PLANNING PROPOSAL TO PERMIT RESIDENTIAL DEVELOPMENT

7 CONCORD AVENUE, CONCORD WEST

Assessment of Traffic and Parking Implications

December 2015
(Rev D)

Reference 15143

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LIST OF ILLUSTRATIONS

1. INTRODUCTION

This report has been prepared to accompany a Planning Proposal to the City of Canada Bay for a rezoning to permit residential development on a large site located in the former Concord West Industrial Area adjacent to Homebush Bay Drive at Concord West (Figure 1).

Many established industrial precincts throughout the Sydney Metropolitan Area, particularly those with convenient access to public transport and employment opportunities, are experiencing ongoing redevelopment as part of the urban consolidation process. Older style industrial sites and other redundant uses are generally being consolidated and replaced with residential apartments often as part of a masterplan process.

The site for the proposed rezoning at Concord West has very convenient access to public transport services (rail and bus) as well as the arterial road system and the consolidating Sydney Olympic Park Precinct. Council has undertaken a master plan process for redevelopment of the industrial area including the subject site. The envisaged development for the site consequential to the proposed rezoning is relatively consistent with the JBA master plan and comprises:

- 300 apartments & townhouses
- basement parking
- new access roadway

The purpose of this report is to:

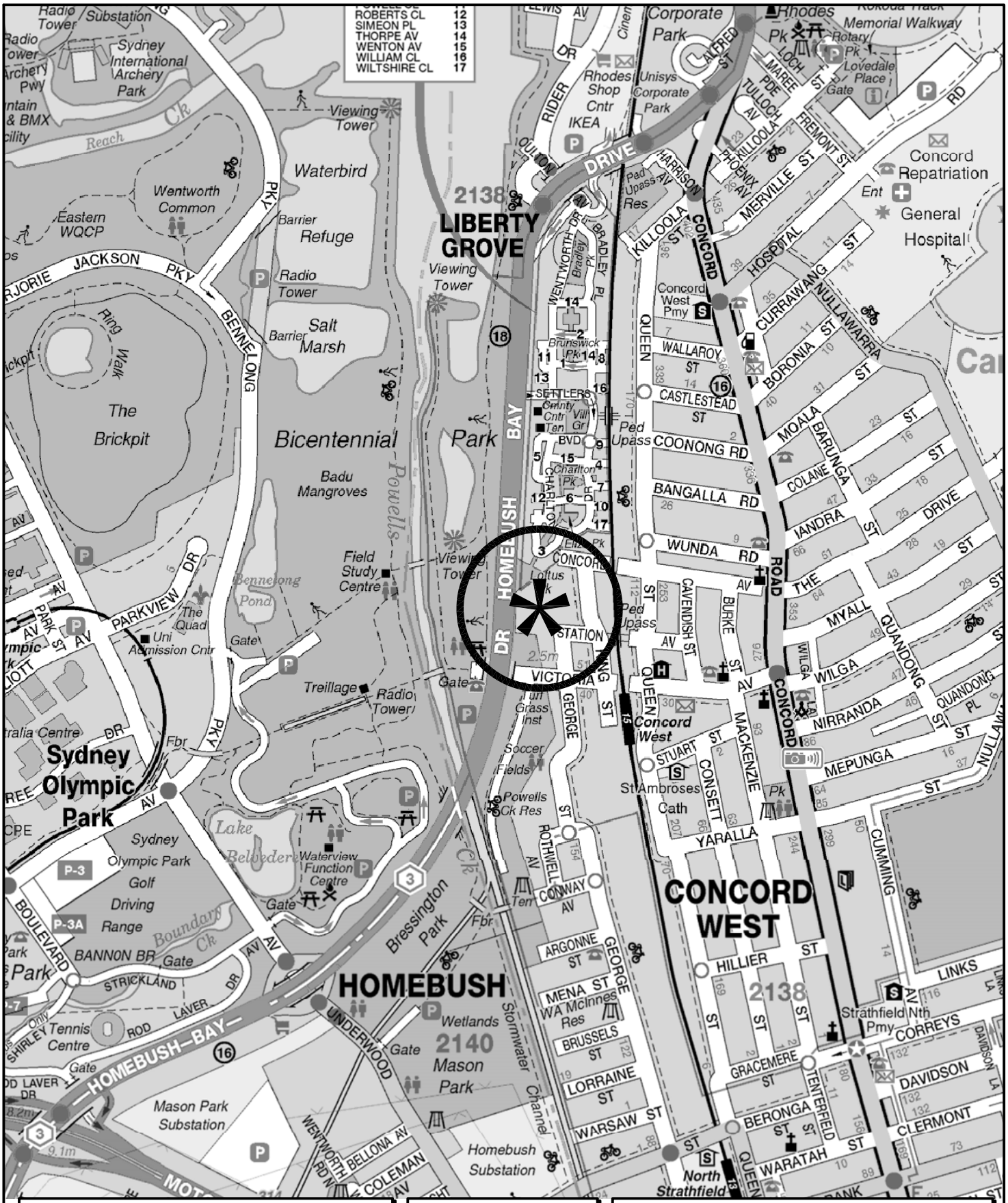
* describe the site, its context and the envisaged development outcome resultant of the rezoning sought with the Planning Proposal

* describe the road network and traffic conditions on the road system serving the site

* assess the suitability of the proposed vehicle access and circulation arrangements

- assess the potential traffic implications and identify the necessary road/traffic management upgrade works

- assess the potential parking, internal circulation and servicing implications



LEGEND

LOCATION

FIG 1

2. PROPOSED DEVELOPMENT SCHEME

2.1 SITE, CONTEXT AND EXISTING USE

The site (Figure 2) is Lot 1 in DP 219742 being a large generally rectangular shaped area of some 15,023m^2 located immediately to the northeast of Concord West Railway Station. The site, which is bound to the west by Homebush Bay Drive, is currently occupied by an older style industrial complex of some 5,867m^2 GFA with vehicle accesses on the Concord Avenue and Station Avenue frontages. The industrial use ceased some years ago and the more recent use has been the Spitfire Paintball center.

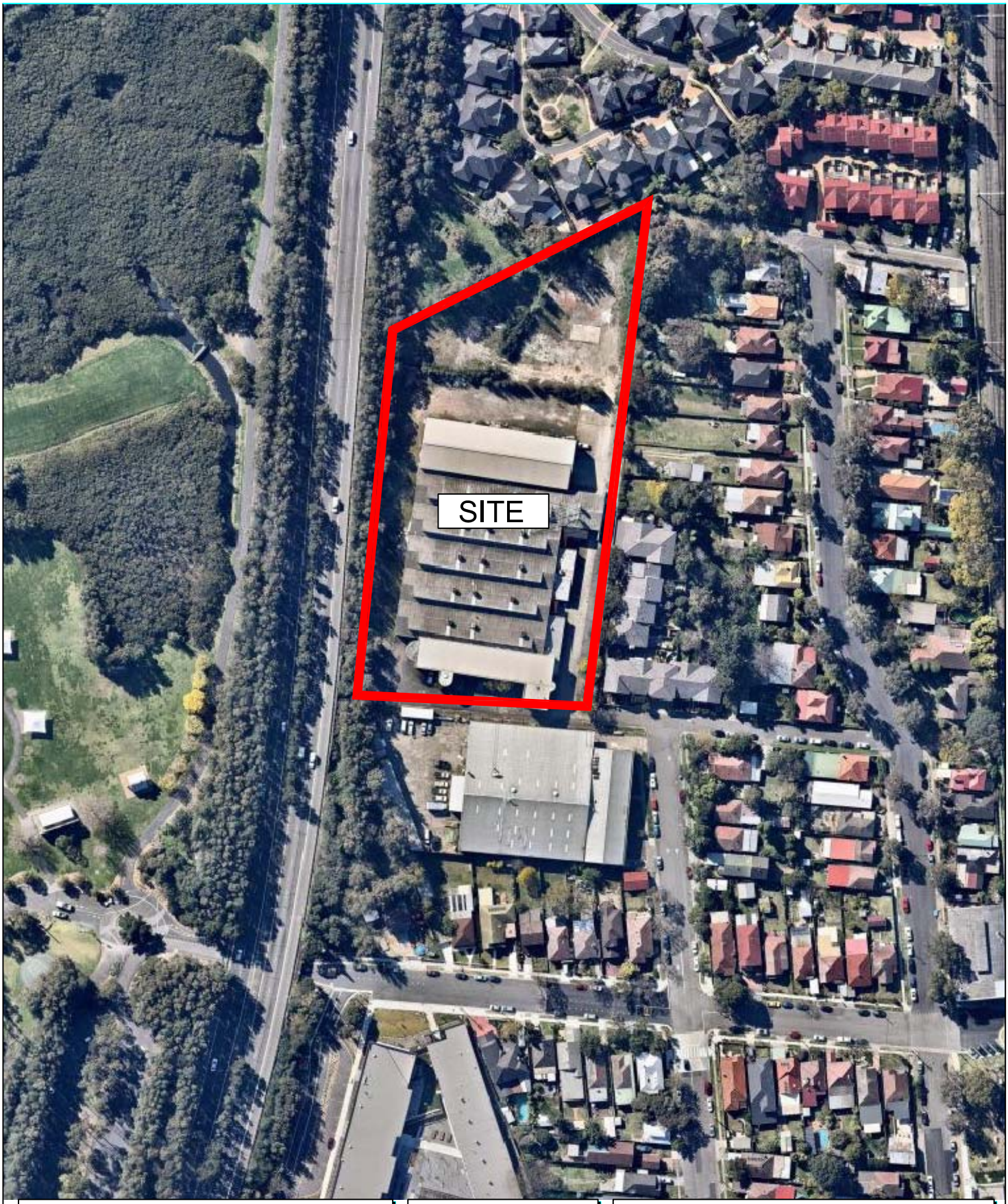
The surrounding uses include:

