



PARKING & TRAFFIC

CONSULTANTS

Driving success through valuable advice

46-50 Hoxton Park Road, Liverpool

For Hoxten Pty Ltd

c/o

Ghazi Al Ali Architects

Traffic and Parking Assessment

For the attention of: Fabrizio Ceruti

2 October 2015



Document Control

Our Reference: T2-1484, 46-50 Hoxton Park Road, Liverpool, Traffic and Parking Assessment

ISSUE	DATE	ISSUE DETAILS	AUTHOR	REVIEWED
1	29/09/15	Draft Issue	C. Saunders	S. Wellman
2	02/10/15	Final Issue	C. Saunders	S. Wellman
3				

Contact

Chris Saunders
02-89200800
0410 744 819
Chris.saunders@parkingconsultants.com

COMMERCIAL IN CONFIDENCE

The information contained in this document, including any intellectual property rights arising from designs developed and documents created, is confidential and proprietary to Parking & Traffic Consultants (PTC).

This document may only be used by the person/organisation to whom it is addressed for the stated purpose for which it is provided and must not be imparted to or reproduced, in whole or in part, by any third person without the prior written approval of a PTC authorised representative. PTC reserves all legal rights and remedies in relation to any infringement of its rights in respect of its intellectual property and/or confidential information.

© 2015

PARKING & TRAFFIC CONSULTANTS
Suite 102, 506 Miller Street
Camberay NSW 2062

Ph. +61 2 8920 0800
Fax +61 2 8076 8665

Suite 406, 838 Collins Street
Docklands VIC 3008

Ph. +61 3 9020 7333

Contents

1	Introduction	1
1.1	Project Summary.....	1
1.2	Purpose of this Report.....	2
2	Proposal	3
2.1	Development Site.....	3
2.2	Development Proposal	4
3	Existing Transport Facilities	5
3.1	Road Hierarchy	5
3.2	Public Transport.....	6
3.3	Bicycle Network.....	7
3.4	Existing Traffic Generation.....	8
4	Development Traffic Assessment	9
4.1	Traffic Generation.....	9
5	Car Parking Provision.....	10
5.1	Planning Policy Requirements.....	10
5.2	Proposed Parking Provision.....	10
5.3	Site Servicing.....	10
6	Access and Car park Assessment.....	11
6.1	Vehicular Access.....	11
6.2	Sight Distance.....	11
6.3	Car park Arrangement.....	11
7	Summary	12
	Attachment 1 Architectural Plans.....	13
	Attachment 2 Car Park Review & Turning Path Assessment	14
	Attachment 3 – Vehicle Profiles	15
	Figure 1 – Site Location.....	1
	Figure 2 – The Site (Aerial)	3
	Figure 3 –Road hierarchy (Source: RMS Road Hierarchy Review)	5
	Figure 4 – Access to local Train Station.....	6
	Figure 5 – Access to local Bus Services.....	7
	Figure 6 – Liverpool City Council Cycleways (extract, Source Liverpool City Council Bike Plan, 2009).....	8
	Table 1 - Existing Traffic Generation.....	8
	Table 2 - Proposed Traffic Generation.....	9
	Table 3 - Parking Provisions.....	10

1 Introduction

1.1 Project Summary

Parking and Traffic Consultants (PTC) have been engaged by Ghazi Al Ali Architects to prepare a Traffic and Parking Assessment to accompany a Development Application to Liverpool City Council for the construction of a building accommodating 30 affordable housing apartments at 46-50 Hoxton Park Road, Liverpool.

