

**PLANNING PROPOSAL FOR
MIXED USE DEVELOPMENT
311 HUME HIGHWAY, LIVERPOOL**
*Assessment of Traffic and
Parking Implications*

August 2015
(Rev H)

Reference 14303

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1. INTRODUCTION

This report has been prepared to accompany a Planning Proposal to Liverpool City Council to permit an envisaged residential apartment based mixed use development on a site at 311 Hume Highway in the southern sector of the Liverpool City Centre (Figure 1).

Development activity in Liverpool CBD in recent times has largely been focused on the northern sector, while development in the western and southern sectors has been limited and many sites remain underutilised. The Liverpool City Centre offers considerable advantages for major residential based development of underutilised sites due to:

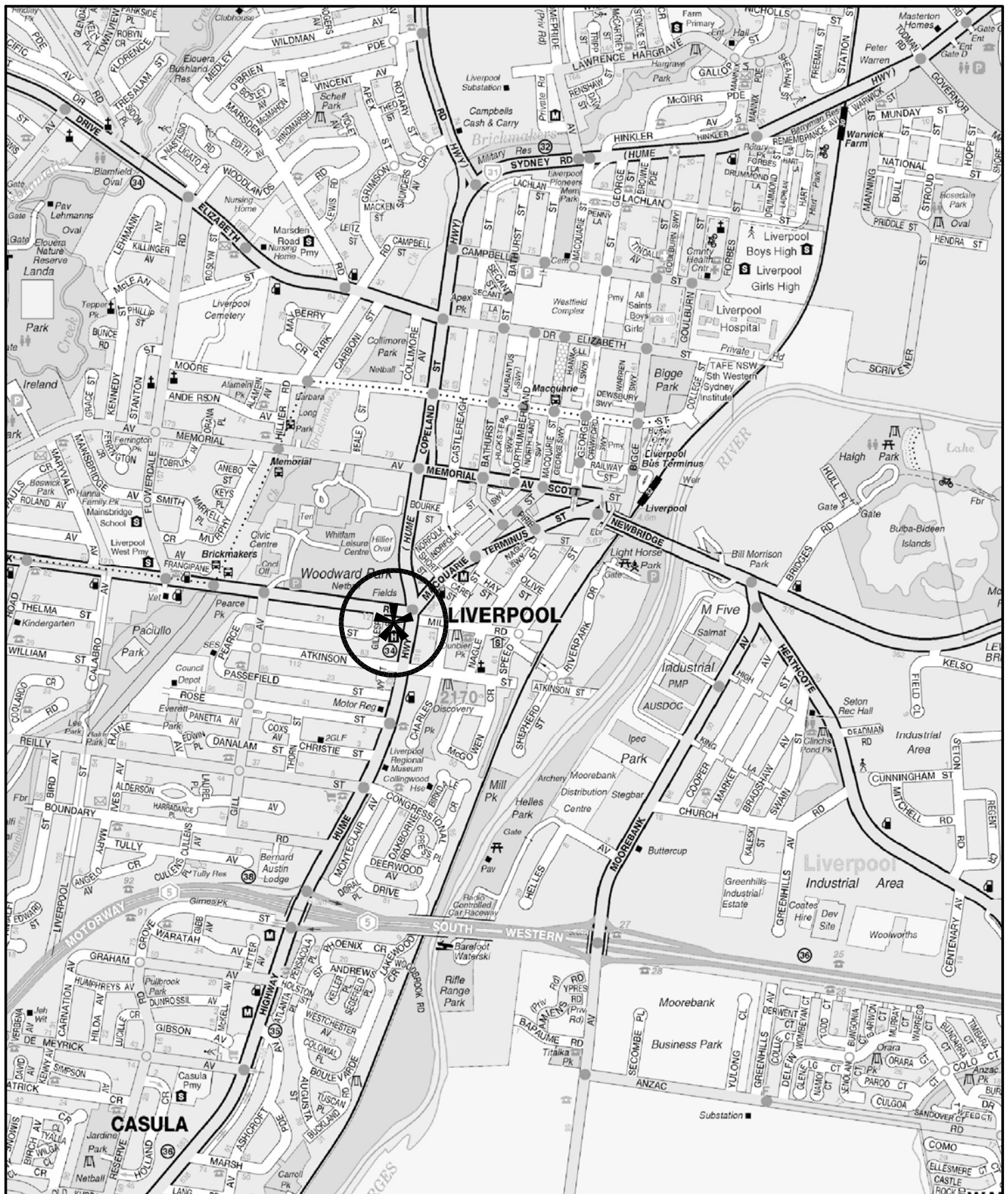
- * the close proximity of primary public transport services (rail and buses)
- * the convenient proximity to employment, shopping and entertainment facilities available in the centre along with the nearby educational and hospital/medical services

There have been two previous consents granted for development on the site and the now envisaged development scheme, subject to approval of the Planning Proposal, comprises:

- 307 residential apartments
- Commercial floor space 636.69m²
- Basement parking

The purpose of this report is to:

- * describe the proposed development
- * 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 proposed vehicle access, internal circulation and servicing arrangements



LEGEND



LOCATION

FIG 1

2. PROPOSED PLANNING PROPOSAL

2.1 SITE, CONTEXT AND EXISTING USE

The site (Figure 2), being Lot 71 of DP 1004792, occupies an area irregular shaped all with frontages to Hume Highway, Hoxton Park Road and Gillespie Street located on the southern edge of the CBD.

The site is cleared and partially excavated while the surrounding landuses comprise:

- * the Collingwood Hotel which adjoins to the south
- * the vacant commercial building which adjoins to the west
- * the commercial uses which extend along the highway and the residential areas extending to the south and west
- * the Liverpool CBD and medical precinct which is located just to the north-east

2.2 APPROVED DEVELOPMENT

Two Consents have been previously granted for proposed developments on the site with the most recent (which was substantially commenced with basement excavation) comprising:

Retail	3,036m ² GLFA (supermarket & shops)
Commercial	800m ²
Residential	124 apartments
Parking	277 spaces

Vehicle access was located on Gillespie Street and there was a Consent Condition for the provision of traffic signals at the Hoxton Park Road and Gillespie Street intersection.



LEGEND



SITE

FIG 2

Details of the approved development are provided on the architectural plans provided in part in Appendix A.

2.3 ENVISAGED DEVELOPMENT

It would be proposed to complete the excavation of the site to provide for basement car parking and a level building platforms to enable construction of a 30 storey tower and two 7 storey buildings.

The envisaged development comprises:

Residential Apartments

Tower

19 x One-bedroom apartments

259 x Two-bedroom apartments

29 x Three-bedroom apartments

Total:	307 apartments
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Commercial Floor Space	636.69m ² (2 units)
------------------------	--------------------------------

Carpark	352 spaces
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Vehicle access will be located on the Gillespie Street frontage.

Architectural details of the development scheme are shown on the plans prepared by Design Workshop Australia which accompany the Development Application and are reproduced in part in Appendix B.