- the medium density townhouse developments which adjoin to the north and east
- the industrial building on the southern side of Station Avenue
- the traditional residential areas extending to the east
- the Sydney Olympic Park precinct extending to the west

2.2 PRECINCT PLANNING

In August 2013 Council resolved to prepare a Master Plan for redevelopment of the sites which formed the Concord West Industrial Area with an envisaged R3 Residential zoning. A Masterplan was prepared by the Council for the area and details of this are provided on the diagram prepared by JBA which is reproduced in Appendix A. Socio-economic and traffic studies were also undertaken to support the Masterplan.

The envisaged development outcome involved 7 storey apartment buildings with an indicative yield of some 785 dwellings with 255 dwellings attributed to the subject site. The traffic study undertaken by GTA for the Master Plan recommended a constrained parking provision in line with that specified in the Rhodes West DCP.



LEGEND

N

SITE

FIG 2

2.3 PLANNING PROPOSAL

The Planning Proposal seeks to rezone the site to R3 Residential with a permitted FSR of 1.75:1 and buildings ranging up to 8 levels.

The envisaged development subject to the rezoning would provide for some 300 apartments and townhouses identified as:

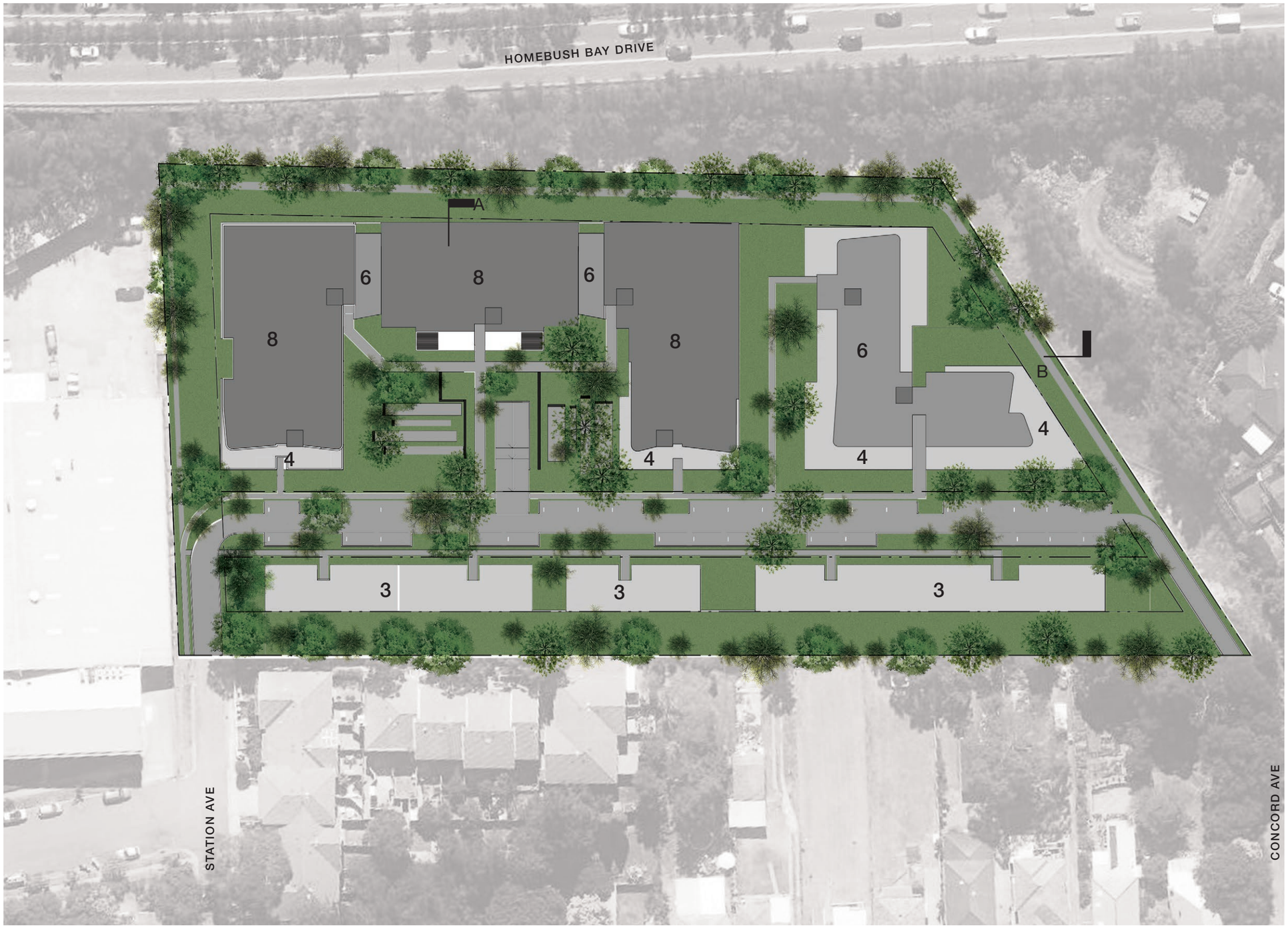
6 x Studio
65 x One Bed
195 x Two Bed
34 x Three Bed

Vehicle access would be provided by a new roadway with ROW in favour of Council running along the eastern part of the site connecting between Station Street and Concord Avenue and there will be new shared path linkages as indicated on the Site Plan overleaf. A total of 300 parking spaces for residents would be provided in an integrated basement level accessed by a combined ingress/egress driveway on the new roadway. There would be some 30 parking spaces (nominally visitors and delivery vehicles) provided along the new roadway and details of the envisaged development consequential to the Planning Proposal are provided on the plans prepared by Antoniades Architects which are reproduced in part in Appendix B.

2.4 OTHER DEVELOPMENT

The other development considerations are:

- it is envisaged that there will be some 500 dwellings developed on the remaining sites in the Precinct
- the new Primary School on Victoria Avenue accommodates up to 600 children and is estimated to generate some 360 vtph in the morning (commuter) peak period and 360 vtph in the afternoon (non-commuter) peak period
- It is possible that McDonald College may seek to incorporate a new primary school however there is no specific proposal for this at the present time



Numbers Indicate Building Storeys

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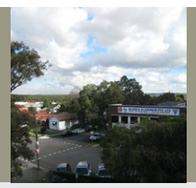
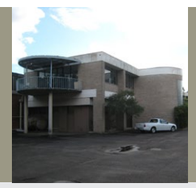