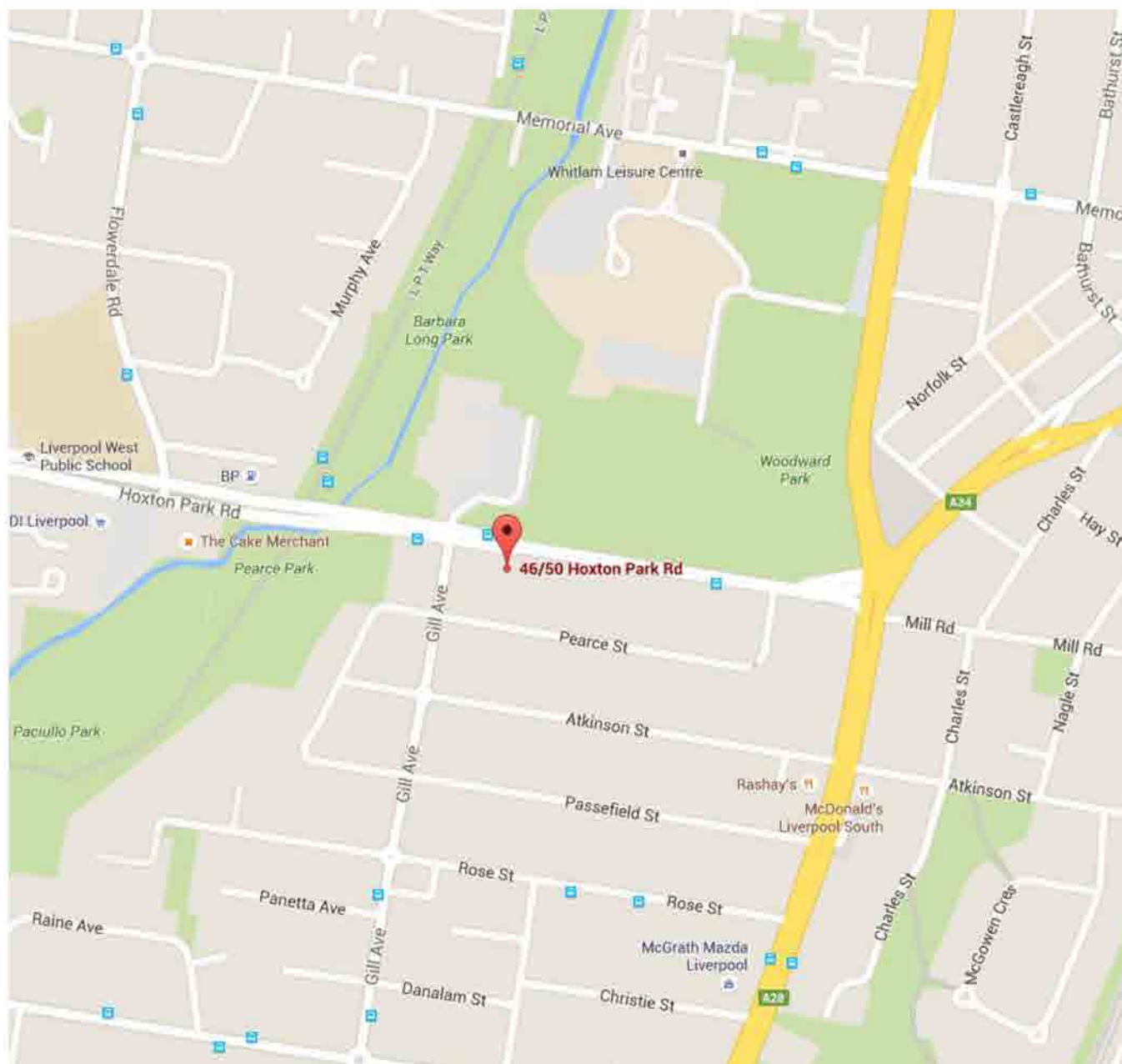


Figure 1 – Site Location

1.2 Purpose of this Report

This report presents the following considerations in relation to the Traffic and Parking assessment of the Proposal:

- Section 2 - A description of the project,
- Section 3 - A description of the road network serving the development property,
- Section 4 - Determination of the traffic activity associated with the development proposal, and the adequacy of the surrounding road network,
- Section 5 - Assessment of the proposed parking provision in the context of the relevant planning control requirements,
- Section 5 - Assessment of the proposed car park, vehicular access and internal circulation arrangements in relation to compliance with the relevant standards, and
- Section 6 - Conclusion

2 Proposal

2.1 Development Site

The site is located on the southern side of Hoxton Park Road, where the proposed access point is located approximately 90 meters east of the signalised intersection of Hoxton Park Road and Gill Avenue, in the suburb of Liverpool. The property has a 40m frontage along Hoxton Park Road and a site area of approximately 1585m² and is situated in a high density residential area of the suburb.

The site is currently occupied by 2 residential properties;

- 46 Hoxton Park Road (Lot 103 DP 594256), a single storey domestic property, accessed by a 3.5m wide driveway,
- 50 Hoxton Park Road (Lot 9 DP 26897), a single storey domestic property, accessed by a 3.0m wide driveway.



Figure 2 – The Site (Aerial)

2.2 Development Proposal

The development proposal involves the construction of a 5 storey building accommodating 30 affordable housing residential apartments, with a unit split of;

- 5 one bedroom dwellings;
- 23 two bedroom dwellings; and
- 2 three bedroom dwellings.

The proposal also involves an on-site parking provision of 29 car parking spaces located in a basement level car park, in addition to a service bay. As with the existing situation, it is proposed that servicing of the building will be undertaken on street via Hoxton Park Road.

As part of the proposal, all vehicular access to the site will be provided via a 7 metre wide driveway leading to an access ramp down to the basement car parking. The driveway is to be located in line with the existing driveway access into 46 Hoxton Park Road. The proposal will allow the removal of existing driveway accessing 50 Hoxton Park Road, thus removing a potential conflict point on Hoxton Park Road and improving the safety of the site.

Details of the proposal are presented on the architectural drawings prepared by Ghazi Al Ali and are included in **Attachment 1**.

3 Existing Transport Facilities

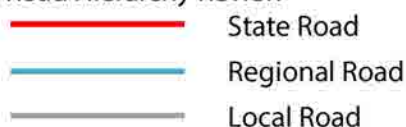
3.1 Road Hierarchy

The subject development site is located in the suburb of Liverpool and is serviced by Hoxton Park Road. The road network servicing the area comprises of a number of State Roads, making the site easily accessible from different regions of the metropolitan area. The road network in this area also comprises of local streets providing direct access to the surrounding retail, commercial and residential land-use.



Figure 3 –Road hierarchy (Source: RMS Road Hierarchy Review)

Source: RTA Road Hierarchy Review



The NSW administrative road hierarchy comprises the following road classifications, which align with the generic road hierarchy as follows:

- State Roads - Freeways and Primary Arterials (RMS Managed)
- Regional Roads - Secondary or sub arterials (Council Managed, Part funded by the State)
- Local Roads - Collector and local access roads (Council Managed)

The road network serving the site includes:

Hoxton Park Road, which is classified as a state road and within the vicinity of the development site and the carriageway carries two lanes of traffic in each direction. A 24 hour no stopping restriction is in place along Hoxton Park Road and it has a posted speed limit of 50km/hr.

3.2 Public Transport

The development site is well serviced by both trains and buses.

Trains - the site is located at a distance of approximately 1.5 KM from Liverpool Rail Station

