. The plan emphasises the need to continue to host large events while also accommodating new commercial and residential uses. The masterplan identifies some broad principles to improve transport and access in the Sydney Olympic Park. Some of these measures are:

- Targeting a journey to work non-car mode share split of 25 percent
- Strategically locating commercial and retail land uses around Olympic Park Station and close to local bus service corridors

- Limiting the provision of parking spaces for new developments to encourage public transport use
- Designing a street network that supports bicycles, vehicles and pedestrian use

Measures to improve vehicular access and parking were also identified in the masterplan. Some of the measures are:

- Improving connections to the major arterial roads such as Parramatta Road and Silverwater Road, and also local roads in the Carter Street Precinct and North Lidcombe.
- Upgrading traffic capacity of local intersections by installing traffic signals and lane reconfiguration.
- Managing parking provision to promote alternative forms of transport.

Plans showing the proposed measures are shown in Appendix D. It can be seen from the Vehicular Access Plan indicates that the intersection of Uhrig Road/ Edwin Flack Avenue and all the intersections along Carter Street will be upgraded in the plan.

The Masterplan identifies future land uses in the Sydney Olympic Park. The existing coach parking area between Uhrig Road and Birnie Avenue has been reserved for hotels and serviced apartments.

Thus the proposed development and the transport implications are in accordance with the masterplan and their transport needs have been addressed in the formulation of an overall transport plan for the area.

2.7.2 *Urban Transport Statement*

NSW Government prepared an Urban Transport Statement in 2006. The main focus of the statement is passenger transport. The statement aims to increase the number of daily trips on public transport. The statement identifies a number of projects that target routes across Sydney's transport network which experience high transport demand. The initiative includes improvement to bus travel times and reliability on 43 strategic bus corridors. The main objectives are to encourage use of public transport and relieve road congestion in most areas in Sydney, including Sydney Olympic Park. This would improve access to the Sydney Olympic Park. The Sydney Olympic Park Masterplan is

supportive of this statement as all proposed land uses within the Sydney Olympic Park, including the proposed service apartments, are within walking distance to the train station and bus stops.

2.7.3 *State Environmental Planning Policy 66 – Integrating Land Use and Transport*

Draft SEPP 66 aims to ensure that urban structure, building forms, land use locations, development designs, subdivision and street layouts help achieve the following planning objectives:

- improving accessibility to housing, employment and services by walking, cycling, and public transport
- improving the choice of transport and reducing dependence solely on cars for travel purposes
- moderating growth in the demand for travel and the distances travelled, especially by car
- supporting the efficient and viable operation of public transport services
- providing for the efficient movement of freight.

The proposed development is compatible with these objectives, noting that it:

- is located within walking distance of train station and bus stops
- improves pedestrian access between the development and the bus/rail interchange
- provides bicycle parking racks to encourage trips by bicycle
- supports the operation of public transport services through its location close to the Sydney Olympic bus/rail interchange linking public transport with land use
- fosters mixed use development concentrated in a centre, thereby moderating growth in the demand for travel and distance travelled
- has a limited parking supply.

In addition to this the following measures are proposed to foster travel by modes other than private car:

- continued limitation of on-site employee parking

- provision of a public transport information board at the entry plaza
- dissemination of public transport access information on the hotel's brochure to be made available to all visitors and employees
- provision of public transport information and links to transport operator sites on the Quest Apartment's website
- provision of bicycle hire service at the hotel.

Therefore the proposed development is consistent with government objectives of reducing private car usage for journey to work travel.

3 The Proposed Development

The components of the proposed 8 storey serviced apartment building are as follows:

- 77 serviced apartments with a total Gross Floor area of 7,746m² at Levels 1 to 7, with a total of 136 keys as follows:
 - 18 x 2 bedroom with single keys
 - 45 x 2 bedroom with twin key
 - 14 x 3 bedroom with twin key
- Shops with a total Gross Floor Area of 161m² at the Ground Floor Level
- A conference room with 50sqm Gross Floor Area at Ground Floor Level
- 46 on-site Carparking spaces comprising 6 at-grade and 40 basement car parking spaces.
- Bicycle storage

Plans of proposed development are provided in Appendix B.

The proposed retail mix is intended only to serve the local community, including hotel guests and workers and visitors to the Sydney Olympic Park and therefore only walk-in trade is expected.

In addition, the small conference room, 50 m² would not generate additional traffic as it will be used by the hotel guests only.

4 Traffic Generation and Impacts

4.1 *Traffic Generation*

4.1.1 *Weekday Evening Peak Hour*

The traffic generation of the proposed development will have its greatest effects during the morning and evening peak periods. The Roads and Traffic Authority guidelines² provides traffic generation for motel and retail development as follows:

Motel:

Evening peak hour vehicle trips = 0.4 veh per unit

In practice the proposal is expected to serve groups from out of Sydney visiting SOP for sport or business purposes. Only a limited number will drive and the proposed parking supply reflects this. This means that the RTA traffic generation rates would not be strictly applicable. Nevertheless to account for taxis and examine a highest possible case, traffic generation scenario, the RTA traffic generation rate was adopted for the purposes of analysis.

On this basis, the peak hour vehicle trips for 136 lettable units would be 54 vehicles per hour.

Retail:

As indicated above the shops will only serve walk-in trade and therefore no customer parking and no traffic generation will result. In accordance with government policies no parking for staff is proposed and hence no staff traffic generation is expected.

4.2 *Future Traffic Volumes on Surrounding Roads*

The potential traffic generation of the proposed development has been added to the existing traffic flows on the surrounding road system. The expected future traffic volumes on surrounding roads in the AM and PM peak hours are summarised below in Table 4-2.

² Roads and Traffic Authority of New South Wales (1993) *Guide to Traffic Generating Developments*, December 1993.

External traffic can only access the site by turning from Uhrig Road into the rear access lane and then exiting the site by turning from the rear access lane into Birnie Avenue. In preparing the future traffic estimates the following traffic distribution in Table 4-1 was assumed:

Table 4-1: Traffic Distribution

Route	Traffic Proportion	New Traffic From	
		Direction AM Peak Hour	PM Peak Hour
From West via M4 Motorway	30%	16	16
From East Via Parramatta Road	30%	16	16
From North via Homebush Bay Road (then Australia Avenue)	40%	22	22

The future traffic volumes on the surrounding roads are shown in Table 4-2.

The estimated future traffic volumes indicate that change in traffic volumes on the road network after the development would be low after the development. On weekdays peak hours the percent change in traffic volumes range from 0 percent to around 2.5 percent, except on Uhrig Road where changes of up to 6.6 percent are experienced . However traffic volumes in Uhrig Road at these locations still remain within the range specified in RTA’s guidelines for its classification. Therefore the potential traffic impact of the development would not be significant. Capacity implications of these changes are discussed below.

Table 4-2 – Existing and Future Morning and Evening Peak Hour Traffic Flows

Road	Location	Weekday AM Peak (8.00am to 9.00am)			Weekday PM Peak (5.15pm to 6.15pm)		
		Existing	Future	Percent Change	Existing	Future	Percent Change
Hill Road	South of Carter Street	2136	2152	1	2224	2240	1
Hill Road	North of Carter Street	1531	1531	0	1506	1506	0
Carter Street	East of Hill Road	817	833	2.0	822	844	2.0
Carter Street	West of Birnie Avenue	457	465	1.7	523	531	1.5
Birnie Avenue	South of Carter Street	1028	1044	1.5	1157	1173	1.4
Birnie Avenue	North of Coach Access Lane	875	897	2.5	1006	1028	2.2
Uhrig Road	South of Edwin Flack Avenue	185	196	5.9	165	176	6.6

Note: All figures are total volumes for both directions unless indicated otherwise.

