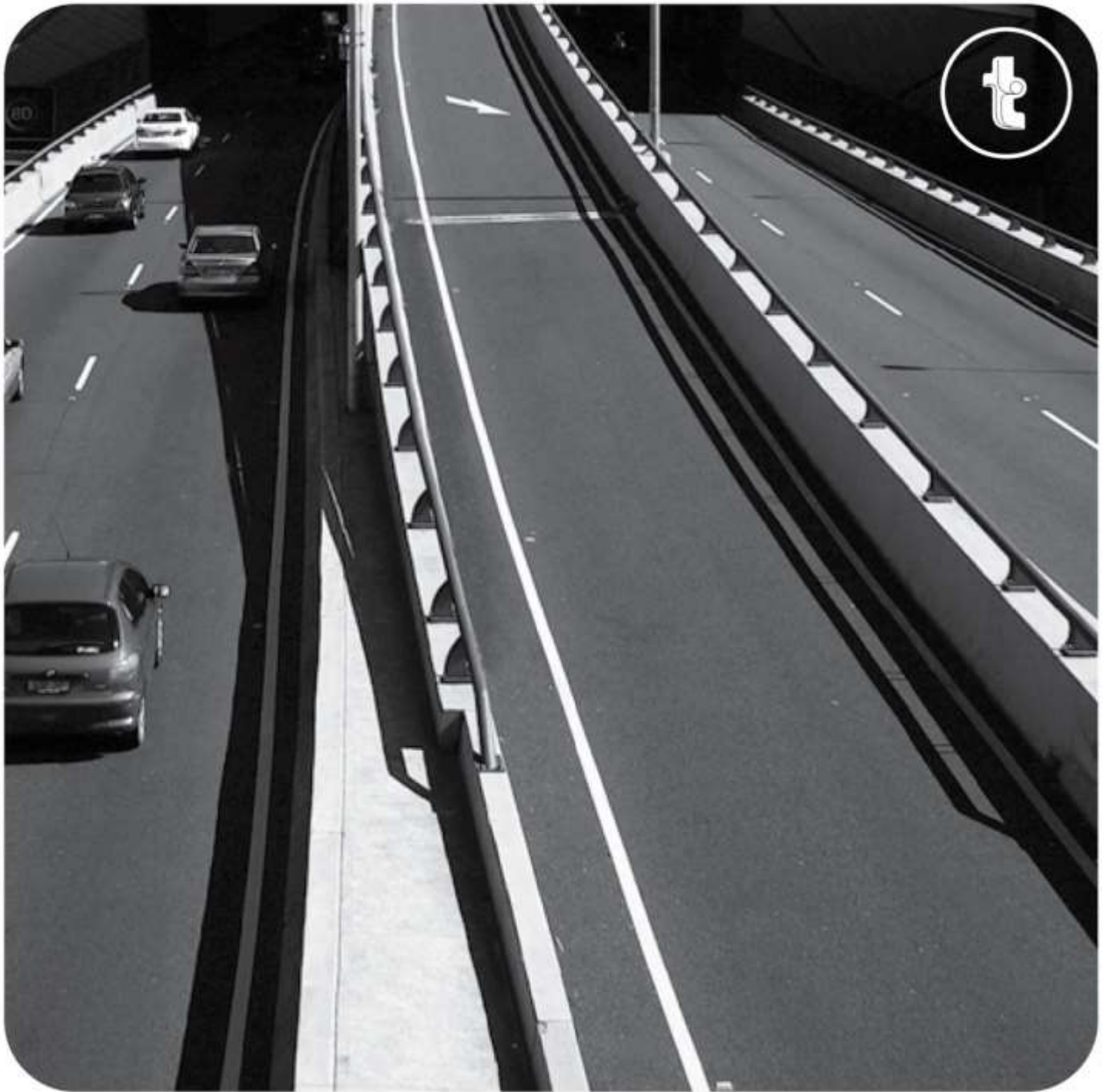


Attachment 9 – Proponent's Traffic Impact Assessment



Traffic Impact Assessment

Planning Proposal
36 Lonsdale Street & 64-70 Brenan Street, Lilyfield

Reference: 18.186r01v03
Date: July 2018

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Document Verification

Job Number:	18.186			
Project:	36 Lonsdale Street & 64-70 Brenan Street, Lilyfield			
Client:	Ozzy States Pty Ltd			
Revision	Date	Prepared By	Checked By	Signed
v01	02/05/2018	Kedar Ballurkar	Kedar Ballurkar	<i>Kedar Ballurkar</i>
v02	02/05/2018	Kedar Ballurkar	Kedar Ballurkar	<i>Kedar Ballurkar</i>
v03	05/07/2018	Kedar Ballurkar	Kedar Ballurkar	<i>Kedar Ballurkar</i>



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Appendix A: Photographic Record

Appendix B: Concept Drawings (Reduced Scale)



1. Introduction

TRAFFIX has been commissioned by Ozzy States Pty Ltd to undertake a Traffic Impact Assessment in relation to a Planning Proposal for a site at 36 Lonsdale Street and 64–70 Brenan Street in Lilyfield. Approval is sought to vary the Floor Space Ratio controls for the site under the *Leichhardt Local Environmental Plan 2013*.

A Concept Development containing 54 residential apartments has been assessed, which represents the maximum yield directly arising from the proposed changes.

This report documents the findings of our investigations and should be read in the context of the Planning Proposal prepared separately.

The report is structured as follows:

- ❑ Section 2: Describes the site and its location
- ❑ Section 3: Documents existing traffic conditions
- ❑ Section 4: Describes the Planning Proposal and Concept Development
- ❑ Section 5: Assesses the parking requirements
- ❑ Section 6: Assesses traffic impacts
- ❑ Section 7: Discusses access and internal design aspects
- ❑ Section 8: Presents the overall study conclusions.



2. Location and Site

The development site is located on the southwest corner of the intersection of Lonsdale Street and Brenan Street in Lilyfield. In a regional context, the site lies approximately 50 metres southwest of Lilyfield Light Rail Station and four kilometres west of the Sydney central business district.

The site is irregular shaped in configuration with a site area of 2,145m². It has a northern frontage to Brenan Street approximately 68 metres in length, an eastern frontage to Lonsdale Street approximately 36 metres in length and a western frontage to Russell Street approximately 30 metres in length. The site is otherwise bounded by low density residential developments to the south.