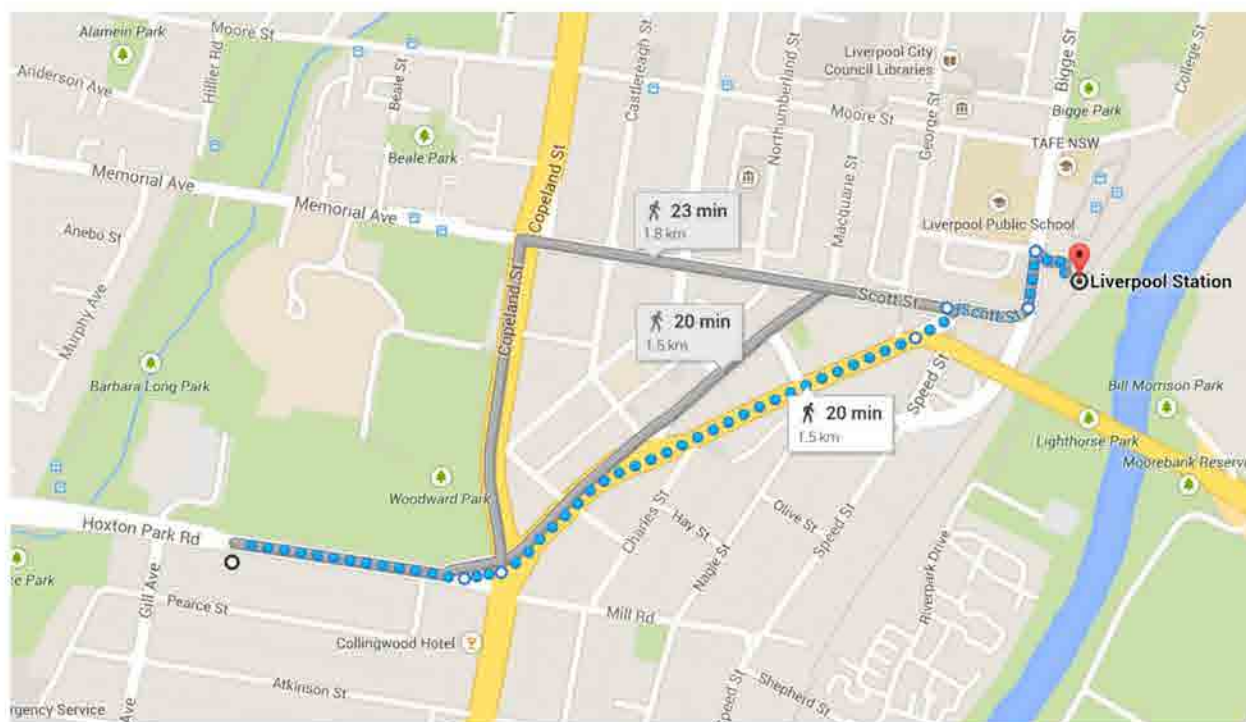


Figure 4 – Access to local Train Station

Liverpool Station is operated by Sydney Trains and operates services on the Northern line (T1), Western Line (T1) and Inner West & South Line (T2) and are summarised in the following:

- **T2 Inner West and South Line:** Services operate between Campbelltown and the City (via Granville) approximately every 30 minutes between 4.00am and 11.45pm, with additional services during peak periods.
- **T3 Bankstown Line:** Services operate between Liverpool and the City (via Bankstown) approximately every 30 minutes between 4.30am and 11.15pm, with additional services during peak periods.
- **T5 Cumberland Line:** Services operate between Schofields and Campbelltown approximately every 30 minutes between 7.15am and 7.15pm.

Buses- the site is well serviced by buses that operate from the 2 bus stops in close proximity to the site;

- Brickmakers T Way Station to Liverpool
- Brickmakers T Way Station to Parramatta

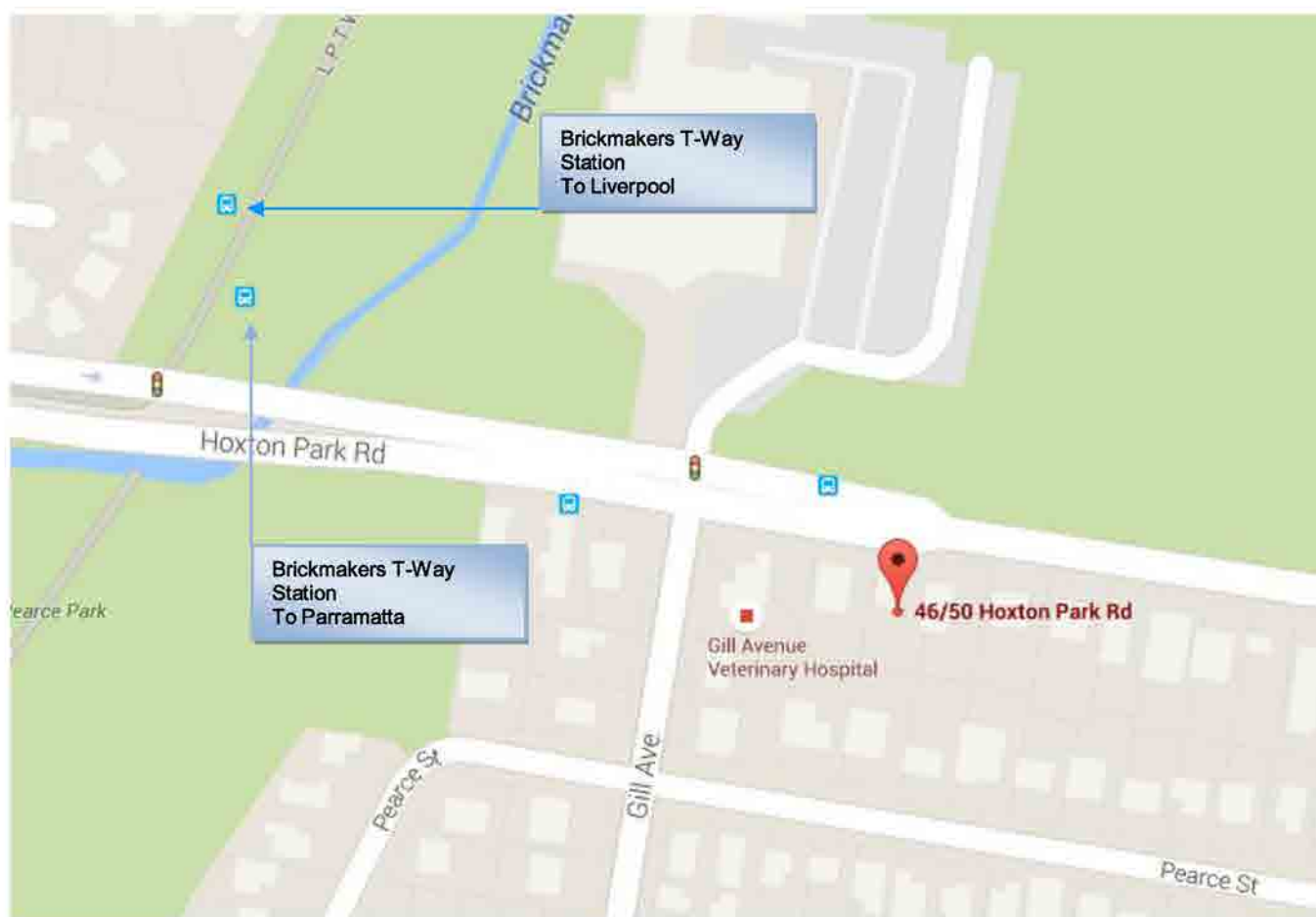


Figure 5 – Access to local Bus Services

These services are summarised in the following:

