APPENDIX 6:
TRAFFIC REPORT

BURWOOD GRAND

KANNFINCH

ARCHITECTURE INTERIOR DESIGN MASTER PLANNING FACILITIES PLANNING

'BURWOOD GRAND'

PROPOSED MIXED USE DEVELOPMENT

BELMORE STREET, CONDER STREET & WYNNE AVENUE, BURWOOD

Assessment of Traffic and Parking Implications

December 2015
(Rev G)

Reference 12039

TRANSPORT AND TRAFFIC PLANNING ASSOCIATES
Transportation, Traffic and Design Consultants
Suite 502, Level 5
282 Victoria Avenue
CHATSWOOD 2067
Telephone (02) 9411 5660
Facsimile (02) 9904 6622
Email: ross@ttpa.com.au

TABLE OF CONTENTS

1. INTRODUCTION 1

2. PROPOSED DEVELOPMENT SCHEME 2

2.1 Site, Context and Existing Use 2
2.2 Proposed Development 2

3. ROAD NETWORK AND TRAFFIC CONDITIONS 4

3.1 Road Network 4
3.2 Traffic Controls 4
3.3 Traffic Conditions 5
3.4 Transport Services 6
3.5 Future Circumstances 6

4. PARKING 8

5. ACCESS 11

6. TRAFFIC AND TRAVEL DEMAND 12

7. INTERNAL CIRCULATION AND SERVICING 17

8. CONSTRUCTION TRAFFIC MANAGEMENT 18

9. CONCLUSION 21

APPENDIX A DEVELOPMENT PLANS
APPENDIX B BUS ROUTES
APPENDIX C TURNING PATH ASSESSMENT

LIST OF ILLUSTRATIONS

FIGURE 1 LOCATION
FIGURE 2 SITE
FIGURE 3 ROAD NETWORK
FIGURE 4 TRAFFIC CONTROLS
FIGURE 5 EXISTING PEAK TRAFFIC FLOWS
FIGURE 6 PROPOSED ACCESS INTERSECTION

1. INTRODUCTION

This report has been prepared to accompany a Development Application to Burwood Council for the proposed Burwood Grand mixed use complex at Burwood (Figure 1).

Burwood is a popular inner western Regional Centre which is well served by public transport and has shopping, entertainment and educational facilities as well as employment sources. The large Westfield and Burwood Plaza retail centres are well established while older style residential, retail and commercial sites in the Centre are being redeveloped in accordance with the provisions of BURWOOD LEP (Burwood Town Centre) 2010.

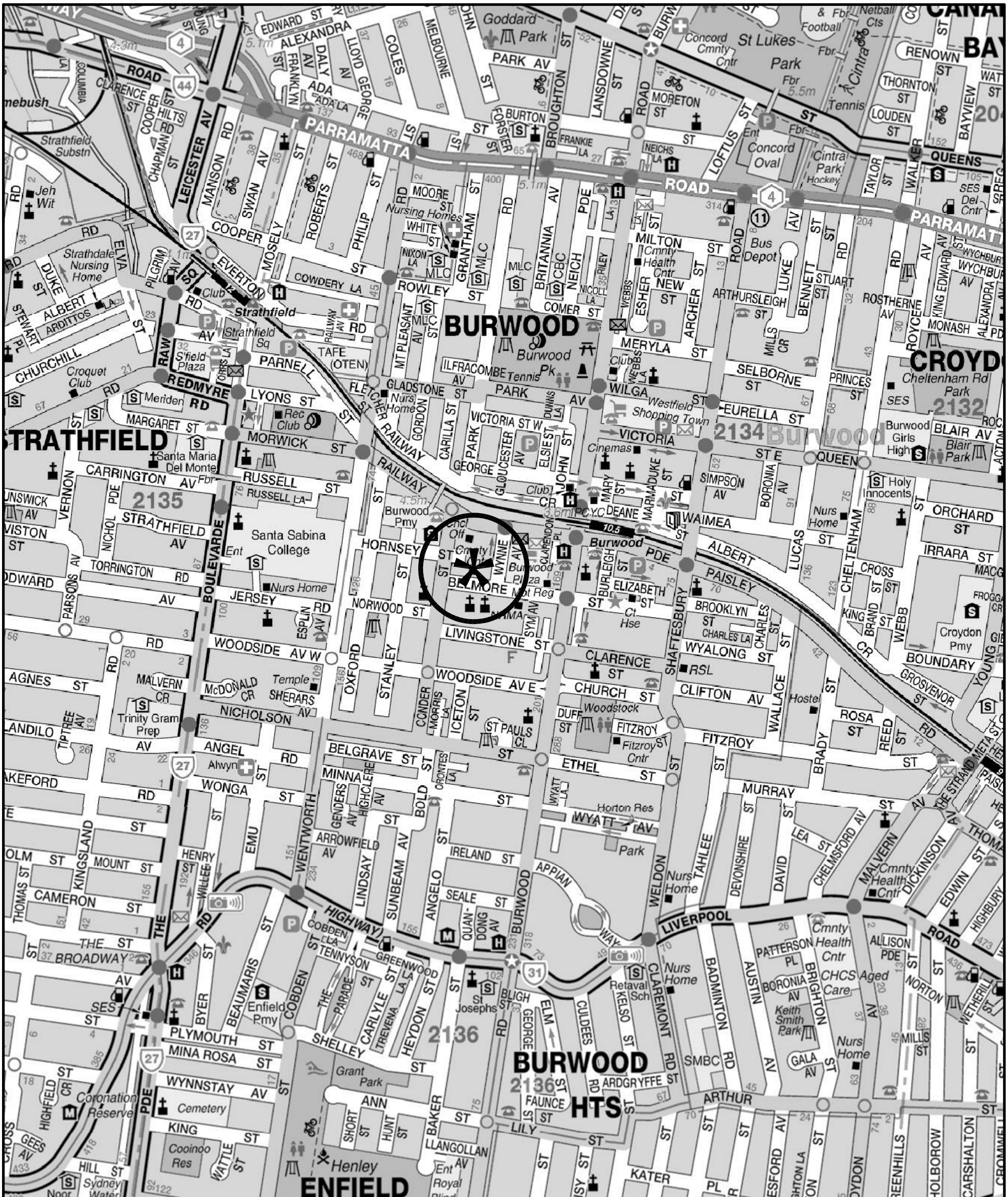
This Development Application proposes the following modifications:

	Building A	**Building B**	**Building C**
Residential apartments	88	218	185
GFA Retail floor space	-	-	1,795m^2
Commercial floor space (Council Offices)	4,197m^2	-	-

679 parking spaces

The purpose of this report is to:

* describe the site and the proposed revised development scheme
* describe the road network serving the site and the prevailing traffic conditions
* assess the adequacy of the proposed parking provision
* assess the potential traffic implications
* assess the suitability of the proposed vehicle access, internal circulation and servicing arrangements



Legend

Location

Fig 1

2. PROPOSED DEVELOPMENT SCHEME

2.1 SITE, CONTEXT AND EXISTING USE

The site (Figure 2) a consolidation of lots which occupies an area of some 10,149m^2 located in the south-western part of the Burwood Town Centre. The rectangular shaped allotment has frontages to Belmore Street, Wynne Avenue and Conder Street being adjoined to the north by a multi-level commercial office building and the adjacent historic Council building.

The Burwood Plaza Retail Centre and adjacent Site C are located on the eastern side of Wynne Avenue while the Railway Station and core retail area are situated just to the north along Burwood Road.

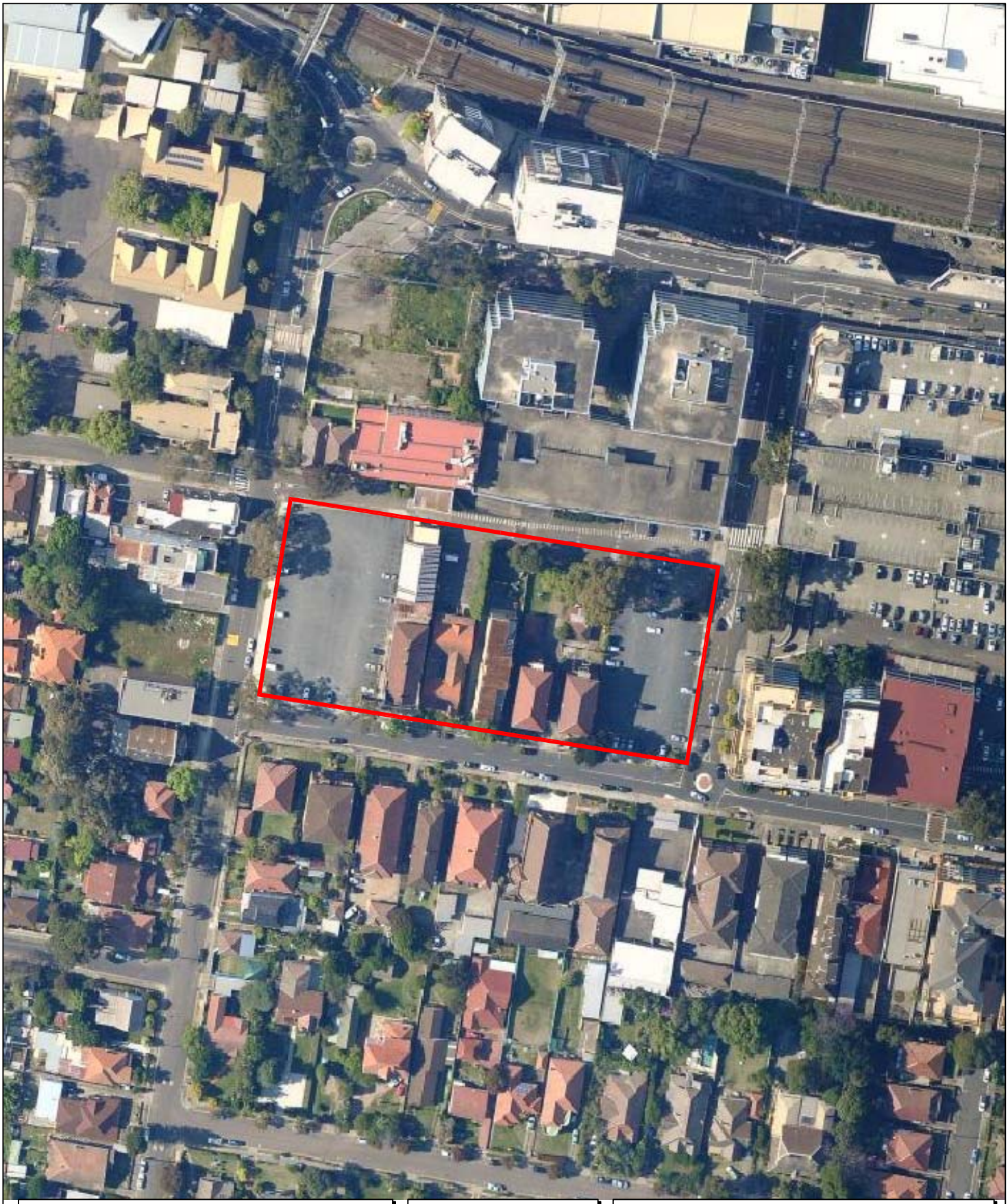
The site comprised:

- a Masonic Hall building
- residential flat buildings
- open parking areas

2.2 PROPOSED DEVELOPMENT

The proposed development comprises:

	Building A Residential	**Building B Residential**	**Building C Residential**
Studio Apartments	-	1	-
One bed apartments	20	17	29
Two bed apartments	66	184	156
Three bed apartments	-	16	-
Total:	88 apts	218 apts	185 apts
Retail floor space	-	-	1,795m^2
Commercial floor space	4,197m^2	-	-



LEGEND

N

SITE

FIG 2

It is proposed to provide a total of 679 parking spaces within the basement levels for the development needs as follows:

- 41 retail spaces
- 55 office spaces

Total 96 spaces accessed on Wynne Avenue

- 499 resident apartment spaces
- 84 resident visitor spaces

Total 583 spaces accessed on Conder Street

A loading dock capable of accommodating garbage trucks and vans etc will be retained on Basement Level 1.