The site is a consolidation of the following properties:

- ❑ 36 Lonsdale Street: An irregular shaped warehouse development fronting Brenan Street and Lonsdale Street. Each tenancy has a driveway leading to a roller door, though this is not assumed to cater for off-street car parking. The development is estimated to contain a total of 950m² gross floor area.
- ❑ 64 Brenan Street: A two storey commercial building fronting Brenan Street estimated to contain 230m² gross floor area. The development provides at-grade parking accessed from a single driveway on Brenan Street.
- ❑ 66 Brenan Street: A detached dwelling house fronting Brenan Street containing a single garage and driveway.
- ❑ 68 Brenan Street: A detached dwelling house fronting Brenan Street with no off-street parking.
- ❑ 70 Brenan Street: A detached dwelling house fronting Brenan Street and Russell Street with no off-street parking.

A Location Plan is presented in **Figure 1**, with a Site Plan presented in **Figure 2**. Reference should also be made to the Photographic Record presented in **Appendix A**, which provides an appreciation of the general character of roads and other key attributes in proximity to the site.

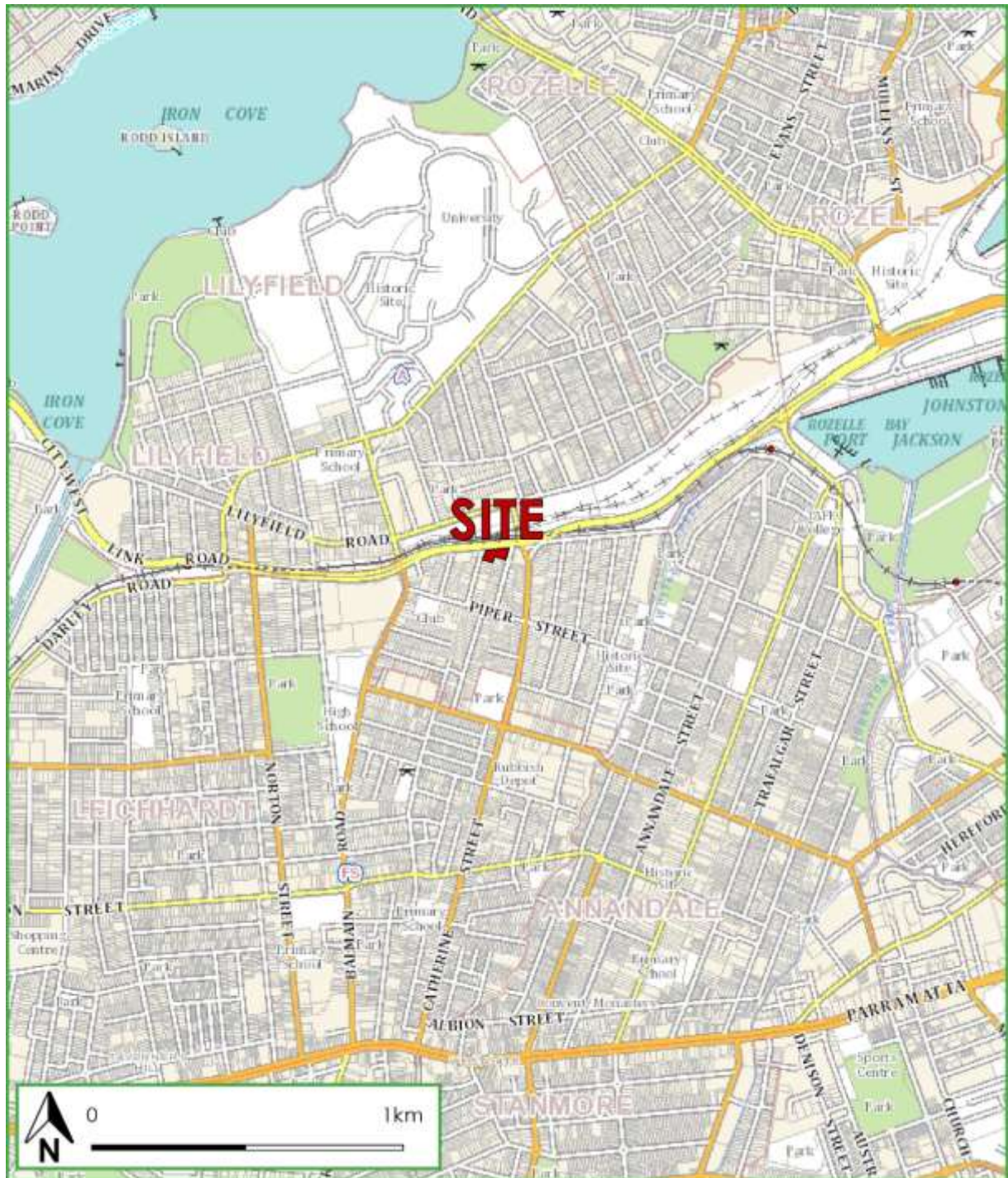


Figure 1: Location Plan

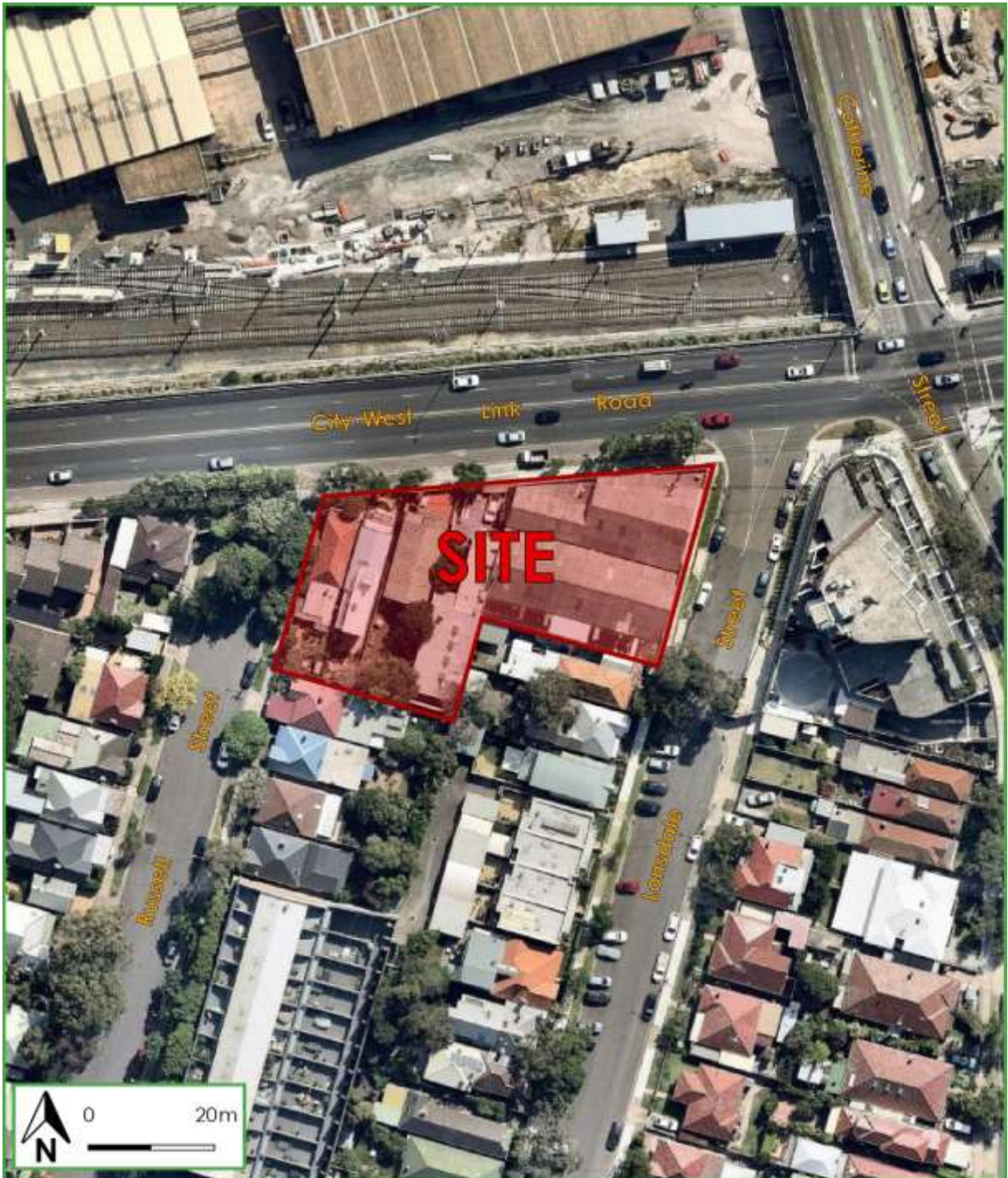



Figure 2: Site Plan





3. Existing Traffic Conditions

3.1 Road Network

The road hierarchy in the vicinity of the site is shown in **Figure 3** with the following roads of particular interest:

-  City West Link (Brenan Street): a classified Main Road (MR650) that generally runs in an east-west direction from the Western Distributor in the east until a cycleway extension of Lilyfield Road to the west, where it continues as Dobroyd Parade thereafter (it is also known as Brenan Street between Balmain Street and Catherine Street, separate to a local section of Brenan Street east of Catherine Street). It carries approximately 69,000 vehicles per day (2018 AADT) and in the vicinity of the site, has a posted speed limit of 70 km/h. The City West Link accommodates between two and three lanes of traffic in either direction within a divided carriageway. An indented bay along the site frontage permits unrestricted parking, independent of Clearway restrictions.