- **Route 854:** (operated by Interline Bus Service) This service operates between Carnes Hill and Liverpool and runs approximately every 60 minutes between 04.50 and 20.30, with additional services at peak times.
- **Route T80:** (operated by Transit Systems Sydney) This service operates between Parramatta and Liverpool (via T-Way) and runs approximately every 15 minutes between 04.45 and 00.30

3.3 Bicycle Network

Liverpool City Council has prepared a bike plan to encourage cycling as a preferred transport choice for the residents, workers and visitors. The plan identifies a number of on and off-road cycle paths and establishes a practical program for cycling infrastructure. The site is serviced by designated off road cycle route on Hoxton Park Road, which connects to the wider cycle network.

There are also a large number of proposed cycle routes within the vicinity of the site, which will provide further connectivity to the greater cycle network within the Liverpool City area.

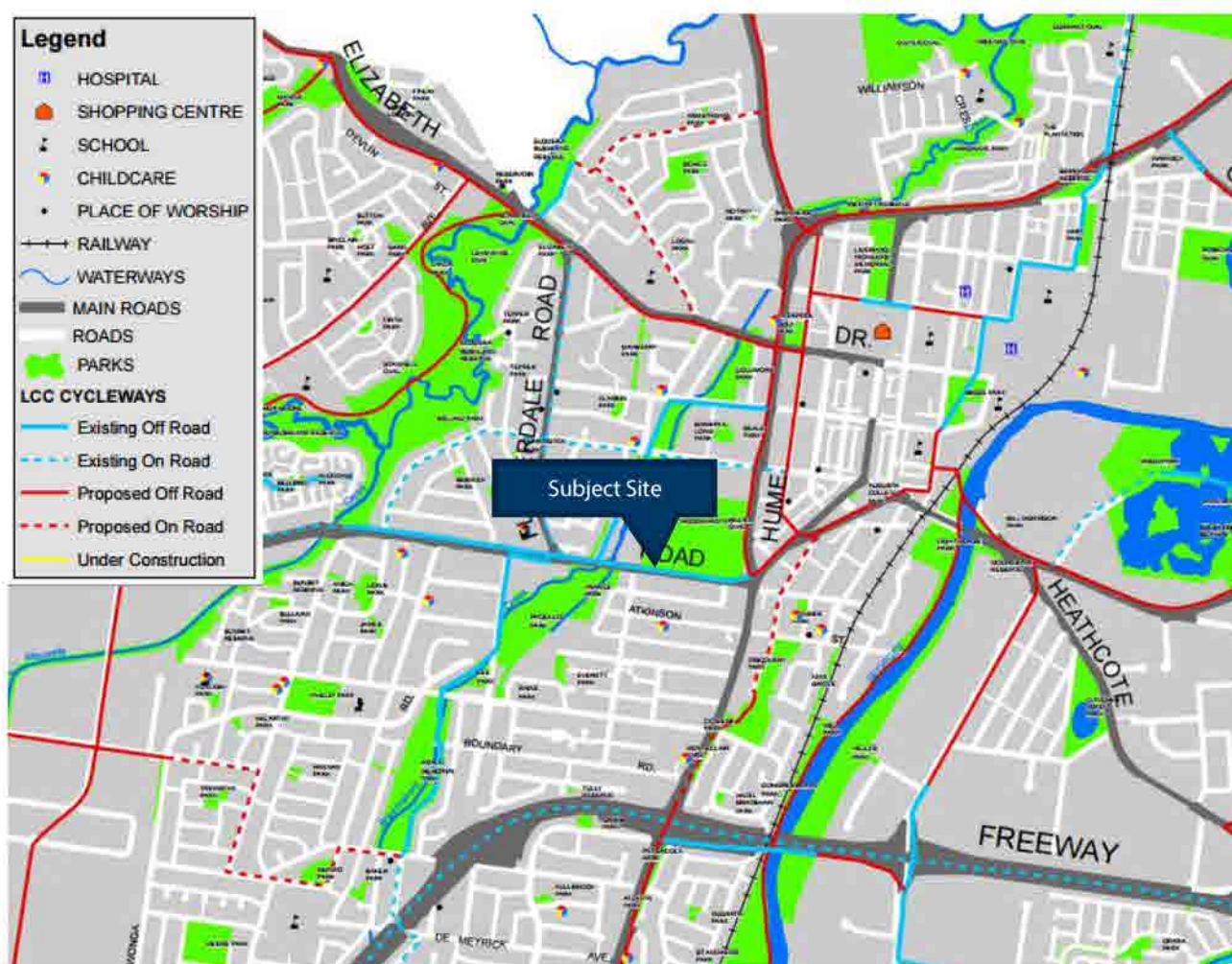


Figure 6 – Liverpool City Council Cycleways (extract, Source Liverpool City Council Bike Plan, 2009)

3.4 Existing Traffic Generation

The development is proposed on a site which currently operates as two residential properties and generates traffic activity. According to Section 3.3.1 of the RMS Guide to Traffic Generating Development (the guide), the traffic generation rates for the existing land-use and the resulting vehicular trip generated from these uses are shown in Table below:

Table 1 - Existing Traffic Generation

Period	Rate	Dwelling	Total
AM Peak Trips	0.95 / dwelling	2	2 (1.9)
PM Peak Trips	0.99 / dwelling	2	2 (1.98)
Daily Trips	10.7 / dwelling	2	21 (21.4)

In this regard we have concluded that the site currently generates 2 vehicle movements in the AM and PM peaks respectively.

4 Development Traffic Assessment

4.1 Traffic Generation

The traffic generation of the proposed development has been established with reference to Technical Direction 13/04, which serves as an update to the RTA's Guide to Traffic Generating Developments, presents the traffic generation rates for a number of land uses based on the surveys undertaken more recently.