Architectural details of the proposed development are provided on the plans prepared by the Kann Finch Architects which accompany the Application and are reproduced in part in Appendix A.

3. ROAD NETWORK AND TRAFFIC CONDITIONS

3.1 ROAD NETWORK

The roads network which serves the site (Figure 3) comprises:

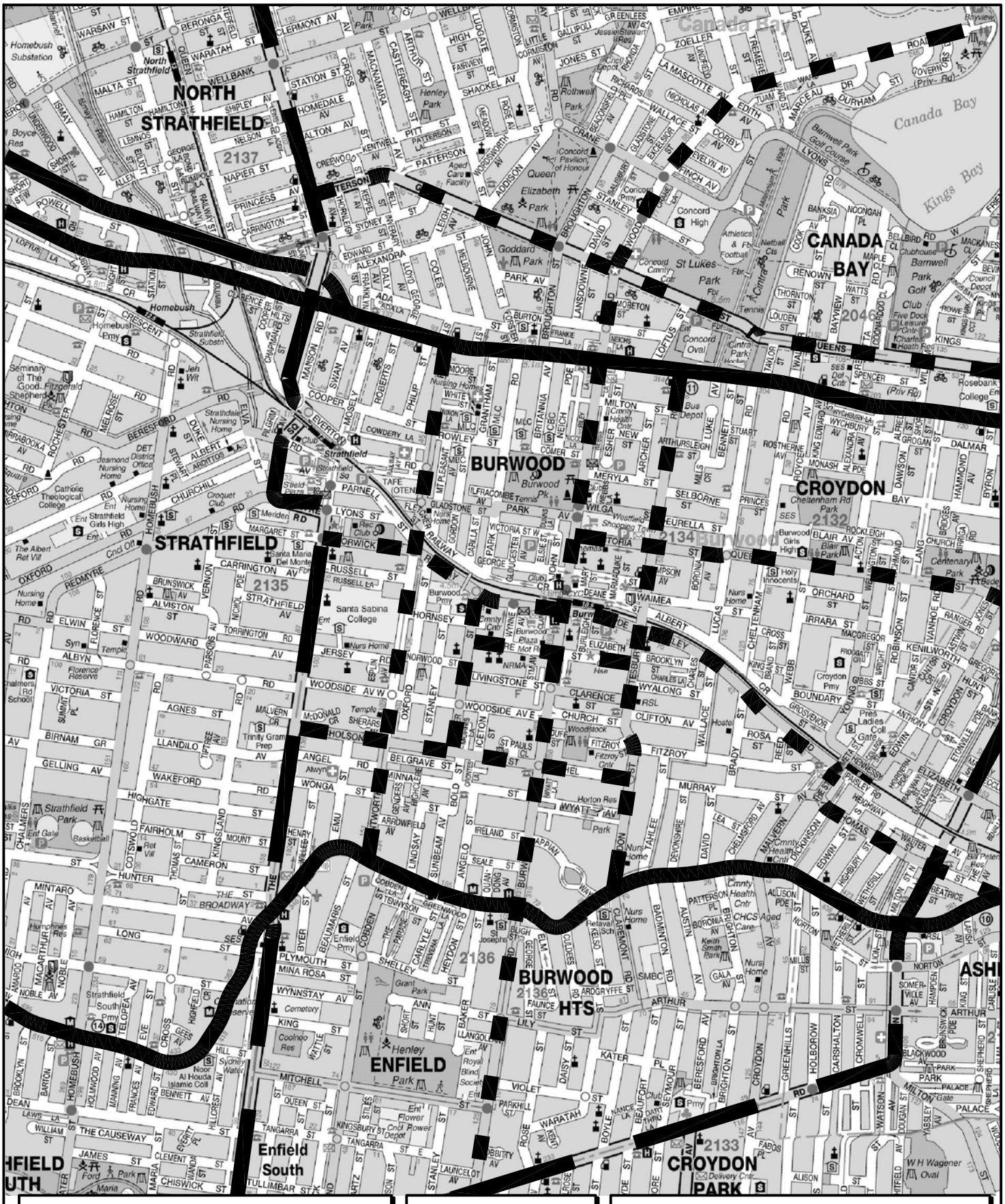
- *Liverpool Road and Parramatta Road* - the State Highway and arterial routes
- *Georges River Road and Coronation Parade - The Boulevarde* the State Road and sub-arterial routes
- *Railway Parade* - the Regional Road and collector route
- *Burwood Road, Shaftsbury Road, Railway Parade and Wentworth Road* - the major collector routes

Belmore Street is part of a minor collector route connecting across Burwood Road and has a roadway some 11 metres wide being relatively straight and level in the vicinity of the site. Wynne Avenue connects between Railway Parade and Belmore Street and is some 12m wide except for the narrower southern section which is 10m wide while Conder Street is some 11 metres wide. The eastern section of Hornsey Street (east of Conder Street) will be closed to form part of the pedestrian corridor.

3.2 TRAFFIC CONTROLS

The traffic controls which have been applied to the road system in the vicinity of the site (Figure 4) comprise:

- the mini roundabout at the Belmore Street and Wynne Avenue intersection
- the traffic signals on Burwood Road at the Belmore Street and Railway Parade intersections
- the traffic signals at the Railway Parade and Wynne Avenue intersection
- the one-way westerly traffic flows on Railway Crescent and Deane Street



LEGEND

- ARTERIAL
- SUB-ARTERIAL
- COLLECTOR

N

ROAD NETWORK

FIG 3

LEGEND

- TRAFFIC SIGNAL CONTROL
- ROUNDABOUT
- RESTRICTED TURNING MOVEMENT

N

TRAFFIC CONTROLS

FIG 4

- the roundabouts on Conder Street at the Railway Parade and Woodside Avenue intersections
- the right-turn prohibitions at the Burwood Road/Railway Parade intersection
- the marked foot crossings on Wynne Avenue and Conder Street between Railway Parade and Belmore Street

3.3 TRAFFIC CONDITIONS

An indication of traffic conditions in the vicinity of the precinct is provided by data published by RMS and surveys undertaken as part of this study.

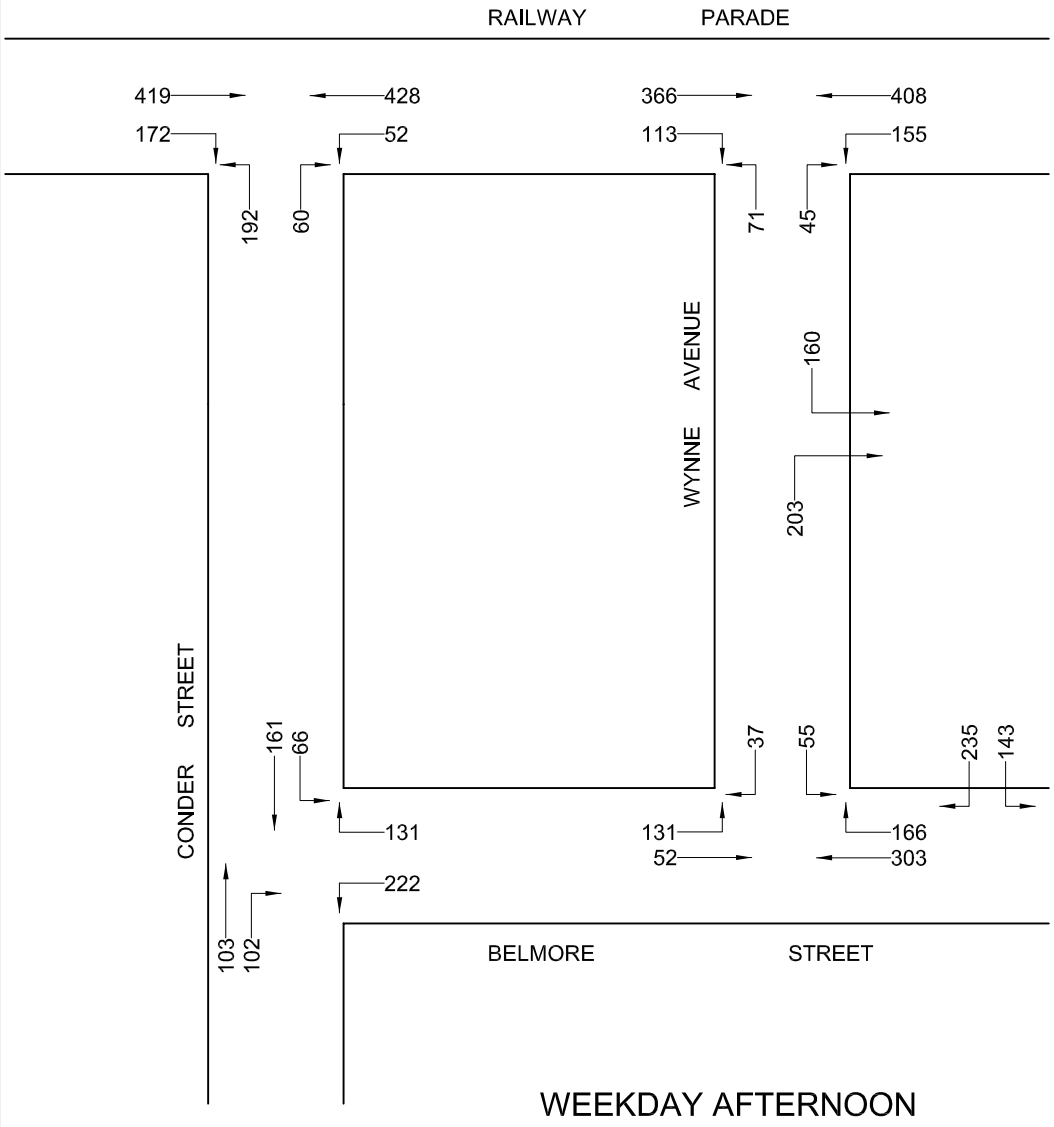
The data published by RMS is expressed in terms of Annual Average Daily Traffic (AADT) and details are provided in the following:

	AADT
Railway Parade at Burwood Road	13,749
Burwood Road at Railway Parade	16,812
Wentworth Road at Railway Parade	8,961
Railway Parade at Wentworth Road	16,359