-  Lilyfield Road: an unclassified regional road (RR7316) that runs in an east-west direction from Victoria Road in the east and terminating in a one-way loop adjacent to Maliyawul Street in the west. West of Balmain Street, Lilyfield Road is classified as a local road and further west of the loop, it extends as a cycleway until Dobroyd Parade. Lilyfield Road accommodates a single lane of traffic within an undivided carriageway and has a posted speed limit of 50 km/h.

-  Balmain Road: an unclassified regional road (RR7315) that runs in a north-south direction between Park Drive in the north and Parramatta Road to the south (east of Perry Street, Balmain Road is classified as an RMS Main Road). It



generally accommodates a single lane of traffic in either direction, increasing to two lanes on approach to intersections and has a posted speed limit of 50 km/h.

- ❑ Catherine Street: a local road that runs in a north-south direction between Lilyfield Road in the north and Parramatta Road to the south. North of the City West Link, it runs one-way in a southbound direction and accommodates three lanes with a default 50 km/h speed zoning.
- ❑ Lonsdale Street: a local road that runs in a north-south alignment with two segments which are separated adjacent to the site by a wall structure (only pedestrian access between the two segments is achievable). The northern segment is accessed from Brenan Street and is restricted to left-in and left-out movements (due to a median on Brenan Street). The southern segment is accessed from Piper Street and serves a primarily residential area. Parking parking is permitted along each kerbside both segments.
- ❑ Russell Street: a local road that runs in a north-south alignment between Piper Street in the south, terminating before Brenan Street adjacent to the site.

Due to the median on Brenan Street, site movements (either by Brenan Street or Lonsdale Street) are restricted to left-in and left-out only. Drivers entering the site from the west or exiting the site to the east would perform the following detour:

- ❑ Left or Right Turn into Balmain Road;
- ❑ Right Turn into Lilyfield Road;
- ❑ Right Turn into Catherine Street; and
- ❑ Left or Right Turn into Brenan Street.