The proposed development is designated as residential use, comprising 30 residential units. The guide provides traffic generation high density residential sites based on trips per unit and trips per parking space and the traffic generation for the peak hour vehicle trips have been based on the parking provision.

The traffic generation rates for the high-density residential land use are shown in Table below:

Table 2 - Proposed Traffic Generation

Period	Rate	Units	Total	Net Generation *
AM Peak Trips	0.19 / Unit	30	6 (5.7)	4
PM Peak Trips	0.15 / Unit	30	5 (4.5)	3
Daily Trips	1.52 / Unit	30	46 (45.6)	25

**Difference between existing and proposed trips estimates (See Section 3.4)*

The data indicates that the projected peak hour generation of vehicles resulting from the proposed project will generate a net increase of 4 trips during the AM peak hours and 3 trips during the PM peak hours.

This increase in trip volumes is considered minor, such that intersection modelling would not show any notable difference in the results and at that level. The change in the pre and post-development traffic scenarios would be similar to the daily variation in the traffic volumes.

It should also be noted that that the development reduces the number of driveways accessing onto Hoxton Park Road, removing a potential conflict point and therefore improving the overall safety on Hoxton Park Road.

In this regard, the development proposal will not cause any detrimental impact on the operation of the road network in the context of the existing traffic activity.

5 Car Parking Provision

5.1 Planning Policy Requirements

The parking provision for the development has been established with reference to the requirements presented in State Environmental Planning Policy Affordable Rental Housing 2009 (AHSEPP).

In accordance with the SEPP the relevant residential parking requirements are as follows:

- 0.5 spaces per 1 bedroom dwelling;
- 1.0 spaces per 2 bedroom dwelling; and
- 1.5 spaces per 3 bedroom dwelling.

5.2 Proposed Parking Provision

The proposed development will accommodate 30 units and the proposed parking provision has been calculated in relation to each type of unit.

Table 3 - Parking Provisions

Unit Split				SEPP Rate (Min)	Minimum Allowable Spaces
One bedroom	5	units	@	0.5 spaces per unit	2.5
Two Bedroom	23	units	@	1.0 spaces per unit	23
Three Bedroom	2	units	@	1.5 spaces per unit	3
Minimum Residential Spaces					29 (28.5)
Total On-Site Parking Spaces Provided					29

The proposed parking provision has been determined based on a number of factors including the size of the car park area and the location of the site in relation to public transport. The proposed provision is compliant with the requirements of the SEPP which stipulates a minimum provision of spaces.

5.3 Site Servicing

A loading bay has been provided, designed to the requirements of AS2890.1 (Section 4.10), which stipulates a minimum width of 0.5m greater than the standard space for the relevant user class, i.e. 2.9m wide. The proposed bay is 3.9m wide, and has been demonstrated to accommodate up to car derived vans (see **Attachment 3**)

6 Access and Car park Assessment

6.1 Vehicular Access

The proposal involves construction of a new driveway in-line with the existing (western) driveway. The proposed driveway will have a width of 7m metres which is sufficient to accommodate two-way traffic flow and provide safe access to vehicles.

According AS2890.1, Section 3.2, the access facility can be categorised as a Category 2 access facility with allowable driveway width from 6.0 and 9.0 metres. The proposed width of the driveway of 7 metres is therefore compliant with the standards.

6.2 Sight Distance

The sight distance requirements are described in Section 3.2 of AS2890.1 and are prescribed on the basis of the sign posted speed limit or 85th percentile vehicle speeds along the frontage road.

Hoxton Park Road has a posted speed limit of 60kph, which requires a desirable visibility distance of 83 metres and a minimum distance of 65 metres. Observations of the traffic movements along Hoxton Park Road indicate that 60kph speed limit is adhered to. The proposed driveway will be located in a location where sufficient sight distance is provided and is consistent with the existing driveway and other existing driveways along Hoxton Park Road. Also, the removal of the existing eastern driveway eliminates a potential conflict point on Hoxton Park Road, therefore improving the overall situation.

6.3 Car park Arrangement

The car park access arrangement, internal circulation and parking arrangements have been designed in accordance with the requirements of Section 2 of AS2890.1.

Table 1.1 of AS2890.1 presents a number of classifications applicable to different land-uses. According to the Table, the most appropriate car park classification applicable to the subject car park will be a Class 1A facility, which is suitable for "Residential, domestic and employee parking".

The parking space dimensions and associated aisle widths for each classification are presented in Table 2.2, and accordingly, a Class 1A facility requires parking space dimensions of 2.4 x 5.4 metres with an access aisle width of 5.8 metres. The proposed car park has been designed to provide compliant parking space widths of 2.4 metres and an aisle width of 5.9 metres, which exceeds the minimum requirement. A height clearance of 3m is indicated within the basement, exceeding the minimum requirement of 2.2m – no ancillary components (plumbing, sprinkler heads, etc) shall reducing height clearance to below 2.2m, or 2.5m where above accessible bays. An assessment of all elements of the car park has been undertaken including column locations, aisle extensions and ramp grades and in this regard, the car park design complies with the requirements of AS2890.1.

Included in the car park arrangements is the provision of 3 accessible spaces. These spaces have been assessed against the requirements of Section 2 of AS 2890.6 'Off Street Parking for People with Disabilities'. The standard requires parking space dimensions of 2.4 x 5.4 metres with a shared space of 2.4 metres width between spaces. An exception to this is proposed, whereby the accessible space '18' uses the adjacent aisle as the shared space. This arrangement is to be assessed by an accredited accessibility consultant.

7 Summary

In summary, the proposed development comprises the construction of 30 affordable housing units, with a split of 5 one bedroom units, 23 two bedroom units and 2 three bedroom units.

The assessment of traffic activity has established that the development will be comparable with the existing use of the site. Furthermore, the traffic generated from the site is unlikely to have any detrimental impact on the overall performance of the surrounding road network.

The parking provision for 29 car spaces is considered to be suitable in the context of the AHSEPP requirements and is unlikely to increase the demand for on-street parking.