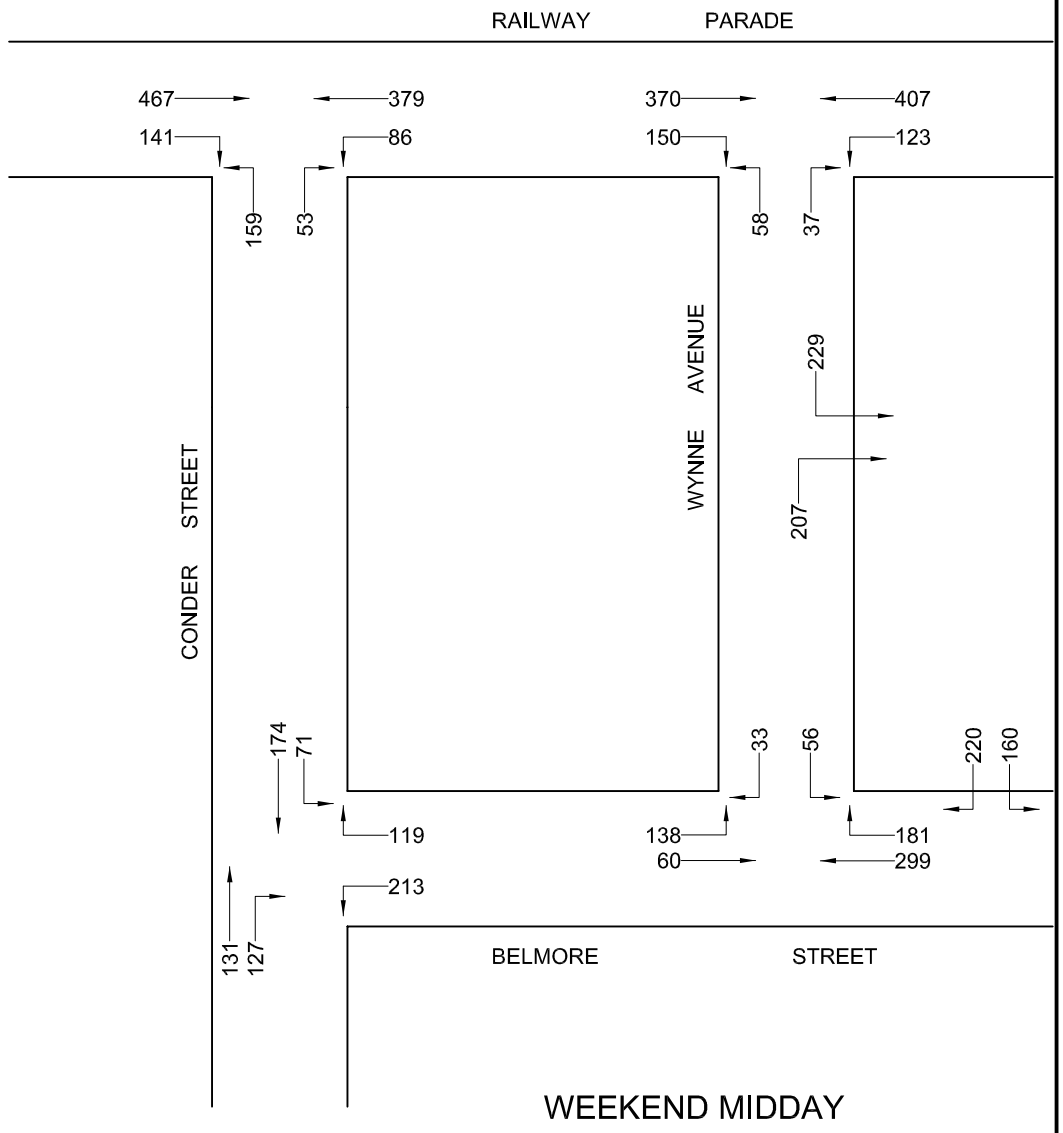
Details of the intersection traffic movement volumes during the weekday afternoon and Saturday midday peak periods in the area are provided in Figure 5.

The operational performance of relevant intersections during the morning and afternoon peak periods was assessed using the SIDRA program in a study[1] undertaken for Council. The results are provided in the following and the criteria for interpreting the modelling results is reproduced in part overleaf.

[1] *Burwood Town Centre Development*
Assessment of Road Network and Traffic Implications



WEEKDAY AFTERNOON



WEEKEND MIDDAY

LEGEND

EXISTING PEAK TRAFFIC FLOWS

FIG 5

	WD PM			WE MD		
	LOS	**DS**	**AVD**	**LOS**	**DS**	**AVD**
Burwood Road/Belmore Street (signals)	B	0.67	25	B	0.63	27
Railway Parade/Wynne Avenue (signals)	B	0.82	22	A	0.33	11
Belmore Street/Wynne Avenue (roundabout)	A	0.06	3.7	A	0.10	4.1

The operational performance of the road system is dominated by the arterial traffic flows on Parramatta Road however conditions the precinct are relatively satisfactory apart from some delays and congestion that occur along Burwood Road particularly at peak retail trading times.

3.4 TRANSPORT SERVICES

The Burwood Centre is very well served by public transport services comprising:

- the high frequency rail services accessed at Burwood Railway Station located within a short walk of the site
- the numerous State Transit bus services which run along Burwood Road and other routes to/from or through the centre

Comprehensive details of the Bus Routes which operate in the vicinity of the site and interchange with the Railway Station are provided in Appendix B.

3.5 FUTURE CIRCUMSTANCES

Burwood Local Environmental Plan (Town Centre) 2010 permits substantial redevelopment in the Centre involving residential apartment, retail and commercial uses. To accommodate these envisaged changes a comprehensive Traffic Management Strategy was developed concurrent with the LEP process and this involves significant changes to the existing road and traffic management arrangements.

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.

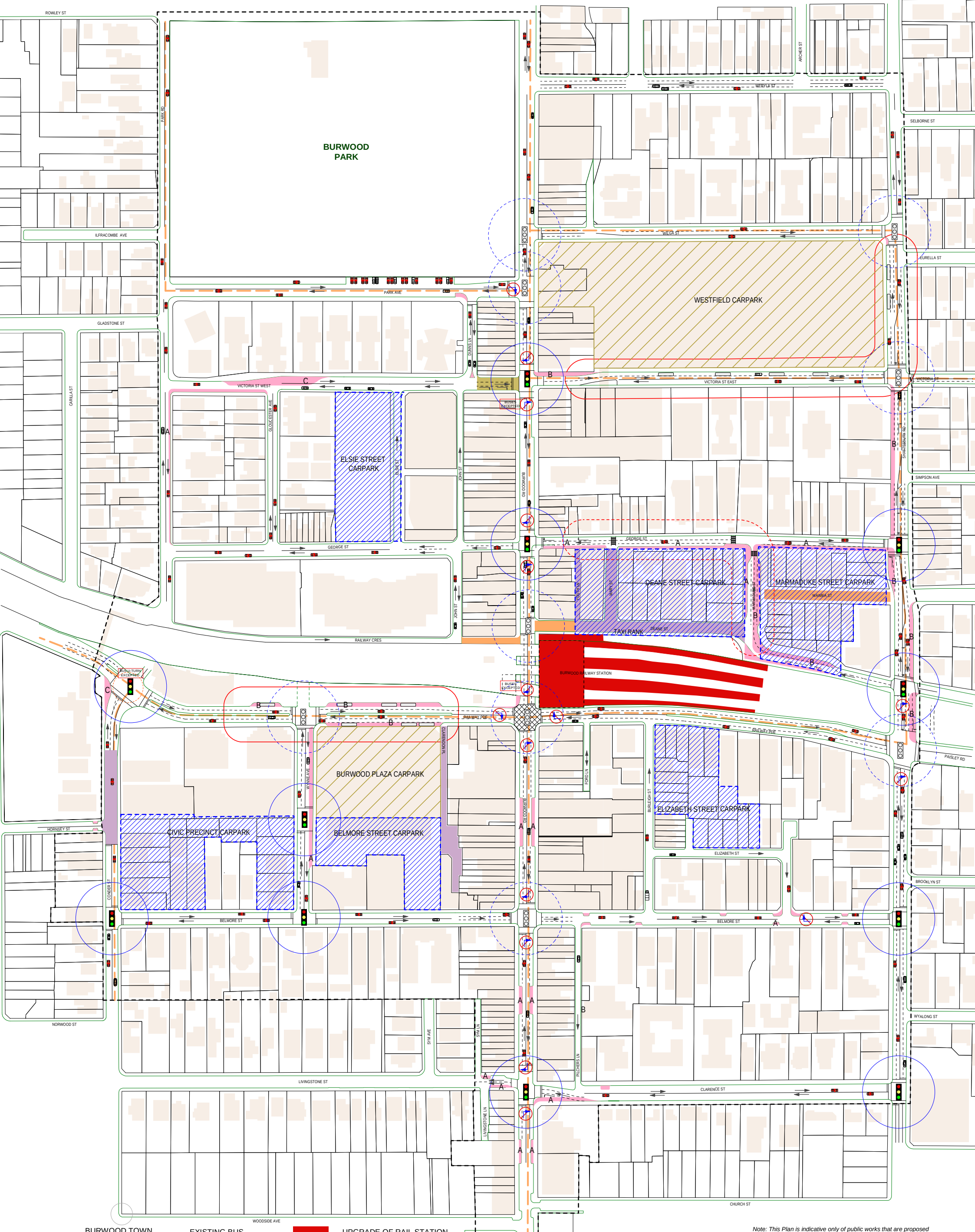
[1] *the values of DS for intersections under traffic signal control are only valid for cycle length of 120 secs*

The study which underlies the Traffic Management Strategy[2] involved a comprehensive assessment of the existing floorspace and network traffic demands together with the envisaged future floorspace/uses and resultant changes to traffic demands. Details of the proposed 'Public Transport, Traffic and Parking Scheme are provided on the plan which is reproduced overleaf.

Proposed changes relevant to the site include:

* creating the pedestrian corridor
* providing traffic signals on Wynne Avenue between Railway Parade and Belmore Street replacing the existing pedestrian crossing and producing signal controlled access for the subject development and the development on the eastern side of Wynne Avenue
* providing traffic signals at the Belmore Street/Wynne Avenue and Belmore Street/Conder Street intersections
* changing the traffic flow on section of Belmore Street across Burwood Road to one-way east
* changing the traffic flow on the section of Livingstone Street and Clarence Street across Burwood Road to one way west
* prohibition of right turn movements at intersections along Burwood Road
* provision of traffic signals at the Railway Parade/Conder Street and Burwood Road/ Livingstone Street/Clarence Street intersections
* provision of substantial new elements of public off-street parking
* provision of measures to facilitate bus movements

[2] *Burwood Town Centre Development*
Assessment of Road Network and Traffic Implications
Transport and Traffic Planning Associates 2006



BURWOOD TOWN CENTRE BOUNDARY

EXISTING BUS FLOWS

PROPOSED TRAFFIC SIGNAL

TRAFFIC DIRECTION

EXISTING TRAFFIC SIGNAL

NO RIGHT TURN

EXISTING BUILDINGS

ROUNDABOUT TO BE REMOVED

UPGRADE OF RAIL STATION (STATE GOVT)

STREET CLOSURE TO GENERAL TRAFFIC (EMERGENCY VEHICLES EXCEPTED)

SHARED WAY / STREET CLOSURE

STREET OPENING

SCRAMBLE CROSSING

EXISTING MAJOR SHOPPING CENTRE PARKING

PUBLIC PARKING

EXISTING/EXPANDED TRANSPORT INTERCHANGE

FUTURE TRANSPORT INTERCHANGE PROPOSED BY COUNCIL

CARRIAGEWAY VARIATIONS

A	<= 2.0m
B	3.0m - 6.0m
C	6.0m - 9.0m

Note: This Plan is indicative only of public works that are proposed to be provided over a 30 to 40 year time frame. Works are subject to budgetary and operational requirements of Council. Not all works are prioritised in the Section 94A Plan for the Town Centre.