3. ROAD NETWORK AND TRAFFIC CONTROLS

3.1 ROAD NETWORK

The road network serving the site (Figure 3) comprises:

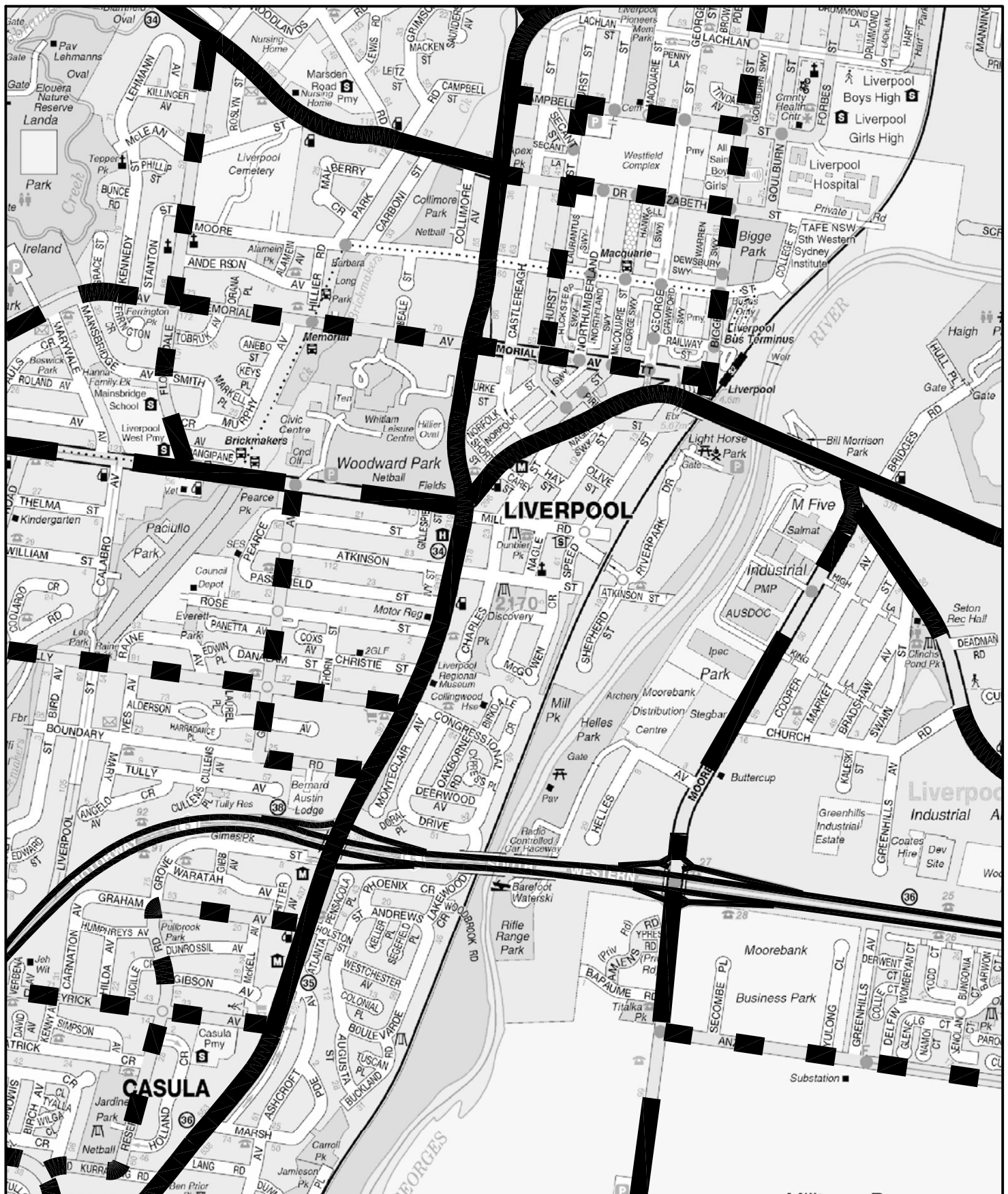
- * *South-western (M5) Motorway* – a State Road and arterial route
- * *Hume Highway* – a State Road and arterial route
- * *Cumberland Highway* – a State Road and arterial route
- * *Elizabeth Drive* – a State Road and arterial route
- * *Newbridge Road/Terminus Street/Macquarie Street* – a State Road and arterial route
- * *Hoxton Park Road* – a State Road and sub-arterial route linking between Hume Highway and Cowpasture Road
- * *Gill Avenue and Reilly Street* – minor collector road routes connecting to Hoxton Park Road and Hume Highway

Gillespie Street and Pearce Avenue are local access roads being some 13m wide.

3.2 TRAFFIC CONTROLS

The existing traffic controls on the road system in the vicinity of the site (Figure 4) comprise:

- * the traffic control signals at the Macquarie Street/Hume Highway/Hoxton Park Road intersections
- * the traffic control signals at the Macquarie Street/Terminus Street and Bathurst Street/Memorial Avenue intersections



LEGEND

- ARTERIAL
- SUB-ARTERIAL
- COLLECTOR



ROAD NETWORK

FIG 3

FIG 4

- * the central median island along the Hume Highway which restricts movements to left-turn IN/OUT of Atkinson Street and Passefield Street
- * the traffic signal control at the Hoxton Park Road and Gill Avenue intersection
- * the roundabouts along Gill Avenue at the Atkinson Street, Rose Street and Reilly Street intersections
- * the GIVEWAY sign controls at the Gill Avenue and Pearce Street intersection
- * the NO STOPPING and CLEARWAY restrictions along Hume Highway and Hoxton Park Road
- * the 50 km/h speed restriction within the local road network and 60 kmph on Hume Highway and Hoxton Park Road

3.3 TRAFFIC CONDITIONS

An indication of the traffic conditions on the road system serving the site is provided by the most recently published Roads and Maritime Services (RMS) traffic data. The data is expressed in Average Annual Daily Traffic (AADT) and is provided as follows:

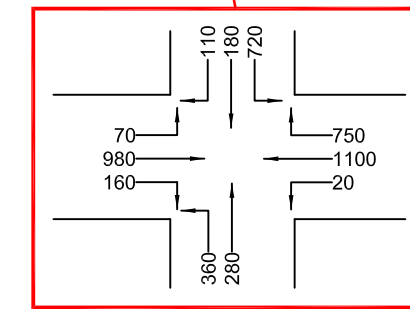
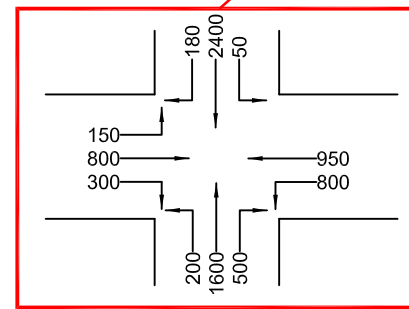
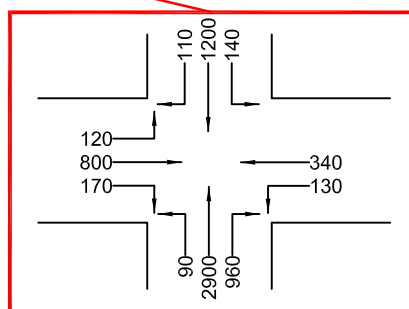
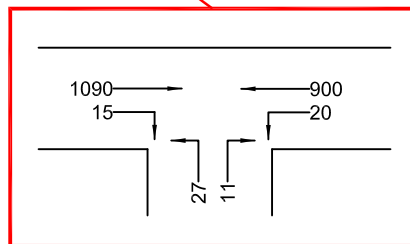
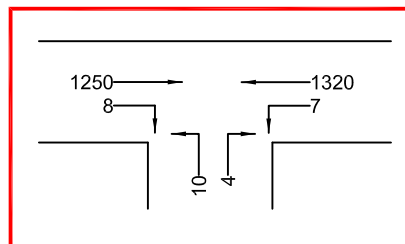
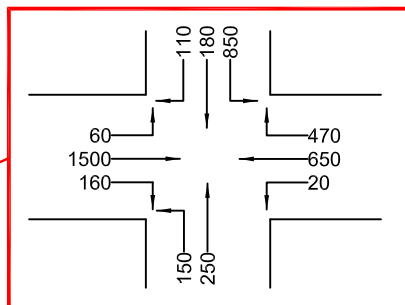
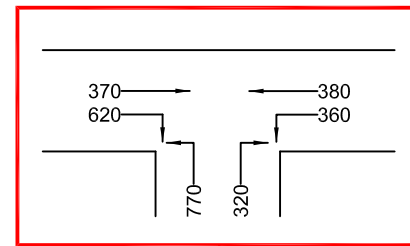
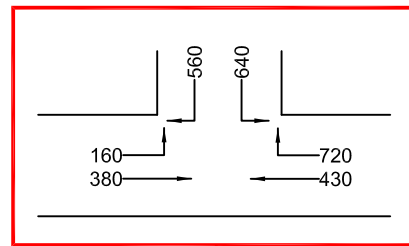
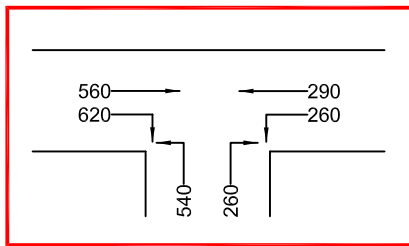
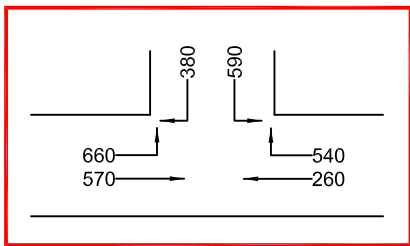
	AADT
Copeland Street, West of Memorial Avenue	72,450
Hoxton Park Road, West of Hume Highway	27,150
Terminus Street, East of Hume Highway	30,222