4.3 *Future Intersection Operation*

The intersections surrounding the site were again analysed using SIDRA to determine the future impact of the additional traffic from the proposed development would have on their operations. The SIDRA results are presented in Table 4-9 and Table 4-10.

The results indicate that with the development, Uhrig Road/ Edwin Flack Avenue will continue to operate satisfactorily at level of service A, with spare capacity.

The results also indicate that the intersections of Carter Street with Hill Road and Birnie Avenue would continue to operate at levels similar to current situation. As shown in Table 4.2, vehicles would approach the development from three directions, and this would mean that the additional traffic load at any single intersection would be low.

As the intersections along Carter Street have been identified for upgrading to cater for anticipated development, including the proposed service apartments, the traffic impact of the development is considered to be satisfactory.

Table 4-3 – Existing and Future Intersection Operating Characteristics on Saturday

Intersection	Control	Existing Morning Peak		Future Morning Peak		Existing Evening Peak		Future Evening Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Carter Street/Hill Road	Priority	365	F	373	F	780	F	822	F
Carter Birnie Avenue	Street/ Priority	65	E	76	F	515.0	F	565	F
Uhrig Edwin Avenue	Road/ Flack Stop	13	A	13.2	A	14	A	14.1	A

Note: Roundabout and priority intersection performance relates to the most disadvantaged approach whereas signalised intersection performance relates to the intersection as a whole.

4.4 Travel Information

This development proposes to promote a culture of public transport use by employees and visitors to this site.

Hotel guests will be provided with information on public transport services and pedestrian linkages to the surrounding area. A copy of the information will also be displayed on the Quest Apartment's website.

Transport information on bus, ferry and rail services as well as walking and cycling links would be displayed at a prominent location at the reception.

5 Parking and Vehicle Access Arrangement

5.1 *Car Parking Requirement*

It is proposed to provide 46 parking spaces representing about 0.6 spaces per apartment or 0.34 spaces per key.

The parking provision is based on Quest's experience with other sites and its expectations of the market it will serve at SOP. It is also based on advice from SOPA that is preferred that ground level parking be limited for urban design and street front activation reasons.

The proposed parking ratio is of the same order as that provided for the adjoining Formule 1 hotel. Given that there is a pool of some 10,000 parking spaces in the SOP, the actual amount of parking supplied on this site is not considered to be critical. The main issue is that the supply will be commercially acceptable to Quest having regard to its expected market and the manner in which it seeks to operate the development.

5.2 *Carpark Layout*

Australian Standard for Parking Facilities, Part 1: Off-Street Carparking (AS 2890.1-2004) classifies carparks according to the user classes. The carpark has been designed to suit long-term parking in a motel (User Class 2). A car park for user class 2 requires 2.5m wide parking bay and a minimum aisle width of 5.8m.

The parking spaces are 2.5m wide and the disabled parking spaces are 3.2m wide. The aisle widths in the carparks are 7.9m. Therefore the carpark layouts comply with AS 2890.1.

The development proposes a left-in left-out driveway from Coach Access Lane to the basement carpark. The entry and exit lanes are separated by a painted median in the first 6m from the building line. The remaining section of the ramp provides for a one-lane

two-way traffic movement with traffic movement controlled by traffic signals giving priority to entering vehicles. A holding bay with a stop line is provided at the entrance for entering vehicles to wait for green signals. A holding bay is also provided for exiting vehicles at the basement. The traffic operation has been reviewed and found to be satisfactory subject to detailed design of vehicle exit movements and manoeuvring of vehicles into and out of 90⁰ parking spaces on the lane. This checking should be undertaken in conjunction with the preparation of the construction certificate plans.

Plans of the carpark showing the swept paths and the traffic control measure are provided in Appendix C.

5.3 Service Vehicle Access

Delivery for the Motel and the small retail shops will be carried out from the Coach Access Lane. It is expected that delivery would be made by small trucks. These vehicles would enter the lane from Uhrig Road and exit via Birnie Avenue.



6 Traffic Management during Special Events

6.1 *Major Events Implication on Operation*

Various events are held at Sydney Olympic Park and these affects access to streets and public areas. The major events include:

- Major Stadium events
- Royal Easter Show events
- Athletic's Centre and Warm Up Track Events

Street closures are carried out in the Sydney Olympic Park during these events as shown on the Events Access Plan in Appendix D. To maintain access to development sites during events, driveways to the developments need to be located away from the affected streets. During major events street closures will be carried out in the streets located north of the Coach Access Lane. Vehicular access to the proposed development would be via the Coach Access Lane which is located away from the affected streets identified in the Sydney Olympic Park Masterplan 2030.

As discussed above, during major events, access into Sydney Olympic Park is restricted. Access along Uhrig Road and Birnie Avenue is subjected to security controls. Guests and staff needing access to the site would need to provide identification and evidence of the validity of their need to drive to the site. This would take the form of a hotel key, document supplied by the hotel or other identification as agreed with SOPA.

Entry would be by right turn from Uhrig Road into the rear access lane only. Egress from the site would be by way of right turn from the rear access lane into Birnie Avenue only.

Management of the Quest Apartments would appropriately advise staff and guests of access arrangements during events.

6.2 *Major Events' Implication on Construction Activities*

During construction of the proposed development, construction vehicles would access the site from Carter Street. Entry would be by right turn from Uhrig Road into the rear access lane only. Egress from the site would be by way of right turn from the rear access lane into Birnie Avenue only. The use of these routes for construction vehicles would ensure that construction activities would have minimal impact on operational requirement of any major event. Approved routes for construction vehicles would be provided to the building contractor.

Pedestrian access in Edwin Flack Avenue during construction would continue to be available as there would be a hoarding for pedestrian overhead protection.

In the event that construction access had to be limited for a particular event then forewarning would be given to the building contractor. The potential for modified or disrupted construction access during major events would be notified in the building contract.



7 Summary and Conclusions

7.1 *Summary*

This report addresses the transport and access implications of proposed serviced apartments at Site 22, Sydney Olympic Park.

The Proposed Development

The components of the proposed development include:

- 77 serviced apartments at Levels 1 to 7 , with a total of 136 keys as follows:
 - 18 x 2 bedroom with single keys
 - 45 x 2 bedroom with twin key
 - 14 x 3 bedroom with twin key
- Shops with a total Gross Floor Area of 161m²
- 46 carparking spaces are proposed
- The proposed development supports the objectives of the Sydney Olympic Masterplan, NSW Urban Transport Statement 2006 and Draft SEPP 66 (Integrating Land Use and Transport).

Parking Provision and Layout

- The proposed supply of 46 car parking spaces would be appropriate for the use of the development.
- The layout of the carpark has been designed in accordance with the Australian Standard for Off-Street Car Parking.
- A proposed traffic signal arrangement at the entry and exit to the carpark would provide satisfactory access to the development.