7 CONCORD AVE, CONCORD WEST
PLANNING PROPOSAL
November 2015

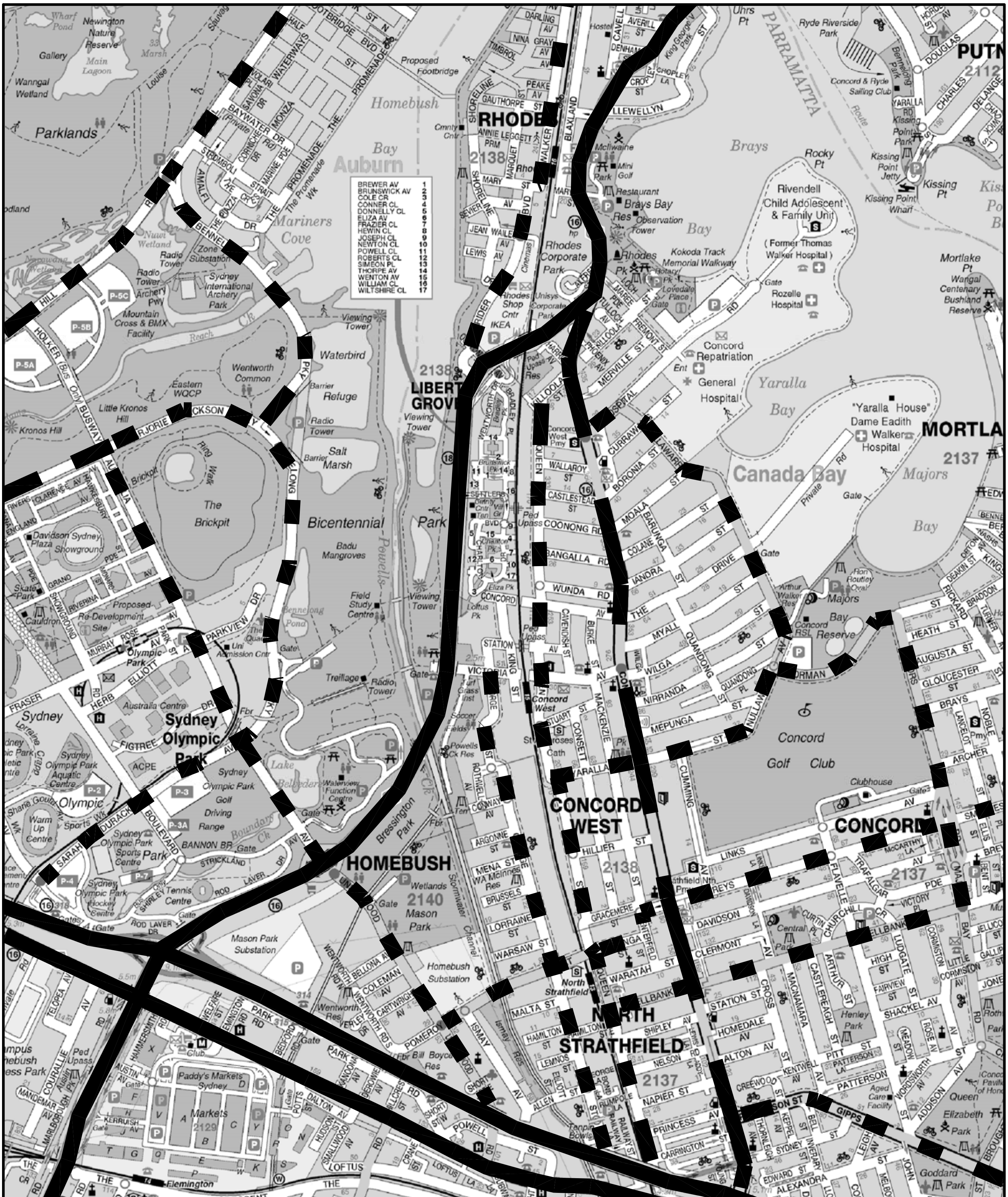
SITE PLAN

3. ROAD NETWORK AND TRAFFIC CONDITIONS

3.1 ROAD NETWORK

The road network serving the site (Figure 4) comprises:

- *M4 Western Motorway* – a State Road and east-west arterial route connecting between Concord and Penrith, which has three lanes in each direction and is subject to current upgrade works as part of the WestConnex project
- *Homebush Bay Drive* – a State Road and north-south arterial route linking between Hornsby and Sylvania
- *Parramatta Road (Great Western Highway)* – a State Road and east-west arterial route connecting between the City and Penrith
- *Concord Road* – a State Road and sub-arterial route connecting between Parramatta Road and Ryde Bridge
- *Underwood Road / Australia Avenue* – a collector road connecting between Parramatta Road and Sydney Olympic Park
- *Pomeroy Street* – part of a collector road route connecting between Underwood Road and Concord Road
- *George Street and Queen Street* – minor north-south collector roads running along each side of the railway line
- George Street terminates at Station Avenue and Concord Avenue, Station Avenue and Victoria Avenue are served by the railway line corridor. As such George Street to Pomeroy Street provides the sole vehicle access for the area between the railway line and Homebush Bay Drive



Legend

ARTERIAL

SUB-ARTERIAL

COLLECTOR

N

Road Network

Fig 3

3.2 TRAFFIC CONTROLS

The traffic controls on the road network in the area (Figure 4) include:

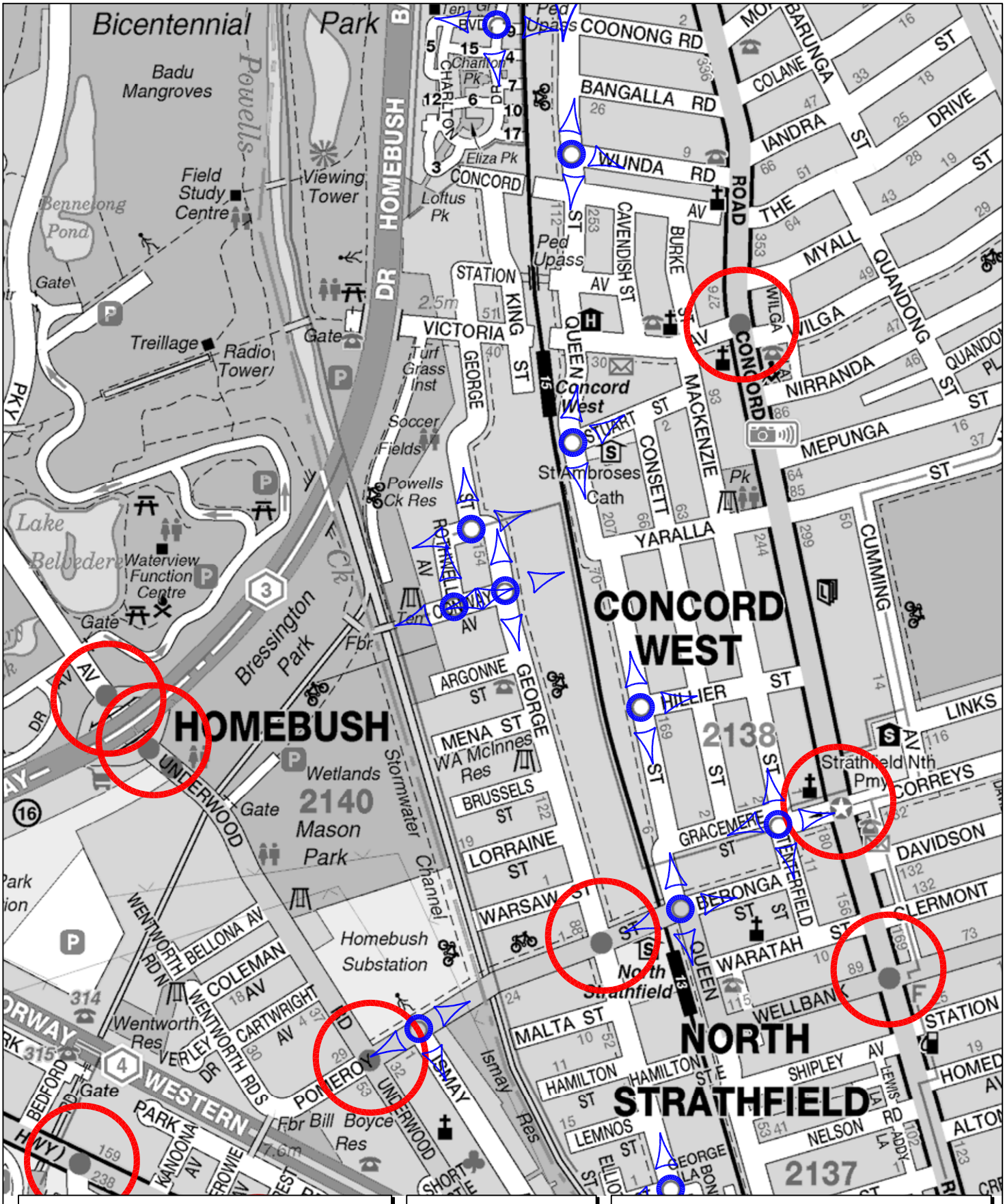
- the traffic signals at the George Street and Pomeroy Street intersection (see details in Appendix C)
- the traffic signals along Concord Road including the Victoria Avenue, Correys Road and Wellbank Street intersections
- the roundabouts on George Street at the Rothwell Avenue and Conway Avenue intersections
- the traffic signals at the Underwood Road and Pomeroy Street intersection
- the traffic signals at intersections along Parramatta Road at the George Street and Underwood Street intersections
- the roundabout control at the Pomeroy Street and Queen Street intersection

3.3 TRAFFIC CONDITIONS

The results of recent traffic surveys undertaken during the morning and afternoon peak periods at intersections providing access for the site are provided in Figure 5.