Available traffic surveys of intersections in the vicinity of the site provide the generalised peak traffic flows at intersections as indicated on Figure 5.

3.4 TRANSPORTATION SERVICES

The development site is ideally located in relation to high capacity and frequent public transport services. Liverpool City Centre (CBD) is the transport 'hub' for south-west Sydney comprising extensive railway and bus network connections and the development site is located within easy walking distance to bus services connecting to the CBD.

Numerous bus services including Westbus, Busabout and Liverpool Transport pass the site along Hume Highway while other services along the transitway are only a short distance away to the west.



AM

PM

LEGEND



APPROXIMATE
INTERSECTION TRAFFIC
FLOWS

FIG 5

4. TRAFFIC

The Roads and Maritime Services Development Guidelines¹ provide indicative traffic generation rates in relation to specific landuse types based on surveys of a wide range of locations and circumstances which are aggregated.

The recent RMS Technical Direction (TDT 2013-4b) in relation to 'high density' residential apartments with good access to public transport services specify a traffic generation characteristic of 0.19 and 0.15 vtpd per unit during the on-street peak periods (AM and PM respectively). Application of these rates to the proposed residential element of the envisaged development scheme (307 apartments) would indicate a traffic generation during the peak traffic periods of some 60 vtpd and 48 vtpd during the AM and PM peaks respectively.

The RMS criteria for retail and commercial traffic generation is not really relevant as it is only envisaged that there will be 7 tenant parking spaces provided for these uses indicating an arrival/departure rate of only 3 vtpd in the peak periods.

Application of these factors to the development scheme indicates generation of:

	AM		PM	
	IN	OUT	IN	OUT
Residential	11	49	40	8
Retail/Commercial	3	-	-	3
Total:	14	49	40	11

¹ RMS Technical Direction TDT-2013 (4b)

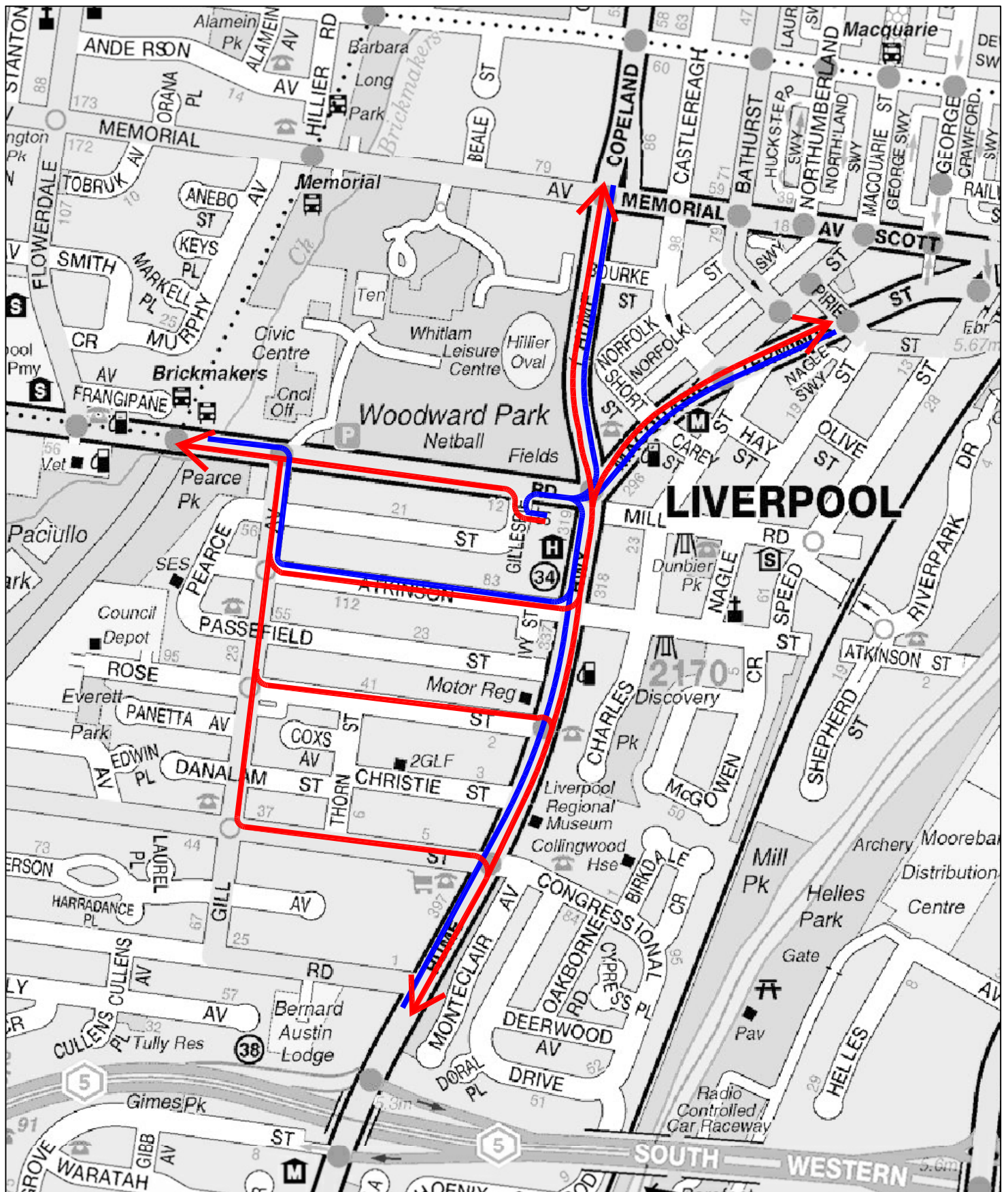
Prior to the demolition of existing buildings for the previously approved development there was a mixture of commercial uses on the site which generated a moderate level of vehicle activity. The traffic assessment² undertaken for the most recently approved development on the site established projected peak generation rates of 113 vtp/h in the morning and 451 vtp/h in the afternoon (see extracts in Appendix C).

