FOUNDATION EARTH SCIENCES

PRELIMINARY ACID SULPHATE SOIL ASSESSMENT (PASSA)

Property Address
67-75 Lords Road,
Leichhardt NSW 2040

Prepared for
Platino Properties Pty Ltd

Date

December 2023

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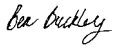
Authorised		Benjamin Buckley	20/12/2023

TABLE OF CONTENTS

TABLE OF FIGURES

LIST OF FIGURES & APPENDICES

ABBREVIATIONS

AASS	Actual Acid Sulphate Soils
AHD	Above Height Datum
ANC	Acid Neutralising Capacity
ASS	Acid Sulphate Soils
ASSMAC	Acid Sulphate Soils Management Advisory Committee
ASSMP	Acid Sulphate Soils Management Plan
BGL	Below Ground Level
DNR&M	Department of Natural resources and Mines
DO	Dissolved Oxygen
EC	Electric Conductivity
EIL	Ecological Investigation Level
EPA	Environmental Protection Authority
HIL	Health-based Investigation Level
LOR	Limit of reporting
NV	Neutralising Value
PASS	Potential Acid Sulphate Soils
POCAS	Peroxide Oxidation Combined Acidity and Sulphate
PSI	Preliminary Site Investigation
QA/QC	Quality Assurance/Quality Control
QASSIT	Queensland Acid Sulphate Soils Investigation Team
SPOCAS	Suspended Peroxide Oxidation Combined Acidity and Sulphate
SPOS	Peroxide Oxidisable
TAA	Total Actual Acidity
TCLP	Toxicity Characteristic Leaching Procedure
TPA	Total Potential Acidity
TSA	Total Sulfidic Acidity
TSS	Total Suspended Solids
VENM	Virgin Excavated Natural Material

1.0 INTRODUCTION

Foundation Earth Sciences (FES) was appointed by Platino Properties Pty Ltd to prepare a Preliminary Acid Sulphate Soil Assessment (PASSA) for the property located at 67-75 Lords Road, Leichhardt NSW 2040 ("the site"). The site is in the Inner West Council area.

The existing buildings form of the site consists of a series of brick warehouse style buildings with sheds and/or extensions and paved outdoor carpark and driveway. A smaller building is located on the southeast corner of the site facing Lords Road and Davies Lane. The site is proposed to be redeveloped to provide for a mix of residential and non-residential uses over a single level basement, and public open spaces.

An ASSA assessment is required as disturbances to Potential Acid Sulphate Soil (PASS) or Actual Acid Sulphate Soils, which may occur during construction and excavation works, can result in the formation of acid. The acid, once formed, could then damage infrastructure or harm ecological systems. The results of the field parameters from this assessment should only be used as a preliminary study to determine if further investigations are required. If results exceed the criteria, then further work, including an ASS Management Plan, may be required.

2.0 OBJECTIVES

The purpose of the ASS Assessment is to determine the presence or absence of ASS at the site. In the absence of ASS, it is essential to assess for the presence of Potential Acid Sulphate Soils (PASS). If the results do not meet criteria an Acid Sulphate Soil Management Plan will be required.

This assessment reviewed the presence of ASS / PASS in the portion of the site that may require excavation.

3.0 SCOPE OF WORKS

The scope of works of the PASSA included:

- Review of previous environmental assessments;
- Site walkover;
- Targeted soil boring, sampling and testing for ASS at the site;
- Interpretation of field test analysis and findings;
- Reporting in accordance with relevant assessment guidelines / regulations

4.0 ASSESSMENT CRITERIA

When assessing ASS at sites in NSW, the Acid Sulphate Soils Management Advisory Committee 'Acid Sulphate Soil Manual' apply. The following national guidelines issued in June 2018 are also applicable:

- Australian Government Department of Agriculture and Water Resources (2018), National Acid Sulfate Soils Guidance – National Acid Sulfate Soil Sampling and Identification Methods Manual, June 2018.

The purpose of this report is to determine whether there is a probable risk associated with ASS or PASS and to determine whether these types of soils exist on the site.

This report has been prepared in accordance with the Acid Sulphate Soil Manual (1998) & National Acid Sulfate Soil Sampling and identification methods manual (2018).

Risk Map

A review of NSW Department of Land & Water Conservation (DLWC) Acid Sulphate Soil Risk Maps (Edition Two, December 1997, Scale 1:250,000) was undertaken**.** The risk maps do not detail the severity of the ASS, but only provide an indication that they may be present. The decision to classify certain areas as ASS is based on several geomorphic conditions and site criteria. The following points are used to determine if ASS is likely to exist (extracted from ASSMAC (1998) Acid Sulphate Soils Assessment Guidelines):

- Sediments of recent geological age (Holocene) ~ 10 000 yr.
- Soil horizons less than 5m AHD (Australian Height Datum).
- Marine or estuarine sediments and tidal lakes.
- In coastal wetlands or back swamp areas; waterlogged or scalded areas; interdune swales or coastal sand dunes.
- In areas where the dominant vegetation is mangroves, reeds, rushes and other swamp tolerant and marine vegetation.
- In areas identified in geological descriptions or in maps bearing sulphide minerals, coal deposits or former marine shales/sediments.
- Deeper older estuarine sediments >10m below the ground surface, Holocene or Pleistocene age.

Based on the above information to determine whether there is a potential for acid sulphate soils to be present within a site, reference was made to the NSW Department of Land & Water Conservation (DLWC) Acid Sulphate Soil Risk Maps (Edition Two, December 1997, Scale 1:250,000). A review of the “Botany Bay” map indicated that the site is in “No known occurrences” of acid sulphate soil material within the soil profile. However, it is noted that the site is in the vicinity of X2 - disturbed terrain area where acid sulphate materials are of “Low to high probability”.

A review of the "Leichhardt Local Environmental Plan 2013, Acid Sulfate Soils Map Sheet ASS_002", the site is in Class5 area of acid sulphate soil material within the soil profile. However, it is noted class3 areas is in the vicinity of the area to the west.

Assessment Criteria

The following soil indicators are used to determine if AASS is present on a site:

- field pH ≤4 in soils
- presence of shell
- any jarosite horizons or substantial iron oxide mottling in auger holes, in surface encrustations or in any material dredged or excavated and left exposed. Jarosite is not always found, however, in actual acid sulphate soils.

The following soil indicators are used to determine if PASS is actually present on a site:

- waterlogged soils, unripe muds (soft, buttery, blue grey or dark greenish grey) or estuarine silty sands or sands (mid to dark grey) or bottom sediments of estuaries or tidal lakes (dark grey to black)
- presence of shell
- soil pH usually neutral but may be acid -positive Peroxide Test (see section 7.2 Field pH results).

5.0 SITE INFORMATION

5.1 Site Identification

The site is identified as follows:

Table 1: Site Identification Review

Site Identifier	Site Details	
Site Location	67-75 Lords Road, Leichhardt NSW	
Lot/DP	Lot 1 in DP940543 (67-73 Lords Road) Lot 1 in DP550608 (75 Lords Road)	
Site Coordinates #	NE Corner: Latitude -33.885088, Longitude: 151.146191	
Site Area	Approximate 10,691m^2	
Local Government Area (LGA)	Inner West	
Zoning##	E4 – General Industrial	
Surrounding Land Uses	*North*	Lambert Park
	South	Lords Road then residential and commercial
	East	Laneway then residential
	West	Sydney Light Rail Corridor & Hawthorne Canal

Notes: # Six Maps
refer to NSW Planning Portal
https://www.planningportal.nsw.gov.au/spatialviewer/#/find-a-property/address
//www.planningportal.nsw.gov.au/find-a-property

5.2 Topography

The topography viewed on NSW indicated the following for the Disturbed Terrain soil landscape:

Terrain disturbed by human activity. Local relief is usually <2 m, but occasionally up to 10 m. Most areas of disturbed ground have been levelled to slopes of <3%. In terraced cut and fill areas short rises may be steeper than 30%. Microtopography may be hummocky due to truck dumping of fill material.

Based on the site inspection it was determined that the site was sloping to the west at approximately 10-20°.

5.3 Local Geology & Surface Waters

The Geological Map of Sydney (Geological Series Sheet 9130, Scale 1:100,000, 1983), published by the Department of Mineral Resources indicates the site is located in the vicinity of Mf, Qha & Rwa:

Mf indicates man-made fill, dredged estuarine sand and mud, demolition rubble, industrial and household waste.

Qha indicates the residual soils within the site to be underlain by Quaternary Age soils consisting of silty to peaty quartz sand, silt and clay. Ferruginous and humic cementation in places with common shell layers.

Rwa indicates the residual soils within the site to be underlain by Triassic Age Shale of the Wianamatta Group, comprising black to dark grey shale and laminite.