The operational performance of the George Street and Pomeroy Street intersection has been assessed using SIDRA. The results of that assessment indicating a relatively satisfactory operation are provided in the following while the criteria for interpreting SIDRA results is reproduced overleaf.

AM			PM		
LOS	**DS**	**AVD**	**LOS**	**DS**	**AVD**
C	0.886	24.8	D	0.898	35.2



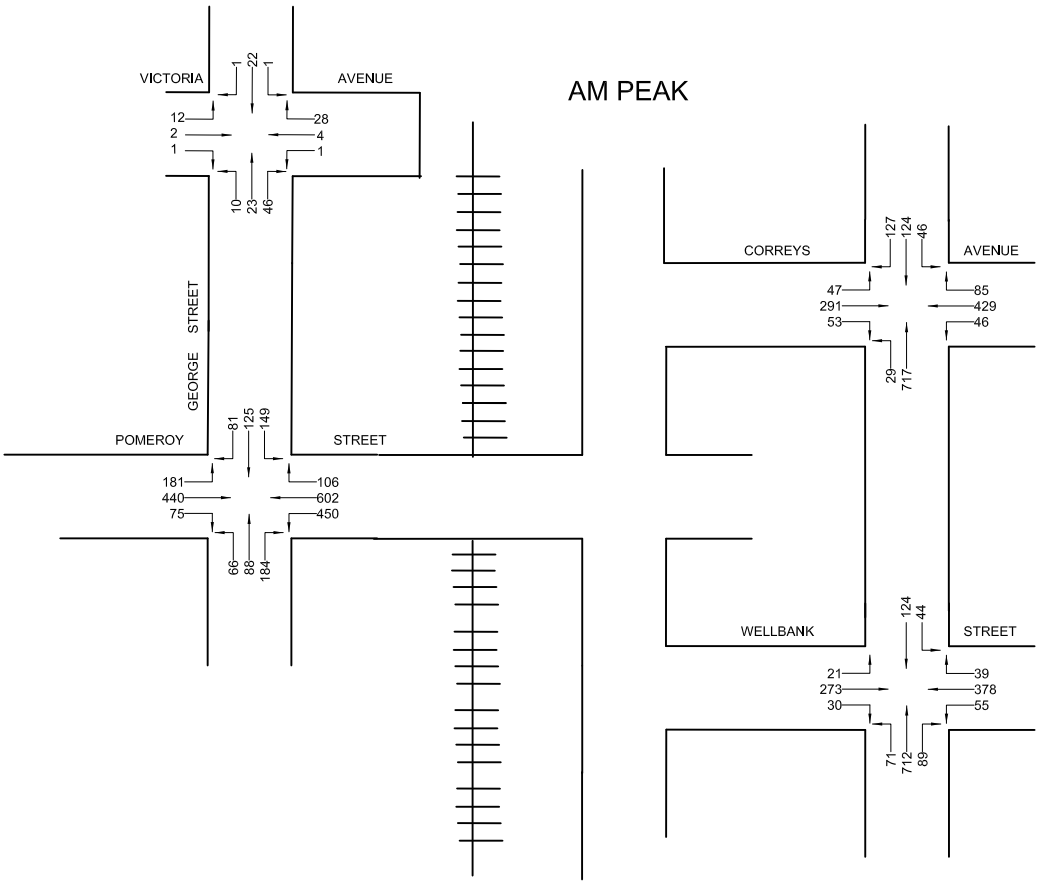
LEGEND

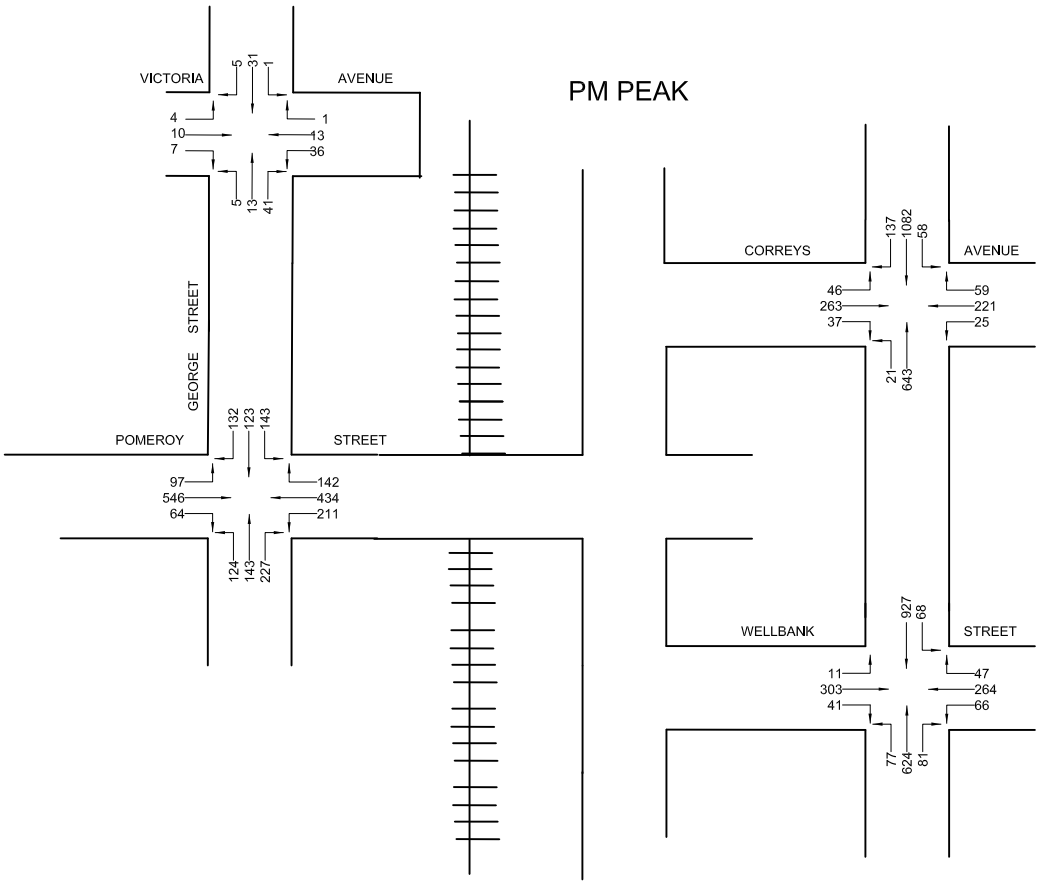
- TRAFFIC SIGNAL CONTROL
- ROUNDABOUT
- RESTRICTED TURNING MOVEMENT

N

TRAFFIC CONTROLS

FIG 4





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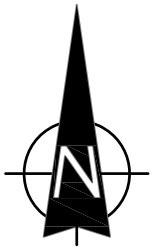


EXISTING PEAK TRAFFIC FLOWS

FIG 5

Criteria for Interpreting Results of SIDRA Analysis

1. Level of Service (LOS)

LOS	Traffic Signals and Roundabouts	Give Way and Stop Signs
'A'	Good	Good
'B'	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
'C'	Satisfactory	Satisfactory but accident study required
'D'	Operating near capacity	Near capacity and Accident Study required
'E'	At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode	At capacity and requires other control mode
'F'	Unsatisfactory and requires additional capacity	Unsatisfactory and requires other control mode

2. Average Vehicle Delay (AVD)

The AVD provides a measure of the operational performance of an intersection as indicated on the table below, which relates AVD to LOS. The AVD's listed in the table should be taken as a guide only as longer delays could be tolerated in some locations (ie inner city conditions) and on some roads (ie minor side street intersecting with a major arterial route).

Level of Service	Average Delay per Vehicle (secs/veh)	Traffic Signals, 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 and requires other control mode

3. Degree of Saturation (DS)

The DS is another measure of the operational performance of individual intersections.

For intersections controlled by **traffic signals**[1] both queue length and delay increase rapidly as DS approaches 1, and it is usual to attempt to keep DS to less than 0.9. Values of DS in the order of 0.7 generally represent satisfactory intersection operation. When DS exceeds 0.9 queues can be anticipated.

For intersections controlled by a **roundabout or GIVE WAY or STOP signs**, satisfactory intersection operation is indicated by a DS of 0.8 or less.