Consent for the previous development involved the provision of traffic signals at the Hoxton Park Road and Gillespie Street intersection as indicated on the design plan which incorporates peak period right turn prohibition (refer to Appendix D). Recent discussions with Council in relation to the now envisaged development indicate that Council (and presumably RMS) would prefer to formerly prohibit the right turn movements to/from Gillespie on this basis:

- * vehicles departing the site to travel north, south or east will either access the highway via Rose Street or Reilly Street or access Hoxton Park Road via Gill Avenue
- * vehicles approaching the site from the west will turn into Gill Avenue from Hoxton Park Road

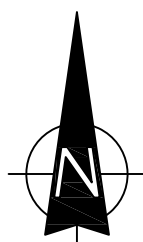
The distribution of the projected 63 vtp/h in the morning and 51 vtp/h in the afternoon (two way) as indicated on Figure 6 will be diverse and will not result in any adverse traffic implications (particularly when compared with that of the previously approved development on the site).

2 *Proposed Residential and Retail Development
Cnr Hume Highway and Hoxton Park Road, Liverpool
Traffic and Parking Assessment
Traffic Solutions, Sept 2002*



LEGEND

- APPROACH MOVEMENTS
- DEPARTURE MOVEMENTS



TRAFFIC DISTRIBUTION

FIG 6

5. ACCESS, INTERNAL CIRCULATION AND SERVICING

ACCESS

Vehicle access for the site will be provided by a combined ingress/egress driveway on the Gillespie Street frontage. This access point will be located where there are excellent sight distances and will comply with the design requirements of AS2890.1.

INTERNAL CIRCULATION

A simple and efficient one way access ramp and aisle circulation system will be provided through the carpark levels. The aisles, ramps, parking bays and manoeuvring areas will be designed to accord with AS2890.1 and 6.

SERVICING

Refuse will be removed from the street by Council's collection service. Small vehicles (eg service personnel/couriers etc) will be able to use the visitor parking spaces while occasional needs of larger service vehicles (eg furniture pantechnicons etc) will be accommodated on the available on-street kerbspace as is normal for a residential apartment development of this nature.

6. PARKING

Car Parking

Car parking for retail and commercial developments within the Liverpool CBD are subject to the Liverpool Local Environmental Plan (LLEP) 2008 while Liverpool Development Control Plan (LDCP) 2008 applies to residential components of all developments.

The LLEP specifies a minimum parking provision for development as follows:

'Development consent must not be granted to development on land in the Liverpool city centre that is in Zone B3 Commercial Core or B4 Mixed Use that involves the erection of a new building or an alteration to an existing building that increases the gross floor area of the building unless:

- (a) *at least one car parking space is provided for every 200 m² of any new gross floor area that is on the ground floor level of the building, and*
- (b) *in respect of any other part of the building:*
 - *at least one car parking space is provided for every 100 m² of any new gross floor area that is to be used for the purposes of retail premises, and*
 - *at least one car parking space is provided for every 150 m² of any new gross floor area that is to be used for any other purpose.'*

Application of the above criteria to the retail component would indicate a minimum parking requirement as follows:

	Minimum Requirement
Retail (636.69 m ²)	7 spaces

The residential component of the development is subject to LDCP control, which is provided in the following:

	Minimum Requirement
1-bed	1 space per unit
2-bed	1 space per unit
3-bed	1.5 space per unit

Application of the above criteria indicates the following requirements:

	No. of spaces
19 x 1-bed	19 spaces
259 x 2-bed	259 spaces
29 x 3-bed	44 spaces
Total:	322 spaces

The quantum of visitor spaces becomes skewed in larger developments and significant urban renewal and infrastructure developments within the Liverpool CBD have resulted in similar 'city' characteristics to the Sydney CBD, in particular the convenience of public transport services along with increased reliance on these services. It is therefore proposed to provide visitors' parking in accordance with the Sydney LEP rates which largely reflect a CBD locality and accessibility.

The City of Sydney LEP 2012 rate for visitor parking are as follows:

	Rate
0-30 apartments	0.167 space per unit
30-70 apartments	0.1 space per unit
70 and above apartments	0.05 space per unit

Application of the above criteria to the proposed 307 apartments would indicate a requirement of 16 visitor spaces.

Having regard to both the LLEP and LDGP requirements along with the 'CBD' nature of the site location it is envisaged that a total of 352 car parking spaces will be provided within the car park, including 31 accessible spaces, with the following composition:

Residents	329 spaces
Visitors	16 spaces
Retail	7 spaces
Total	352 spaces

The envisaged provision of 16 spaces for visitors in a conveniently located site with close proximity to city centre and excellent transport services is considered to be satisfactory and will not result in adverse parking implications. It is apparent that the overall envisaged provision of 352 spaces will essentially provide a balanced outcome which will be adequate for the proposed development.

Bicycles and Motorcycles

There is no specification for bicycle provision within the LLEP therefore assessment in relation to the appropriate provision for motorcycles and bicycles is made with reference to LDGP 2008 as follows:

		Bicycles	Motorcycles
All developments	-	1 per 200 m ² GFA	1 per 20 car spaces

It is envisaged to provide 158 bicycle storage spaces (residents' bicycles could be in store areas) and 21 motorbike spaces in the basement carpark and this would be entirely compliant with Council's code.

7. CONCLUSION

The envisaged development (subject to approval of the Planning Proposal) reflects a contemporary outcome for the Liverpool CBD reflecting other nearby current development processes. The development scheme will take advantage of the excellent public transport services which are available and the convenient access available to the arterial road system.

The assessment provided in this report confirms that:

- * the potential traffic generation of the development will be satisfactorily accommodated on the road system (and will be substantially less than that of the previously approved development on the site)
- * the envisaged vehicle access, internal circulation and turning arrangements will be satisfactory
- * there will not be any unacceptable road safety and traffic related environmental implications
- * a suitable and appropriate parking provision can be made in relation to the needs of the development

Appendix A

APPROVED PLANS

As stated dimensions are to be checked prior to commencement of work. Larger scale drawings take precedence over smaller. Figure dimensions over scaling. Immediately notify the Architect of any discrepancy.

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CHECKED				
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DD DESIGN DEVELOPMENT

DA DEVELOPMENT APPLICATION

CC CONSTRUCTION CERTIFICATE

TD TENDER DRAWING

WD WORKING DRAWING

AS AS BUILT

REV.