The nearest downgradient watercourse is Hawthorne Canal located approximate 60m west of the site.

5.4 Proposed Development

The site is proposed to be redeveloped to provide for a mix of residential and non-residential uses over a single level basement, and public open spaces.

Refer to **Appendix B** - Concept Development Plans.

6.0 SOIL BORING AND SAMPLING

A soil sampling and analysis program was used to consolidate the nature and degree of Acid Sulphate Soils present in the surface and subsurface geology. Samples were collected from four (4) boreholes within the site. The borehole locations are presented in **Figure 2** – Site Plan.

Field analysis was performed on the collected samples for pH_f and pH_{fox} in accordance with the required sampling techniques outlined in the Acid Sulfate Soil Manual *(ASSMAC 1998).* This included the Field pH and peroxide test protocol.

6.1 Quality Assurance/Quality Control (QA/QC)

Standard QA/QC procedures were followed. The decontamination of sampling equipment and the hand auger was achieved by washing with phosphate-free detergent and tap water, followed by final rinsing with distilled water. This was conducted after the collection of samples.

Standard sampling and analysing procedures are in accordance with and set out in the Acid Sulphate Soil Manual (1998) and Australian Government Department of Agriculture and Water Resources (2018), National Acid Sulfate Soils Guidance – National acid sulfate soil sampling and identification methods manual, June 2018.

7.0 FIELD RESULTS

7.1 Soil Observations

Based on information from all boreholes, the surface and sub-surface profile across the site is generalised as follows:

- Fill: Silty Gravelly Sand, Silty Gravelly Clay, Silty Sand,
- Natural: Sandy CLAY, Silty CLAY
- Bedrock: SANDSTONE

No unusual colouring or shells were detected in the soil suggesting the presence of pyrite (iron sulphide) or jarosite was unlikely.

Refer to **Appendix A** – Borehole Logs.

7.2 Field pH Results

The results of the field pH tests are presented in the table below:

Table 2: Summary of field analysis results

Sample	Depth (m)	pH		pH		Change in pH (pH_f – pH_{fox})	Effervescence Reaction Rate
		H_2O	Soil pH_f	H_2O_2	Soil pH_{fox}		
ASS1	0.1	-	7.4	-	8.2	-0.8	Volcanic reaction
ASS1	0.5	-	8.3	-	7.2	1.1	Volcanic reaction
ASS1	1	-	8.3	-	7.2	1.1	Medium reaction
ASS1	1.5	-	7.2	-	5.1	2.1	Medium reaction
ASS1	2	-	8	-	6.3	1.7	Low reaction
ASS1	2.5	-	8.1	-	6.1	2	Low reaction
ASS1	3	-	7.9	-	2.7	5.2	High reaction
ASS1	3.3	-	6.9	-	3.4	3.5	Low reaction
ASS2	0.1	-	9.3	-	9.1	0.2	Extreme reaction
ASS2	0.5	-	7.8	-	5.9	1.9	Medium reaction
ASS2	1	-	6.8	-	3.9	2.9	Low reaction
ASS2	1.5	-	6.5	-	3.7	2.8	Low reaction
ASS2	2	-	6.2	-	3.9	2.3	Low reaction
ASS2	2.5	-	4.9	-	3.7	1.2	Low reaction
ASS2	3	-	4.7	-	3.8	0.9	Low reaction
ASS3	0.1	-	8.8	-	8.5	0.3	Low reaction
ASS3	0.5	-	8.7	-	9.2	-0.5	Extreme reaction
ASS3	1	-	8.9	-	9	-0.1	Extreme reaction
ASS3	1.5	-	7.7	-	5.3	2.4	High reaction
ASS3	2	-	5.9	-	4.3	1.6	Low reaction
ASS3	2.5	-	5.3	-	4.3	1	Low reaction
ASS4	0.1	-	8.4	-	6.5	1.9	Medium reaction
ASS4	0.5	-	6.3	-	4.6	1.7	Medium reaction
ASS4	1	-	7.6	-	6.6	1	Low reaction
ASS4	1.5	-	7	-	4.3	2.7	Low reaction
ASS4	2	-	5.7	-	4.1	1.6	Low reaction
ASS4	2.5	-	5.5	-	4	1.5	Low reaction

Notes:

- pH_f refers to pH field (soil and distilled H_2O).
- pH_{fox} refers to pH field oxidised (soil and peroxide).
- Change in pH refers to pH field minus pH field oxidised.
- **Highlighted** refers to detections.

To investigate the pH of the soils (pH_f) water was added to the soil samples. pH_f of all the investigated samples were above the pH of 4. This indicates the soils from which the samples were collected did not contain actual ASS.

To investigate the presence of PASS, 30% peroxide (H_2O_2) was added to soil samples and the resulting pH of the mixture was measured (field test protocols are presented in Appendix D of the ASSMAC (1998) Field pH and peroxide test protocol). The soil peroxide solution (pH_{fox}) results indicated the pH did drop by more than two units in some samples and some reactions including high to extreme. Based on the field analysis limited further laboratory investigation was warranted.

8.0 SUSPENDED PEROXIDE OXIDATION COMBINED ACIDITY & SULPHATE (SPOCAS) RESULTS

Following the field tests undertaken by FES (administered Envirolab), four (4) soil samples from FES (collected from 15th June 2022) were submitted to the NATA certified laboratory of Envirolab for the SPOCAS test.

The soils were assessed against the guidelines set out in Acid Sulphate Soils Management Advisory Committee (ASSMAC) (1998) *Acid Sulphate Soils Assessment Guidelines*. The action criteria selected was based on excavation of more than 1,000 tonnes of soils disturbed within the site. The results are assessed against the available criteria, those being:

Coarse to Fine Texture Soils

- Sulphur Trail (S_{pos}) = 0.03%
- Acid Trail (TPA) = 18 mol H^+/tonne

The laboratory analysis results are presented in the following table:

Table 3: Laboratory Results - SPOCAS

Sample	Profile	Depth (m)	S-POS (%) (sulphur trail)	TAA (mol H^+/ tonne)	TPA (mol H^+/ tonne) (acid trail)	TSA (mol H^+/tonne) (acid trail)	Lime Calculation (kg $CaCO_3$/t includes 1.5 safety factor).
Sampling dated 15th June 2022							
ASS1/ BH1	Silty Gravelly Sand	0.5	0.004	<5	<5	<5	2.1
ASS1 /BH1	Sandy CLAY	3.0	**0.30**	<5	**110**	**110**	**10**
ASS2 /BH2	Silty Gravelly Clay	0.1	0.02	<5	<5	<5	0.89
ASS2 /BH2	Silty CLAY	1.5	<0.005	13	16	<5	1.1
Coarse to Fine Texture Soils		-	***0.03***	-	***18***	***18***	-

Notes:

- Guidelines follow the ASSMAC "Acid Sulphate Soils Assessment Guidelines 1998".
- Fine Texture Criteria based upon clay content of > or equal to 40%
- Medium Texture Criteria based upon clay content of 5-40%
- Criteria based upon more than 1000 tonnes disturbed
- **Bold values exceed ASSMAC guidelines**

When comparing the results summarised above in Table 3 to Table 4.4 (ASSMAC) for fine to coarse texture soils it can be determined that the percentage of oxidisable Sulphur (SPOS) & acid trail (TPA/TSA) in the samples were below the action criteria with the exception of ASS1/BH1 at 3.0m.

9.0 CHROMIUM REDUCIBLE SULPHUR RESULTS

Chromium Reducible sulphur method calculates the potential acidity from analysis of sulphide content. This method does not include sulphur from organics and sulphates (e.g. gypsum) and detects as low sulphide content and is therefore suitable to determine potential interferences caused by naturally occurring acidity within the soils. The laboratory results are presented in the following table:

Table 4: Laboratory Results – Chromium Reducible Sulphur

Sample	Depth	Chromium Reducible Sulphur (%)
Sampling dated 15th June 2022		
ASS1/ BH1	0.5	**0.05**
ASS1 /BH1	3	**0.26**
ASS2 /BH2	0.1	0.02
ASS2 /BH2	1.5	0.006
SPOS Action Criteria		**0.03**

The results from the Table 4 indicated the following:

- A lack of oxidisable sulphur compounds were detected within the borehole locations with the exception of BH1.

10.0 DISCUSSION & RECOMMENDATION

The assessment of acid sulphate material can be quite complex and can have a lot of interferences associated with the test methods and soil matrix.

Based on the laboratory results, it has been determined that the site ***impacted by Acid* Sulphate Soils** within the borehole location **BH1**.