N

BURWOOD COUNCIL

SCALE 1:1000 AT A0 ISSUE AB - 29/04/2010 PUBLIC DOMAIN SHEET 3 OF 3

0 50 100m

PUBLIC TRANSPORT, TRAFFIC + PARKING

BURWOOD TOWN CENTRE

4. PARKING

CAR PARKING

Burwood Council's Parking Code (DCP Part 36 – Burwood Town Centre) which was current at the time the DA was submitted specifies the following requirements in respect of the proposed development:

Residential Apartments

one and two-bedroom apartments	1.0 spaces
three-bedroom apartment	1.5 spaces
Visitors	1 space per 6 apartments

Retail — 1 space for 1st 400m² (or part) plus 1 space per 40 m² after

Commercial — agreed with Council to provide 55 spaces

Application of these guidelines to the proposed development would indicate:

	Building A		**Buildings B & C**	
One bed apartments	20	20 spaces	47	47 spaces
Two bed apartments	68	68 spaces	340	340 spaces
Three bed apartments	-	-	16	24 spaces
Total:		**88 spaces**		**411 spaces**
Visitors	-	15 spaces		69 spaces
Retail (1,865m^2)	-	-		41 spaces
Commercial (3,650m^2)	-	55 spaces		-
Total:		**158 spaces** (14 accessible)		**521 spaces** (48 accessible)

Grand Total: 679 spaces

It is proposed to provide a total of 679 spaces in satisfaction of the DCP requirement allocated as:

499	residential
41	retail (including 2 car share)
69	resident visitor
15	visitor
55	office

This total car parking provision will incorporate (refer to Accessibility Report) for:

- 50 adaptable spaces (residential)
- 12 accessible spaces (public)

All things considered it is apparent that the overall parking provision proposed will be quite adequate for the uses and will to all intent and purpose comply with Council's requirements.

Bicycle Parking

Burwood Councils DCP 36 sets out a range of objectives and provisions with respect to the need for new developments to accommodate bicycles. In terms of the number of spaces and the type of facilities, DCP 36 refers to the Austroads publication "Guide to Traffic Engineering Practice, Part 14-Bicycles". Table 10.1 of this document recommends the following parking rates in respect of the proposed development.

Land Use	**Employee/Resident Rate**	**Visitor/Shopper Rate**
Residential	1 per 4 apartments	1 per 16 apartments
Retail	1 per 300m^2	1 per 500m^2 over 1,000m^2
Commercial	1 per 200m^2	1 per 750m^2 over 1,000m^2

In general compliance with these rates the proposed development will provide the following:

Residential (491 apts)	122 resident bikes, 30 visitor bikes
Retail (1,795m^2)	6 staff bikes, 2 shopper bikes
Commercial (4,197m^2)	21 staff bikes, 5 visitor bikes

5. ACCESS

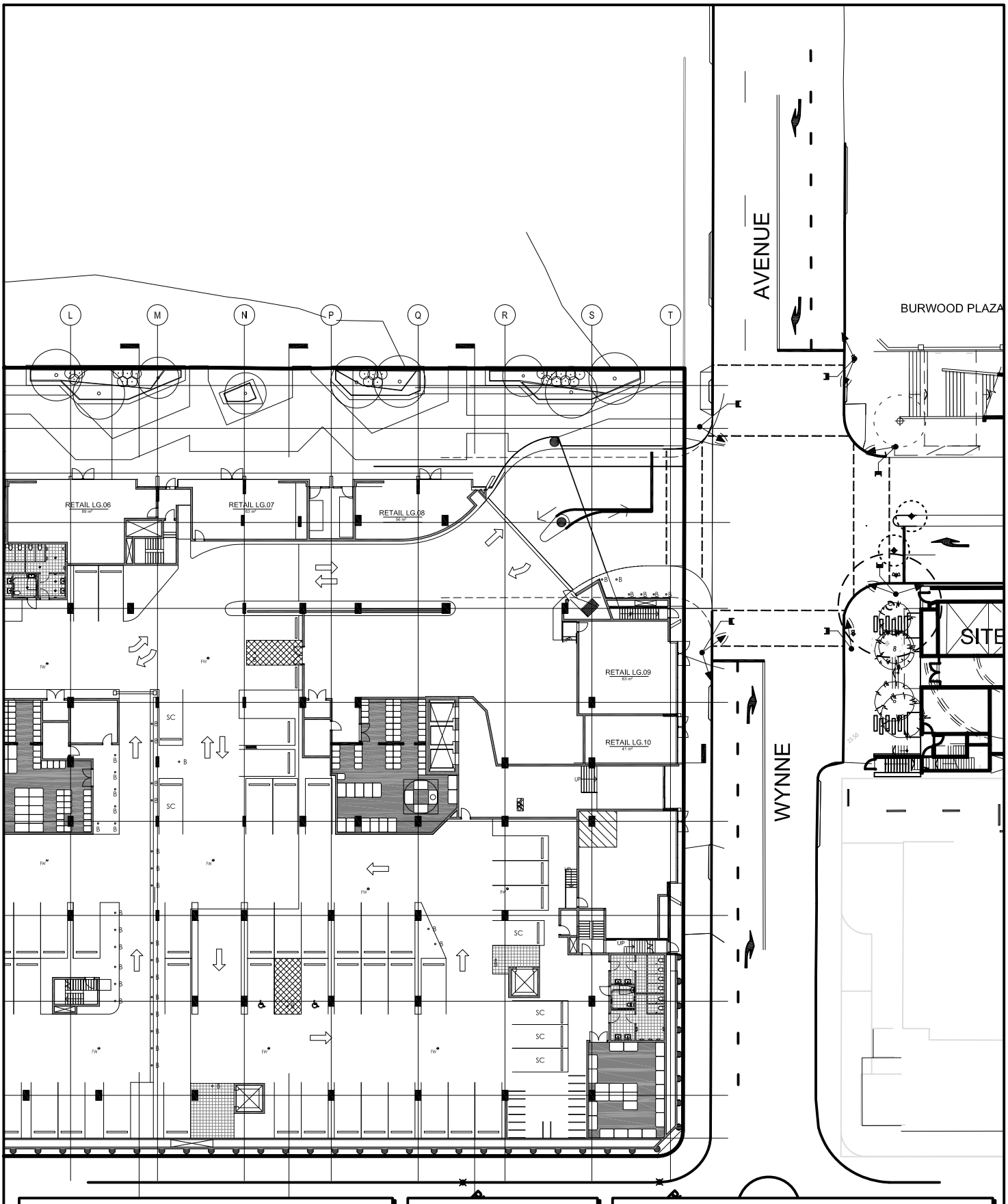
The retail and office parking spaces and loading dock will be accessed on Wynne Avenue in the form of a traffic signal controlled intersection. These signals will incorporate access for the Burwood Plaza carpark and the adjoining development site on the eastern side of Wynne Avenue. This controlled access provision will facilitate access movements, separate pedestrian conflicts and assist distribution onto the access road system.

The concept for this access is entirely compatible with the LEP proposal for the major east-west pedestrian corridor through the Civic Precinct linking between Conder Street and across Burwood Road. This corridor is an upgrade of the existing at grade footway provision with the marked foot crossing on Wynne Avenue. The corridor will link through the proposed Civic Precinct from the "Civic Square" at Conder Street through the middle of the two "town centre blocks" providing connectivity between:

- the future Civic Centre
- Sites A and B development
- Site C development
- Burwood Plaza
- Burwood Road frontage development
- Railway Station and Bus Interchange

The proposed intersection is shown on the concept plan (Figure 5).

Access for the parking located on the lower basement levels for the residential and visitor elements will be located on the Conder Street frontage. This access will comprise a single ingress and a 2-lane egress located in a suitable position midway between Belmore Street and Hornsey Street.



LEGEND

PROPOSED ACCESS INTERSECTION

FIG 6

6. TRAFFIC AND TRAVEL DEMAND

TRAFFIC

The former parking on the site generated the following recorded peak vehicle movements:

	Weekday Afternoon	Weekend Midday
IN	20	26
OUT	35	32
Total	55	58

An indication of the potential future traffic generation of the residential apartments contained in the proposed development scheme is provided by data published in the RMS Development Guidelines. However, the constrained parking rates applied to retail use and the special nature of the office element use preclude reference to the RMS Guidelines. Also the RMS rates for retail are derived from surveys of large regional shopping centres (Departmental Store, Supermarket, DDS etc).

The relevant considerations are as follows:

- the peak generation rate for residential apartments as specified in the RMS Technical Direction TDT2013-4 is 0.19 vtph per apartment in the AM peak and 0.15 for the PM peak with a weekend midday rate of 0.10 vtph per apartment
- the RMS generation rate for office is 1.6vtph per 100m^2 for the AM peak and 1.2vtph per 100m^2 for the PM peak. However the proposed parking provision is constrained and a more realistic rate is 60% arrive/depart in peak hour
- the retail spaces will include an element of “tenant/staff” parking and the proposed 41 spaces are assessed to generate some 100 vtph during the weekday PM and 200 vtph weekend midday peak periods

The assessed future generation will comprise:

	WD PM		WE MD	
	IN	**OUT**	**IN**	**OUT**
Residential Apartments (491)	80	15	25	25
Retail (41 spaces)	50	35	95	95
Commercial (55 spaces)	-	30	-	-
Total:	**130**	**80**	**120**	**120**

The assessed access movement distribution, including the movements generated through the B1 Square access, is as follows:

		PM	**WEMD**
Wynne Avenue	NB	250	260
	RT	312	327
	LT	40	50
	SB	200	160
	RT	30	40
	LT	246	256
B1 Square	RT	110	126
	LT	140	161
Burwood Grand	RT	40	50
	LT	30	40

		WD PM	**WE MD**
Conder Street	NB	234	250
	RT	30	15
	SB	227	245
	LT	29	15
Access	RT	7	15
	LT	7	15

The operation of the access intersection on Wynne Avenue with the connection for B1 Square and Burwood Plaza as well as the proposed access on Conder Street have been assessed using SIDRA. The results of that assessment are provided in Appendix B and summarised in the following.

	WD PM	**WE MD**
Wynne Ave Access		
Level of Service	C	C
Average Vehicle Delay	33.7	34.3
Max Egress Queue	15.7m	19.6m
Conder Street Access		
Level of Service	A	A
Average Vehicle Delay	1.5	1.2

The results of the assessment indicate that satisfactory operational performance will be achieved.

The scale of the proposed development and the land uses are generally consistent with the LEP vision for development within the Burwood Town Centre whilst the projected traffic generation is somewhat less than the traffic growth parameters identified in the development of the Traffic Management Strategy for the Town Centre. In summary, the access intersections operate relatively satisfactorily at the present time. The projected increased peak traffic generation is not great in relation to the existing traffic flows on the road system and circumstances will improve with the implementation of the Traffic Management Strategy. Accordingly no adverse traffic implications will result from the proposed development.