AMENDMENTS

BY

A

19.04.07 - TENDER ISSUE

B

17.05.07 - LEVELS REVERSED, O/A HEIGHT OF BUILDING MAINTAINED
NOTES ADDED, AUTO DOOR ADDED

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KEY PLAN

DRAWING STATUS

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PROJECT

RETAIL - RESIDENTIAL DEVELOPMENT

311 HUME HIGHWAY cnr. HOXTON PARK RD- LIVERPOOL

DRAWING TITLE

EAST ELEVATION

DWG No

A.16

REV

B

SCALE

1:100

PLOT DATE

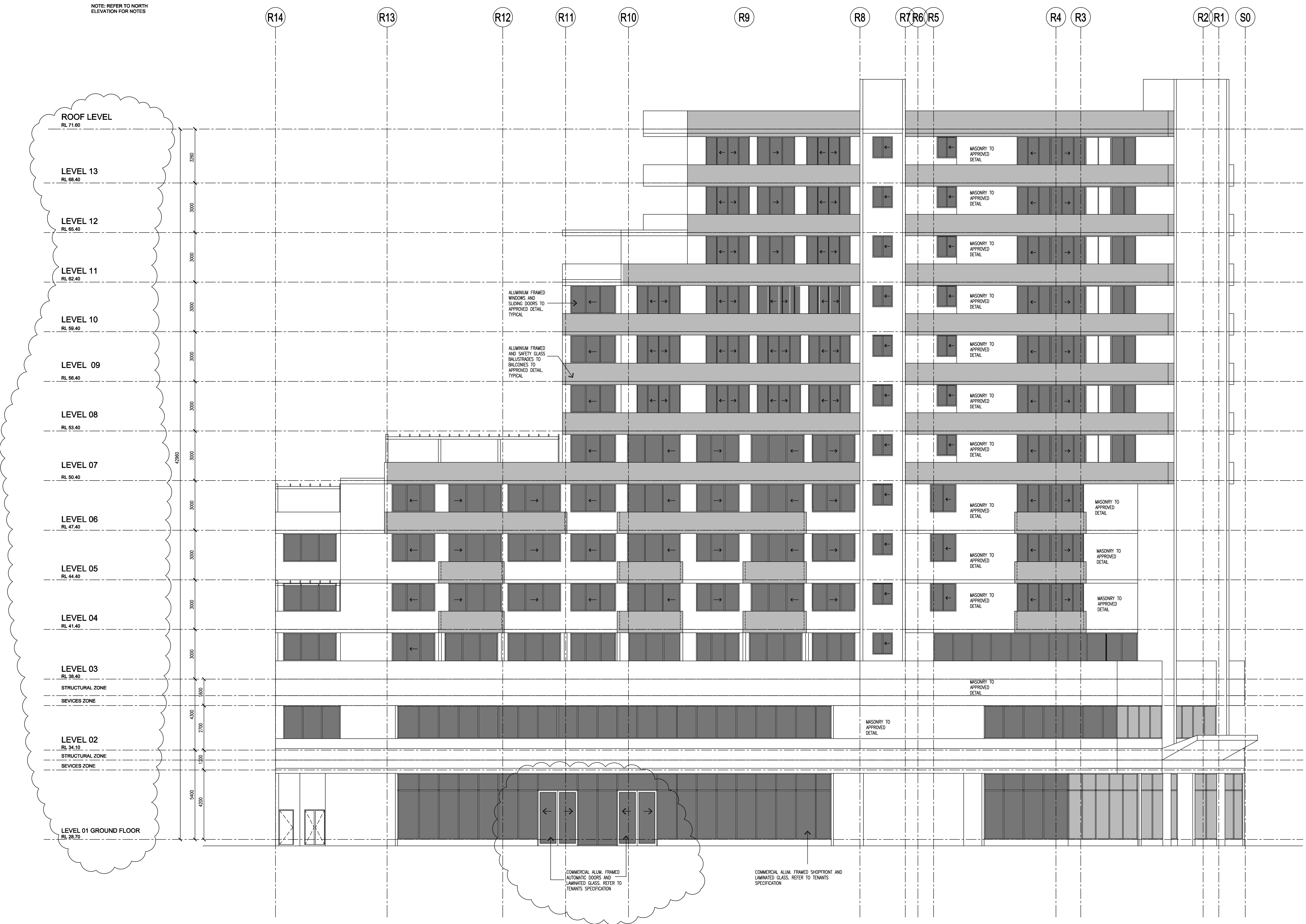
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JOB No

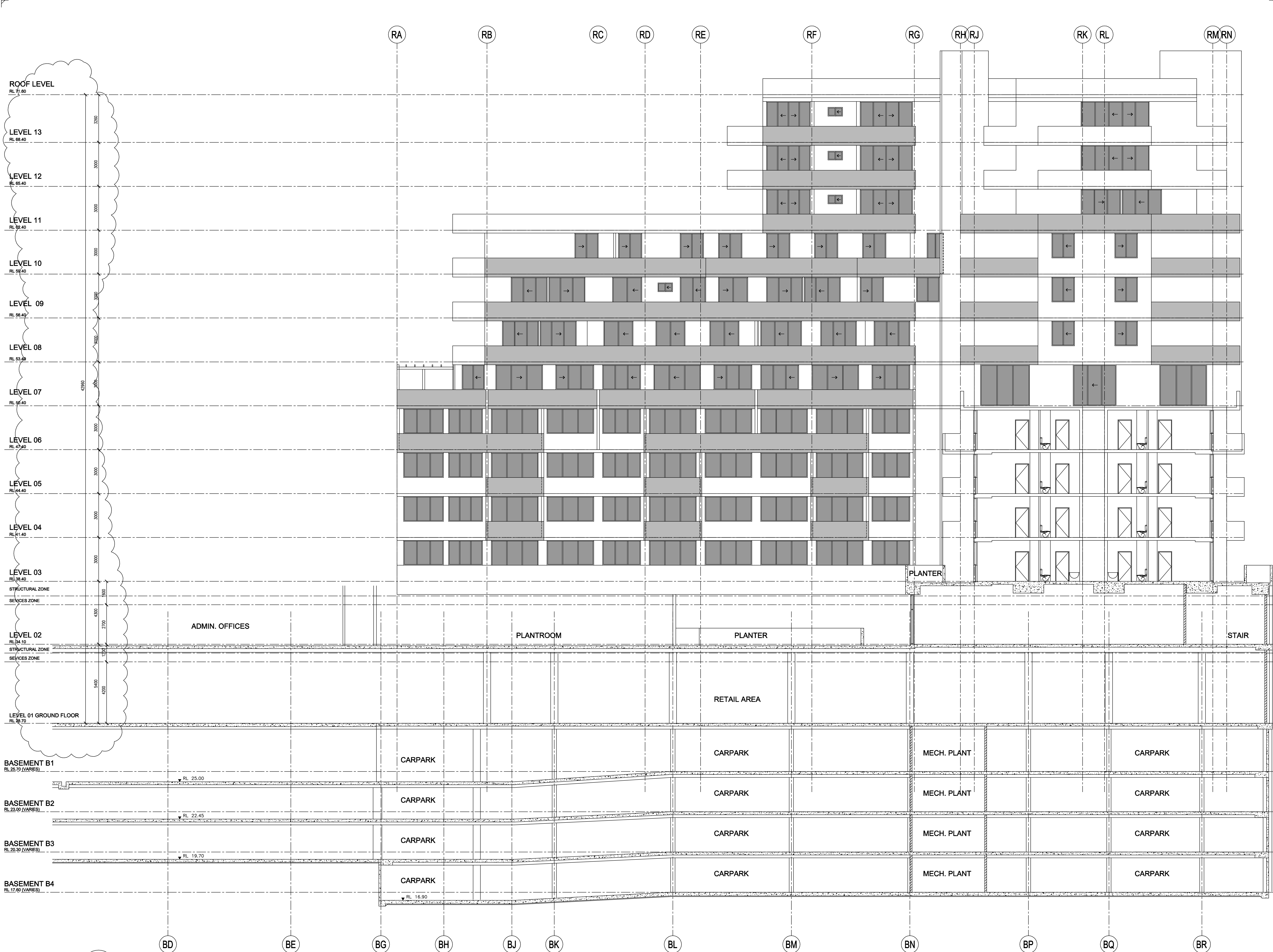
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STATUS

TD



01 EAST ELEVATION
ALONG HUME HIGHWAY



02 SECTION D
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DA DEVELOPMENT APPLICATION
CC CONSTRUCTION CERTIFICATE
TD TENDER DRAWING
MD WORKING DRAWING
AD AS BUILT