Recommendation

The following works are recommended to be completed prior to bulk excavation:

- A Detailed Acid Sulphate Soil Assessment is required to be completed during future site works to further assess the risk at depth and to target soil surrounding BH1. This is to be completed as part of the DA process and assessed against the DA approved plans for the site.
- Completion of an Acid Sulphate Soil Management plan (ASSMP) is required for the site.

REFERENCES

- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG) (2018).
- Australian Government Department of Agriculture and Water Resources (2018), National Acid Sulfate Soils Guidance – National Acid Sulfate Soil Sampling and Identification Methods Manual, June 2018.
- Stone Y, Ahern C.R and Blunden B (1998), 'Acid Sulphate Soil Manual 1998', Acid Sulphate Soils Management Advisory Committee, Wollongbar, NSW, Australia.

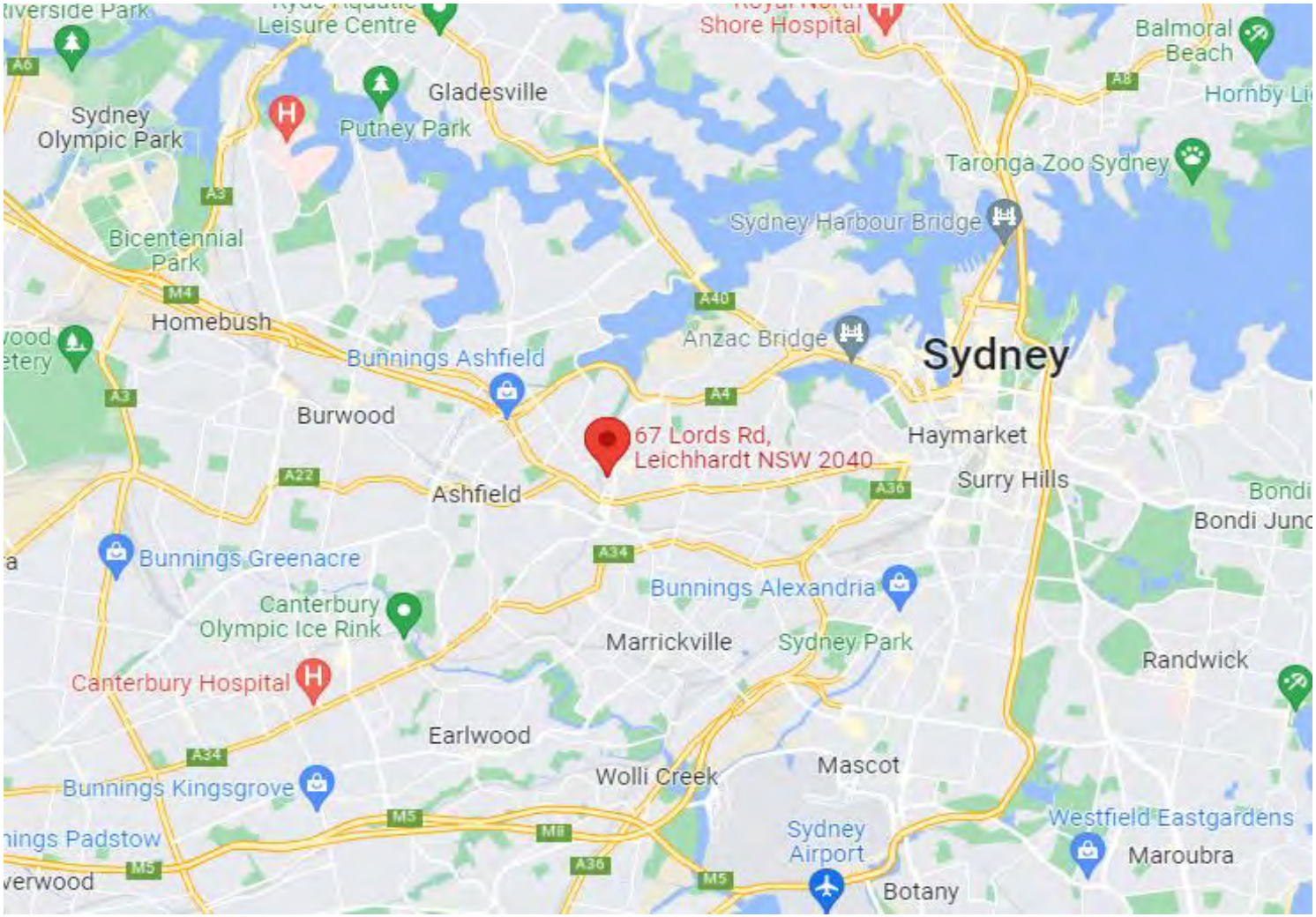
LIMITATIONS

Whilst to the best of our knowledge, information contained in this report is accurate at the date of issue, although subsurface conditions, including groundwater levels and contaminant concentrations, can change in a limited time. This should be borne in mind if the report is used after a protracted delay. There is always some disparity in subsurface conditions across a site that cannot be fully defined by investigation. Hence it is unlikely that measurements and values obtained from sampling and testing during environmental works carried out at a site will characterise the extremes of conditions that exist within the site.

There is no investigation that is thorough enough to preclude the presence of material that presently or in the future, may be considered hazardous at the site. Since regulatory criteria are constantly changing, concentrations of contaminants presently considered low may, in the future, fall under different regulatory standards that require remediation.

Opinions are judgements that are based on our understanding and interpretation of current regulatory standards and should not be construed as legal opinions. Although the information provided by an Acid Sulphate Soils Assessment and Management Plan can reduce exposure to risks, no assessment, however diligently carried out, can eliminate them. It must be noted that these findings are professional findings and have limitations. Even a rigorous professional assessment may fail to detect all ASS and/or PASS on a site. Sulphates may be present in areas that were not surveyed or sampled.

FIGURE 1: LOCALITY MAP



Key Site Location	FOUNDATION EARTH SCIENCES	**DRAWN** EY	**SITE LOCALITY**
		FIGURE 1	Platino Properties Pty Ltd
		Job # E2843-2	67-73 Lords Road, Leichhardt NSW

FIGURE 2: SITE FEATURES PLAN

Feature No	Details
a	Residential House
b	Driveway
c	Car parks
d	Transmission tower

Key

Site Location
Testing Locations

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DRAWN EY	**Site Features Plan**
Figure 2	Platino Properties Pty Ltd
Job # E2843-2	67-73 Lords Road, Leichhardt NSW

APPENDIX A: BOREHOLE LOGS

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BOREHOLE : ASS1

CLIENT NAME: Platino Properties Pty Ltd **JOB NUMBER:** E2843-2

SITE ADDRESS: 67-75 Lords Road, Leichhardt NSW 2040 **PROJECT:** Preliminary Acid Sulphate Soil Assessment

Date Started : 15/06/2022 **Completed :** 15/06/2022 **Logged By :** EY **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
ADT				0.00			Concrete Slab, approximately 200mm thick					
				0.20			FILL, silty gravelly sand, fine to medium grained, dark brown-dark grey, with gravels	M	L-MD	0.2	No HC smell, No Staining or No fibro fragments observed	
				0.5						0.5	No HC smell, No Staining or No fibro fragments observed	0.5
				1.0						1	No HC smell, No Staining or No fibro fragments observed	1.0
				1.20		CH	Sandy CLAY, medium to high plasticity, brown-grey, with orange mottling, trace of gravel	M-W	F-St			
				1.5						1.5	No HC smell, No Staining or No fibro fragments observed	1.5
				2.0						2	No HC smell, No Staining or No fibro fragments observed	2.0
	▶			2.5						2.5	Seepage at 2.5m BGL No HC smell, No Staining or No fibro fragments observed	2.5
				3.0						3	No HC smell, No Staining or No fibro fragments observed	3.0
				3.30			SANDSTONE, fine to medium grained, extremely weathered, extremely low to low strength, brown-yellow	M		3.3	No HC smell, No Staining or No fibro fragments observed	
				3.5								3.5
				4.0								4.0
				4.30			Borehole ASS1 terminated at 4.30m					
				4.5								4.5
				5.0								5.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

FOUNDATION EARTH SCIENCES

BOREHOLE : ASS2

CLIENT NAME: Platino Properties Pty Ltd **JOB NUMBER:** E2843-2

SITE ADDRESS: 67-75 Lords Road, Leichhardt NSW 2040 **PROJECT:** Preliminary Acid Sulphate Soil Assessment