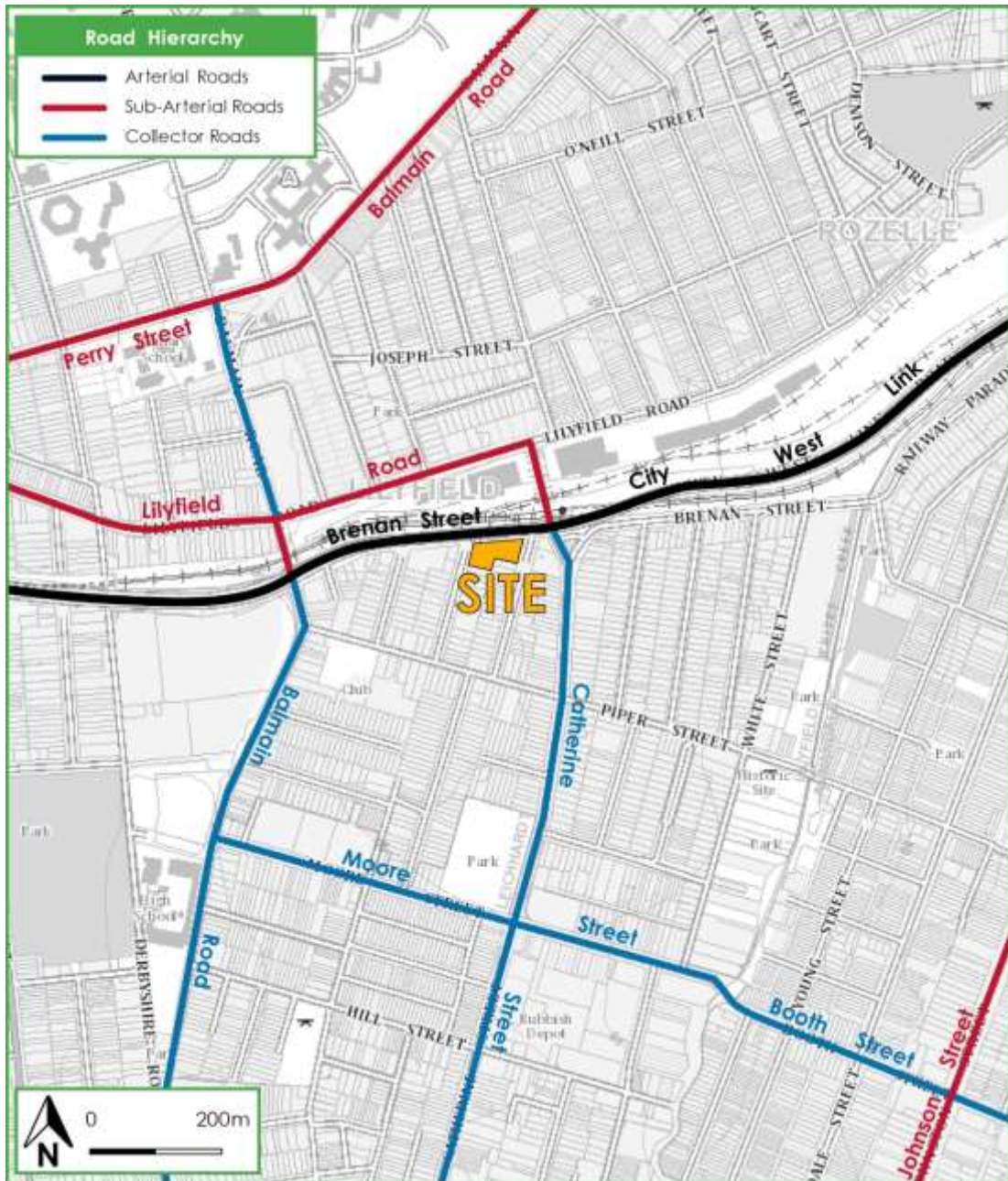


Figure 3: Road Hierarchy



3.2 Public Transport

The existing public transport services that operate in the locality are illustrated in **Figure 4**. Lilyfield Light Rail Station is within 50 metres walking distance from the site which lies on the L1 Dulwich Hill Line between Central in the east and Dulwich Hill to the south-west. Light rail services from this stop depart every 10 minutes during peak periods.

The site is also situated within 200 metres of bus stops on Catherine Street and Lilyfield Road that are service by routes connecting to the Sydney central business district and the surrounding region.