REV	AMENDMENTS	BY
1	11.05.07 - ISSUED FOR TENDER ADDENDUM	
A	17.05.07 - LEVELS REYSED, O/A HEIGHT OF BUILDING MAINTAINED	

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PROJECT

RETAIL - RESIDENTIAL DEVELOPMENT
311 HUME HIGHWAY cnr. HOXTON PARK RD- LIVERPOOL

DRAWING TITLE

SECTION D-D

DWG No

A.21

REV

A

SCALE

1:100

PLOT DATE

17.05.07

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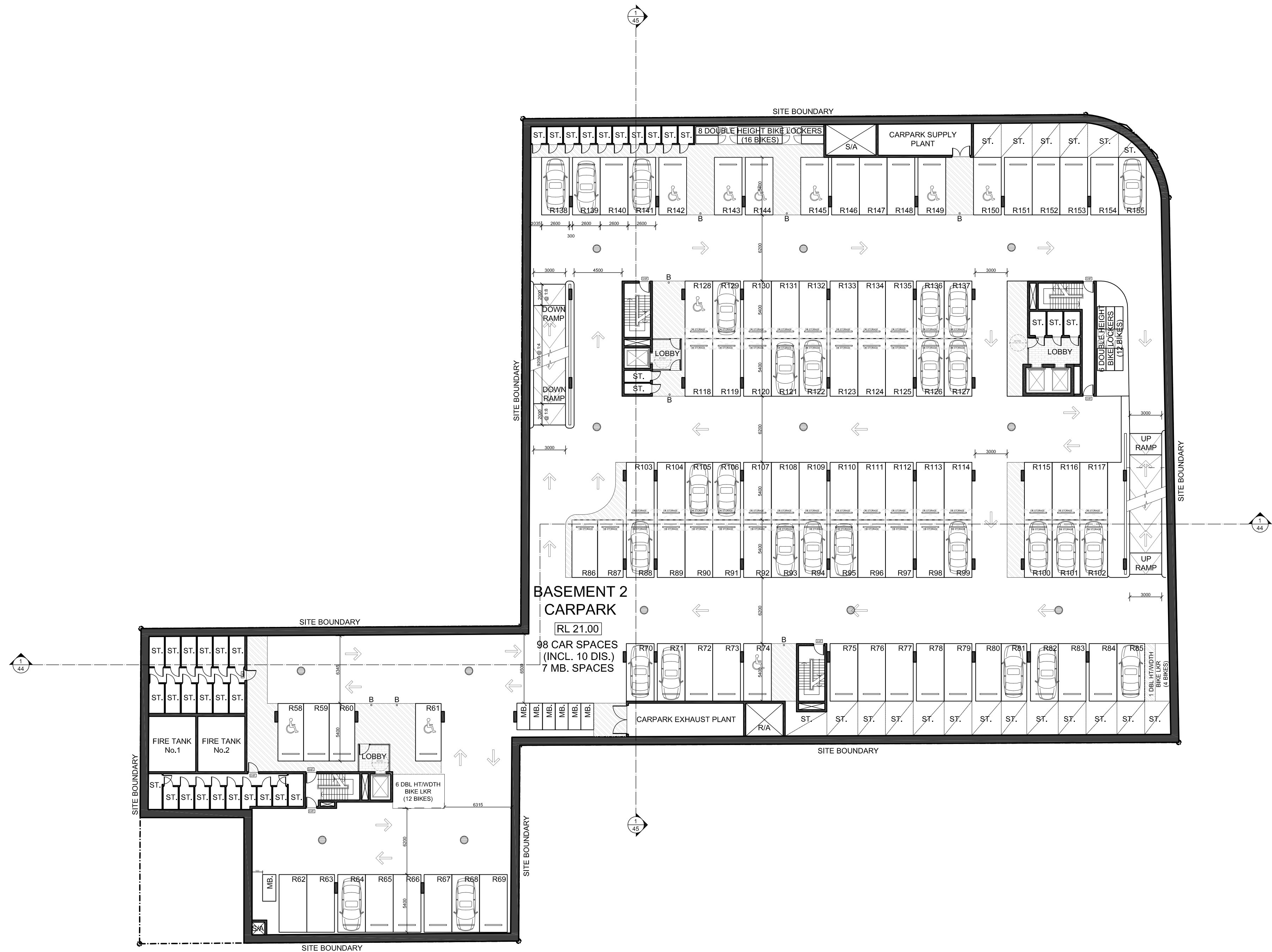
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STATUS

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Appendix B

PLANS OF ENVISAGED DEVELOPMENT



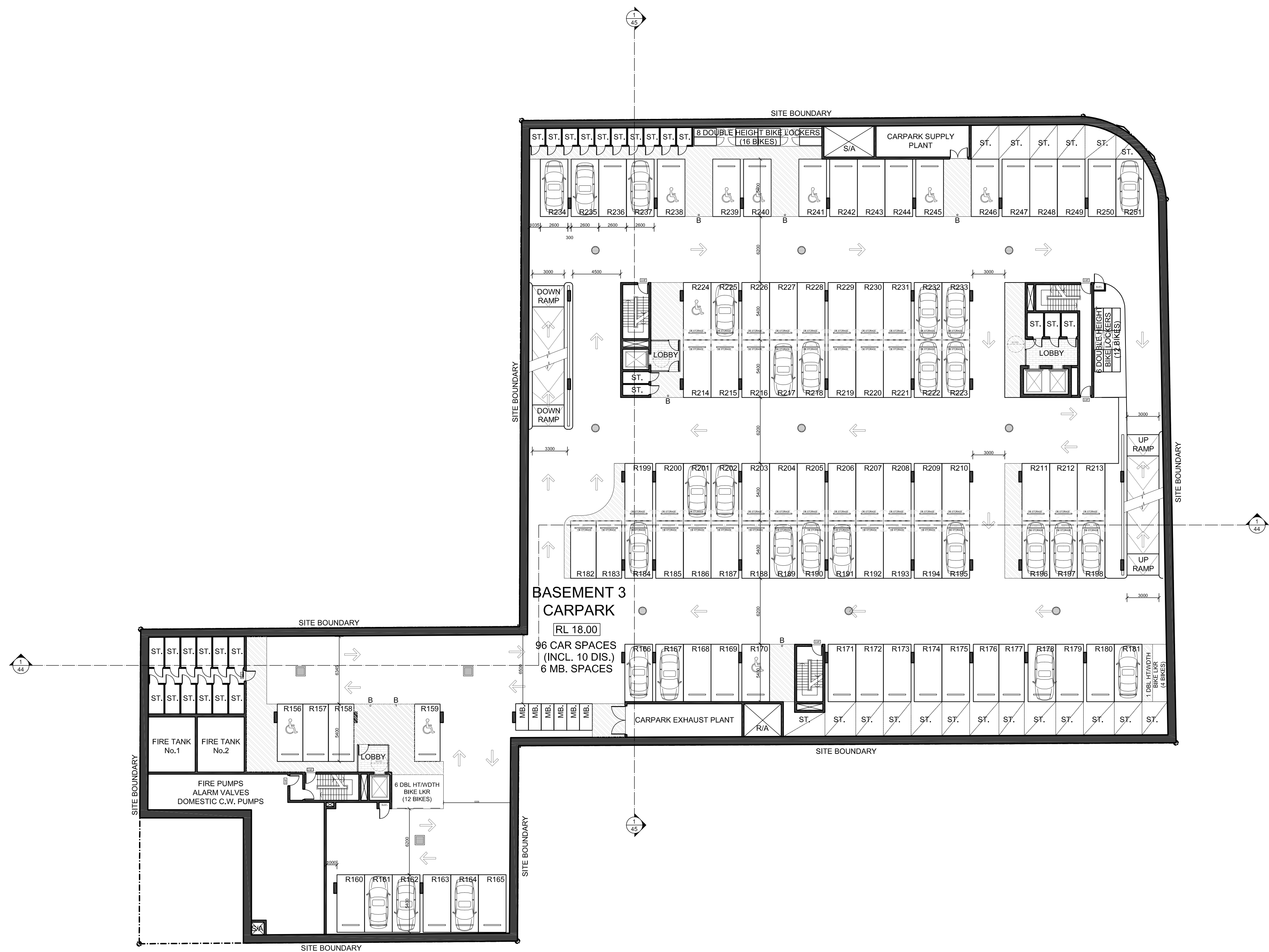
PLAN - BASEMENT LEVEL 2
1:250

DA ISSUE

REF.	DATE	AMENDMENT
I	23.06.2015	CONSULTANT ISSUE
J	17.07.2015	DA ISSUE

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PLAN - BASEMENT LEVEL 3
1:250