Date Started : 15/06/2022 **Completed :** 15/06/2022 **Logged By :** EY **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
ADT				0.02			Ashphalt Concrete, approximateky 20mm thick	M	F	0.1	No HC smell, No Staining or No fibro fragments observed	
							FILL, silty gravelly clay, low to medium plasticity, dark brown, with gravel					
				0.5						0.5	No HC smell, No Staining or No fibro fragments observed	0.5
				0.80		CH	Silty CLAY, medium to high plasticity, brown, trace of gravel	M	F-St			
				1.0						1	No HC smell, No Staining or No fibro fragments observed	1.0
				1.20			becoming reddish brown, trace of gravel					
				1.5						1.5	No HC smell, No Staining or No fibro fragments observed	1.5
				2.00			becoming pale grey-yellow, trace of sand	M	VSt	2	No HC smell, No Staining or No fibro fragments observed	2.0
				2.5						2.5	No HC smell, No Staining or No fibro fragments observed	2.5
	▶			3.0						3	Seepage found @ 3.0m BGL No HC smell, No Staining or No fibro fragments observed	3.0
				3.00			SANDSTONE, fine to medium grained, extremely weathered, extremely low to low strength, grey-yellow	M				
				3.5								3.5
				4.0								4.0
				4.5								4.5
				4.90			Borehole ASS2 terminated at 4.90m					
				5.0								5.0
				5.5								5.5

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

FOUNDATION EARTH SCIENCES

BOREHOLE : ASS3

CLIENT NAME: Platino Properties Pty Ltd **JOB NUMBER:** E2843-2

SITE ADDRESS: 67-75 Lords Road, Leichhardt NSW 2040 **PROJECT:** Preliminary Acid Sulphate Soil Assessment

Date Started : 15/06/2022 **Completed :** 15/06/2022 **Logged By :** EY **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
ADT				0.02			Asphalt Concrete, approximately 20mm thick	M	D	0.1	No HC smell, No Staining or No fibro fragments observed	
							FILL, silty sand, fine to medium grained, brown-yellow, with gravel					
				0.5						0.5	No HC smell, No Staining or No fibro fragments observed	0.5
				1.0						1	No HC smell, No Staining or No fibro fragments observed	1.0
				1.5						1.5	No HC smell, No Staining or No fibro fragments observed	1.5
				1.50		CH	Sandy CLAY, medium to high plasticity, brown-light brown, with ironstaining rock band	M	VSt			
				2.0						2	No HC smell, No Staining or No fibro fragments observed	2.0
				2.30			becoming reddish brown					
				2.5						2.5	No HC smell, No Staining or No fibro fragments observed	2.5
				2.80			SANDSTONE, fine to medium grained, extremely weathered, extremely low to low strength, grey-brown-reddish brown	M				
				3.0								3.0
				3.5								3.5
				4.0								4.0
				4.5								4.5
				4.70			Borehole ASS3 terminated at 4.70m					
				5.0								5.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

FOUNDATION EARTH SCIENCES

BOREHOLE : ASS4

CLIENT NAME: Platino Properties Pty Ltd **JOB NUMBER:** E2843-2

SITE ADDRESS: 67-75 Lords Road, Leichhardt NSW 2040 **PROJECT:** Preliminary Acid Sulphate Soil Assessment

Date Started : 15/06/2022 **Completed :** 15/06/2022 **Logged By :** EY **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
ADT				0.02			Ashphalt Concrete, approxmately 20mm thick	M	MD	0.1	No HC smell, No Staining or No fibro fragments observed	
				0.5			FILL, silty sand, fine grained, dark brown, with gravel			0.5	No HC smell, No Staining or No fibro fragments observed	0.5
				0.50		CH	Silty CLAY, medium to high plasticity, brown-yellow	M	St			
				1.0						1	No HC smell, No Staining or No fibro fragments observed	1.0
				1.5						1.5	No HC smell, No Staining or No fibro fragments observed	1.5
				1.90 2.0			with ironstaining rock band			2.0	No HC smell, No Staining or No fibro fragments observed	2.0
				2.30 2.5			SANDSTONE, fine to medium grained, extremely weathered, extremely low strength to low strength, brown-grey, with ironstaining rock band			2.5	No HC smell, No Staining or No fibro fragments observed	2.5
				3.0								3.0
				3.5								3.5
				4.0								4.0
				4.00			Borehole ASS4 terminated at 4.00m					
				4.5								4.5
				5.0								5.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

APPENDIX B: CONCEPT DEVELOPMENT PLANS

SJB Urban

67-75 Lords Road Masterplan
Urban Design Report

Prepared for
Platino

Issued
21 November 2023

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We create amazing places

At SJB we believe that the future of the city is in generating a rich urban experience through the delivery of density and activity, facilitated by land uses, at various scales, designed for everyone.

Version: 08
Prepared by: JM, MH
Checked by: FL, JK

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ABN 20 310 373 425
ACN 081 094 724
Adam Haddow 7188 John Pradel 7004

SJB would like to acknowledge the traditional custodians of the land on which we live and practice and pay our respects to elders, past, present and future. In particular, we would like to acknowledge the 60,000+ years of continuous engagement of this land by Aboriginal and Torres Strait culture.

The journey of Aboriginal and Torres Strait Islander people and their knowledge of this land is incredibly rich – its importance to the future of our country should never be underestimated.

Issued

01 - Draft for Review	02.06.2022
02 - Revision	24.06.2022
03 - Revision	01.07.2022
04 - Revision	04.07.2022
05 - Revision	15.07.2022
06 - Revision	26.07.2022
07 - Gateway Revision	29.09.2023
08 - Gateway Revision	21.11.2023

Certified Management Systems

ISO 9001:2015 Quality Management System
ISO 45001:2018 Occupational Health & Safety Management System
ISO 14001:2015 Environmental Management System

Contents

Introduction

1

1.1 Connecting to Country

Australia's First Nations peoples have lived and shaped this country for thousands of years. SJB adopts the maxim of the NSW Government Architect that 'if we care for Country, it will care for us.' We are committed to fulfilling our obligations under the NSW EP&A Act 1979 which requires development to promote the sustainable management of built and cultural heritage, including Aboriginal cultural heritage.

We believe that identifying the value of First Nations leadership and knowledge necessitates a shared responsibility between designers, planners, government, our clients, stakeholder groups and the communities we serve, to build the trust, friendships and relationships that lead to more considered outcomes.

Our approach is guided by the NSW Government Architect's Connecting with Country draft framework for understanding the value of Aboriginal knowledge in the design and planning of places. Its successful implementation will result from a collaborative mindset and therefore we seek to foster partnerships that work towards the common goal of delivering a built environment that contributes to the wellbeing of Country, and which respects the oldest living culture.

The Sydney basin is the Country of the Eora Nation and its twenty nine Clans. The map below illustrates recorded fragments of language, clan and other named groups in Sydney which have emerged over thousands of years of interaction with Country. This overlooked and deep connection between indigenous people and the Country of Sydney continues today and should help shape its future.

The project team acknowledge this site at Leichhardt is on Gadigal and Wangal Country.

1788 Clans along the Parramatta River
Source: Wallumedegal: An Aboriginal History of Ryde, Keith Vincent Smith, 2005

Clan name	Historical spelling(s)	Name or description of Country
Gadigal	*Cadigal* *Cadigàl* *Càd-i-gal* *Cadi-gal*	*Cadi was on the south side of Port Jackson, extending from South Head to Long Cove (Darling Harbour) (King in Hunter 1793). Càdi, the bay of Cadi, is probably 'Kutti' which is the Aboriginal place name for Watsons Bay.*
Wangal	*Wangal* *Wanngal* *Won-gal*	*Wann (Phillip 1790). Wanne (King in Hunter 1793) extended along the south side of the harbour from Long Cove (Darling Harbour) to Rose Hill, which the local inhabitants called Parramatta.*

Clan name chart
Source: Australian Musuem

1.2 Executive Summary

This urban design report has been prepared to support a planning proposal for the site at 67-75 Lords Road, Leichhardt. The proposal seeks to align the Local Environmental Plan (LEP) with the recommended controls in the Parramatta Road Corridor Urban Transformation Scheme (PRCUTS). A Floor Space Ratio of 2.4:1, a Height of Building of 30m, and Land Zoning of R3 Medium Density Residential is proposed.

The project has been a collaborative engagement between SJB, Platino Properties, FDP, Matthew Pullinger Architect, and multiple additional specialist consultants.

The urban design proposal results from an extensive process of peer review of previous design work, reports and feedback received from Inner West Council and the community, a thorough analysis of the site and its context and consideration of the prevailing strategic planning framework.