TRAVEL DEMAND MANAGEMENT

Councils DCP No. 36 specifies that Travel Demand Management requires to be addressed for major developments in the Town Centre. While Travel Demand Management is an increasingly important aspect of contemporary land use/transport planning, the proposed development does not present a circumstance where substantial planning and application is needed because:

* the site is located in very close proximity to the Railway Station, bus services and taxi services
* the existing ease of pedestrian travel to/from the public transport services will be facilitated by the design/nature of the development
* the parking provisions permitted by the DCP are “constrained”
* the residents in the development will readily be able to walk to the shopping, entertainment services and employment available in the town centre
* tenants/workers in the development will be able to walk to the shopping and entertainment and services in the Town Centre
* there will be appropriate provisions for cyclists as well as car share spaces in the development
* the resident visitor parking is integrated with the retail parking and there will only be a very limited provision for tenant parking

The DCP provides guidance to the potential initiatives which could be used to achieve travel demand management however many of the suggestions are not applicable to the development because of:

* the residential component
* the relatively small individual mixed nature of the retail elements

It is apparent that there are separate considerations in relation to the resident population of the development and the tenant/employee/visitor population and that separate Travelsmart Plans are applicable. The desirability of these plans is acknowledged and so is the desirability of not simply adopting a "motherhood" approach.

The Resident Plan would concentrate on:

* a Transport Access Guide
* use of the car share facility
* cycling information
* potential car pooling for "journey to work"
* encouraging visitors to travel by public transport or walk/cycle

The Tenant/Employee/Visitor Plan would:

* "signpost" details of public transport and time tables to support a Transport Access Guide
* identify and encourage the use of the bicycle facilities available
* encourage occupant car sharing schemes
* establishing a Trip Planner to provide guidance to people wishing to visit the site
* using taxis for work related journeys

The plans should be implemented by the Body Corporate and be subject to regular monitoring and update. Consent Conditions should be applied to require draft plans to be submitted for the Occupation Certificate.

7. INTERNAL CIRCULATION AND SERVICING

INTERNAL CIRCULATION

The internal ramps, aisles and parking bay will accord with AS 2890.1 & 6 while two-way circulation system will provide for flexible and efficient access with a minimum of potential conflict points.

SERVICING

The loading dock area will accommodate refuse trucks and vans as well as smaller service vehicles. Couriers and service personnel etc will be able to use the visitor/retail spaces. Details of the swept path analysis for service vehicles including a 10.2m refuse truck are provided in Appendix C.

8. CONSTRUCTION TRAFFIC MANAGEMENT

PROGRAM

The envisaged program for the construction process is as follows:

Site Establishment and Demolition	6 weeks
Demolition	6 weeks
Excavation	16 weeks
Construction	52 weeks
Fitout & Finalisation	52 weeks
Total	**132 weeks**

HOARDINGS AND ACCESS

B Class Hoardings will be erected on the Wynne Avenue, Belmore Street, Conder Street frontages. The eastern section of Hornsey Street and the pedestrian corridor will be closed.

Vehicle accesses will comprise:

* Ingress and egress on Wynne Avenue
* ingress and egress on Hornsey Street (closed section)

WORKS ZONE

A Works Zone will be provided on the Belmore Street frontage with site tower cranes for materials handling. The Works Zone on Belmore Street may require the provision of NO STOPPING on the southern side due to the narrow road width.

TRUCK ROUTES

For demolition and excavation processes trucks will approach and depart via Railway Parade and Wynne Avenue (turning around within the site).

For the Construction and Fitout processes trucks will approach via Railway Parade and Wynne Avenue and depart the WORKS ZONE via Belmore Street and Burwood Road.

TRAFFIC CONTROL

Traffic Controllers will supervise all truck movements accessing the site and any works within the roadway and footway areas (eg erecting hoardings, services connections).

TRUCK MOVEMENTS

The volume/frequency of truck movements will vary throughout the processes with the major movements occurring during the excavation process and major concrete pours. The general nature and volumes of movements will be as follows:

	Visitations Per Day	**Truck**
Demolition	8	Truck & Dog
Excavation	20	Truck & Dog
Construction	10-15 *	Various
Fitout	10	Various

* *more during major concrete pour*

MATERIALS HANDLING

Demolition	-	on site loading by machinery
Excavation	-	on site loading by machinery except final stages by tower crane to truck on the WORKS ZONE
Construction	-	Tower cranes with trucks standing in WORKS ZONE
Fitout	-	Tower crane with trucks standing in the WORKS ZONE with use of loading docks in latter stages

CTMP AND TMP DOCUMENTS

A detailed Construction Traffic Management Plan will be submitted for the Construction Certificate. Traffic Control Plans will be prepared by the Traffic Control contractor and submitted to Council for approval progressively during the process as required.

9. CONCLUSION

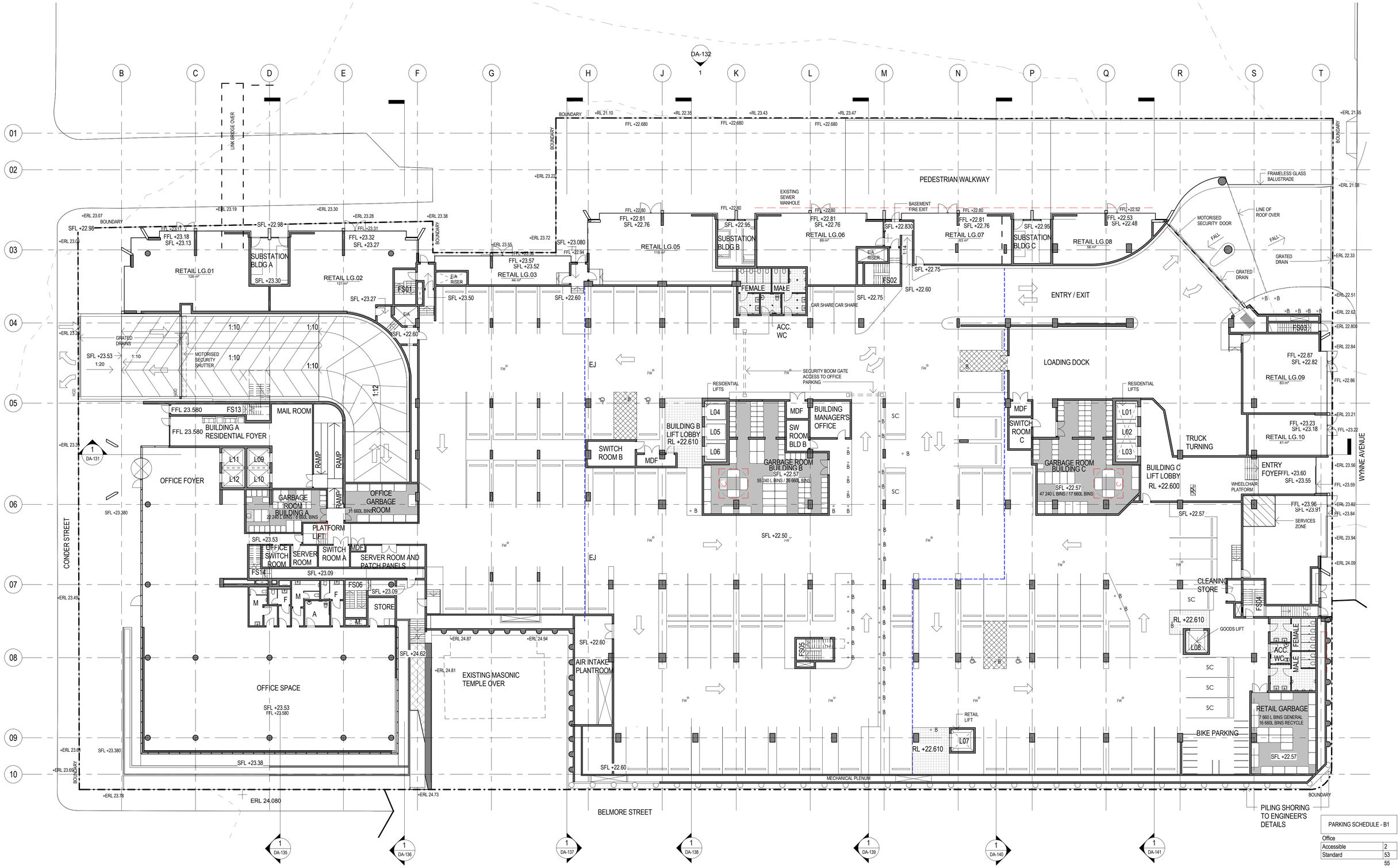
The proposed modifications to the approved “Burwood Grand” mixed development with residential, commercial office and retail elements will be a suitable and appropriate outcome for the site on Belmore Street, Burwood.

This assessment has concluded that:

* the development will not present any adverse traffic implications
* the proposed parking provision will be quite appropriate and adequate for the uses
* the proposed access, internal circulation and servicing arrangements will be suitable and appropriate to normal design criteria

Appendix A

DEVELOPMENT PLANS



PARKING SCHEDULE - B1	
Office	
Accessible	2
Standard	53
	55
Retail	
Accessible	2
Small	6
Standard	33
	41
	96

N

0 4 8 12 16m

SCALE 1:200 @ A1 / 1:400 @ A3

DEVELOPMENT APPLICATION (ADDITIONAL LEVELS + OFFICE SPACE)

BURWOOD GRAND

BELMORE ST, CONDER STREET, WYNNE AVENUE
BURWOOD NSW

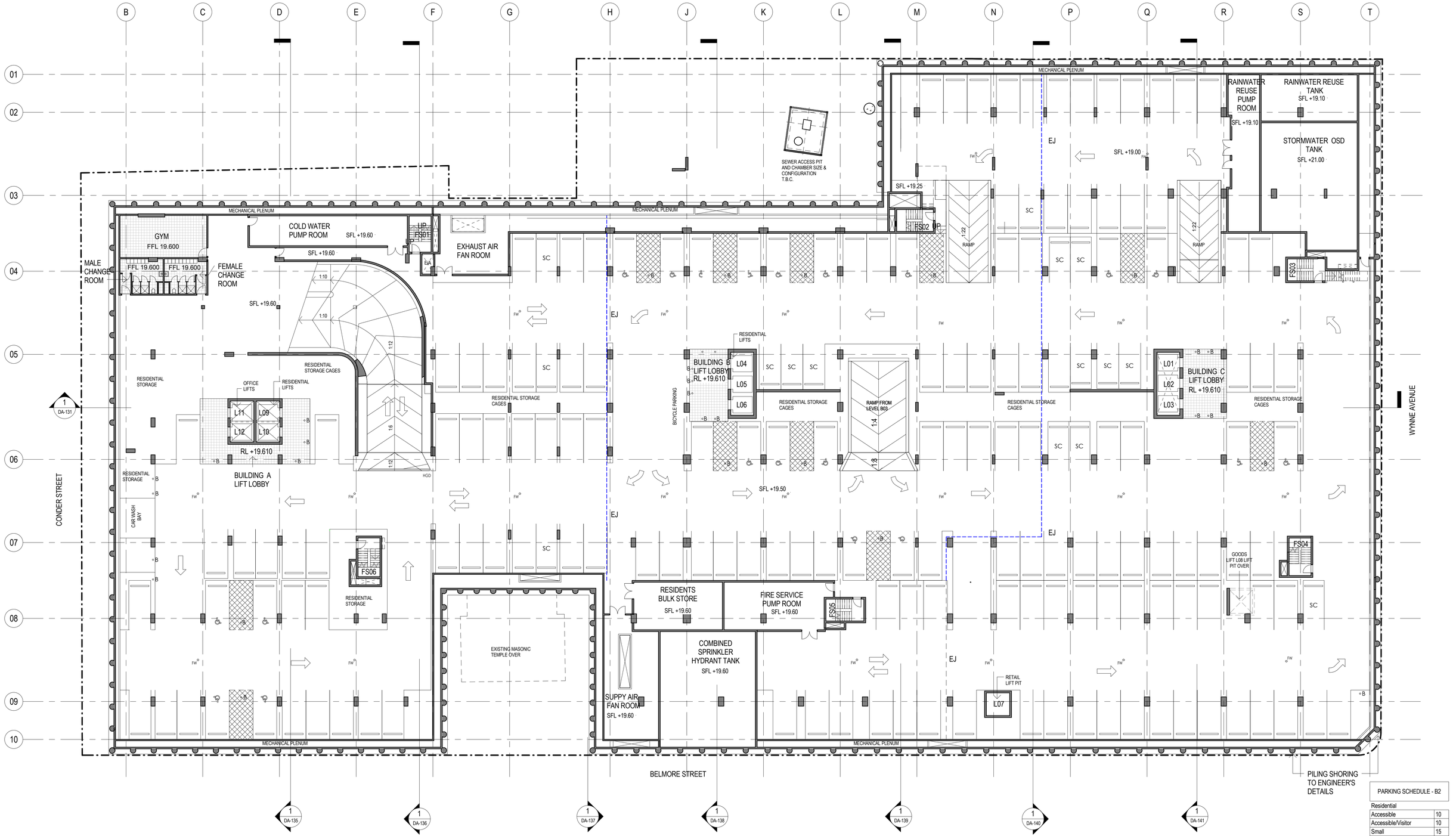
architect KANNFINCH **client** KAPAU HOLDINGS PTY LTD