[1] *the values of DS for intersections under traffic signal control are only valid for cycle length of 120 secs*

3.4 TRANSPORT SERVICES

The site is located only some 300 metres from Concord West Railway Station on the T1 Northshore, Northern and Western Line and services operate at 15 and 30 minute frequencies. In addition there are a number of bus services operating in the area (Routes M41, 458 & 459 along Concord Road) which provide linkages to other railway stations and centres.

3.5 FUTURE CIRCUMSTANCES

The future circumstances comprise:

- the envisaged future development in the vicinity of the site detailed in Section 2.4

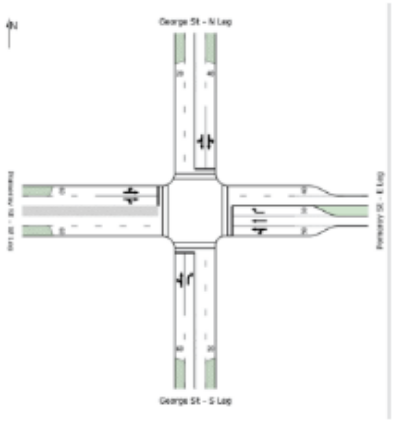
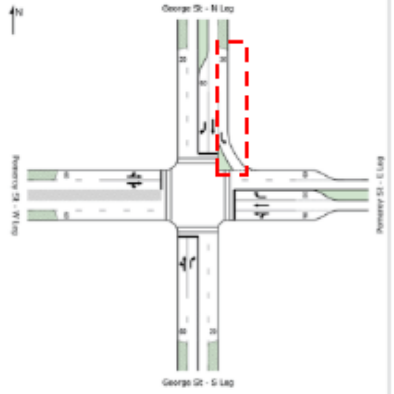
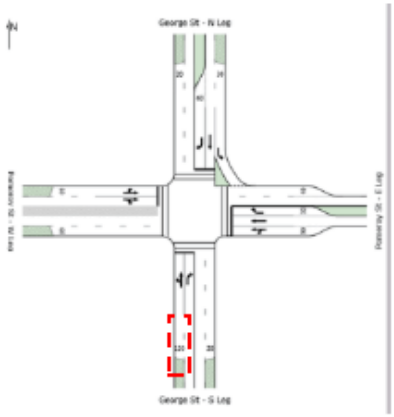
- the proposed upgrade to the George Street/Pomeroy Street intersection

The circumstances at this intersection are shown on the diagram overleaf from the Masterplan Traffic Study by GTA. Traffic modelling undertaken in this study concluded that the existing Level of Service would be maintained as a result of the proposed capacity improvements with the assessed 785 additional dwellings in the Precinct (i.e. with a peak traffic generation rate of 0.29 vtph per dwelling or 278vtph).

The proposed upgrade works comprise:

- provision of a left turn lane (with “slip”) on the northern approach of George Street with the school development
- increasing the length of the NO PARKING restriction on the southern approach of George Street during the morning peak

George Street / Pomeroy Street Intersection Upgrades

Stage	Intersection Layout	Summary of Intersection Works
Existing Conditions		• No change
Post Primary School		• 30m left turn short lane and slip lane provided on the north approach
Post-Development (+785 dwellings)		• Extension of 'No Parking' restriction from 40m to 120m on the south approach during the AM peak hour

4. ACCESS AND CIRCULATION

It is envisaged that vehicle access will be provided by a new private roadway connecting between Station Street and Concord Avenue. This roadway would operate with a one way northwards traffic flow and will have indented on-street parking bays.

The envisaged roadway would be relatively straight and level with footways running along both sides. Vehicle access for the basement car park would connect to the western side of the new roadway in the southern part.

It is apparent that the envisaged provisions for vehicle access and circulation will be quite adequate and appropriate to the circumstances given that:

- the access will be adequate to accommodate all vehicles requiring to access the site
- the access will have adequate capacity for the traffic movements generated by the envisaged development

5. TRAFFIC

An indication of the potential traffic generation of the envisaged residential apartment development is provided by RMS Technical Direction TDT 2013-4b which specifies the following for sites with good access to a railway station.

Residential Apartment	-	0.19 vtph per dwelling in AM Peak
	-	0.15 vtph per dwelling in PM Peak

The Traffic Report prepared by GTA Consultants for Councils' Masterplan Study adopted a peak traffic generation rate of 0.29 vtph per apartment on the basis of:

- the earlier 2002 version of the then RTA Guidelines
- the results of surveys at the nearby Liberty Grove residential precinct undertaken as part of the RMS update study

Unfortunately there are numerous glaring errors in many of the survey assessments undertaken by consultants for the RMS update studies. An extract from the Working Paper for the High Density Residential Analysis Report is reproduced overleaf where it can be seen that there are 3 sites which exhibit distinct deviation from the "trend" results as follows:

Liberty Grove

This site, located a distant 1km from Rhodes Railway Station, is significantly further away than any of the other sites surveyed. However the most telling issue is that southbound traffic on Homebush Drive has a tendency to "bypass" through the precinct to avoid delays on Homebush Bay Drive (hence the false high recorded movements particularly in the PM peak).

Table 4 - Summary of Surveyed Trip Generation Rates

	Sydney Metropolitan Area							
Site No.	**Site 1**	**Site 2**	**Site 3**	**Site 4**	**Site 5**	**Site 6**	**Site 7**	**Site 10**
Location	**St Leonards**	**Chatswood**	**Cronulla**	**Rockdale**	**Parramatta**	**Liberty Grove**	**Strathfield**	**Pyrmont**
Weekday								
AM Peak Person Trips per Unit	0.64	0.64	0.32	0.81	0.95	0.72	0.52	0.69
AM Peak Person Trips per Car Space	0.39	0.51	0.22	0.47	0.50	0.62	0.43	0.30
AM Peak Person Trips per Bedroom	0.29	0.30	0.13	0.39	0.45	0.29	0.26	0.46
PM Peak Person Trips per Unit	0.54	0.82	0.14	0.53	0.65	0.91	0.42	0.46
PM Peak Person Trips per Car Space	0.54	0.82	0.14	0.53	0.65	0.91	0.42	0.46
PM Peak Person Trips per Bedroom	0.24	0.39	0.06	0.26	0.31	0.37	0.21	0.30
Daily Person Trips per Unit	3.49	5.35	2.96	5.36	5.01	6.50	4.16	3.05
Daily Person Trips per Car Space	2.52	3.35	4.61	4.83	3.85	4.47	4.30	2.01
Daily Person Trips per Bedroom	1.56	2.51	1.19	2.61	2.39	2.67	2.08	2.01
AM Peak Vehicle Trips per Unit	0.14	0.14	0.07	0.32	0.27	0.28	0.10	0.18
AM Peak Vehicle Trips per Car Space	0.10	0.09	0.11	0.29	0.20	0.19	0.10	0.12
AM Peak Vehicle Trips per Bedroom	0.06	0.07	0.03	0.16	0.13	0.12	0.05	0.12
PM Peak Vehicle Trips per Unit	0.07	0.12	0.11	0.18	0.12	0.41	0.06	0.10
PM Peak Vehicle Trips per Car Space	0.05	0.07	0.17	0.17	0.09	0.28	0.07	0.07
PM Peak Vehicle Trips per Bedroom	0.03	0.05	0.04	0.09	0.06	0.17	0.03	0.07
Daily Vehicle Trips per Unit	0.77	1.23	0.93	2.25	1.67	3.14	1.16	1.03
Daily Vehicle Trips per Car Space	0.56	0.77	1.44	2.03	1.29	2.16	1.20	0.68
Daily Vehicle Trips per Bedroom	0.35	0.58	0.37	1.10	0.80	1.29	0.58	0.68
Saturday								
Peak Hour Person Trips per Unit	3.10	1.02	0.82	0.77	0.84	1.00	1.00	0.79
Peak Hour Person Trips per Car Space	2.24	0.64	1.28	0.70	0.65	0.69	1.03	0.52
Peak Hour Person Trips per Bedroom	0.68	0.33	0.33	0.32	0.40	0.38	0.44	0.32
Daily Person Trips per Unit	10.20	6.12	4.14	5.44	5.87	6.67	7.52	4.86
Daily Person Trips per Car Space	7.36	3.83	6.44	4.89	4.51	4.59	7.77	3.20
Daily Person Trips per Bedroom	4.58	2.87	1.66	2.65	2.80	2.74	3.76	3.20
Peak Hour Vehicle Trips per Unit	0.31	0.21	0.18	0.23	0.22	0.31	0.32	0.19
Peak Hour Vehicle Trips per Car Space	0.23	0.13	0.28	0.21	0.17	0.22	0.33	0.13
Peak Hour Vehicle Trips per Bedroom	0.14	0.10	0.07	0.11	0.10	0.13	0.16	0.13
Daily Vehicle Trips per Unit	1.89	1.41	0.61	1.68	1.39	2.02	1.65	1.11
Daily Vehicle Trips per Car Space	1.36	0.88	0.94	1.52	1.06	1.39	1.70	0.73
Daily Vehicle Trips per Bedroom	0.85	0.66	0.24	0.82	0.66	0.83	0.82	0.73

RMS Av. including to questionable sites

0.19

0.15

Rockdale

This site has significant retail and commercial floorspace on the ground level with related basement carparking. The traffic movements associated with these uses could not be distinguished from the residential apartment movements. Hence the higher recorded movements.