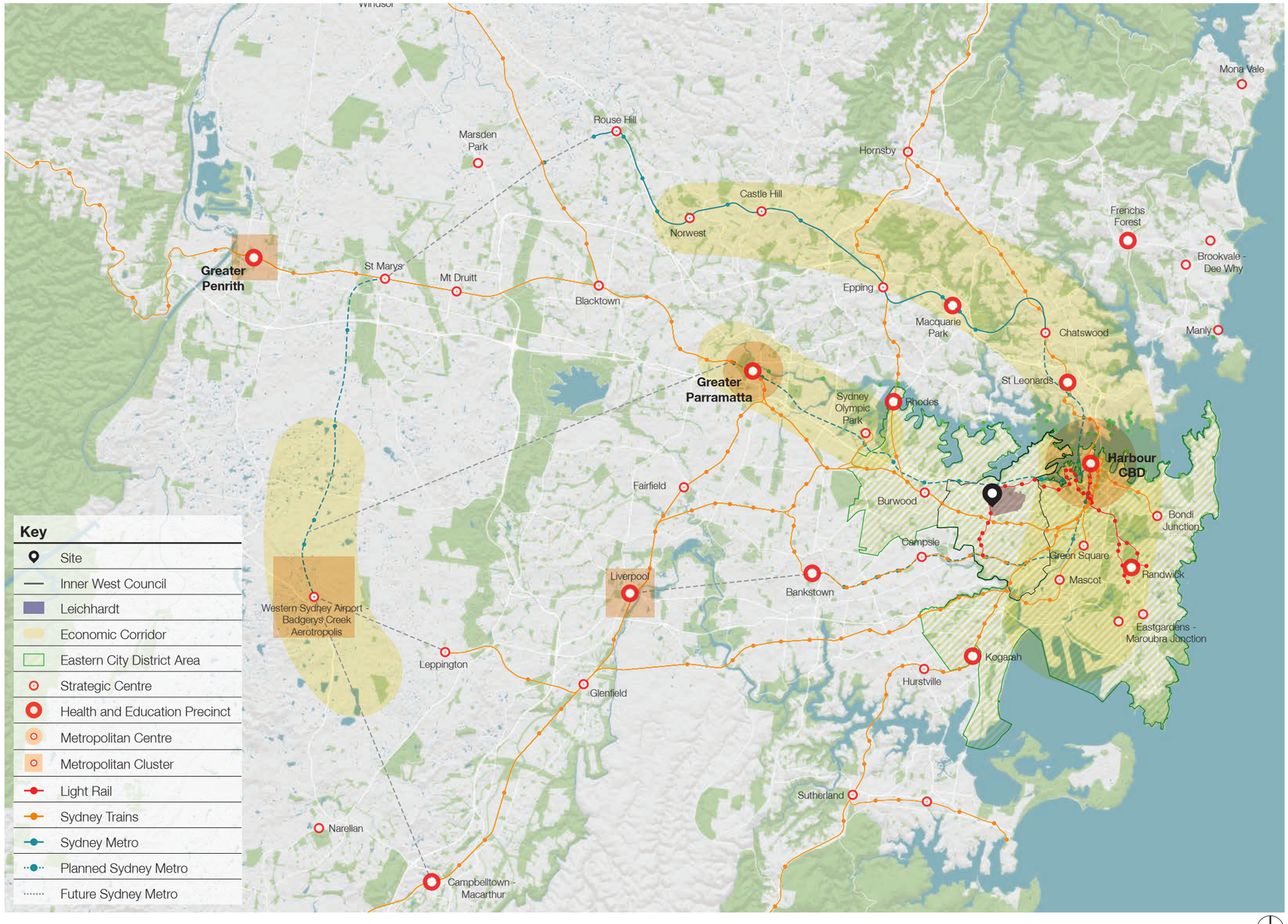
The outcome is a series of proposed controls, a massing envelope and a set of robust design principles that guide the future built form. An indicative reference scheme has been developed to demonstrate how future development on the site can be achieved in compliance with the proposal as well as being compliant with the relevant ADG provisions to ensure high quality design.

Strategic Context

The site is within the suburb of Leichhardt which is part of the Inner West Council Local Government Area. Within the Greater Sydney Region Plan - A Metropolis of Three Cities, it is part of the Eastern City District that covers areas south of the Parramatta River and east of Sydney Olympic Park.

Multiple strategic centres, as defined within the district plan, surround Leichhardt including Burwood, Campsie, Green Square and Sydney CBD. Leichhardt is also west of a major economic corridor that stretches from Sydney Airport to Sydney, North Sydney, Macquarie Park and culminating in Norwest.

The site is along the L1 Light Rail line that connects from Dulwich Hill to Central traversing through Lilyfield, Glebe, Pyrmont and Haymarket.



NTS

Introduction

Local Context

The site is located west of Leichhardt and Marion Street Town Centres and north of Parramatta Road, adjacent the L1 Light Rail line, with two stations servicing the site, and The Greenway, green infrastructure corridor, providing ample green connections. The site is serviced by additional key amenities such as Kegworth Public School and Leichhardt Marketplace Shopping Centre.

Parramatta Road is a key east-west connection between Sydney CBD and Parramatta whilst additional primary roads service the site north and south.

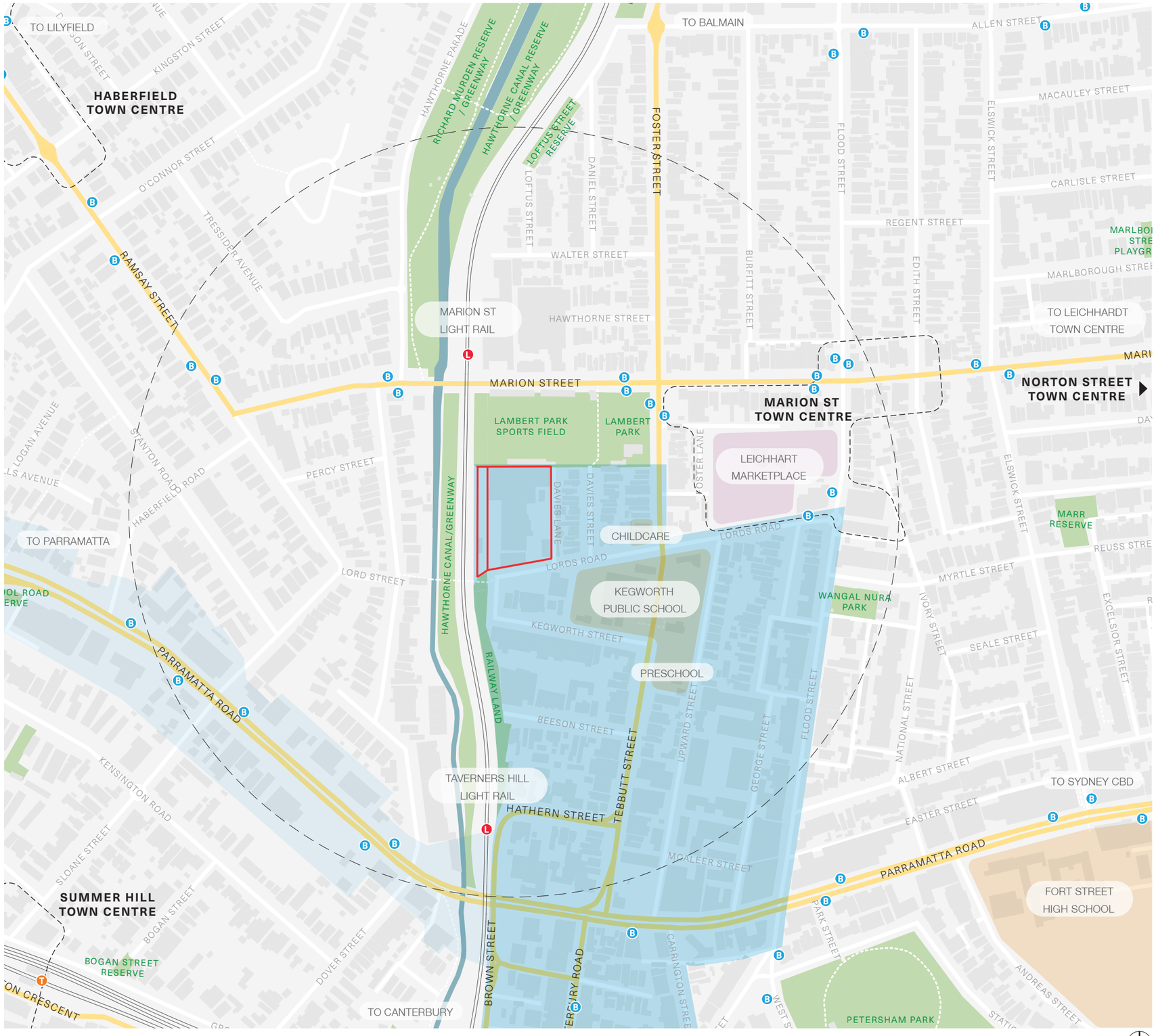
The site is also within the PRCUTS Taverners Hill precinct core area which has recommended changes to height of building, land zoning and floor space ratio. It also has recommendations about existing local character and appropriate development outcomes within the area.