LEVEL B1 / LOWER GROUND

DA-109

No	AMENDMENT	DRAWN	DATE
L	General Update	HT	11-12-2015
K	Preliminary Issue	RB	04-12-2015
J	Preliminary Issue	RB	24-11-2015
H	Modification to suit new office space and additional levels	HT	13-11-2015
G	Issued to Consultants	BZ	06-11-2015
F	Minor Update/Issue For QS	BZ	01-09-2015

Plot Date: 11/12/2015 5:40:33 PM
CAD File: C:\Users\huu.to\Documents\6335 Belmore St Burwood CONTROL - Central_huu.to.rvt



PARKING SCHEDULE - B2	
Residential	
Accessible	10
Accessible/Visitor	10
Small	15
Standard	62
Visitor	74
	171

N

0 4 8 12 16m

SCALE 1:200 @ A1 / 1:400 @ A3

DEVELOPMENT APPLICATION (ADDITIONAL LEVELS + OFFICE SPACE)

BURWOOD GRAND

BELMORE ST, CONDER STREET, WYNNE AVENUE
BURWOOD NSW

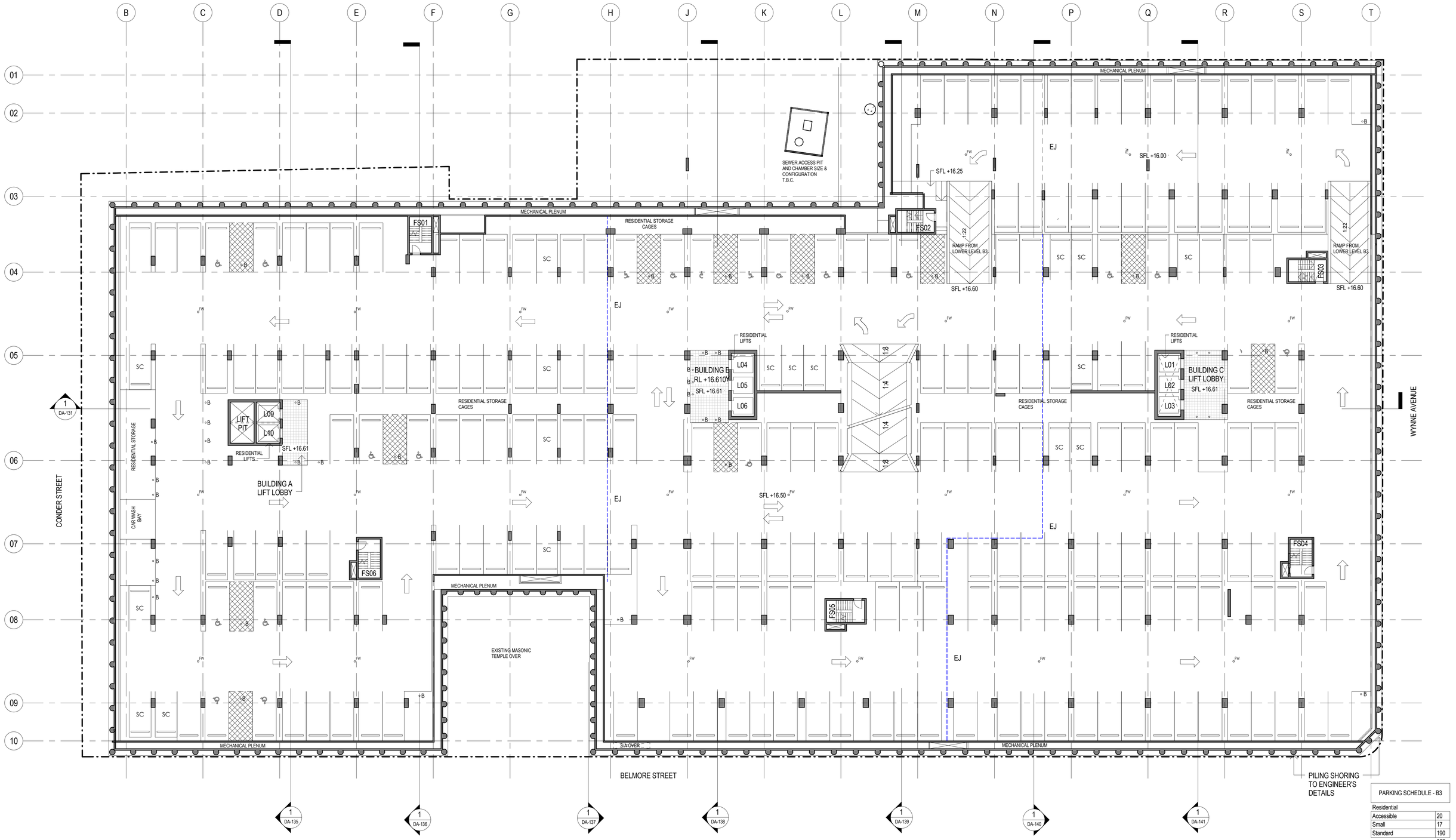
architect KANNFINCH **client** KAPAU HOLDINGS PTY LTD

LEVEL B2

DA-108

No	AMENDMENT	DRAWN	DATE
K	General Update	HT	11-12-2015
J	Preliminary Issue	RB	04-12-2015
H	Preliminary Issue	RB	24-11-2015
G	Modification to suit new office space and additional levels	HT	13-11-2015
F	Minor Update/Issue For QS	BZ	01-09-2015
E	Update to suit new SEPP65	HT	19-08-2015

Plot Date: 11/12/2015 5:40:24 PM
CAD File: C:\Users\huu.to\Documents\6335 Belmore St Burwood CONTROL - Central_huu.to.rvt



PARKING SCHEDULE - B3	
Residential	
Accessible	20
Small	17
Standard	190
	227

N

0 4 8 12 16m

SCALE 1:200 @ A1 / 1:400 @ A3

DEVELOPMENT APPLICATION (ADDITIONAL LEVELS + OFFICE SPACE)

BURWOOD GRAND

BELMORE ST, CONDER STREET, WYNNE AVENUE
BURWOOD NSW

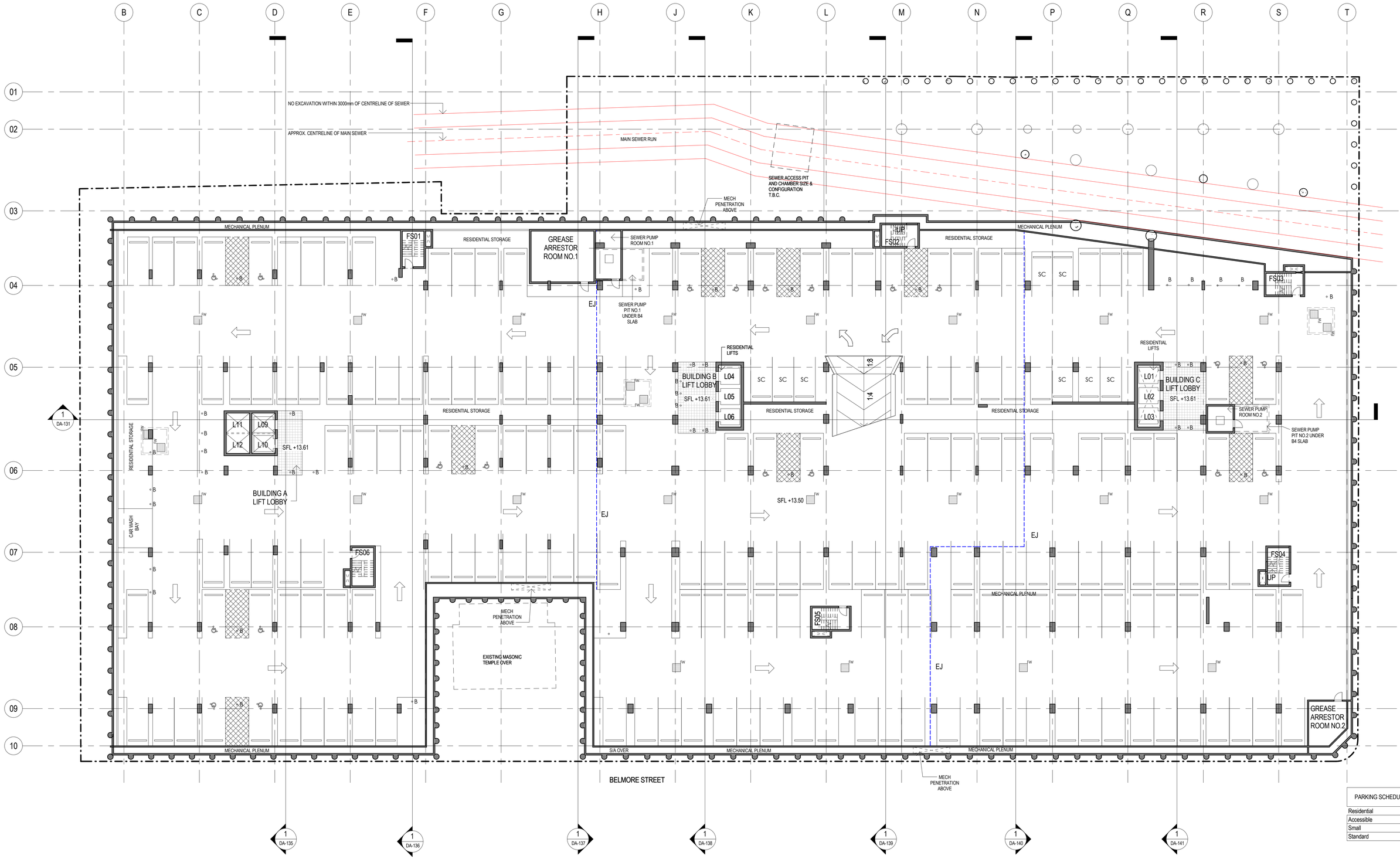
architect KANNFINCH **client** KAPAU HOLDINGS PTY LTD