Parramatta

The reason for the high morning movements is not apparent (although there seems to be a commercial use on the ground level) however the afternoon result reflects the trend.

If these 3 errant results are ignored the average outcome would be lower than the published TDT criteria. However application of the TDT criteria to the envisaged development is compared to the GTA adopted rate in the following:

	AM	**PM**
300 dwellings @ RMS rate	57 vtph	45 vtph
300 dwellings @ GTA rate	87 vtph	87 vtph
255 dwellings @ GTA rate	74 vtph	74 vtph

It is apparent on this basis that the peak traffic generation outcome for the envisaged development will be some 35% to 48% less than that assessed in the Masterplan Traffic Study and some 23% to 39% less than the previously envisaged development outcome of 255 dwellings. Similarly application to the total of 785 dwellings envisaged in the Master Plan would indicate the following comparison:

	AM	**PM**
785 dwellings @ RMS rate	150 vtph	118 vtph
785 dwellings @ GTA rate	278 vtph	278 vtph

It is apparent that the total traffic generation outcome for development under the Masterplan (putting aside any existing generation of existing uses on the sites) will be significantly less than that identified and assessed in the GTA Study. It follows that the impact on the George Street/Pomeroy Street intersection will be significantly less than that assessed in the study.

The assessed distribution of the peak traffic generation for the envisaged 300 dwellings, subject to the rezoning (having regard for the forgoing) is as follows:

	AM Peak	**PM Peak**
In from Station Ave	12 vtph	36 vtph
Out to Concord Ave	45 vtph	9 vtph

By comparison the former industrial (factory) use on the site at some 5,867m^2 would by application of the RMS general criteria (1.0vtph per 100m^2) have generated some 58vtph in the peak periods including large trucks.

It is apparent that the traffic generation of the proposed development will be very similar to that of the farmer manufacturing use on the site. It is also apparent that the traffic generation of the envisaged site development as well as that of the Masterplan precinct will be significantly less than that assessed for the Masterplan study.

If there remains some concern in relation to the operation of the George Street / Pomeroy Street intersection it could be that the proposed additional morning peak NO PARKING restrictions are implemented.

6. PARKING AND SERVICING

PARKING

The proposed parking provision is as follows:

Apartments	-	1 space
Visitors	-	1 space per 10 apartments

On this basis there will be 300 resident spaces and 30 visitor spaces provided.

SERVICING

Refuse would be removed from the street by Council's collection service and the access road system is designed facilitate the movements of these vehicles. Service personnel and other service/delivery vehicles will be able to use the visitor spaces.

7. PEDESTRIANS AND BICYCLES

The envisaged development would embrace the planning vision for the area and the requirements of the DCP as follows:

- provision of a north-south shared path along the western edge of the site providing part of the envisaged route along the eastern side of Homebush Bay Drive
- provision of an east-west shared path along the northern site boundary connecting to the north-south path
- provision of a new shared path along Station Avenue connecting to the north-south path
- provision of storage for 1 bicycle space for each apartment for residents and 1 parking space for each 12 apartments for visitors

8. CONCLUSION

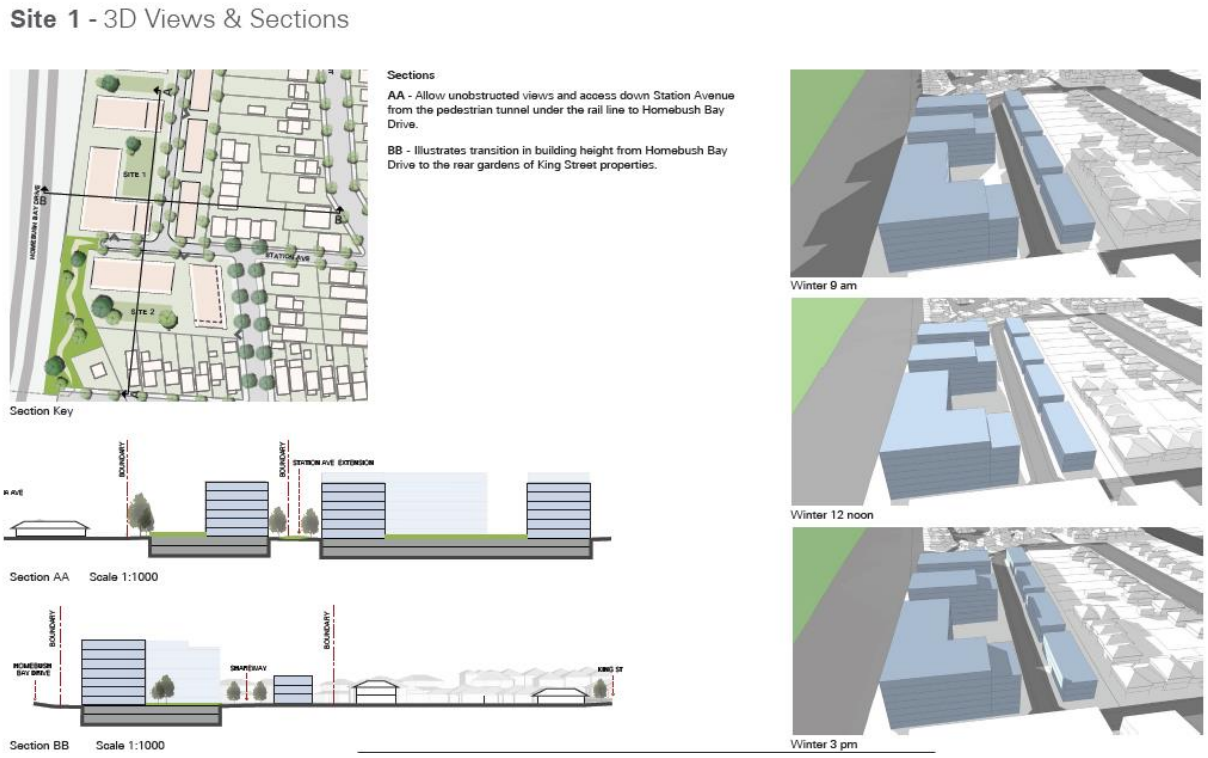
The proposed rezoning of the large Industrial site at Concord West to enable residential apartment development will represent an appropriate outcome consistent with the planning for the precinct. The vehicle access, parking and servicing provisions as well as the provisions for pedestrians and cyclists will be suitable and appropriate.

It is apparent that there will not be any adverse or unsatisfactory traffic or parking implications resulting from the envisaged development scheme.