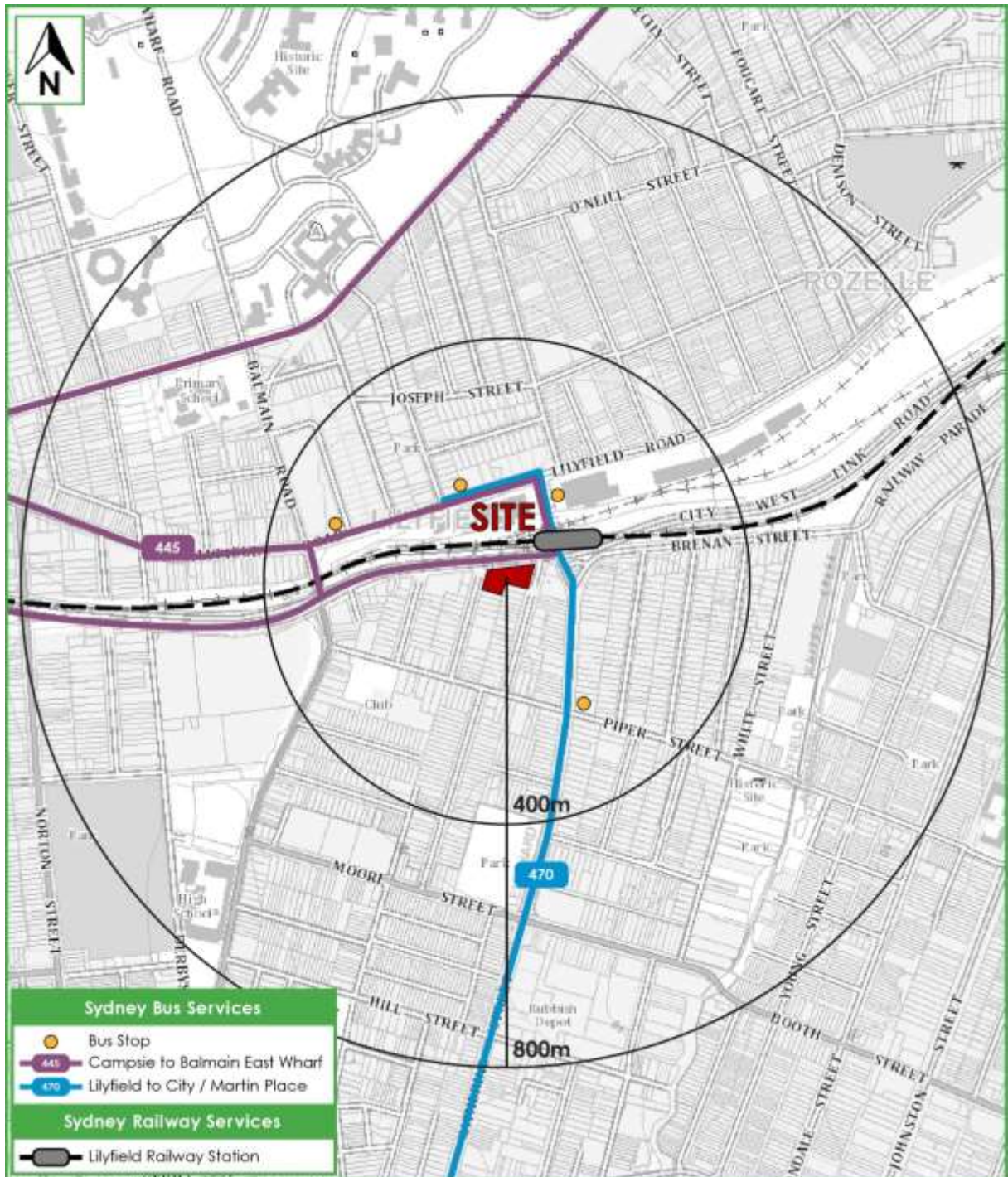


Figure 4: Public Transport



3.3 Existing Site Generation

The existing developments on-site are described in Section 2, with the traffic generation for each component assessed individually below.

Warehouse Development:

The warehouse development at 36 Lonsdale Street is estimated to contain 950m² gross floor area. For such developments, the Roads and Maritime Services (RMS) *Guide to Traffic Generating Developments* recommends an hourly trip rate of 0.5 vehicle trips per 100m² gross floor area during the AM peak period. While no trip generation rate is published during the PM peak period, this is assumed to be half of the AM peak period volumes. Application of these rates results in the following traffic generation:

- ❑ 5 vehicle trips per hour during the AM peak period; and
- ❑ 2 vehicle trips per hour during the PM peak period.

Commercial Development:

The commercial development at 64 Brenan Street is estimated to contain 230m² gross floor area. The RMS *Technical Direction TDT 2013/04a* provides updated trip generation rates for commercial developments, and recommends an hourly trip rate of 1.6 vehicle trips per 100m² gross floor area during the AM peak period and 1.2 vehicle trips per 100m² gross floor area during the PM peak period. Application of these rates results in the following traffic generation:

- ❑ 4 vehicle trips per hour during the AM peak period; and
- ❑ 3 vehicle trips per hour during the PM peak period.

Residential Developments:

Three dwelling houses presently occupy 66-70 Brenan Street. The *Technical Direction TDT 2013/04a* recommends an hourly trip generation rate of 0.95 vehicle trips per dwelling during the AM peak period and 0.99 vehicle trips per dwelling during the PM peak period. Application of these rates results in the following traffic generation:

- ❑ 3 vehicle trips per hour during the AM peak period; and
- ❑ 3 vehicle trips per hour during the PM peak period.



Combined Development:

Collectively, the existing developments at 36 Lonsdale Street and 64-70 Brenan Street are estimated to generate the following traffic volumes:

- ❑ 12 vehicle trips per hour during the AM peak period; and
- ❑ 8 vehicle trips per hour during the PM peak period.



4. Description of Proposed Development

A detailed description of the changes sought under the *Leichhardt Local Environmental Plan 2013* is provided in the Planning Proposal. In summary, approval is sought to vary the Floor Space Ratio controls for the site.

The following six-storey Concept Development has been envisaged for the site, which represents the maximum permissible yield directly associated with the changes sought under the Planning Proposal:

- ❑ 54 residential apartments, consisting of:
 - 15 x one bedroom apartments;
 - 33 x two bedroom apartments; and
 - 6 x three bedroom apartments:
- ❑ A two level basement car park, accessed from Lonsdale Street, with a basement car park indicatively containing:
 - 61 x parking spaces; and
 - 1 x loading bay, capable of accommodating a 6.4m Small Rigid Vehicle.

The parking requirements and traffic impacts arising from the Concept Development are discussed in **Section 5** and **Section 6** respectively. Reference should be made to the concept drawings prepared by Derek Raithby Architecture, for which Ground Floor and Basement Level Plans have been presented at reduced scale in **Appendix B**.



5. Parking Requirements

Section C1.11.1: General Vehicle Parking Rates of the Leichhardt Development Control Plan (DCP) 2013 requires parking for residential uses to be provided in accordance with the rates shown listed in **Table 1**.

Table 1: DCP Parking Rates

Type	No	Minimum Parking Rate	Maximum Parking Rate	Permitted No of Spaces ¹
Residential				
1 Bedroom	15	1 space per 3 dwellings	1 space per 2 dwellings	28-48
2 Bedroom	33	1 space per 2 dwellings	1 space per dwelling	
3 Bedroom	6	1 space per dwelling	1.2 spaces per dwelling	
Visitors	54	1 space per 11 dwellings	1 space per 8 dwellings	5-7
Total				33-55

¹ Parking spaces rounded up to nearest whole number in accordance with DCP.

It can be seen that the Concept Development is permitted to provide between 33 and 55 parking spaces. The concept drawings indicate provision for 61 parking spaces within two basement levels. It is therefore concluded that the site is sufficiently large enough to accommodate a compliant parking provision which would be confirmed in a future Development Application stage. The slightly higher provision also suggests that provision can be made to accommodate any required car share, bicycle and motorcycle parking requirements.

Furthermore, it is noted that the existing warehouse development (and two dwelling houses) on-site do not appear to accommodate off-street parking. On this basis, a compliant parking provision would have a further positive benefit by reducing on-street parking demands that are presently generated by the site.



5.1 Accessible Parking

Section C3.14: Adaptable Housing of the DCP requires developments containing 35 or more dwellings to design 10% of the total number of dwellings in accordance with the adaptable housing standard AS4299 (1995). This equates to a requirement for five (5) adaptable dwellings in the case of the Concept Development, when rounding to the nearest whole number.

The concept drawings currently indicate provision for nine (9) accessible parking spaces. It is expected that a final provision would be determined during a future Development Application stage.