LEVEL B3

DA-107

No	AMENDMENT	DRAWN	DATE
K	General Update	HT	11-12-2015
J	Preliminary Issue	RB	04-12-2015
H	Preliminary Issue	RB	24-11-2015
G	Modification to suit new office space and additional levels	HT	13-11-2015
F	Minor Update/Issue For QS	BZ	01-09-2015
E	Update to suit new SEPP65	HT	19-08-2015

Plot Date: 11/12/2015 5:40:17 PM
CAD File: C:\Users\huu.to\Documents\6335 Belmore St Burwood CONTROL - Central_huu.to.rvt



PARKING SCHEDULE - B4	
Residential	
Accessible	20
Small	8
Standard	158
	186

N

0 4 8 12 16m

SCALE 1:200 @ A1 / 1:400 @ A3

DEVELOPMENT APPLICATION (ADDITIONAL LEVELS + OFFICE SPACE)

BURWOOD GRAND

BELMORE ST, CONDER STREET, WYNNE AVENUE
BURWOOD NSW

architect KANNFINCH **client** KAPAU HOLDINGS PTY LTD

LEVEL B4

DA-106

No	AMENDMENT	DRAWN	DATE
K	General Update	HT	11-12-2015
J	Preliminary Issue	RB	04-12-2015
H	Preliminary Issue	RB	24-11-2015
G	Modification to suit new office space and additional levels	HT	13-11-2015
F	Minor Update/Issue For QS	BZ	01-09-2015
E	Update to suit new SEPP65	HT	19-08-2015

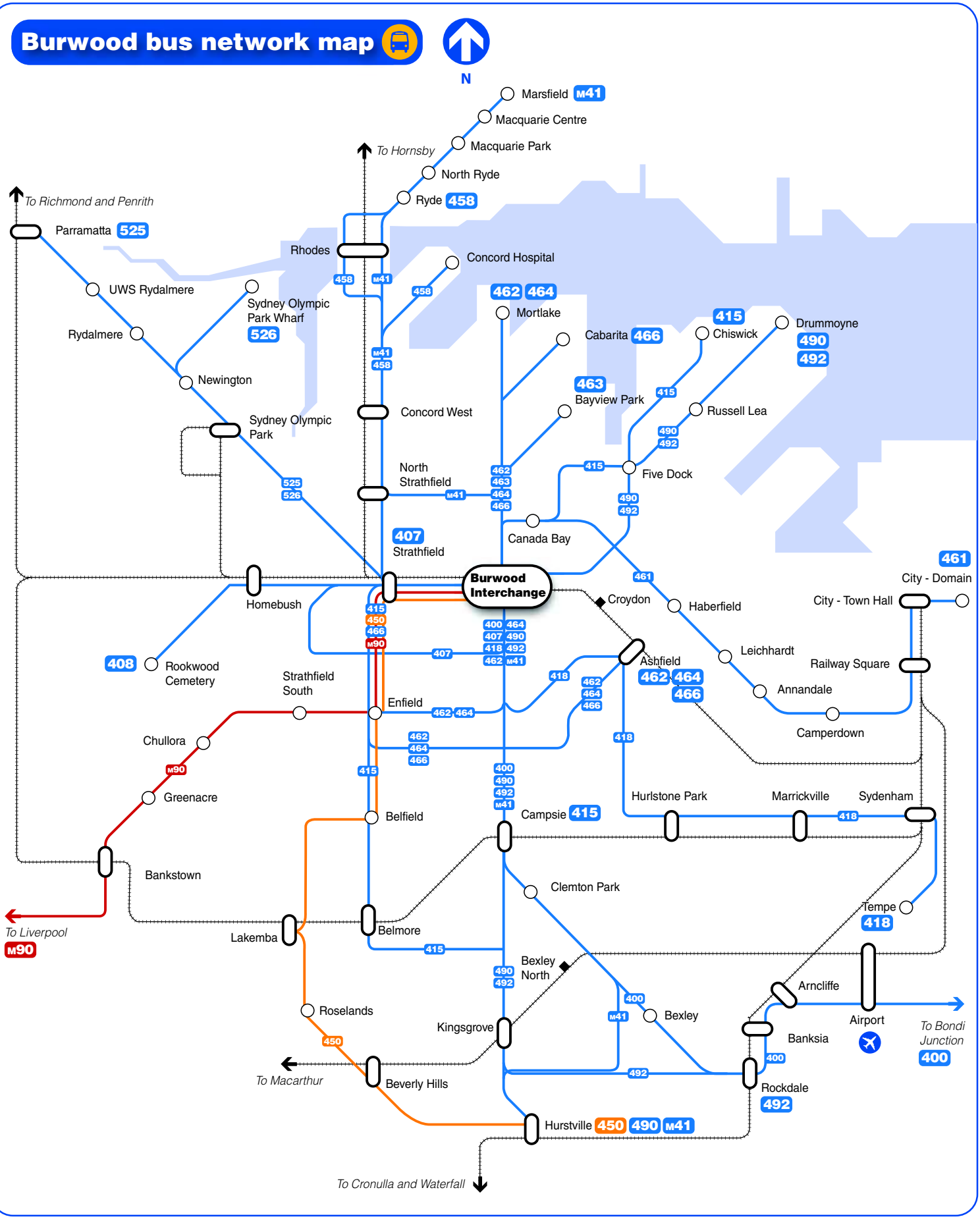
Plot Date: 11/12/2015 5:40:11 PM
CAD File: C:\Users\huu.to\Documents\6335 Belmore St Burwood CONTROL - Central_huu.to.rvt

Appendix B

BUS ROUTES

Service information as at November 2011

Burwood bus network map



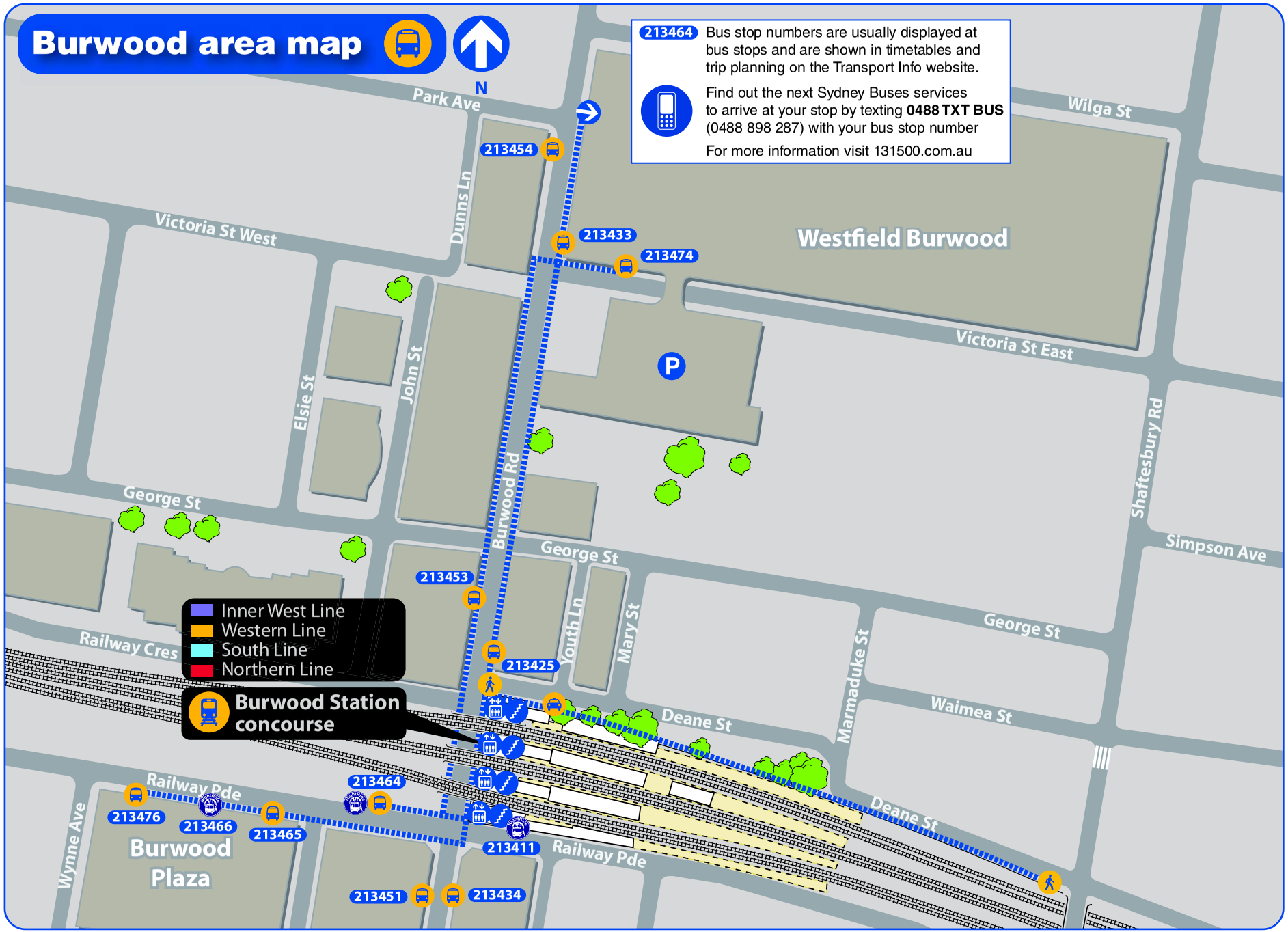
Legend

- Sydney Buses routes
- Veolia Transport routes
- Punchbowl Bus Co routes
- Rail line
- Railway station
- Bus route/suburb
- Bus/Rail interchange

Diagrammatic Map - Not to Scale

Service information as at November 2011

Burwood area map



Legend

Walking route · Lift · Bus stop · Entry · 213464 Bus stop number

Taxi rank · Stairs · Parking · NightRide

Bus services at Burwood

Bus departure information

Please use this listing to find your bus number, route destination and bus stand.
Refer to the Interchange Map to find the bus stand location.