The car parking, internal circulation and vehicular access arrangements have been designed in accordance with the relevant standards, being AS2890 Parts 1 & 6 having regard for geometry and safety. The accessible Space 18 will require certification by an accessibility consultant to ensure that the design is to the intensions of AS2890.6. The proposal also reduces the number of driveway access points from the site onto the surrounding road network, therefore reducing potential vehicle / pedestrian conflict points.

Attachment 1 Architectural Plans

External Walls: Rendered Cavity brick (NO INSUL) -medium colour - SEE TABLE FOR EXCEPTIONS

Internal Walls:

-Plasterboard on studs (no insul.)

-Party/corridor walls: 70mm AAC x2 with 13mm PB both sides plus R1.0 insulation in centre

Windows: Aluminium DG Air Fill High Solar Gain low-E -Clear: U = 4.30; SHGC = 0.53

Roof: concrete tiled surface (medium colour) - no insulation - SEE TABLE FOR EXCEPTIONS

Ceiling: Plasterboard + no Insulation.

Floor: Concrete slab: no insulation - SEE TABLE FOR EXCEPTIONS

Floor Covering: Ceramic tiles in wet areas and carpet elsewhere.

Wall Exhaust fans: must be sealed

Units Additional Insulation

G01 R1.0 insulation in floor

G02 R1.0 insulation in floor

G03 R1.0 insulation in floor

G04 R1.0 insulation in floor + R1.0 Insul. in external walls

G05 R1.0 insulation in floor

G06 R2.0 insulation in floor + R2.0 in roof below tiled surface.

103 R1.0 insulation in floor

104 R1.0 insulation in floor

107 R1.0 insulation in floor

201 R2.0 in roof below walking surface

204 R2.0 in roof below walking surface

205 R2.0 in roof below walking surface

207 R2.0 in roof below walking surface

401 R2.0 insulation in roof

402 R2.0 insulation in roof

403 R2.0 insulation in roof

404 R2.0 insulation in roof

405 R2.0 insulation in roof + R1.0 in floor above 'open air'

SCALE 1:200

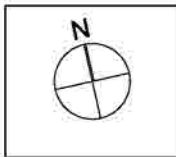


FOR DA PURPOSES ONLY NOT FOR CONSTRUCTION
DA

Drawing Original Size A3

Issue	Date	Description
A	28/10/2015	DA

© COPYRIGHT
DO NOT SCALE DWGS. USE
DIMENSIONS ONLY. REFER
ANY DISCREPANCIES TO
ARCHITECT PRIOR TO
CONSTRUCTION.
THESE DRAWINGS ARE
SUBJECT TO COPYRIGHT.



ACCESS:
BUILDING INNOVATIONS
AUSTRALIA
MARDIROS
450278007
QUANTITY SURVEY:
MIMDCC
MICHAEL DAKHOL
9033 9223

TRAFFIC:
PARKING & TRAFFIC
CONSULTANTS
STEVE WELLMAN
8920 0800
BASIX:
SUSTAINABLE THERMAL
SOLUTIONS
BRUCE CARR
0458 140 590

ACOUSTIC:
ACOUSTIC CONSULTING
DAN DANG
8008 5550
GEOTECHNICAL:
GEO-ENVIRONMENTAL
ENGINEERING
STEPHEN MCCORMACK
1300 197 538

HYDRAULIC:
SBC
SAM HADDAD
2 9502 4388
LANDSCAPING:
LANDSCAPE ARCHITECTS
MICHAEL SHU
9567 9533

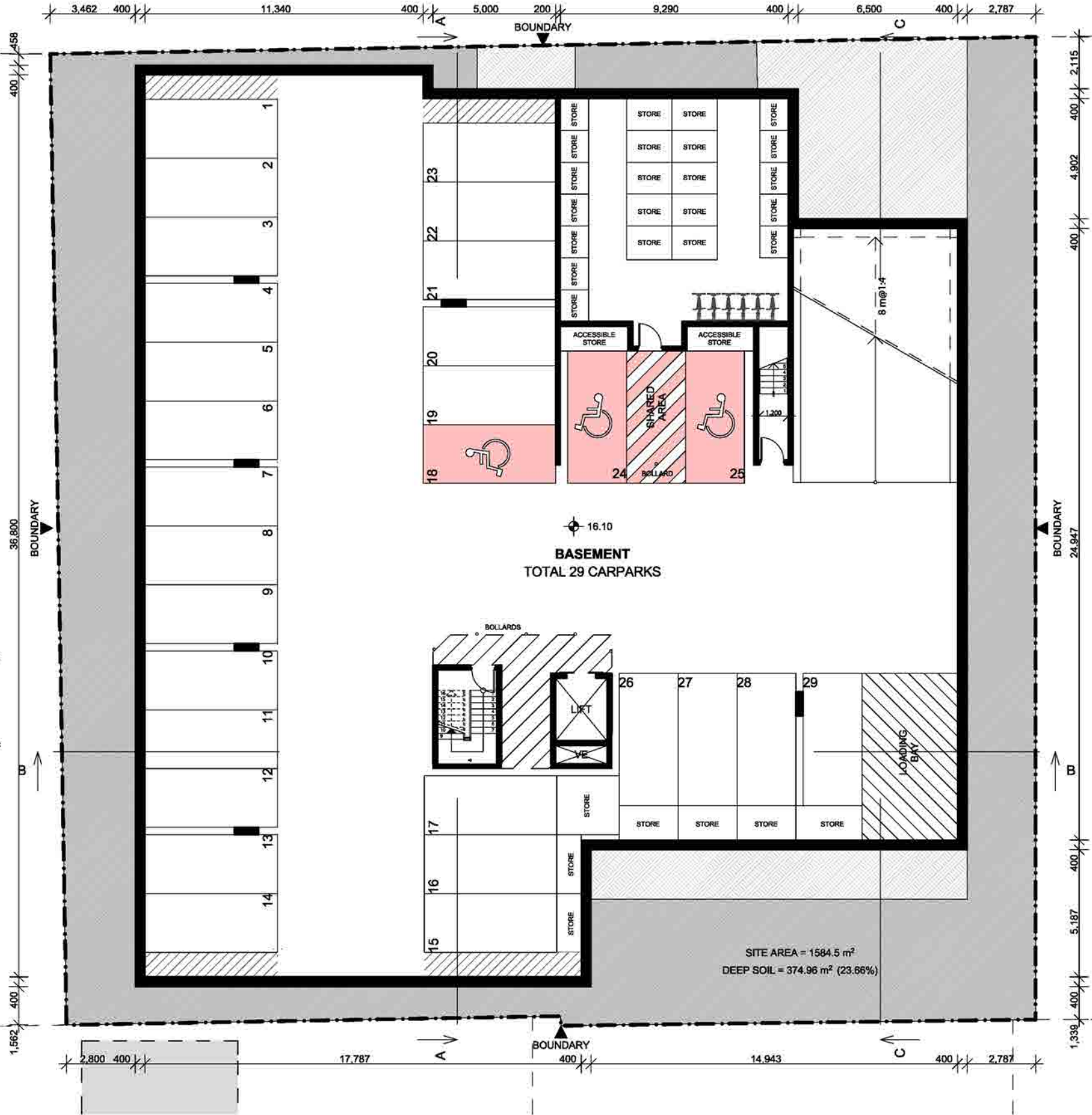
BCA:
BUILDING INNOVATIONS
AUSTRALIA
MARDIROS
450278007