APPENDIX A

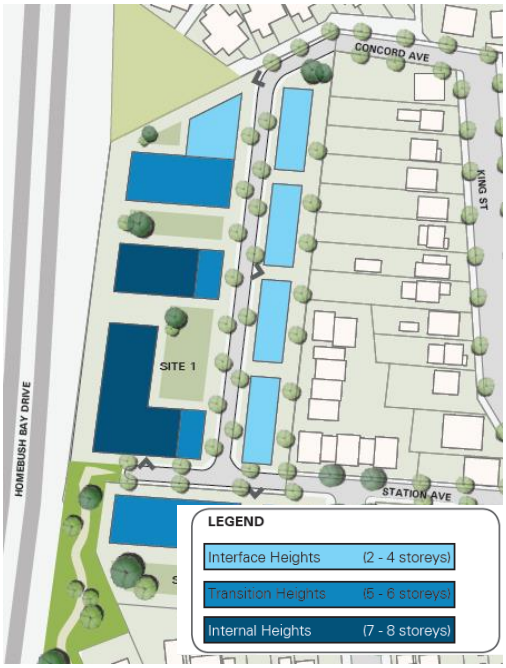
MASTERPLAN FOR PRECINCT

Figure 3 3D Views and sections



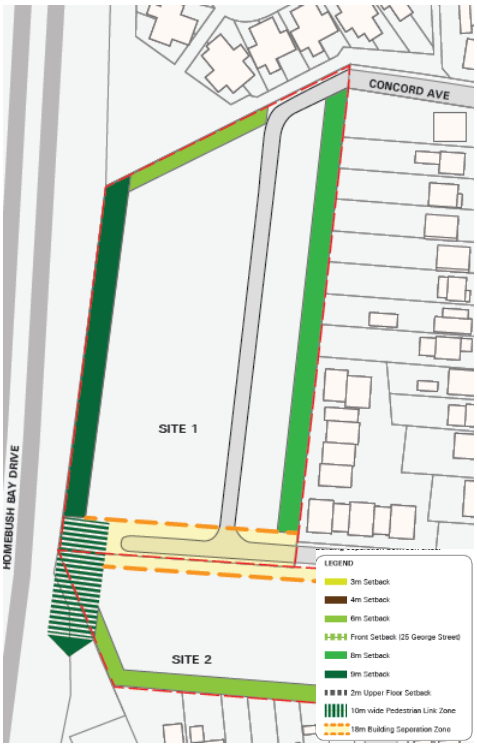
Source: JBA

Figure 4 Building heights principles plan



Source: JBA

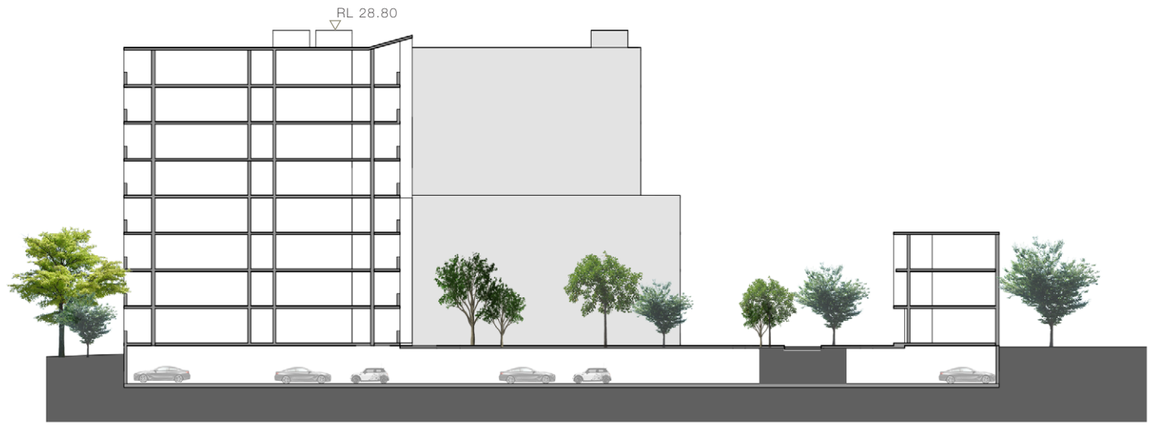
Figure 5 Setback Plan



Source: JBA

APPENDIX B

CONCEPT PLAN FOR SITE



SECTION A

SECTION B

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7 CONCORD AVE, CONCORD WEST
PLANNING PROPOSAL

November 2015

SECTIONS

BICYCLE PATH

A

RL. 2.500

RL. 2.500

BUILDING 1

RL. 2.300

RL. 2.500

OVERLAND
FLOW PATH
UNDER

RL. 2.500

BUILDING 2

B

CENTRAL
COURTYARD

RL. 2.300

RL. 2.300

VISITOR PARKING

VISITOR PARKING

RL. 2.200

VISITOR PARKING

OVERLAND
FLOW PATH
UNDER

BUILDING 3

1 Bed
1 Bed +
2 Bed
2 Bed +
3 Bed
Studio

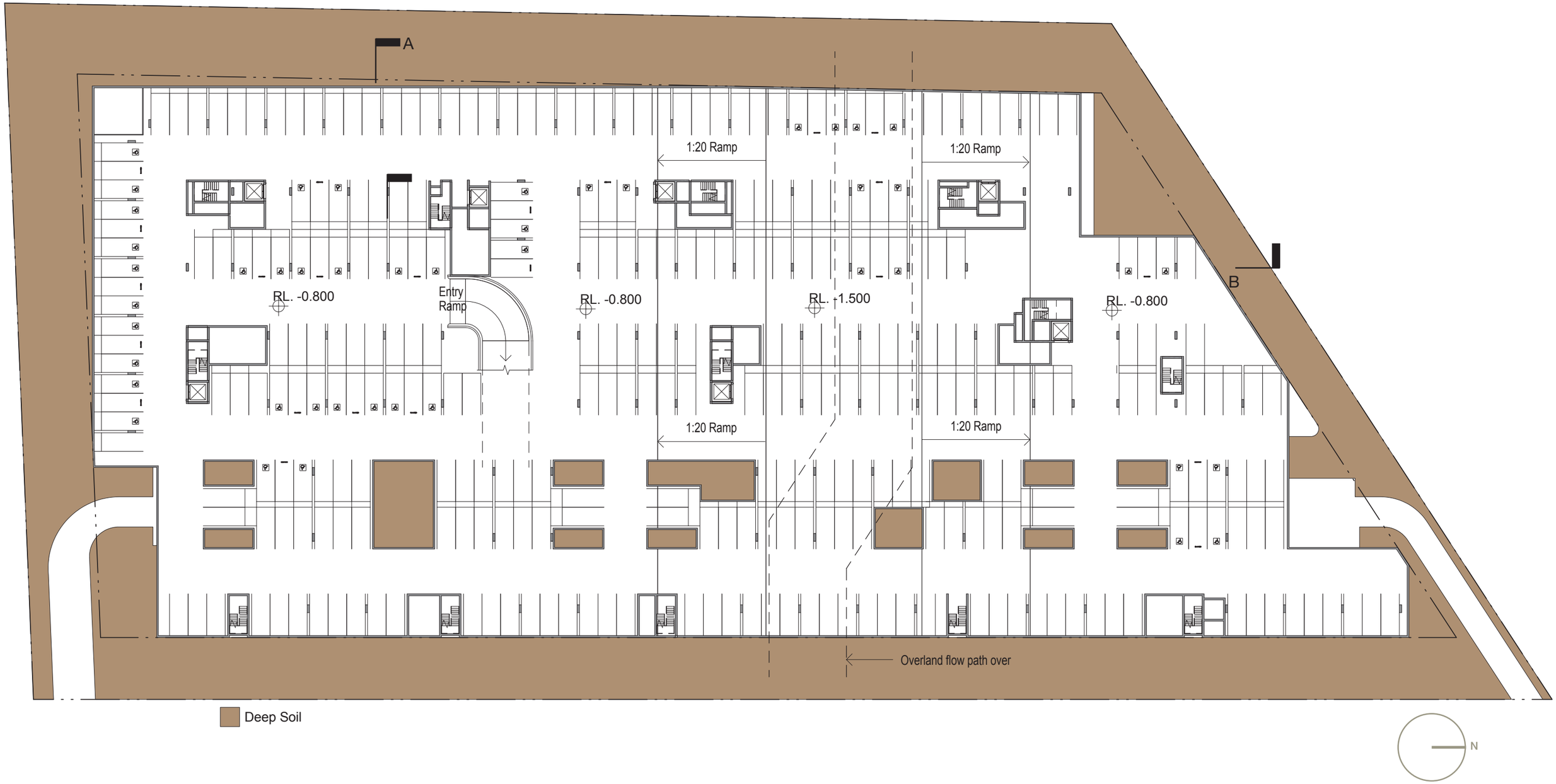
N

ANTONIADES ARCHITECTS
Suite 1, L2, 24 Bay Street, Double Bay NSW 2028
Tel : 9328 3339 Fax : 9328 3369
www.antoniades.com.au ACN 129 731 559