Traffic Impact

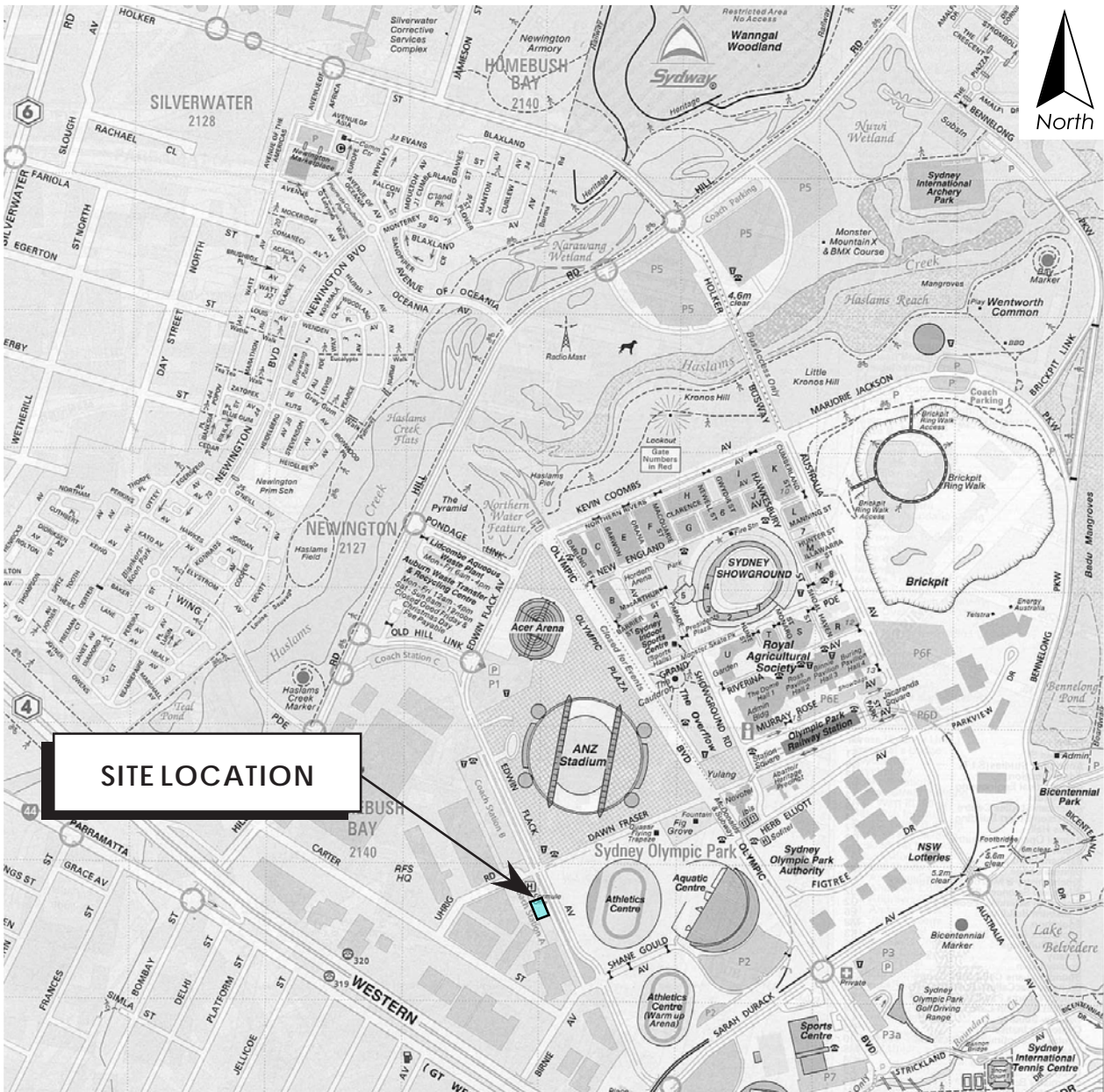
- Analysis indicates that the intersections at both ends of Carter Street are currently operating at or near capacity. However the Sydney Olympic Masterplan 2030 has already identified these intersections for upgrading to accommodate anticipated developments in the Sydney Olympic Park.
- Analysis indicates that the intersection of Uhrig Road and Edwin Flack Avenue will continue to operate at good level of service with spare capacity after the development.
- The traffic impact of the development is considered satisfactory.

7.2 Conclusion

Overall the traffic and parking impacts of the proposed development are considered to be satisfactory.

SITE LOCATION

SITE 22, EDWIN FLACK AVENUE, SYDNEY OLYMPIC PARK



Appendix A Existing Traffic Volumes



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Halcrow M.W.T.

Job No/Name : 2595 Homebush Bay Carter St

Day/Date : Thursday 26th February 2009

All Vehicles

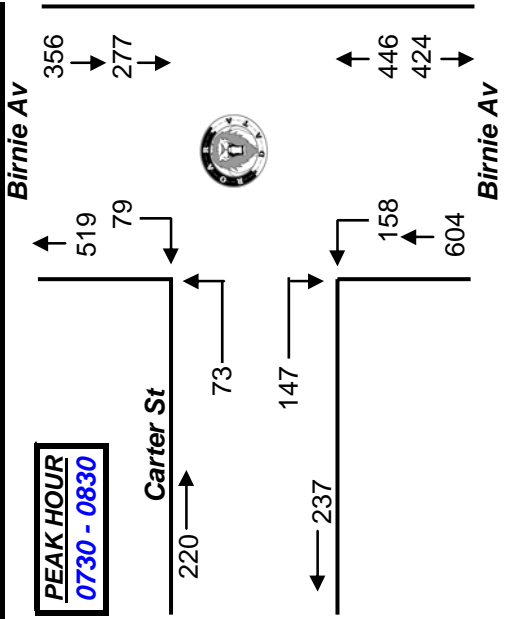
Time Per	NORTH		WEST		SOUTH		TOTAL
	Birnie Av	R	Carter St	R	Birnie Av	I	
0700 - 0715	58	8	34	51	28	90	269
0715 - 0730	37	19	25	38	20	120	259
0730 - 0745	68	19	25	48	33	115	308
0745 - 0800	60	22	19	39	45	105	290
0800 - 0815	72	17	19	33	40	113	294
0815 - 0830	77	21	10	27	40	113	288
0830 - 0845	52	14	24	35	44	105	274
0845 - 0900	45	6	13	34	32	109	239
Period End	469	126	169	305	282	870	2221

Time Per	NORTH		WEST		SOUTH		TOTAL
	Birnie Av	R	Carter St	R	Birnie Av	I	
1600 - 1615	104	31	16	32	33	62	278
1615 - 1630	85	35	18	23	49	56	266
1630 - 1645	112	31	15	54	40	89	341
1645 - 1700	128	21	9	32	23	72	285
1700 - 1715	112	24	22	53	49	87	347
1715 - 1730	121	28	22	48	30	107	356
1730 - 1745	118	33	27	65	37	75	355
1745 - 1800	108	22	13	45	25	59	272
Period End	888	225	142	352	286	607	2500