5.2 Servicing

Control C29 of Section C1.11 of the DCP requires service and loading facilities in new developments to be provided in accordance with the RMS *Guide to Traffic Generating Developments*. In turn, this guide recommends a service vehicle space be provided for every 50 residential apartments (for developments containing less than 200 apartments). Application of these rates to the proposed development results in a single service vehicle space being warranted.

In response, the concept drawings show provision for a single loading bay within the basement car park that can accommodate a 6.4m Small Rigid Vehicle. While this would satisfy the DCP and can cater for removalist demands, it is envisaged that waste collection occur on-street (by Council's larger waste collection vehicle). This is considered to be an acceptable outcome noting that there would be expected to be an improvement in the availability of on-street parking given that the existing warehouse and residential developments on-site do not appear to provide off-street parking.



6. Traffic Impacts

6.1 Trip Generation

The Concept Development contains 54 residential apartments and would be classified as a high density residential development. For Sydney based developments that are close to public transport, the RMS *Technical Direction TDT 2013/04a* recommends an hourly trip generation rate of 0.19 vehicle trips per dwelling during the AM peak period and 0.15 vehicle trips per dwelling during the PM peak period. Application of these rates results in the following trip generation:

- ❑ 10 vehicle trips per hour during the AM peak period; and
- ❑ 8 vehicle trips per hour during the PM peak period.

The above volumes do not account for the traffic volumes already generated by the site. When considering the traffic generation assessed for the existing developments on-site, the proposal is estimated to result in the following net change in traffic volumes:

- ❑ -2 vehicle trips per hour during the AM peak period; and
- ❑ 0 vehicle trips per hour during the PM peak period.

6.2 Traffic Impacts

It is evident that the Concept Development is expected to generate comparable traffic volumes to existing conditions. On this basis, the changes sought under the Planning Proposal will not increase the traffic generating potential of the site.

This is considered to be a positive outcome in the context of the site being limited to left-in and left-out movements (due to the median on Brenan Street). A future development that will incorporate these controls will not exacerbate impacts on the surrounding road network, particularly with the diversion at Balmain Road / Lilyfield Road / Catherine Street (for traffic entering the site from the west or exiting the site to the east).



7. Access & Internal Design Aspects

7.1 Access

The access location for the Concept Development is located on Lonsdale Street, adjacent to the southern site boundary. This access location conforms to the following state policies and preferences:

- ❑ The access is situated on a secondary road frontage, consistent with Clause 101 of *State Environmental Planning Policy (Infrastructure) 2007*, which ordinarily requires that accesses not be provided on classified roads (Brennan Street).
- ❑ The access is positioned as far as practicable from the intersection at Brennan Street. This will ensure separation of vehicles entering and exiting the development from vehicles entering and exiting from Lonsdale Street.
- ❑ The access is proposed at the same location as an existing driveway for the warehouse development at 36 Lonsdale Street. An increase of on-street parking spaces can arise from restoration of the remaining driveways to kerb (at Lonsdale Street and Brennan Street).

The Concept Development may potentially accommodate up to 47 (Class 1A) parking spaces, accessed from Lonsdale Street (local road). It therefore requires a Category 1 driveway under AS2890.1 (2004), having a minimum combined entry-exit width of 5.5m. In response, the Ground Floor Plan shows a driveway of width 5.5m which would comply with the standard.

While the commercial off-street parking standard nominally requires a minimum circulation width of 6.2m for a 6.4m Small Rigid Vehicle to permit two-way flow, the 5.5m width will provide sufficient clearance for passing of a stationary light vehicle, which is considered acceptable noting the low frequency of trucks that would enter the basement. Nevertheless, detailed design of the access can be undertaken during a future Development Application stage.



7.2 Internal Design

The basement car park shown on the concept drawings has been assessed to generally comply with AS2890.1 (2004), AS2890.2 (2002) and AS2890.6 (2009). A detailed design during a Future Development Application stage would incorporate the following requirements:

7.2.1 Parking Modules

- ❑ All residential and staff parking spaces shall be designed in accordance with a User Class 1A having a minimum space length of 5.4m, a minimum width of 2.4m and a minimum aisle width of 5.8m.
- ❑ All spaces located adjacent to obstructions of greater than 150mm in height shall be provided with an additional width of 300mm.
- ❑ Dead-end aisles shall be provided with the required 1.0m aisle extension in accordance with Figure 2.3 of AS 2890.1 (2004).
- ❑ All accessible parking spaces shall be designed in accordance with AS2890.6 (2009). Spaces shall be provided with a clear width of 2.4m and located adjacent to a minimum shared area of 2.4m. Alternatively, accessible spaces could be designed in accordance with the adaptable housing standard AS4299 (1995) which requires a minimum space width of 3.8m.

7.2.2 Ramps

- ❑ All vehicular ramps used by the SRV shall have a maximum gradient of 15.4% (1 in 6.5) in accordance with AS2890.2 (2002).
- ❑ All vehicular ramps used by cars only shall have a maximum gradient of 25% (1 in 4), with minimum 2.0m long transitions at 12.5% (1 in 8), in accordance with the requirements of AS2890.1 (2004).
- ❑ The gradient for the first 6.0m inside the property boundary must be limited to either:
 - a maximum gradient of 5% (1 in 20) in accordance with Clause 3.3 of AS 2890.1 (2004); OR
 - a downgrade maximum gradient (for leaving traffic) of 12.5% (1 in 8) in accordance with the same clause (based on the provision of Class 1A parking spaces remaining below 100 spaces and with access from Lonsdale Street).



7.2.3 Clear Head heights

- ❑ A minimum clear head height of 2.2m shall be provided for all circulation areas and non-accessible parking spaces as required by AS2890.1 (2004). A clear head height of 2.5m shall be provided above all accessible parking spaces as required by AS2890.6 (2009).

7.2.4 Other Considerations

- ❑ All columns shall be located outside of the parking space design envelope shown in Figure 5.2 of AS2890.1 (2004).
- ❑ Appropriate visual splays shall be provided at the access driveway in accordance with the requirements of Figure 3.3 of AS2890.1 (2004).