DA ISSUE

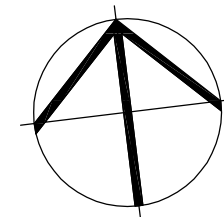
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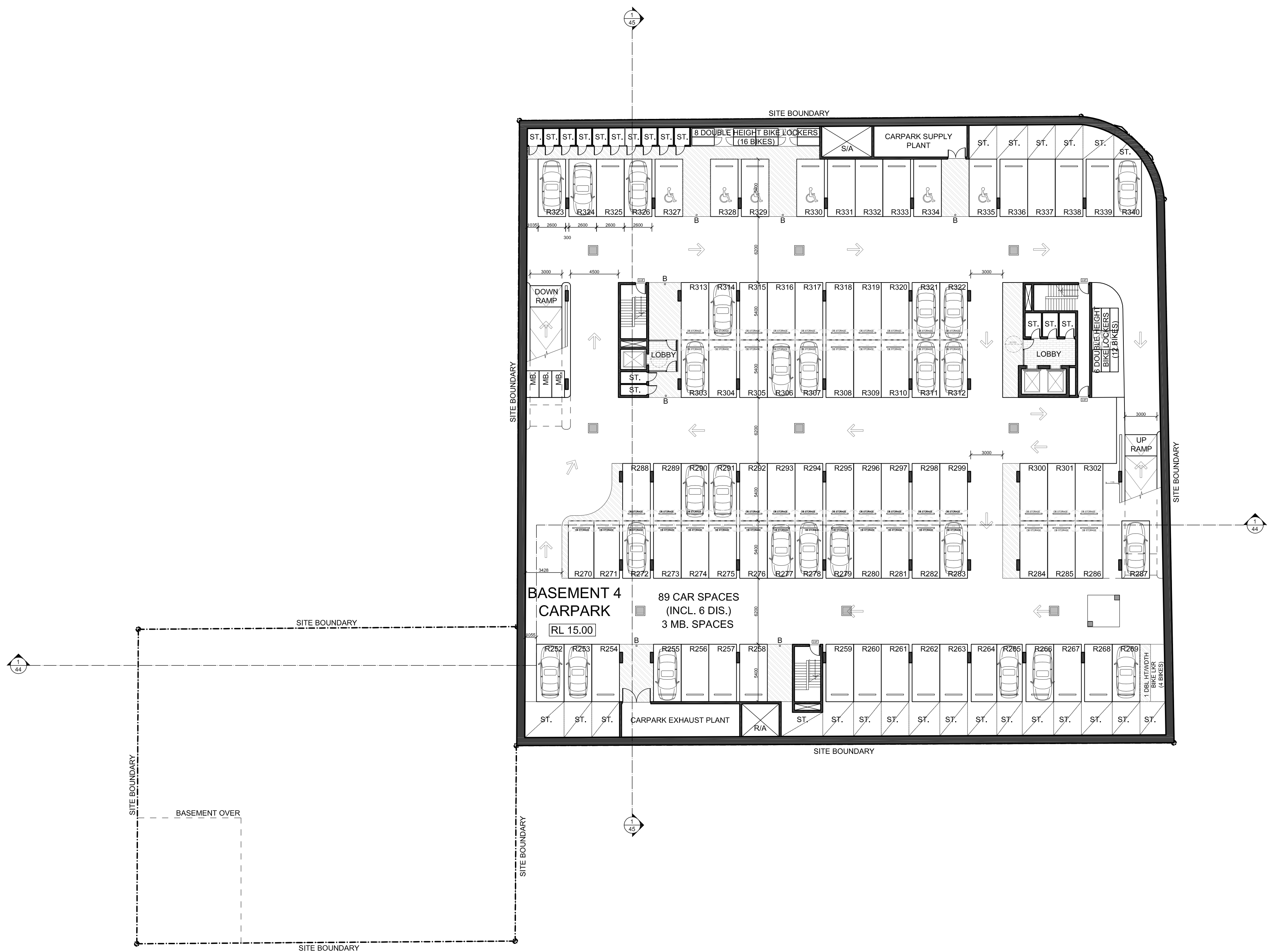
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CLIENT: HUME DEVELOPMENTS
MIXED USE DEVELOPMENT
ADDRESS: LOT NO. AND D.P.1004792
311 HUME HIGHWAY, LIVERPOOL
DRAWING NAME: PLAN - BASEMENT 3

DATE: DEC 14
DRAWN: SWG
SCALE: 1:250
QA:

PROJECT No. 1086
DWG No. 06-J



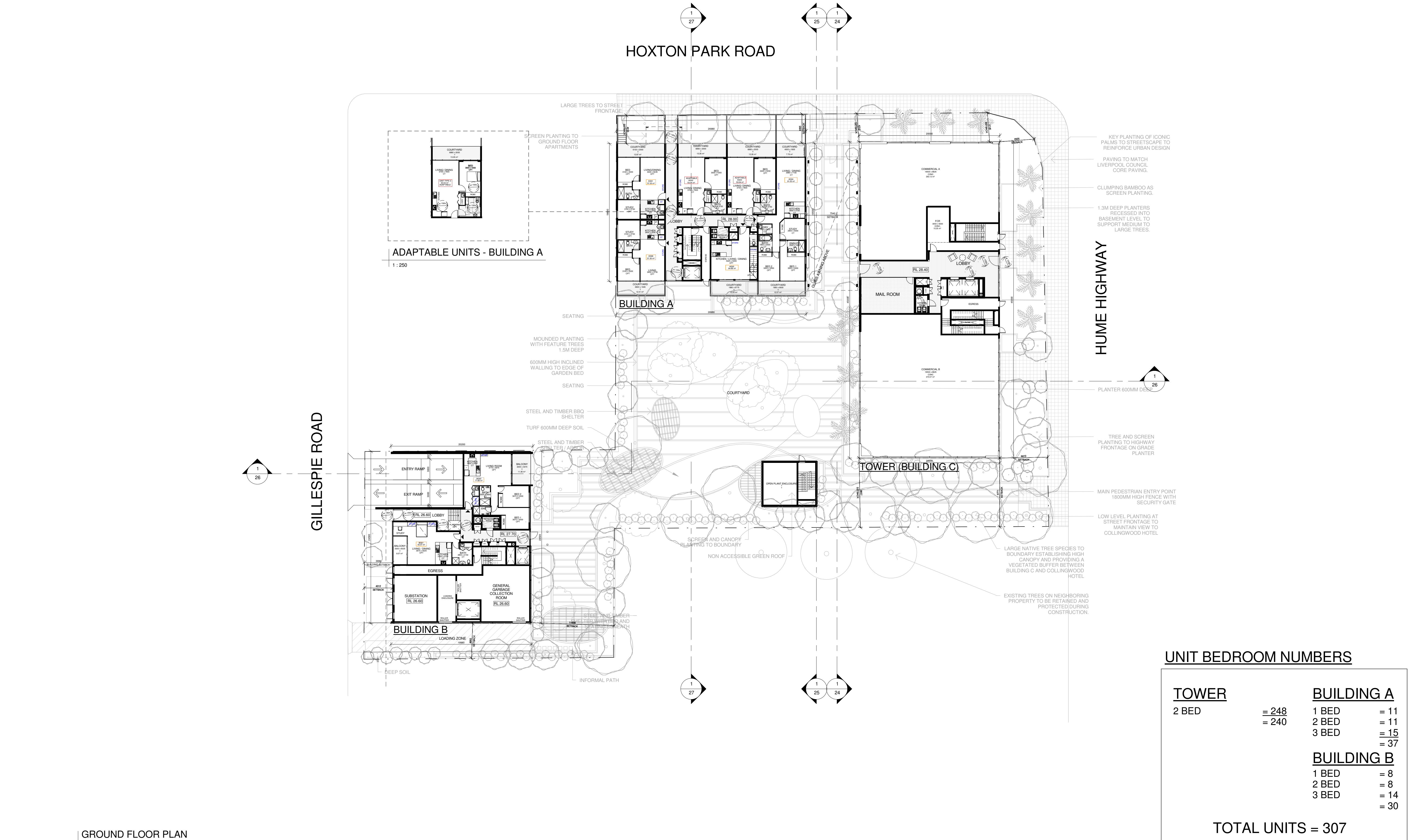
PLAN - BASEMENT LEVEL 4
1:250

REF.	DATE	AMENDMENT
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J	17.07.2015	DA ISSUE