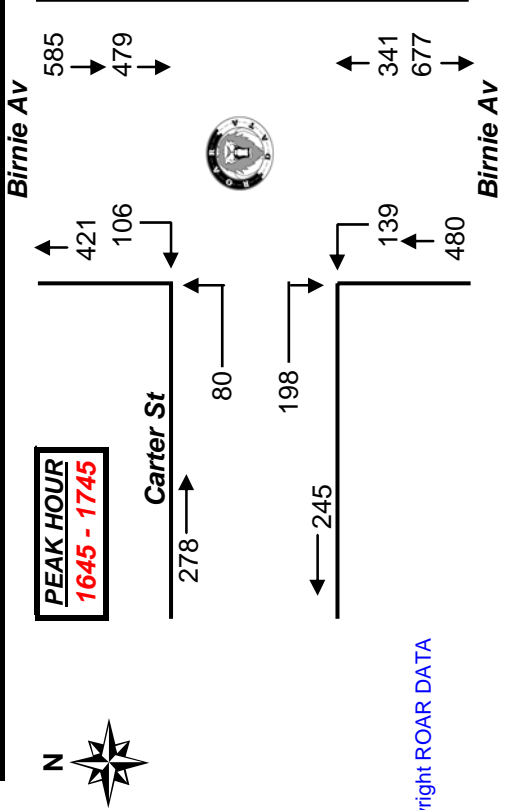
Peak Per	NORTH		WEST		SOUTH		TOTAL
	Birnie Av	R	Carter St	R	Birnie Av	I	
0700 - 0800	223	68	103	176	126	430	1126
0715 - 0815	237	77	88	158	138	453	1151
0730 - 0830	277	79	73	147	158	446	1180
0745 - 0845	261	74	72	134	169	436	1146
0800 - 0900	246	58	66	129	156	440	1095

Peak Per	NORTH		WEST		SOUTH		TOTAL
	Birnie Av	R	Carter St	R	Birnie Av	I	
1600 - 1700	429	118	58	141	145	279	1170
1615 - 1715	437	111	64	162	161	304	1239
1630 - 1730	473	104	68	187	142	355	1329
1645 - 1745	479	106	80	198	139	341	1343
1700 - 1800	459	107	84	211	141	328	1330

PEAK HR	277	79	73	147	158	446	1180
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PEAK HR	479	106	80	198	139	341	1343
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R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client

: Halcrow M.W.T.

Job No/Name : 2595 Homebush Bay Carter St

Day/Date : Thursday 26th February 2009

All Vehicles

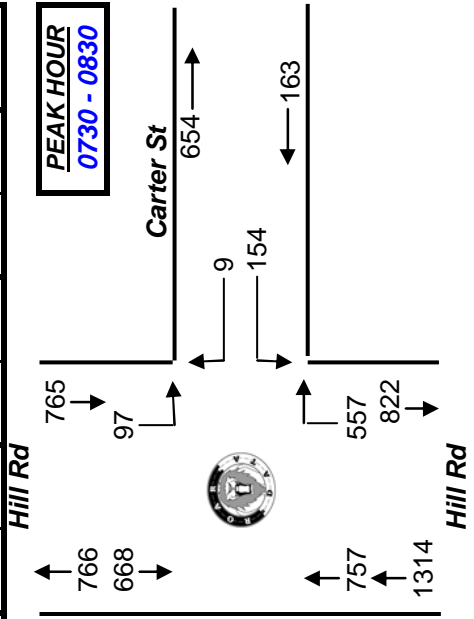
Time Per	NORTH Hill Rd		EAST Carter St		SOUTH Hill Rd		TOTAL
	I	L	R	L	R	I	
0700 - 0715	117	15	6	32	152	133	455
0715 - 0730	117	15	3	38	136	149	458
0730 - 0745	165	22	0	40	157	179	563
0745 - 0800	166	30	3	37	151	173	560
0800 - 0815	166	21	2	41	131	186	547
0815 - 0830	171	24	4	36	118	219	572
0830 - 0845	155	12	1	40	148	198	554
0845 - 0900	112	26	7	28	111	201	485
Period End	1169	165	26	292	1104	1438	4194

Time Per	NORTH Hill Rd		EAST Carter St		SOUTH Hill Rd		TOTAL
	I	L	R	L	R	I	
1600 - 1615	164	5	2	112	51	117	451
1615 - 1630	132	4	2	102	41	123	404
1630 - 1645	189	6	6	130	38	123	492
1645 - 1700	189	8	5	103	53	136	494
1700 - 1715	245	5	4	134	52	176	616
1715 - 1730	201	9	4	134	91	177	616
1730 - 1745	175	11	6	121	82	155	550
1745 - 1800	147	5	3	100	68	133	456
Period End	1442	53	32	936	476	1140	4079

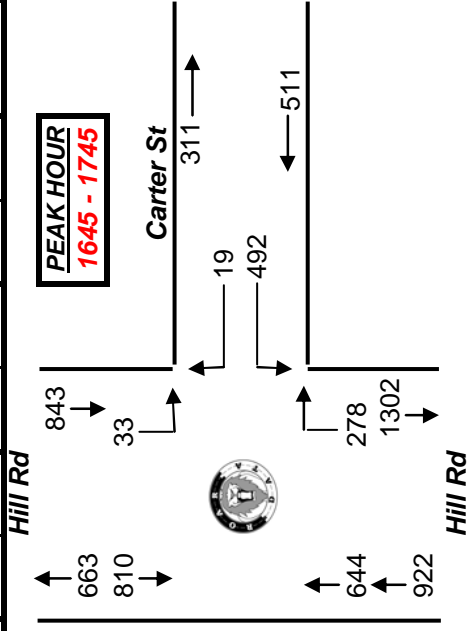
Peak Per	NORTH Hill Rd		EAST Carter St		SOUTH Hill Rd		TOTAL
	I	L	R	L	R	I	
0700 - 0800	565	82	12	147	596	634	2036
0715 - 0815	614	88	8	156	575	687	2128
0730 - 0830	668	97	9	154	557	757	2242
0745 - 0845	658	87	10	154	548	776	2233
0800 - 0900	604	83	14	145	508	804	2158

Peak Per	NORTH Hill Rd		EAST Carter St		SOUTH Hill Rd		TOTAL
	I	L	R	L	R	I	
1600 - 1700	674	23	15	447	183	499	1841
1615 - 1715	755	23	17	469	184	558	2006
1630 - 1730	824	28	19	501	234	612	2218
1645 - 1745	810	33	19	492	278	644	2276
1700 - 1800	768	30	17	489	293	641	2238