7 CONCORD AVE, CONCORD WEST
PLANNING PROPOSAL

November 2015

GROUND FLOOR PLAN



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BASEMENT PLAN

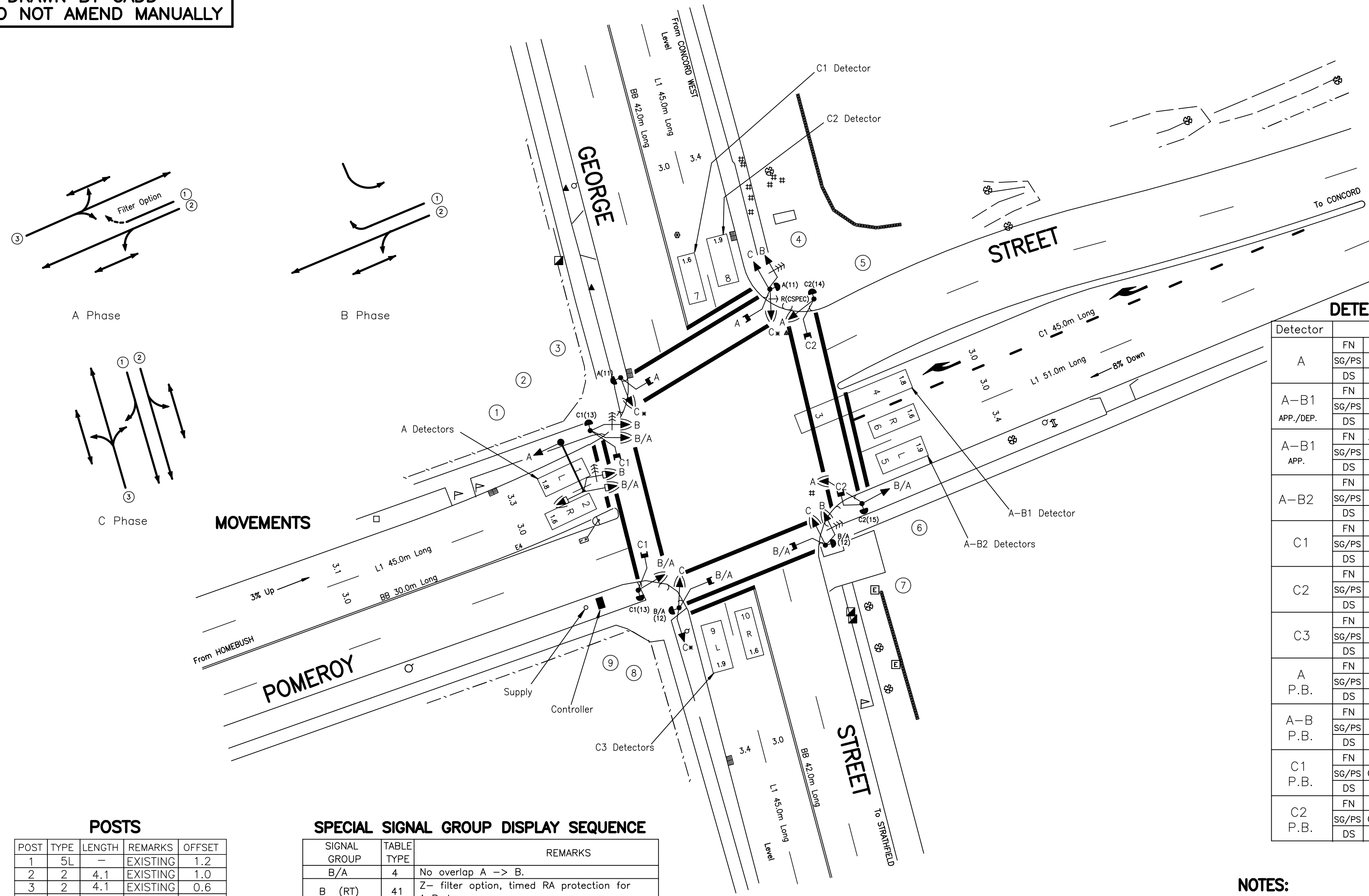
APPENDIX C

INTERSECTION PLANS

7000.093.VV.1181

DRAWN BY CADD
DO NOT AMEND MANUALLY

DATE IN SERVICE : 30/12/75



DETECTOR SPECIFICATION

Detector		Specifications				
A	FN	A(L)	A(E3)			
	SG/PS	$\overline{A}$	A			
	DS	–	–			
A–B1 APP./DEP.	FN	B(PR)				
	SG/PS	A				
	DS	Z–				
A–B1 APP.	FN	A(L).B(L)	B(L)	A(E1)		B(E1)
	SG/PS	$\overline{B/A}$	$\overline{B}$	A		B
	DS	Z–	$\overline{Z}$–	Z–. $\overline{A\text{–}B1(PR)}.\overline{B(NEXT)}$		–
A–B2	FN	A (L)	A(E2)	B(E2)		
	SG/PS	$\overline{B/A}$	A	B		
	DS	–	$\overline{B(NEXT)}$	$\overline{A(NEXT)}$		
C1	FN	C (L)	C(E1)			
	SG/PS	$\overline{C}$	C			
	DS	–	–			
C2	FN	C(PR)	C(E2)			
	SG/PS	$\overline{C}$	C			
	DS	–	–			
C3	FN	C (L)	C(E3)			
	SG/PS	$\overline{C}$	C			
	DS	–	–			
A P.B.	FN	A(PB)	C(L)			
	SG/PS	$\overline{A(WALK)}$	A.$\overline{A(WALK)}$			
	DS	–	$\overline{B}.\overline{C}$			
A–B P.B.	FN	A(PB)		C(L)		
	SG/PS	$\overline{B/A}.\overline{B/A(WALK)}$		B/A.$\overline{B/A(WALK)}$		
	DS	$\overline{B}$		$\overline{C}$		
C1 P.B.	FN	C(PB)	A(L)			
	SG/PS	$\overline{C1(WALK)}$	C.$\overline{C1(WALK)}$			
	DS	–	$\overline{A}.\overline{B}$			
C2 P.B.	FN	C(PB)	A(L)			
	SG/PS	$\overline{C2(WALK)}$	C.$\overline{C2(WALK)}$			
	DS	–	$\overline{A}.\overline{B}$			

POSTS

POST	TYPE	LENGTH	REMARKS	OFFSET
1	5L	–	EXISTING	1.2
2	2	4.1	EXISTING	1.0
3	2	4.1	EXISTING	0.6
4	2	4.1	EXISTING	1.0
5	2	4.1	EXISTING	1.0
6	2	4.1	EXISTING	1.0
7	2	4.1	EXISTING	0.6
8	2	4.1	EXISTING	0.6
9	2	4.1	EXISTING	0.7

SPECIAL SIGNAL GROUP DISPLAY SEQUENCE

SIGNAL GROUP	TABLE TYPE	REMARKS
B/A	4	No overlap A –> B.
B (RT)	41	Z– filter option, timed RA protection for A Ped
B (LT)	12	Timed RA protection for C2 Ped. PB on post 6 extends RA protection subject to timer.
B/A Ped	–	Introduction concurrent with B/A overlap. Walk/Clearance overlap permitted A→B. Timer terminated except under masterlink.
C Spec	–	Timed RA protection for C2 Ped. PB on post 6 extends RA protection subject to timer.

NOTES:

1. Special stop sign (R1–202) placed on posts 4 & 8.
2. This site is SCATS linked.
3. Lanterns denoted by an asterisk are wired to a separate signal group.
4. Audio tactile push buttons are provided on posts 2,3,4,5,6,7,8 and 9.

A ORIGINAL ISSUE

B Issue JI SW14405 6/3/98
Removed: NRT signs posts 1 & 5
Altered: A/B signal group to B/A & S.G. table to type 4.
G.R. 30/3/98

C Issue – WAE
Post 1 relocated. Post 2 additional. Posts renumbered. Notes amended to suit WAE
CNJ 7/98

D Issue – J.I. SH352 14/08/07
Added: Audio tactile pushbuttons to posts 2,3,4,5,6,7,8 and 9.
A.C. 14/04/08

PUBLIC UTILITY LEGEND	
HYDRANT	□
STOP VALVE	▲
GAS VALVE	#
SEWER MANHOLE	⊛
TELECOM PIT	◪
ELECT LIGHT POLE	♂
POWER POLE	○
STAY POLE	⊘
TELEPHONE BOX	⊡
TELECOM PILLAR	◕

REFERENCE PLANS	
SYMBOLS/ABBS.	VD003–6
STD POSIT	VD001–5
DET SCHED EXP	VD018–10
PRES. DETECT	VC005–17
SSG DIS. SEQ.	VD018–8

SURVEYOR : R.SMITH
DATE : 12/1993

U.B.D. Ref. MAP 233 D5
I.S.G. CO–ORDS E 307915 N 1252121

DESIGNED B.MORRISON
CHECKED
P.SANGAR
SITE CHECKED
B.GRIFFITHS
RECOMMENDED

APPROVED
CONNELL WAGNER
18–11–97
DATE

ACCEPTED
24–11–97
DATE

ROADS AND TRAFFIC AUTHORITY N.S.W.

CONCORD COUNCIL
GEORGE AND POMEROY STREETS
NORTH STRATHFIELD

DESIGN LAYOUT

TCS No **1181**

DESIGN OFFICE PARRAMATTA – SYDNEY TECHNICAL SERVICES

CADD FILE: **VV1181_6D.DGN**

SCALE 0 1 2 3 4 5 7.5 10 (1:200)

ISSUE D

FILE **93.TS.153**

SUPERSEDES SHEET/ISSUE **6C**

REGN. 7000.093.VV.1181

SHEET 6