7.2.5 Service Area Design

- ❑ The internal design of the service area has been undertaken in accordance with the requirements of AS2890.2 (2002) for the maximum length vehicle permissible on-site being a 6.4m SRV.
- ❑ AS2890.2 (2002) nominally requires a head height clearance of 3.5m for all areas circulated by an SRV.
- ❑ A minimum bay width of 3.5m is to be provided for the loading bay

It is expected that a detailed design of the basement car park will be undertaken during a subsequent Development Application. Nonetheless the concept drawings sufficiently comply with AS2890.1 (2004), AS2890.2 (2002) and AS2890.6 (2009) to demonstrate that the site is sufficiently large enough to be designed appropriately.



8. Conclusions

In summary:

- ❑ A Planning Proposal seeks to amend the controls for the site under the *Leichhardt Local Environmental Plan 2013*. A Concept Development containing 54 residential apartments has been envisaged to assess the maximum yield that would directly arise from the proposed changes.
- ❑ Under the *Leichhardt Development Control Plan 2013*, Concept Development would be required to provide between 33 and 55 parking spaces. The concept drawings demonstrate that the site is sufficiently large enough to accommodate a compliant provision within a two level basement car park. The compliant parking provision is also expected to result in reduced on-street parking demands over present conditions.
- ❑ The Concept Development has been assessed to generate identical or slightly less traffic during peak periods compared to the existing developments on-site. This is a positive outcome that would not exacerbate impacts on the surrounding road network, particularly in relation to the diversions arising from left-in and left-out movements to and from the site.
- ❑ The concept drawings propose an access on Lonsdale Street, which is considered to be the most appropriate location given the classified status of Brennan Street. The basement car park has been assessed to generally comply with AS2890.1 (2004), AS2890.2 (2002) and AS2890.6 (2009).

It is therefore concluded that the Concept Development is supportable on traffic planning grounds and future development of the site will operate with acceptable traffic impacts.



Appendix A

Photographic Record



View on Lonsdale Street looking southwest towards subject site frontage.



View on Lonsdale Street looking north towards intersection of Brennan Street.





View on Lonsdale Street, looking west towards existing site access.



View on Brenan Street looking west with subject site on left-hand side of photograph.





Appendix B

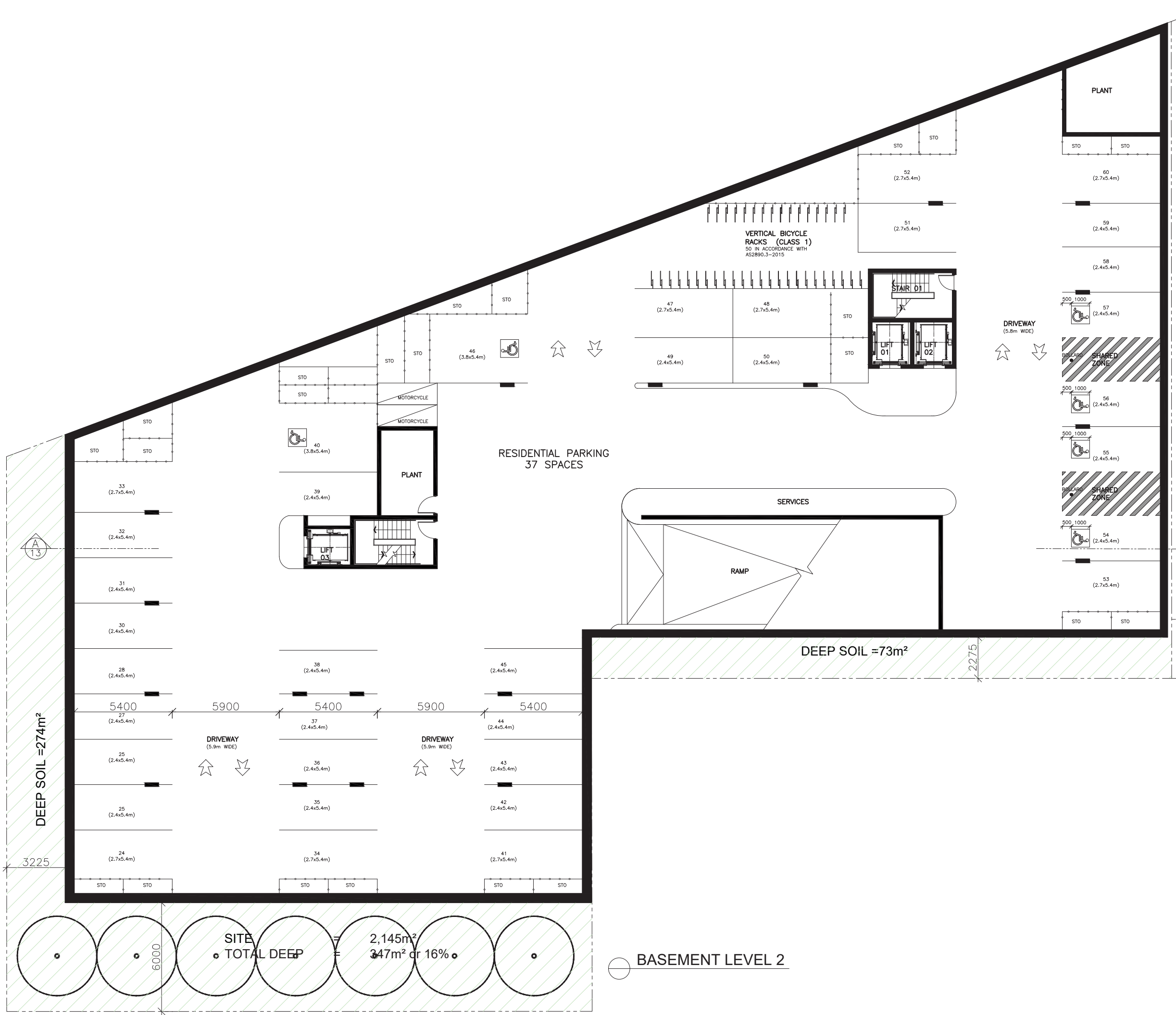
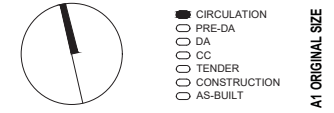
Plans (Reduced Scale)