PEAK HR	668	97	9	154	557	757	2242
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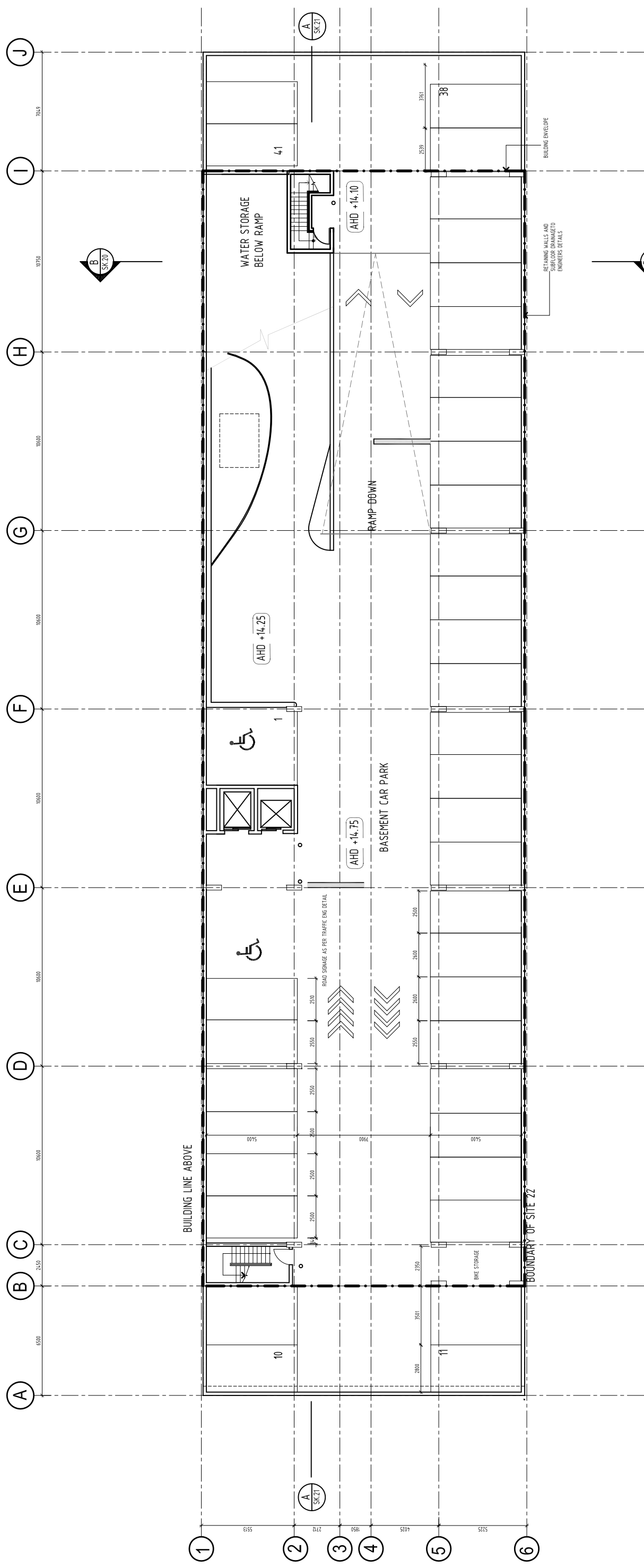


PEAK HR	810	33	19	492	278	644	2276
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Appendix B – Development Plans



BASEMENT FLOOR PLAN
SCALE 1:100 @ B1

NOTE:
AHD LEVELS SHOWN ARE TO
BE VERIFIED BY A
REGISTERED LAND SURVEYOR

Copyright of this drawing is reserved by the client. Where necessary, the client is to be notified of any errors or omissions. Drawings to be used for construction with the client's approval. All dimensions on the plan to be verified by a registered land surveyor.

REVISION	DATE	DESCRIPTION	REVISION	DATE	DESCRIPTION	REVISION	DATE	DESCRIPTION	REVISION	DATE	DESCRIPTION



ARCHITECT
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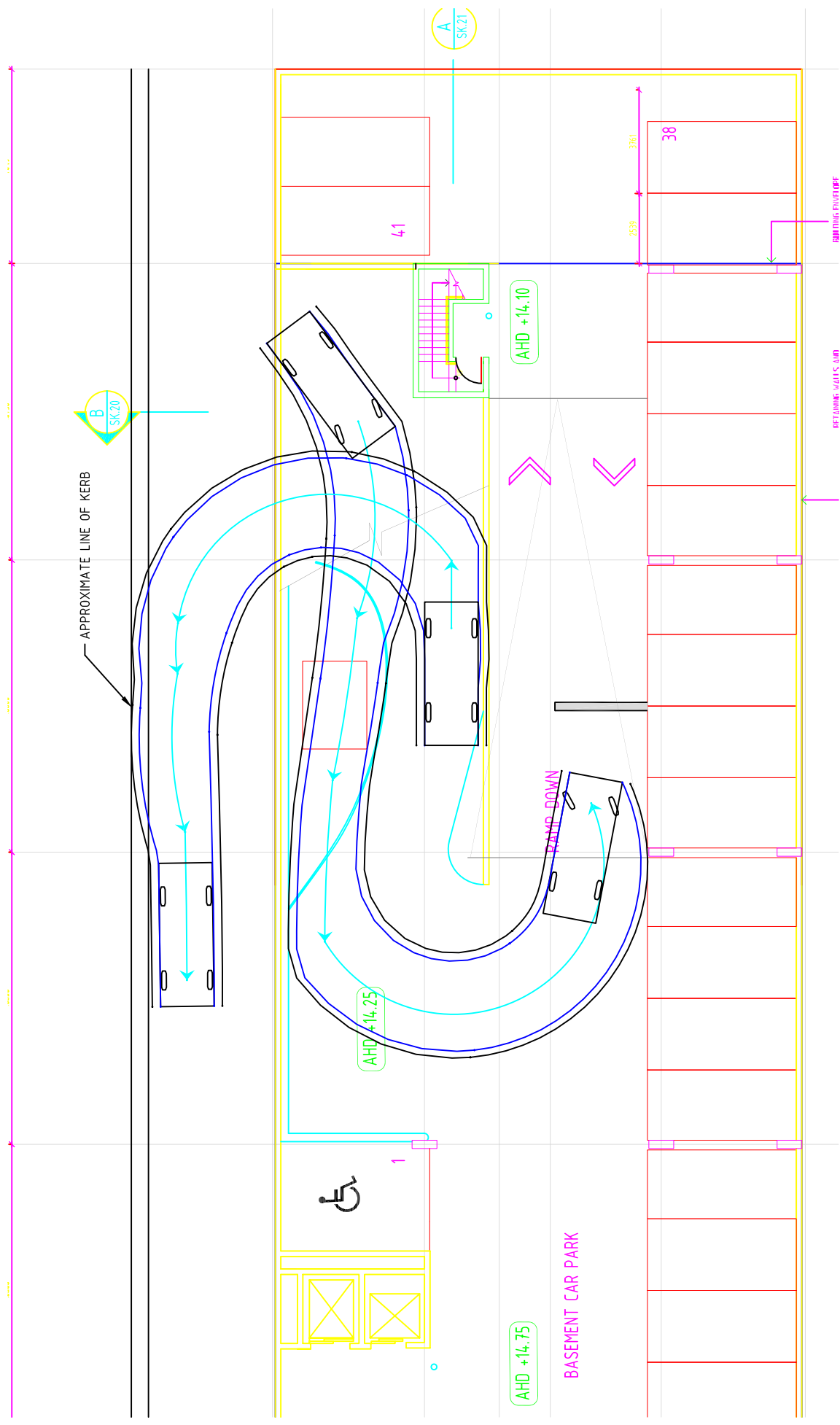
PROJECT
QUEST APARTMENTS
SITE 22 - SYDNEY OLYMPIC PARK
DRAWING
BASEMENT FLOOR PLAN