Key Places Within 400m

- 1 School + 2 Child Care - 100m
- 1 Town Centre incl. 1 Shopping Centre - 250m
- 2 Light Rail Stops + Multiple Bus Stops - 300m
- 5 Open Spaces - 50m

KEY

- Site Boundary
- 400m Buffer
- Primary Road
- Canal
- Open Space
- Taverners Hill PRCUTS Frame Area
- Taverners Hill PRCUTS Core Area



1:5000 @ A3

Introduction

The Site

The site has an area of 10,607sqm and currently zoned (and used) for general industrial. The existing buildings are a mix of styles and qualities. There is a large amount of hardstand used for parking and loading along both the eastern and western interfaces. The site is accessed in two location, both along Lords Road. There are few trees within the site boundary, primarily along the eastern edge and south-eastern corner.

The site is adjacent to Davies Lane which is primarily used for parking and rear lane access for properties with an address to Davies Street. These properties and those to the south are predominantly low-density residential townhouses and terraces of diverse quality and character.

Lambert Park Sportfields to the north is mostly used by APIA (Leichhardt Football Club) throughout the day and night. There is no immediate access to the park from the site, with access only from Davies Street or Marion Street. Access to the Greenway is adjacent the site, with a tunnel running under the light rail corridor exiting along the sites south-west corner. The Greenway provides a 5.8km north-south active transport link from Cooks River to Iron Cove.

The site is split between two parcels, 67-73 Lords Road (DP940543) and 75 Lords Road (DP550608). The latter is to be provided as RE1 open space as per the PRCUTS recommendations.

Key Figures

	52% Site Coverage
	<5% Deep Soil
	5,500sqm Non-Residential
	<10% Tree Canopy Cover
	0sqm Publicly Accessible Open Space

KEY

- Site Boundary
- Land for RE1 Open Space

Aerial Image: Source - MetroMap 2022

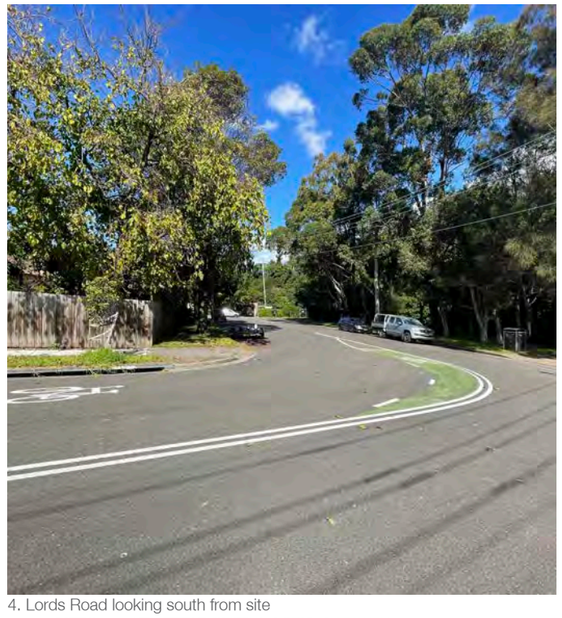
1:1000 @ A3

Introduction


1. The Greenway

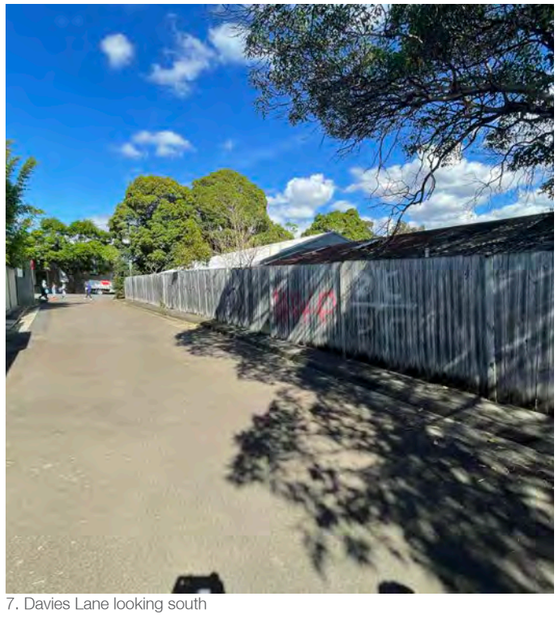

2. North-western corner looking south


3. Western facade and forecourt


4. Lords Road looking south from site


5. Eastern entrance from Lords Road


6. Eastern Facade and forecourt


7. Davies Lane looking south


8. Davies Lane looking north

Introduction

Process

The design process has been developed based on the unification of three separate streams into a singular design response. Drawing on three separate streams has enabled the proposed urban design scheme to be more reflective of the current strategic and spatial requirements of the site.

1. Strategic Policy
Developing an understanding of the current strategic thinking towards the broader and local context of the site. This includes reviewing state and local policy and appropriate guide and approaches to design excellence. The outcome of this is a series of Strategic Priorities that the urban design response is to respond to.

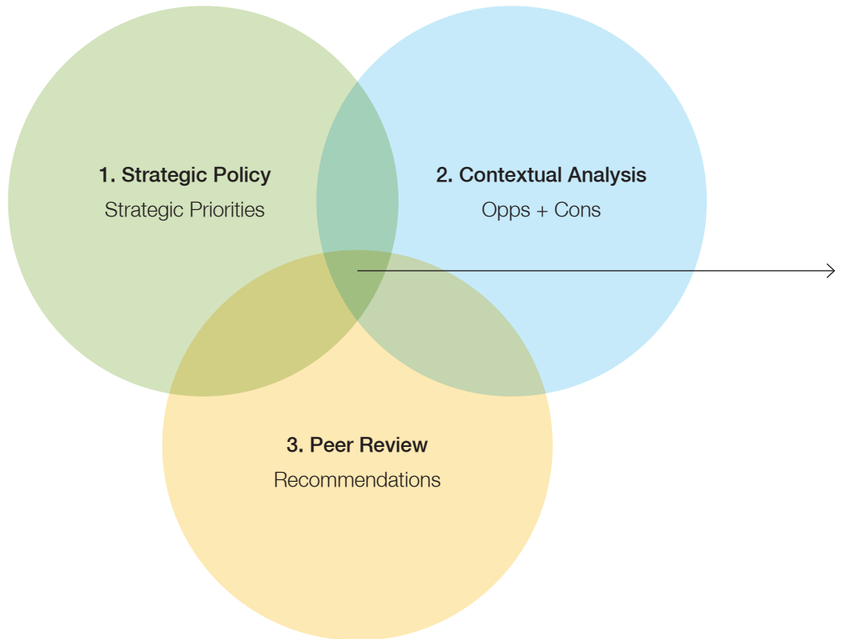
2. Contextual Analysis
Mapping the current spatial requirements of the site including open space, built form and land use, along with consultant recommendations regarding meeting minimum criteria of assessment. The result of this is a number of opportunities and constraints which will be reflected on in the urban design scheme.

3. Peer Review
The previous PP was peer reviewed and a series of recommendations were made. Understanding the position of the peer review and the Planning Panel will be key to creating a new urban design scheme that aligns with the desires for the site. The result is a list of recommendations that will be used as a checklist for the urban design scheme.

Principles

The design principles have been generated through the combination and consolidation of all the criteria of assessment that was discovered through the strategic policy review, context analysis and previous urban design scheme review. The intent is that these principles will guide future built form and design across the site.
Each design principle responds to a number of the factors from each of the priorities, constraints, opportunities or recommendations. Collectively, they respond to all of these, creating a holistic response to the site that the urban design scheme can use to build a fully responsive proposal.

Three Streams



Principles

Introduction

Vision

Envisioned as a mixed-use intergenerational precinct, the proposal would generate vitality and activation for the site and to Lords Road and demonstrates Platino's commitment to the local community. It features improved pedestrian connectivity, permeability, streetscape, presence, open space and non-residential floorspace.

The ground floor would be activated by approximately 1,700sqm of non-residential floor space, providing for the local economy and encouraging movement within and through the site. Large non-residential spaces with high ceiling heights will be able to accommodate a diversity of uses to renew employment opportunities on the site. Activation could come from potential uses such as workshops, cafes, co-working spaces, creative outlets, wellness centres and boutique offices.

Approximately 210 dwellings will help generate long-term activation and help establish a strong community. An intergenerational approach has been envisioned that allows individuals, families, empty nesters, and key workers to coexist within the site. Co-working spaces will allow residents to work from home, whilst common areas, cafes and a playground will encourage socialisation and activity for young and old.

A publicly accessibly central courtyard supports the ground floor activation and residents. Fronting Lords Road, the courtyard aims to draw movement into the site and create a meeting place for the community. The courtyard is connected to the surrounding context via a series of public through-site links with the intent to connect to the Greenway, Davies Lane, a new RE1 public recreation open space along the western interface. This new open space could provide a potential future connection to Marion Street Light Rail via Lambert Park Sports Field to the north.