Bus Stand & Number	Route Number	Bus Route Destination
Burwood Rd nr Westfield 213433	**400**	Bondi Junction via Rockdale, Airport, Eastgardens & UNSW (Limited Stops)
	407	Strathfield via Strathfield West
	408	Rookwood via Strathfield & Homebush
	415	Campsie via Strathfield & Belfield
	418	Tempe via Ashfield & Marrickville
	450	Hurstville via Lakemba & Roselands
	458	Ryde via Strathfield & Concord Hospital
	462/464/466	Ashfield via South Enfield
	490	Hurstville via Campsie
	492	Rockdale via Campsie
	525	Parramatta via Strathfield & Newington
	526	Sydney Olympic Park Wharf via Newington
	M41	Metrobus to Hurstville via Campsie
	M90	Metrobus to Liverpool via Bankstown & UWS Milperra
Burwood Rd nr Railway Pde 213434	**400**	Bondi Junction via Rockdale, Airport, Eastgardens & UNSW (Limited Stops)
	490	Hurstville via Campsie
	492	Rockdale via Campsie
	M41	Metrobus to Hurstville via Campsie
Burwood Rd nr Burwood Stn 213425	**407**	Strathfield via Strathfield West
	408	Rookwood via Strathfield & Homebush
	418	Tempe via Ashfield & Marrickville
	458	Ryde via Strathfield, North Strathfield & Rhodes
	462/464	Ashfield via South Enfield
	M41	Metrobus to Hurstville via Campsie
Victoria St nr Westfield 213474	**490**	Drummoyne via Five Dock & Rodd Point
	492	Drummoyne via Five Dock
Burwood Rd nr Railway Pde 213451	**462**	Mortlake via Concord
	464	Mortlake via Concord
	490	Drummoyne via Five Dock & Rodd Point
	492	Drummoyne via Five Dock
	M41	Metrobus to Marsfield via Concord Hospital & Ryde
Burwood Rd nr George St 213453	**415**	Chiswick via Five Dock
	462	Mortlake via Concord
	463	Bayview Park
	464	Mortlake via Concord
	466	Cabarita Wharf via Concord
	M41	Metrobus to Marsfield via Concord Hospital & Ryde

Bus Operator Legend

- Sydney Buses
- Veolia Transport
- Punchbowl Bus Co

213464 Bus stop numbers are usually displayed at bus stops and are shown in timetables and trip planning on the Transport Info website.

Find out the next Sydney Buses services to arrive at your stop by texting **0488 TXT BUS** (0488 898 287) with your bus stop number

For more information visit 131500.com.au

Bus services at Burwood

Bus departure information

Please use this listing to find your bus number, route destination and bus stand.
Refer to the Interchange Map to find the bus stand location.

Bus Stand & Number	Route Number	Bus Route Destination
Burwood Rd nr Park Av 213454	**415**	Chiswick via Five Dock
	461	City - Domain via Parramatta Rd
	462	Mortlake via Concord
	463	Bayview Park
	464	Mortlake via Concord
	466	Cabarita Wharf via Concord
	M41	Metrobus to Marsfield via Concord Hospital & Ryde
Railway Pde nr Burwood Rd 213464	**415**	Chiswick via Five Dock
	461	City - Domain via Parramatta Rd
	466	Cabarita Wharf via Concord
	N60	City via Ashfield
	N61	City via Ashfield
Railway Pde 213465	**407**	Strathfield via Strathfield West
	408	Rookwood via Strathfield & Homebush
Railway Pde 213466	**N50**	Liverpool via Regents Park
	N60	Fairfield via Parramatta
	N61	Carlingford via Clyde
	415	Campsie via Strathfield & Belfield
	450	Hurstville via Lakemba & Roselands
	466	Ashfield via Strathfield & Enfield
Railway Pde 213476	**458**	Ryde via Strathfield & Concord Hospital
	525	Parramatta via Strathfield & Newington
	526	Sydney Olympic Park Wharf via Newington
Railway Pde 213411	**N50**	City via Ashfield

Bus Operator Legend

- Sydney Buses
- Punchbowl Bus Co
- NightRide

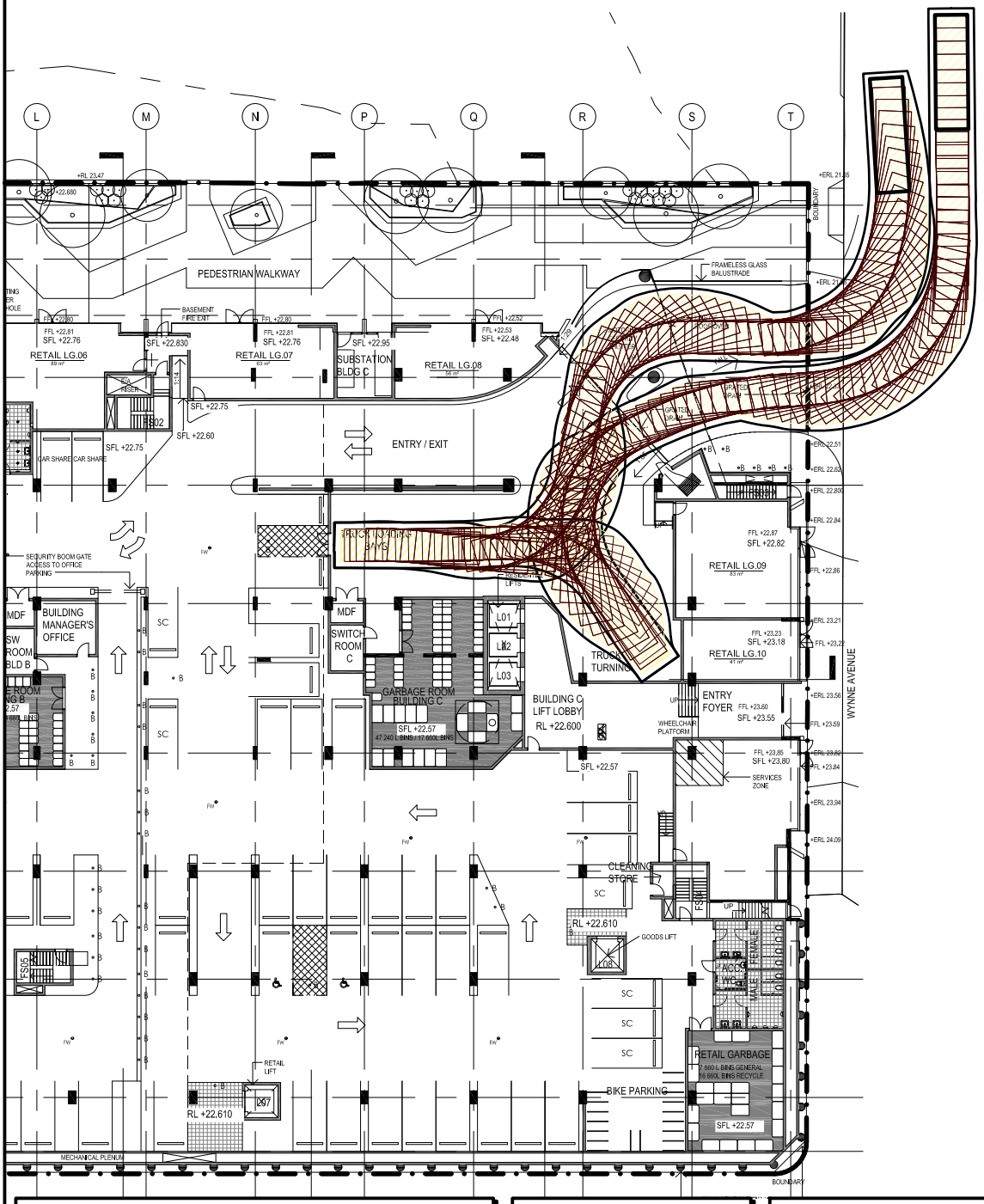
213464 Bus stop numbers are usually displayed at bus stops and are shown in timetables and trip planning on the Transport Info website.

Find out the next Sydney Buses services to arrive at your stop by texting **0488 TXT BUS** (0488 898 287) with your bus stop number

For more information visit 131500.com.au

Appendix C

TURNING PATH ASSESSMENT

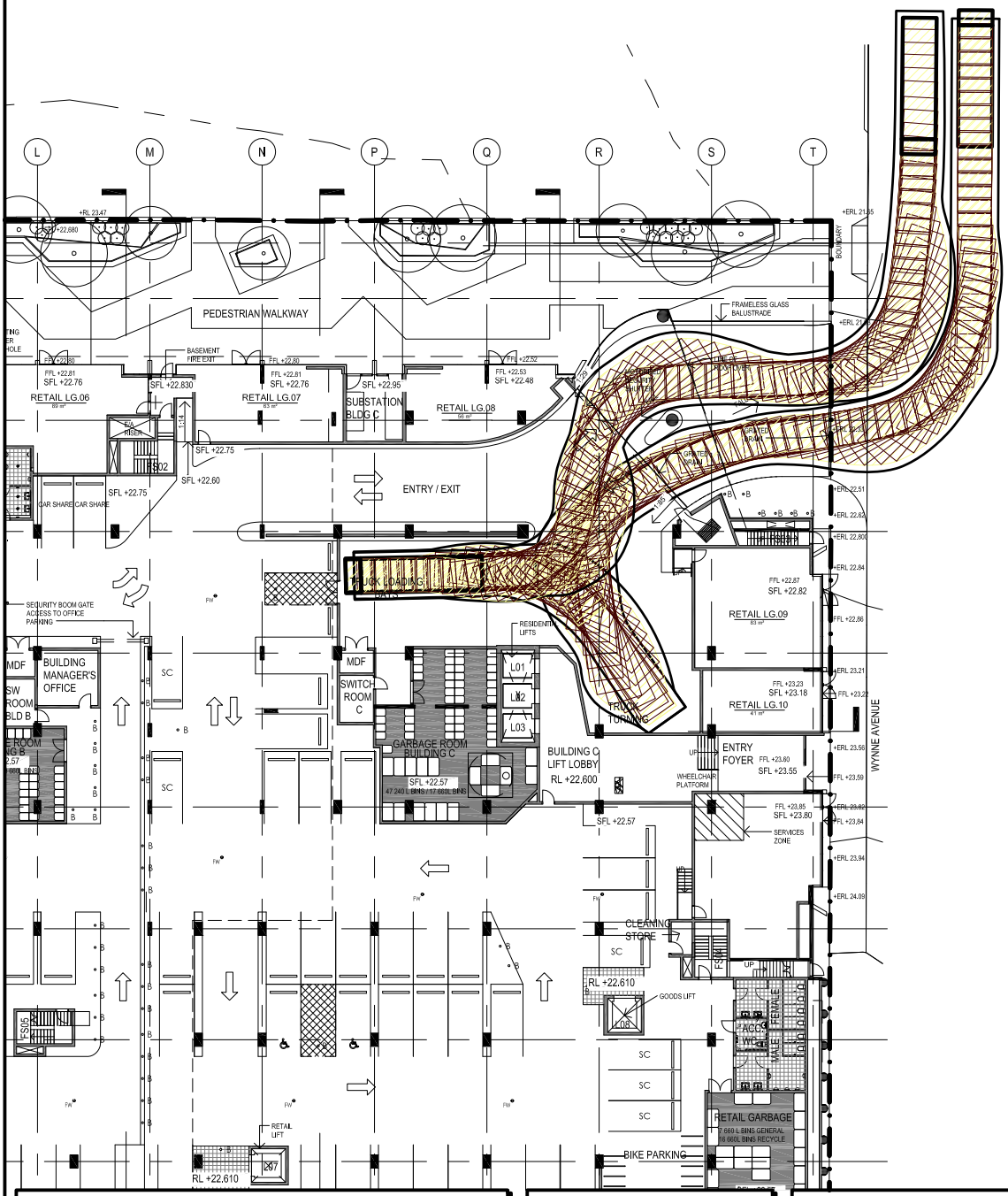


LEGEND

This drawing has been prepared using vehicle modelling computer software AutoTrack V9.21 in conjunction with AutoCAD 2013. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.

SWEPT PATH ANALYSIS OF AN 8.8m RIGID VEHICLE ENTERING AND EXITING THE SITE

SP 1



LEGEND

This drawing has been prepared using vehicle modelling computer software AutoTrack V9.21 in conjunction with AutoCAD 2013. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.

SWEPT PATH ANALYSIS OF A 10.2m REFUSE VEHICLE ENTERING AND EXITING THE SITE

SP 2