PLANNING:
WILLANA
STUART HARDING
9398 5500

ARCHITECT:
GHAZI AL ALI
ARCHITECT
T: +612 8060 1544 | E: office@ghazia.com
ACN: 67197131948
UNIT 2H,
6-13 REEDMYRE RD, STRATHFIELD, NSW 2155

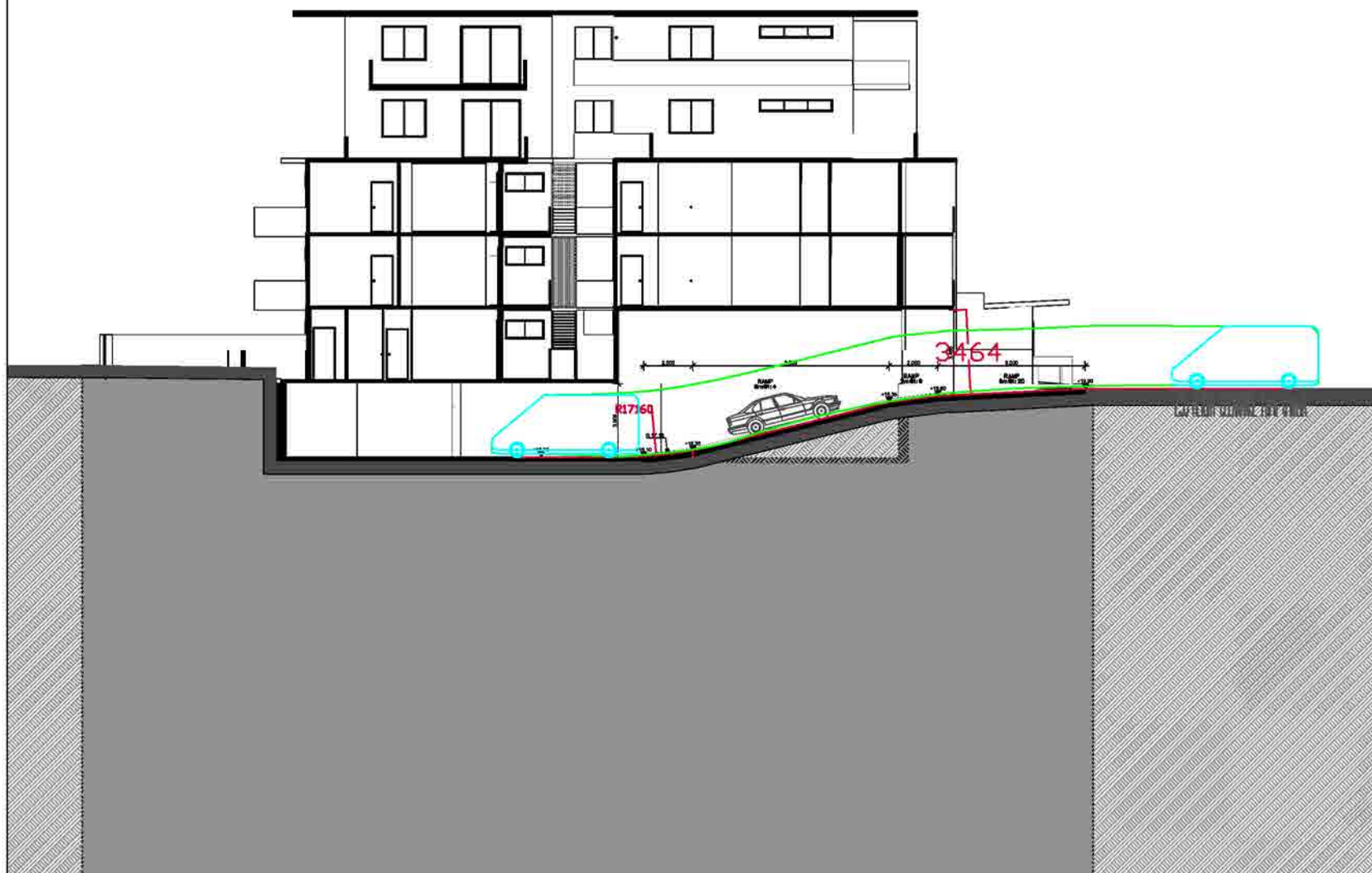
PROJECT:
46-50 HOXTON PARK ROAD
CLIENT:
Hoxten Park PL
SCALE:
1:200
DATE:
28/10/2015
GAD FILE NUMBER:
DRAWN BY:
RM
CHECKED 1:
JU
CHECKED 2:
GA
APPROVED:

DRAWING NAME BASEMENT PLAN	PROJECT NUMBER 68.15
DRAWING NUMBER DA	ISSUE A





Attachment 2 Car Park Review & Turning Path Assessment



NOTES:

The turning paths illustrated in this drawing have been prepared using the Autotrack vehicle modelling software in conjunction with AutoCAD. The vehicle model was prepared by Analytico Pty Ltd based upon vehicle data provided by Austroads. While this modelling represents a conservative assessment of the vehicles ability, it is not possible to account for all vehicle types/characteristics or driver ability.