The design represents a holistic vision for the site that has been grounded in its response to strategic, local and place-specific requirements. A reference scheme has been prepared that demonstrates alignment with the proposed outcomes, controls and vision.

Key Features

- Approx. 1,700sqm non-residential floor space primarily directed towards Lords Road
- Approx. 210 dwellings with a strong diversity of typology and dwelling mix
- 1,500sqm RE1 public recreation open space provided adjacent to Light Rail
- Approx. 700sqm public open space at the centre of the site
- Approx. 1,400sqm private communal open space for residents
- Minimum 15% deep soil (+10% on existing)
- Minimum 22% tree canopy coverage overall (+12% on existing) with min. 15% on R3 zone
- Height transition and above podium setbacks to create human scale interface
- Low street wall in internal courtyard to create fine grain interface with public open space
- No use of Davies Lane for vehicle servicing/movement related to site

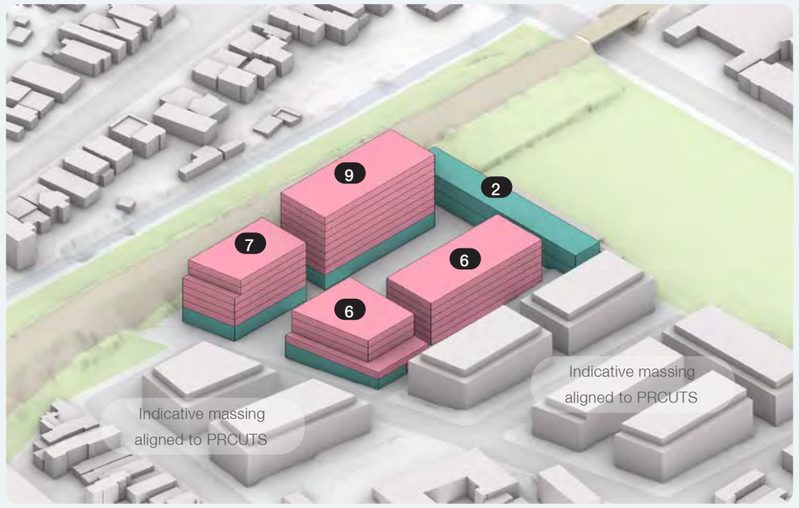
Existing Permissible Height	**-**
Existing Permissible FSR	**1:1** (LEP)
Existing Permissible Land Zoning	**E4 General Industrial** (LEP)
Proposed Height	**30m (8st)** (PRCUTs - 67-73 Lords Rd only)
Proposed FSR	**2.4:1** (PRCUTs - 67-73 Lords Rd only)
Proposed Land Zone	**R3 Medium Density Resi. & RE1 Public Rec.** (PRCUTs)
Potential Dwelling Yield	**Approx. 210**
Potential Deep Soil	**Min. 15%**

Introduction

Scheme Comparison

An urban design framework based on the previous planning proposal was prepared by Stewart Hollenstein and Matthew Pullinger Architect in 2018. This planning proposal was not progressed, however many of the key guiding principles and built form approaches remain relevant and have been carried through to the proposed scheme.

This comparison shows the proposed controls and key metrics of each scheme along with key elements that define their built form outcomes.

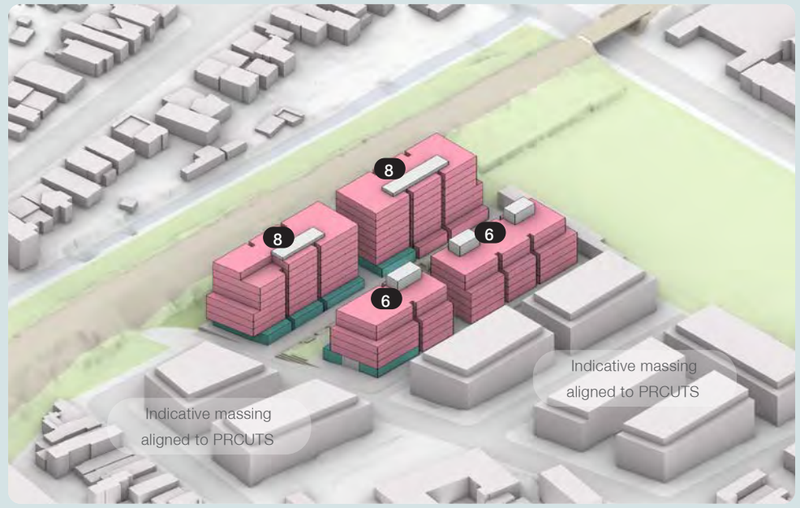


Planning Proposal 2018

Site Area	**10,607sqm**
Developable Site Area	**10,607sqm**
Total GFA	**25,457sqm**
FSR	**2.4:1**
Height	**RL 35m - 9st**
Land Zone	**R3 Medium Density Residential**
Dwelling Yield	**235**
Non-Residential	**min. 3,000sqm**

Key Elements

- Open space centrally located within the site
- One-way shared road enters the site from Lords Road and then exits along Davies Lane
- Two-storey non-residential building along the northern boundary to deal with interface with Lambert Sportsfield
- Stepped height transition from 6 storeys (east) to 9storeys (west)
- Zero metre setback to corner of Lords Road and Davies Lane
- Double height spaces for non-residential at ground
- No residential at ground except for lobby and VT access



Proposed Scheme

Site Area	**10,607sqm**
Developable Site Area	**9,018sqm**
Total GFA	**21,643sqm**
FSR	**2.4:1**
Height	**30m - 8st**
Land Zone	**R3 Medium Density Residential** and **RE1 Public Recreation**
Dwelling Yield	**Approx. 210**
Non-Residential	**Approx. 1,700sqm**

Key Elements

- Central courtyard located towards Lords Road with full visibility
- RE1 open space along western interface with Light Rail
- Shared road enters and exits from Lords Road
- Northern interface is used as a private connection for residents and space for private terraces for ground floor dwellings
- Stepped height transition from 6 storeys (east) to 8 storeys (west) with max. 4 storeys street wall along the eastern boundary
- 6m setback to the corner of Lords Road and for the full extent of Davies Lane. A setback above 4 storeys for the western interface with Lords Road
- Mixed residential and non-residential at ground with non-residential fronting Lords Road and residential provided at the rear of the site

KEY

- Residential
- Non-Residential
- Service/Parking/VT

Strategic Policy Review

2

2.1 Policies, Guides & Plans

Key Takeaways

- Four key themes to the vision are Infrastructure and Collaboration, Liveability, Productivity, and Sustainability
- Key objectives include housing choice, designing places for people, developing a more accessible and walkable city, valuing green spaces and landscape plus more
- The plan is to help identify pathways to building the future of city that responds to the housing needs of its population

Greater Sydney Region Plan

Greater Sydney Commission 2018

In March 2018, the Greater Sydney Commission (GSC) released the Greater Sydney Region Plan, A Metropolis of Three Cities ('the Plan'). The Plan is built on a vision of three cities where most residents live within 30 minutes of their place of work, education, health facilities and services. This vision seeks to bring together land use and transport planning to boost Greater Sydney's liveability, productivity and sustainability by spreading the benefits of growth.

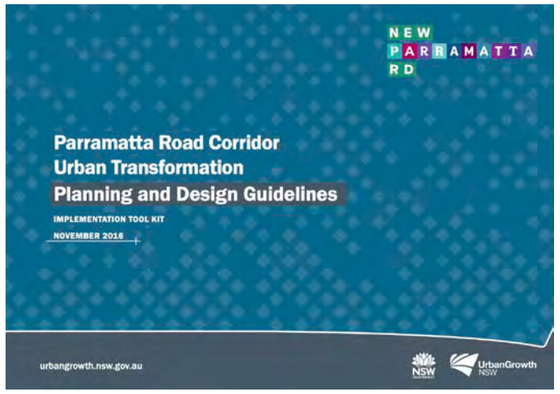
Key Takeaways

- Reflects the same four key themes and vision objectives as the Greater Sydney Region Plan
- Leichhardt Marketplace is highlighted as a local centre alongside Leichhardt
- The Greenway is highlighted as a priority green grid corridor and recommended for improvements
- Leichhardt is mentioned as being a highly diverse neighbourhood through identity and distinctive character

Eastern Harbour City District Plan

Greater Sydney Commission 2018

The Eastern City District Plan was approved in March 2018 and guides the transition of the District within the context of greater Sydney's Three Cities. Its objective is to improve the District's social, economic and environmental assets. The District Plan identifies that growth in the Eastern City will be supported by previously unparalleled levels of city-scale infrastructure investment including transport, public realm and sporting and cultural institutions, which will attract and retain new and existing businesses in the Harbour City.