SCALE 1:100 @ B1
JOB NO QJE - 032
DRAWN SD
DWG NO SK-010
DATE 19 AUGUST 2008
REVISION A

Appendix C – Vehicular Access to Basement Carpark

LARGE CAR TURNING PATHS INTO\OUT OF BASEMENT

SITE 22, SYDNEY OLYMPIC PARK



Scale: 1:200@A4

Halcrow MWT

Filename: 083624dc01_Basement Review_QUE-032-SK-010

APPENDIX C

Date: 10 March 2009

Appendix D – Plans from Sydney Olympic Masterplan

Figure 3.9 Vehicular Access Plan

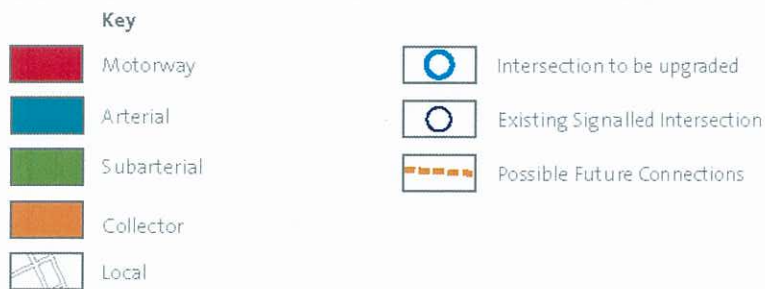
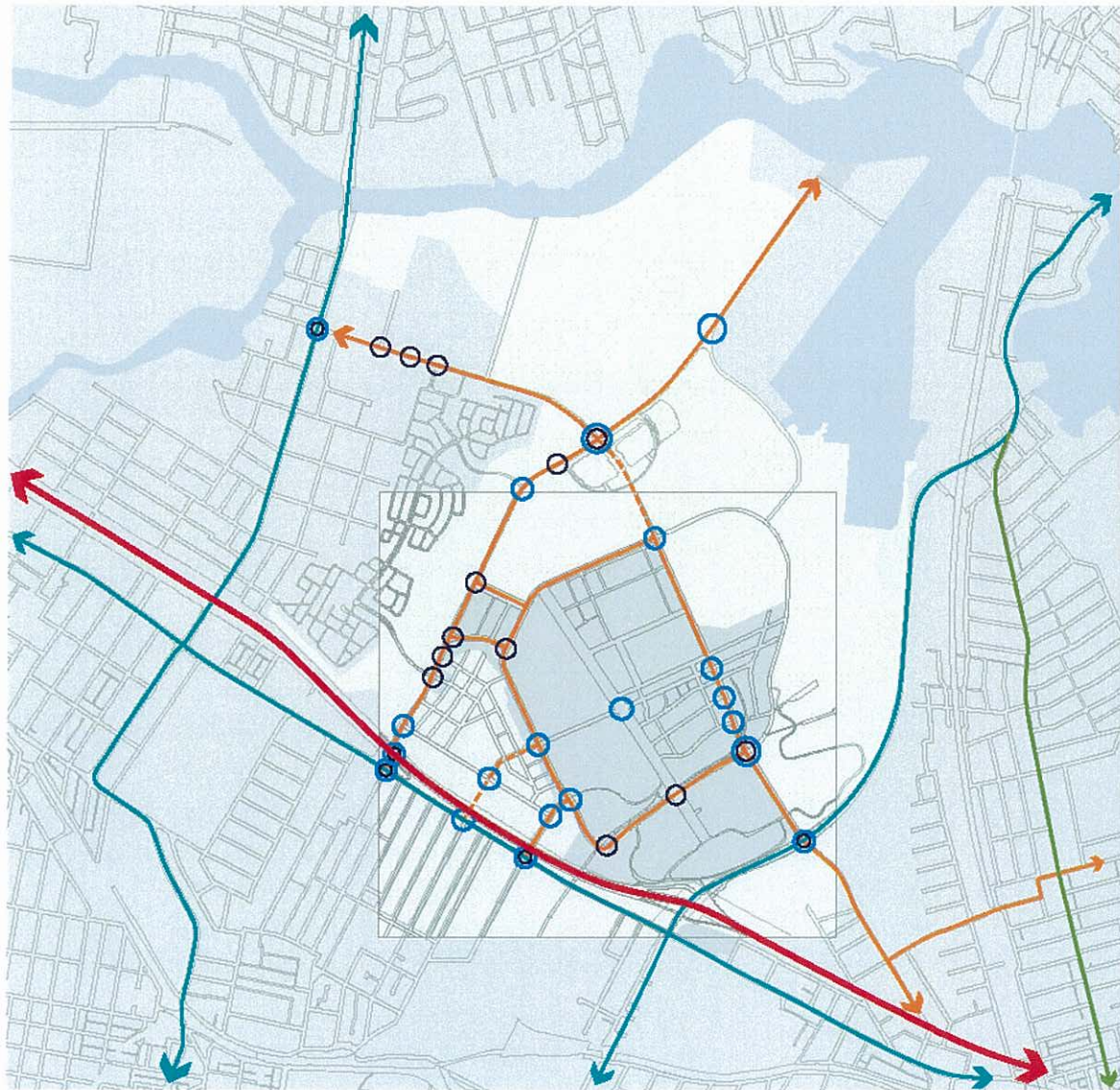
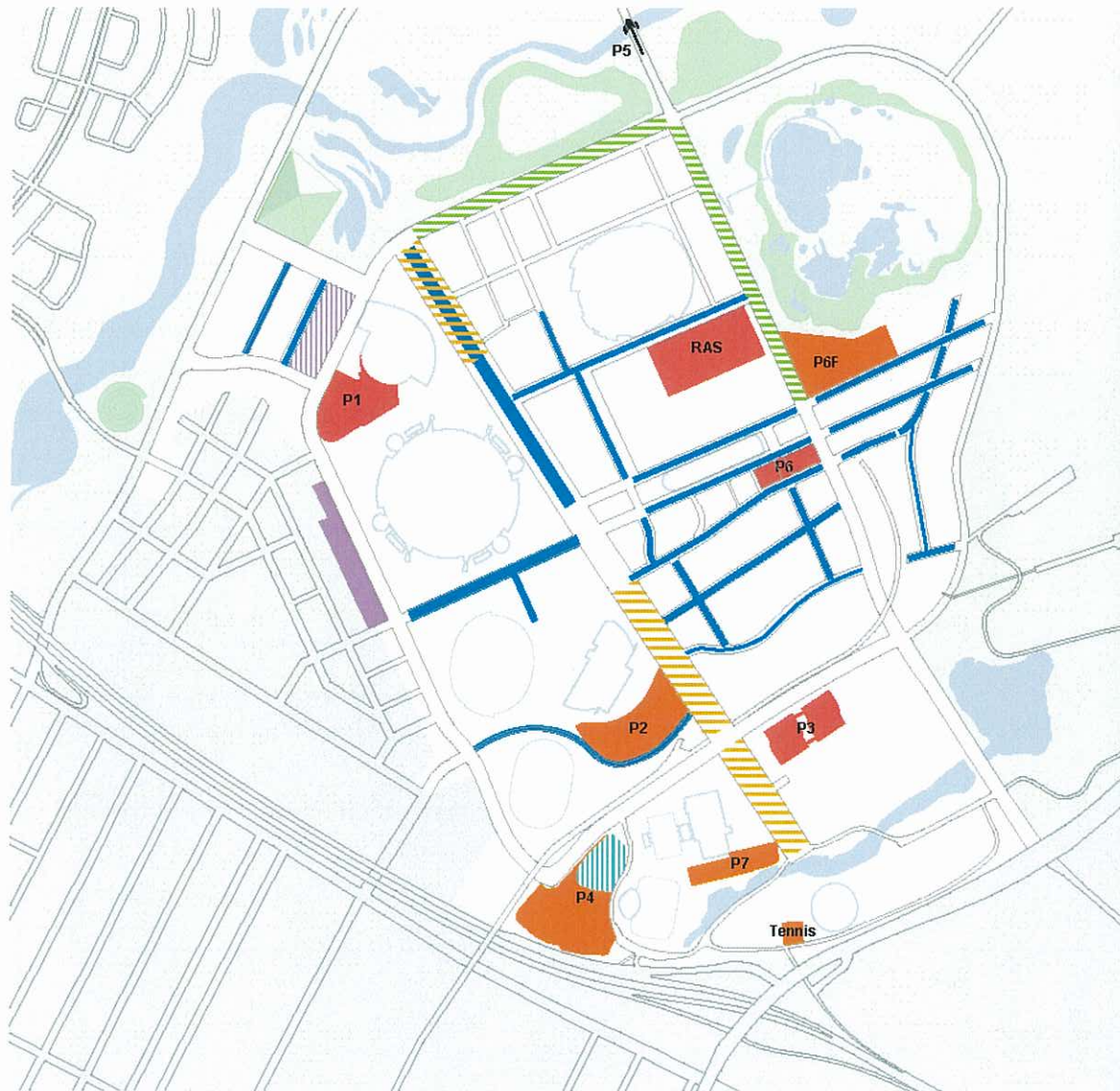