PROJECT:

46 - 50 HOXTON PARK ROAD,
LIVERPOOL
AFFORDABLE HOUSING DEVELOPMENT

DRAWING TITLE:

BASEMENT LEVEL
LAYOUT RECOMMENDATIONS
VERTICAL CLEARANCE
CAR-DERIVED VAN - ENTRY

CLIENT:

GHASI AL ALI ARCHITECTS

DRG. #:

CP-04

VERSION #:

2

SCALE:

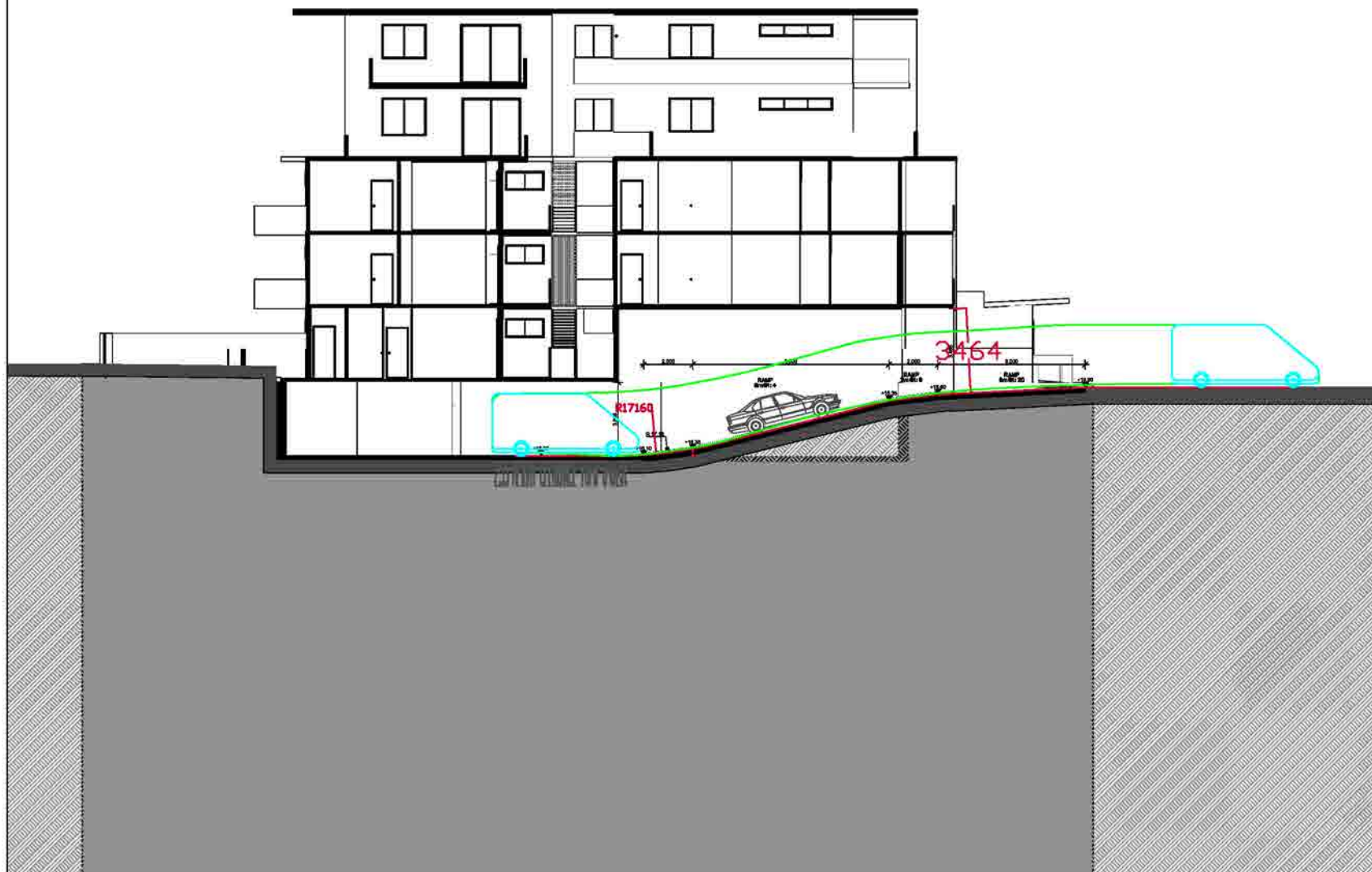
1:250

PROJECT #:

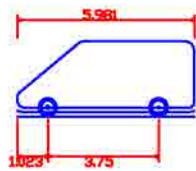
-

DATE:

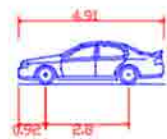
02/10/15



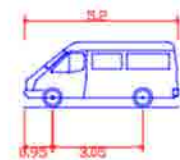
Attachment 3 – Vehicle Profiles



2.55 HEIGHT CLEARANCE ford transit
Overall Length 5.981m
Overall Width 2.094m
Overall Body Height 2.546m
Min Body Ground Clearance 0.149m
Max Track Width 1.743m
Lock-to-lock time 4.00s
Curb to Curb Turning Radius 6.650m



885 Vehicle (Realistic min radius) (2004)
Overall Length 4.910m
Overall Width 1.870m
Overall Body Height 1.421m
Min Body Ground Clearance 0.159m
Track Width 1.770m
Lock-to-lock time 4.00s
Curb to Curb Turning Radius 5.750m



899 Vehicle (Realistic min radius) (2004)
Overall Length 5.200m
Overall Width 1.940m
Overall Body Height 2.200m
Min Body Ground Clearance 0.312m
Track Width 1.840m
Lock-to-lock time 4.00s
Curb to Curb Turning Radius 6.250m