(AUS) Pty Ltd

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ISSUE	DATE	AMENDMENT	BY

CLIENT
OZZY STATES PTY LTD
C/O DEREK RAITHBY ARCHITECTURE

STRUCTURAL ENGINEER

HYDRAULIC ENGINEER

MECHANICAL ENGINEER

LANDSCAPE DESIGN

BASIX / SECTION J

ENVIRONMENTAL

PROJECT
RESIDENTIAL DEVELOPMENT
36 LONSDALE STREET
LILYFIELD, NSW

DRAWING TITLE
BASEMENT LEVEL 2

DATE	APR 2018	DRAWING No.	
SCALE	1:100 @ A1		02
JOB No.	D1807		
DRAWN BY	DR		

PRELIMINARY ONLY

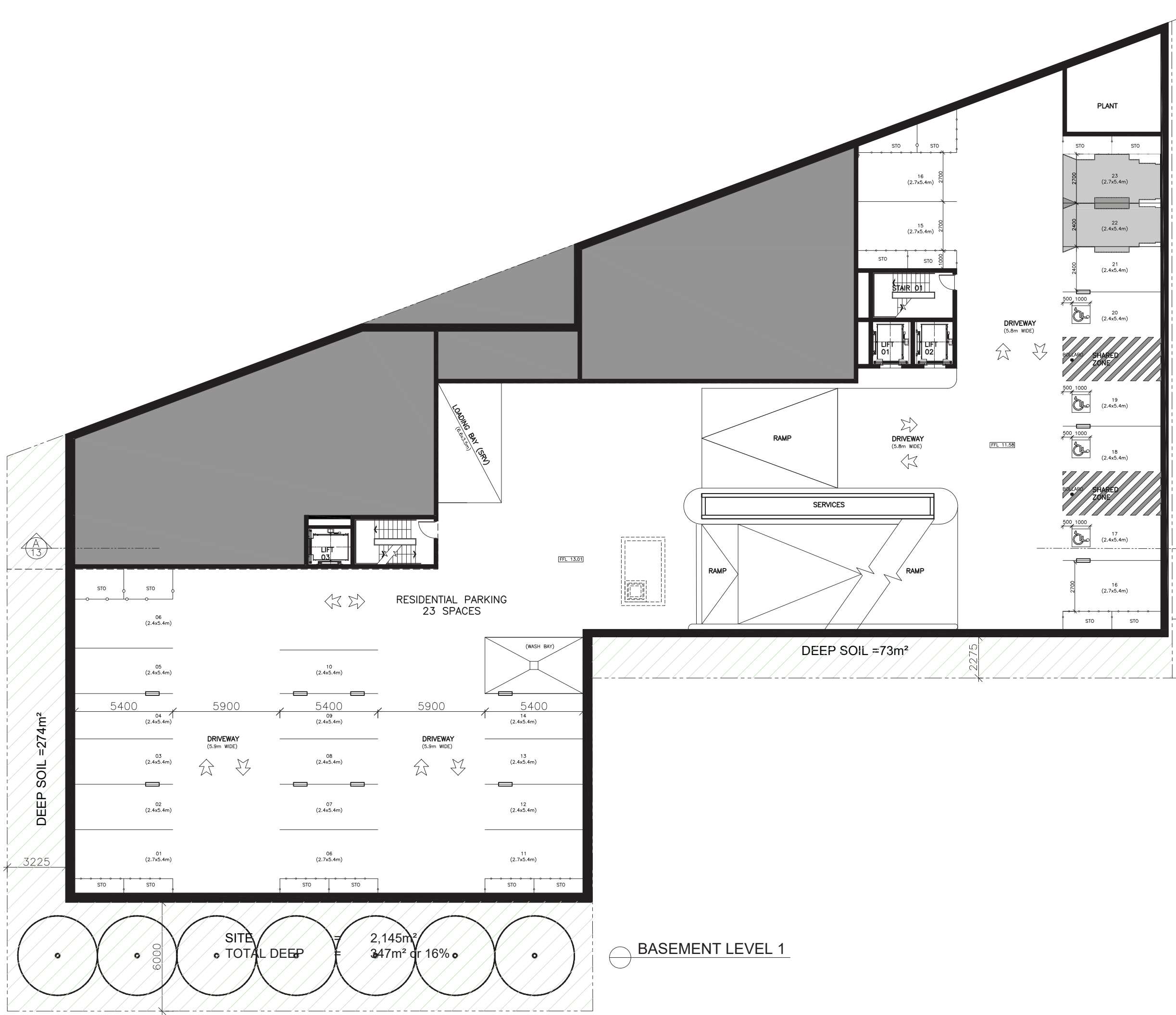
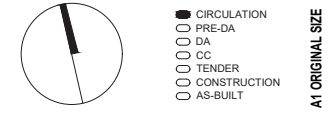
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STRUCTURAL ENGINEER

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MECHANICAL ENGINEER

LANDSCAPE DESIGN

BASIX / SECTION J

ENVIRONMENTAL

PROJECT

RESIDENTIAL DEVELOPMENT
36 LONSDALE STREET
LILYFIELD, NSW

DRAWING TITLE

BASEMENT LEVEL 1

DATE APR 2018 DRAWING No.

SCALE 1:100 @ A1 **03**

JOB No. D1807 DRAWN BY DR

PRELIMINARY ONLY

DEEP SOIL = 274m²

DEEP SOIL = 73m²

SITE TOTAL DEEP = 2,145m²
347m² or 16%

BASEMENT LEVEL 1



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AT ORIGINAL SIZE

2	APR 2018	FOR COORDINATION	DR
1	APR 2018	ISSUE TO CLIENT	DR
ISSUE	DATE	AMENDMENT	BY

CLIENT
OZZY STATES PH/US
C/O DEREK RAITHEY ARCHITECTURE

STRUCTURAL ENGINEER

HYDRAULIC ENGINEER

MECHANICAL ENGINEER

LANDSCAPE DESIGN

SMART DESIGNER

ENVIRONMENTAL

PROJECT
RESIDENTIAL DEVELOPMENT
36 LONSDALE STREET
LILYFIELD, NSW

DRAWING TITLE
GROUND FLOOR PLAN

DATE	APR 2018	DRAWING No.	
SCALE	1:100 @ A1		05
JOB No.	D1807		
DRAWN BY	DR		

PRELIMINARY ONLY