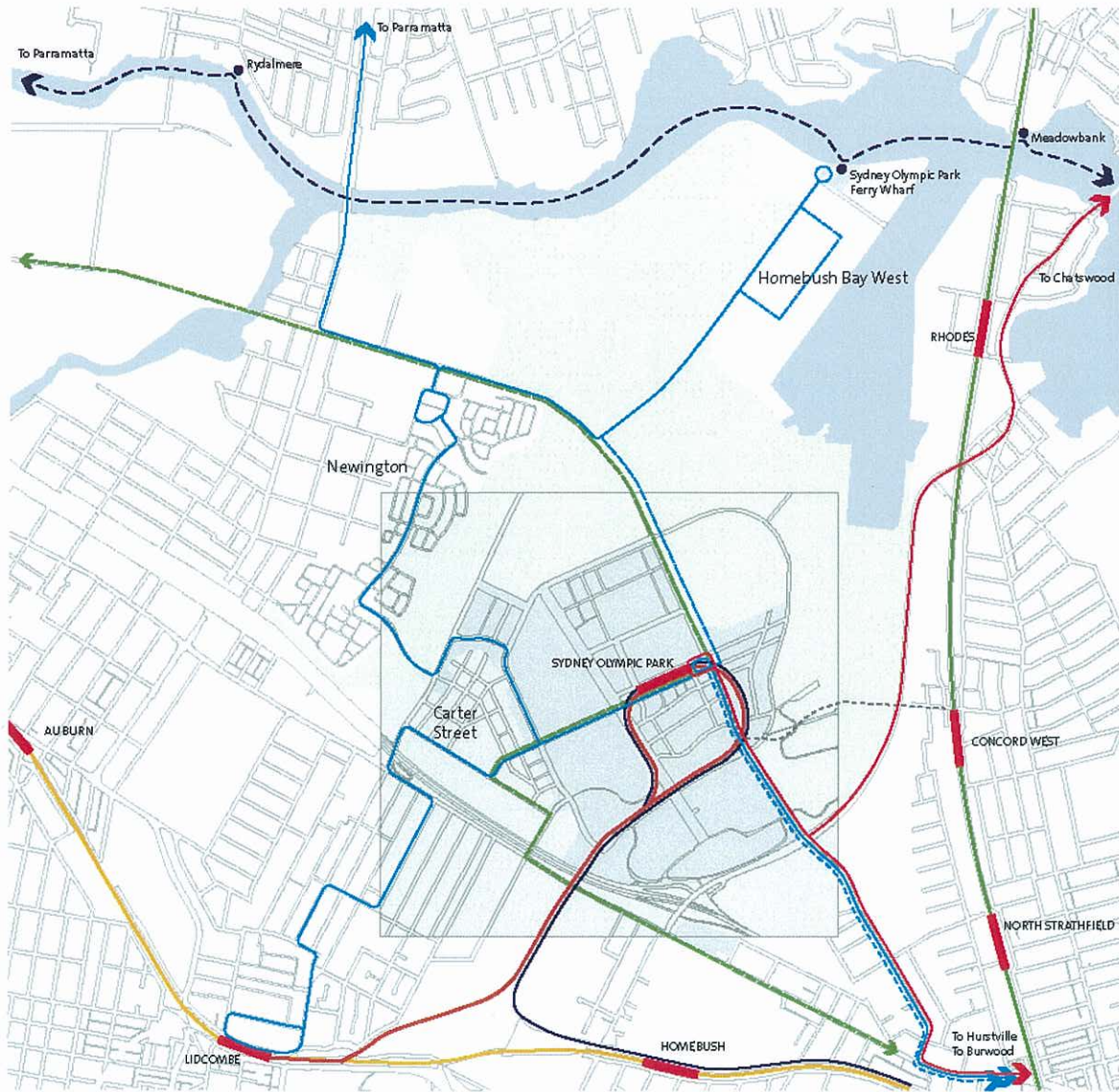
Figure 3.10 Parking Plan



Key

- | | | | |
|---|--|---|---|
|  | On Grade Off Street Car Parking |  | On Street Coach Terminals (Event Mode Only) |
|  | Structured Car Parking |  | Off Street Coach Parking (Event Mode Only) |
|  | Structured Coach Parking (minimum 100) |  | Proposed Coach Parking |
|  | On Street Parking | | |
|  | Short Term Coach Parking | | |