DISCLAIMER

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					MIXED USE DEVELOPMENT	DRAWN:	SWG		
				ADDRESS:	LOT NO. AND D.P.1004792 311 HUME HIGHWAY, LIVERPOOL	SCALE:	1:250	DWG No.	07-J
				DRAWING NAME:	PLAN - BASEMENT 4	QA:			

DA ISSUE



GROUND FLOOR PLAN

1 : 250

UNIT BEDROOM NUMBERS

TOWER

2 BED = 248
= 240

BUILDING A

1 BED = 11
2 BED = 11
3 BED = 15
= 37

BUILDING B

1 BED = 8
2 BED = 8
3 BED = 14
= 30

TOTAL UNITS = 307

Appendix C

EXTRACTS FROM TRAFFIC REPORT



**PROPOSED RESIDENTIAL AND RETAIL
DEVELOPMENT CORNER HUME HIGHWAY
AND HOXTON PARK ROAD, LIVERPOOL**

**TRAFFIC AND PARKING
ASSESSMENT**

September 2002

Ref: 01.02.110

1. INTRODUCTION

This report has been prepared to accompany a development application to Liverpool City Council for a proposed residential and retail development located on the corner of Hume Highway and Hoxton Park Road, Liverpool. (Figure 1)

The development proposes a Coles shopping centre, 9 specialty shops, 4 offices and 124 residential units, comprising 96 x 2 and 28 x 3 bedroom units. Parking for 277 cars is proposed on 5 basement levels. Vehicle access to/from the development is to be via a shared entry/exit driveway off Gillespie Street.

This report examines the traffic and parking implications of the proposed development and will assess the:

- Adequacy of the off-street parking provision.
- The proposed access arrangements.
- Estimated traffic generation of the proposal.
- Impacts on the existing road network of the estimated traffic generation.
- Loading arrangements.

The supermarket and specialty shops have been the subject of a previous development application approval. This approval included the provision of Traffic Signals at the intersection of Hoxton Park Road and Gillespie Street. Recent correspondence with the Roads and Traffic Authority indicates that the traffic signals approval is still current.

therefore have less parking requirements.

The proposed development is located on the fringe of the Liverpool CBD midway between Liverpool Railway Station and the proposed Transitway Station adjacent Liverpool City Council. The development is approximately 960m from Liverpool Rail Station and 600m from the Transitway Station. Consequently, it is considered appropriate to use the RTA's car parking rates at this location.

Accordingly, the proposed residential development exceeds the RTA's suggested parking requirements with the provision of 277 off-street parking spaces.

LOADING FACILITIES

A loading dock is proposed for the sole use of the proposed supermarket (Coles) and is unchanged from the previously approved application. Access to the dock is via a separate driveway off Gillespie Street. The proposed loading dock is sufficient to cater for up to two (2) large rigid vehicles simultaneously. This number of docks is considered sufficient by Coles to adequately service the proposed supermarket.

An additional service vehicle dock is proposed directly off Hume Highway for the collection of refuse generated by the residential, shopping and office components of this development. The garbage collection will be by private contractor and due to the location on the highway will be carried out in the early hours of the morning prior to peak Clearway hours. In this regard the applicant has held discussions with contractors SITA who have provided details of their dock dimension requirements.

Notwithstanding, the previous approval of the supermarket loading docks, an assessment of the supermarket loading dock has been undertaken to determine if they are sufficient in size to enable a large rigid vehicle to manoeuvre on site and enter/exit in a forward direction. This assessment is achieved by overlaying the "*Australian Standard Off-Street parking - Part 2 - Commercial vehicle facilities, AS 2890.2 - 1989*" service area manoeuvring template upon the design plans. This procedure indicates that the subject vehicles can access the loading area from Gillespie Street and leave the site in a forward direction.

TRAFFIC

An estimation of the traffic generation of the proposed development can be calculated by again referring to the Roads and Traffic Authority's '*Guide to Traffic Generating Developments, Section 3 - Landuse Traffic Generation*' of December 1993. The guide specifies 0.24 peak hour vehicle trips per unit for high density residential flat buildings in Metropolitan Regional (CBD) Centres.

In addition the RTA guidelines provide the following evening peak hour generation formula for retail and commercial developments:

Shopping Centres

$$V(P) = 20 A(S) + 51 A(F) + 155 A(SM) + 46 A(SS) + 22 A(OM)$$

(vehicle trips per 1000m)

where:

- A(S):** Slow Trade gross leasable floor area (Gross Leasable Floor Area in square metres) includes major department stores such as David Jones and Grace Bros., furniture, electrical and whitegoods stores.
- A(F):** Faster Trade GLFA - includes discount department stores such as K-Mart and Target, together with larger specialist stores such as Fosseys.
- A(SM):** Supermarket GLFA - includes stores such as Franklins and large fruit markets.
- A(SS):** Specialty shops, secondary retail GLFA - includes speciality shops and take-away stores such as McDonalds. These stores are grouped as they tend to not be primary attractors to the centre.
- A(OM):** Office, medical GLFA: includes medical centres and general business offices.

Accordingly, the estimated residential traffic generation of this development calculates as:

$$124 \text{ units @ } 0.24 \text{ trips/unit} = 30 \text{ am \& pm peak hour trips}$$

And the commercial/retail component of the development calculates as:

$$\begin{aligned} V(P) &= 20 A(S) + 51 A(F) + 155 A(SM) + 46 A(SS) + 22 A(OM) \\ &\quad \text{(vehicle trips per 1000m}^2\text{)} \\ &= 20 A(S) + 51 A(F) + 155 (2419\text{m}^2) + 46 (616.5\text{m}^2) + 22 (798.2\text{m}^2)/1000\text{m}^2 \\ &= 374.9 + 28.4 + 17.6 \\ &= 421 \text{ evening peak hour vehicle trips} \end{aligned}$$

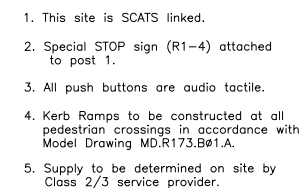
As the RTA does not provide a morning peak hour traffic generation, it will be assumed that the office, shop and 10% of the supermarket (estimated morning staff) component of the evening peak hour traffic generation will approach the site in the morning peak hour.

Accordingly, the estimated potential traffic generation of the proposed development is 113 morning and 451 evening peak hour trips.

Appendix D

INTERSECTION PLAN

PROPOSED



POST	TYPE	LENGTH	REMARKS
1	2	4.1	New
2	2	4.1	New
3	5XL	—	New
4	2	4.1	New
5	5XL	—	New
6	2	3.2	New