Figure 3.11 Public Transport Plan



Key












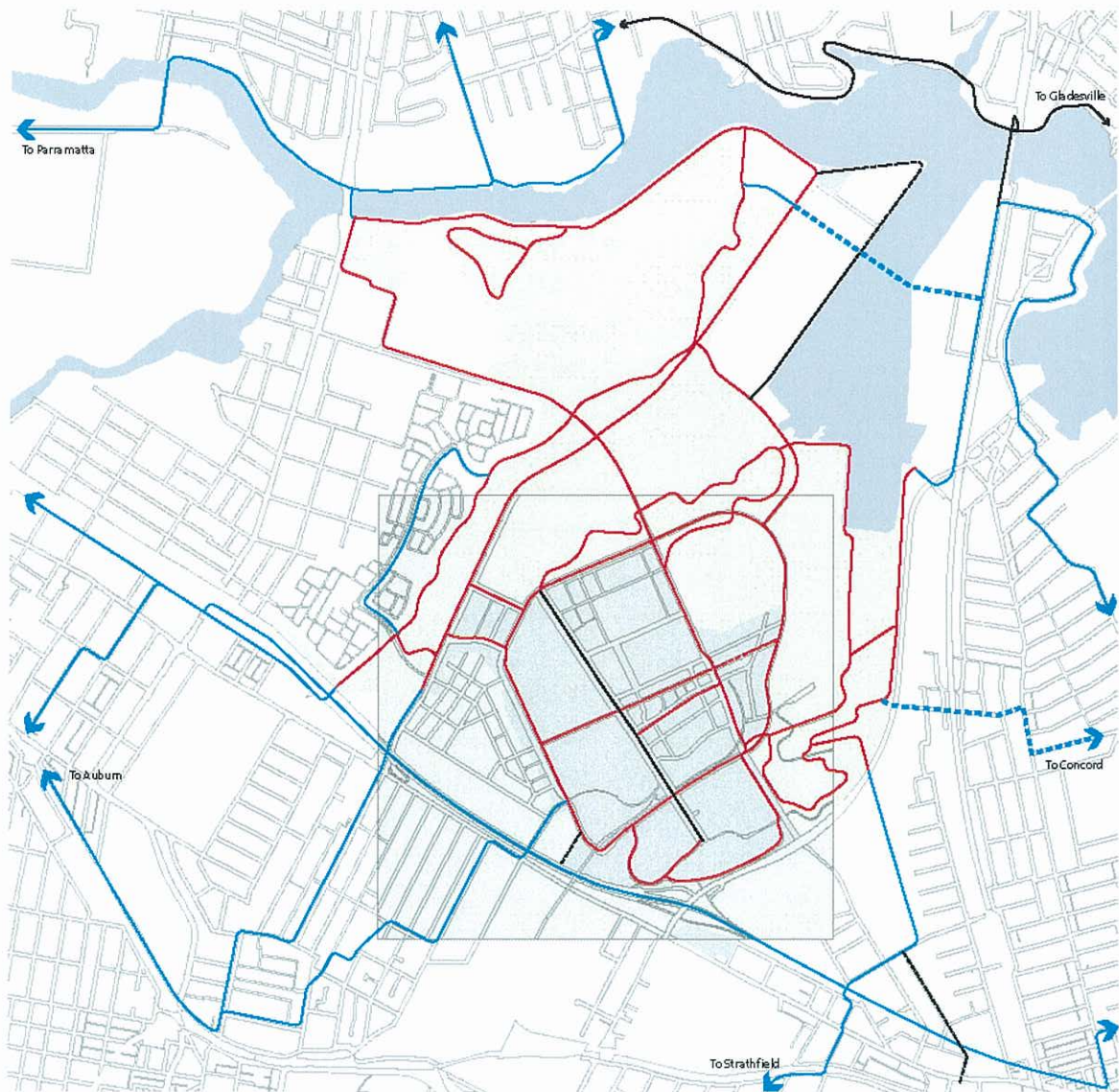
- | | | | |
|---|-------------------------------|---|---|
|  | Local Bus |  | Olympic Sprint- Lidcombe Shuttle |
|  | Future Local Bus |  | Western Line / Blue Mountains Line |
|  | Cross Regional Bus |  | Northern Line / Newcastle & Central Coast Line |
|  | Strategic Bus Corridor |  | High Frequency Shuttle Bus Service to Strathfield |
|  | Ferry Route/Ferry Wharf |  | Direct Event Rail Services |
|  | Walking Route to Concord West | | |

Figure 3.12 Bicycle and Pedestrian Routes



Key






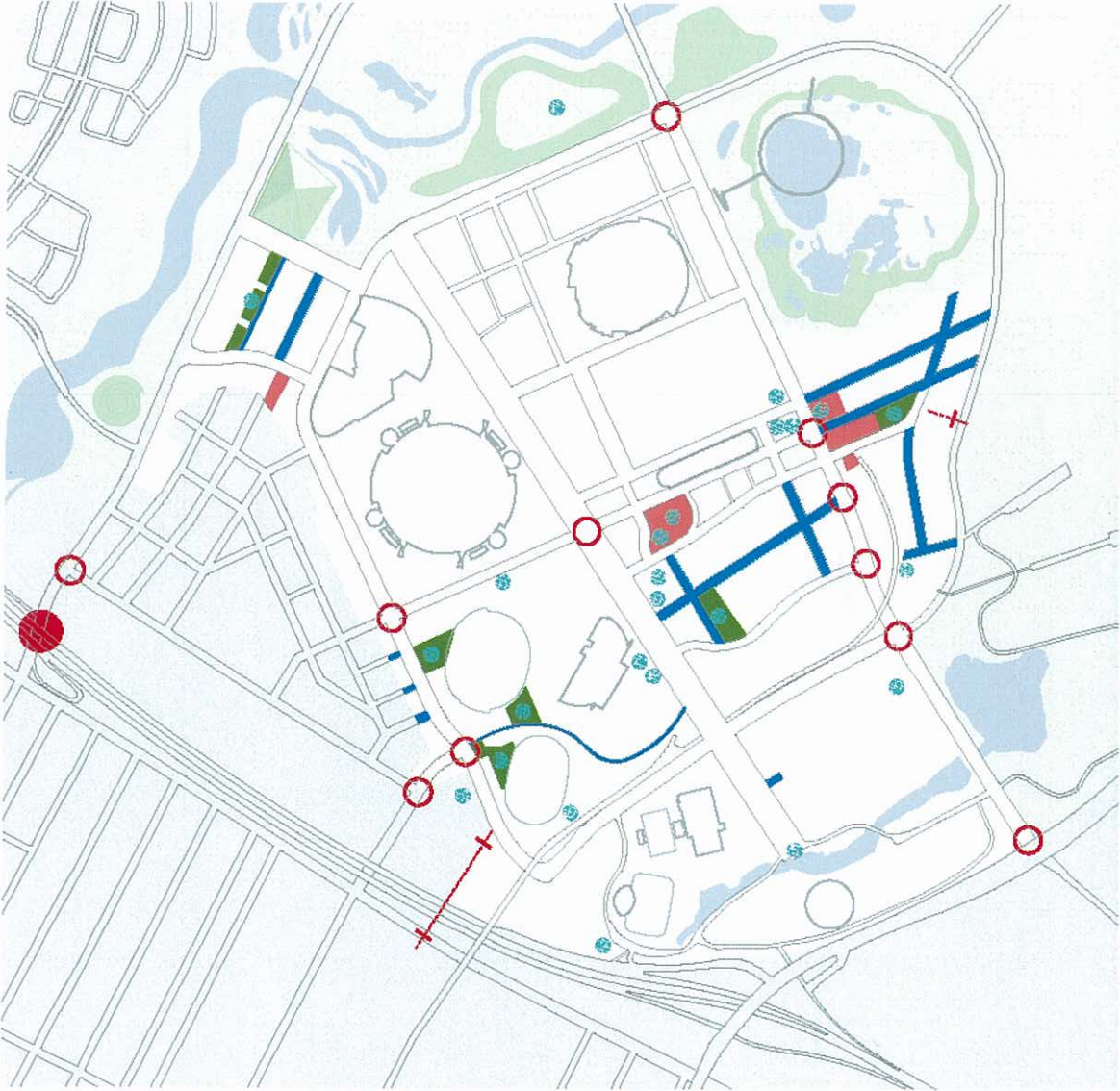
-  Cycleways and On-Road Cycle Lanes within Olympic Park
-  Metropolitan Cycleway
-  Shared Pedestrian/Cycleway
-  Future Metropolitan Cycleway
-  Future Shared Pedestrian/Cycleway

Figure 3.14 Proposed New Infrastructure














Key

 New Streets/Utilities	 Proposed Public Art
 New Open Space	 New M4 East Facing Ramps
 New Community Facilities	 New Pedestrian Links
 New Intersection Upgrades	

Figure 4.3 Event Access Plan



Key

- | | | | |
|---|--|---|--|
|  | Major Stadium/Other Stadium/Royal Easter Show Event Closure |  | Event Car Parking/Station |
|  | Major Stadium/Other Stadium/Royal Easter Show/Minor Event Closure |  | Event Venue |
|  | Major Stadium/Other Stadium/Royal Easter Show/Minor Event Extension area |  | Periodic closure for Athletics Centre/Warm Up Track events |
|  | Royal Easter Show |  | Forced Exit Following Major Events |
|  | Major Stadium Event Closures |  | Closures for Egress of Major Stadium Events |
| | |  | Coach Parking |