Key Takeaways

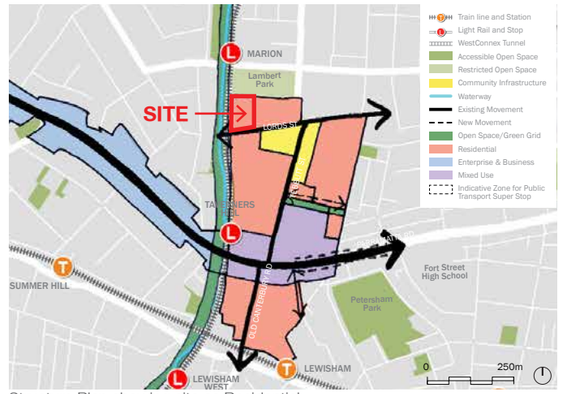
- Site proposed as Residential (R3) + Open Space (RE1)
- Site proposed as 30m max HOB
- Site proposed as 2.4:1 FSR
- Lords Road is a 'Local Street' that should be pedestrian prioritised
- Character objectives state opportunity for development to step up in height towards the Greenway

PRCUTS

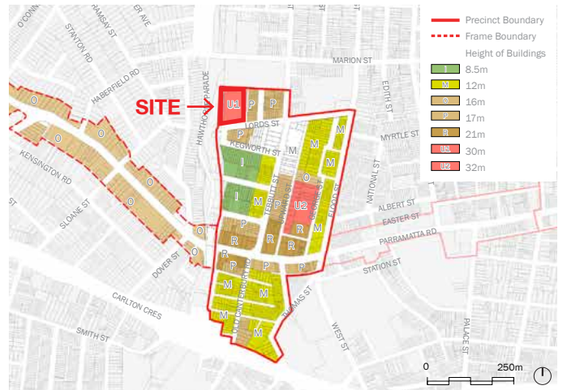
UrbanGrowth NSW 2016 (updated 2021)

The Parramatta Road Corridor Urban Transformation Strategy (PRCUTS) is made up of several documents that aim to provide direction for future development along Parramatta Road. It was initially developed in 2016 by the now disbanded UrbanGrowth NSW.

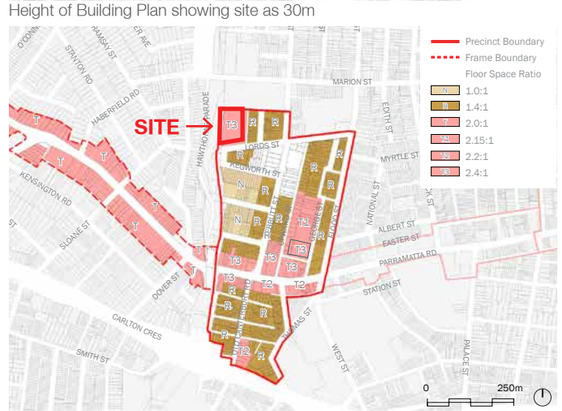
An implementation update to PRCUTS was issued by DPIE July 2021. This update supplemented PRCUTS with additional actions and reflects the changes to the strategic context of the Parramatta Road corridor since PRCUTS was released in 2016. The update encourages the progression of planning proposals, notwithstanding the state of precinct-wide traffic studies.



Structure Plan showing site as Residential



Height of Building Plan showing site as 30m



Floor Space Ratio Plan showing site as 2.4:1

Key Takeaways

- The site identified as ‘Key Employment Lands’ and ‘Urban Services’ land in the plans
- Objectives relating to employment lands are drawn from the Employment and Retail Lands Strategy
- States it is important to retain employment space that can be adapted and re-purposed in the future
- Councils position is to retain all currently zoned industrial lands including that identified for rezoning in PRCUTS
- Analysis shows housing growth in line with PRCUTS can be managed without rezoning industrial lands

LSPS

Inner West Council 2020

The Local Strategic Planning Statement (LSPS) is Council’s approach to the future structure of the Inner West and includes principles and objectives that align to broader strategic frameworks such as the Greater Sydney Region Plan.

It is noted that Council’s policy on retention of all employment lands within the Parramatta road Corridor is inconsistent with the Greater Sydney Region Plan, the North District Plan and PRCUTS.

Key Takeaways

- Lords Road is specifically noted as being considered previously for residential however is to be retained industrial as valuable local urban services
- Key action to prepare a place-based study for the Marion Street Precinct
- Reiterates desire to retain industrial lands in the Taverners Hill Precinct of PRCUTS as residential targets can be met without them

Local Housing Strategy

Elton for Inner West Council 2020

The Local Housing Strategy is another supporting document to the LSPS that aims to provide guidance on where housing supply can be met across the LGA and the principles surrounding future development. It includes provisions for the supply of affordable housing and breaks down potential dwelling yield per precinct. The Strategy has been adopted by Council.

It is noted that the Local Housing Strategy has been endorsed by DPIE subject to amendments that would align with PRCUTS.

Key Takeaways

- Urban services land is to be retained to accommodate affordable and diverse opportunities for business
- States there is a loss of urban service land at a subregional level placing pressure on availability of space and hence affordability
- More or less reflects the same sentiment as the LSPS

Employment and Retail Lands Strategy

Inner West Council 2020

The strategy is Councils position on their current employment lands and how they manage them into the future to accommodate local business floor space that is diverse and affordable. It includes four (4) principles regarding industrial and urban services lands that all revolve around the same premise that employment lands are to be retained. The Strategy has been adopted by Council.

It is noted, as per other previous comments, that the strategy is inconsistent with other state policy.

Key Takeaways

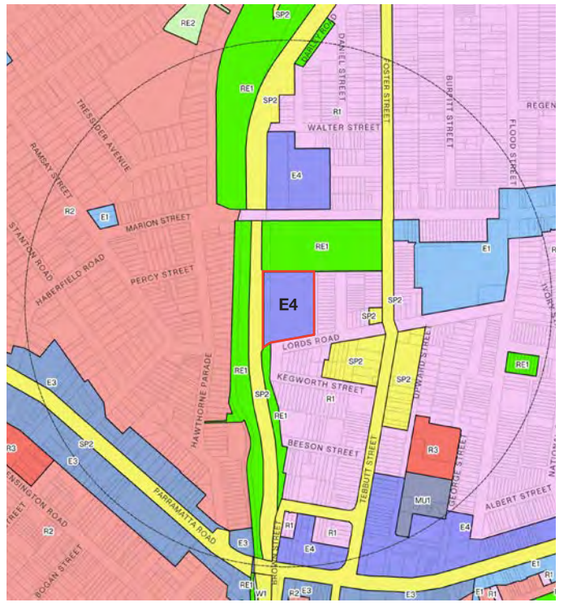
- Plans for the Greenway show no impact on the site
- Plans for the Greenway also show no change to the existing conditions of the current connections immediately adjacent the site
- Lords Road (and the underpass) is considered a good connection from the Greenway to the east

The Greenway

Inner West Council 2018

The Greenway is a masterplan for a long stretch of connected green infrastructure that aims to fill missing links and create a continuous active transport route from Cooks River to Iron Cove. The subject site is immediately adjacent to the Greenway which includes a connection under the light-rail from Lords Road to the Greenway.

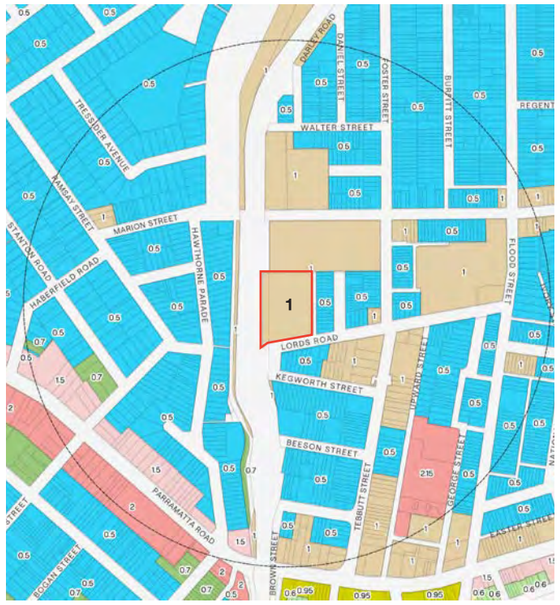
2.2 Existing Planning Framework (IWC LEP 2022)



Land Zoning

E4 General Industrial

Lambert Park to the north is RE1 Public Recreation, residential areas to the east and south are R1 General Residential and the Light Rail line to the west is SP2 Infrastructure Railway.



Floor Space Ratio

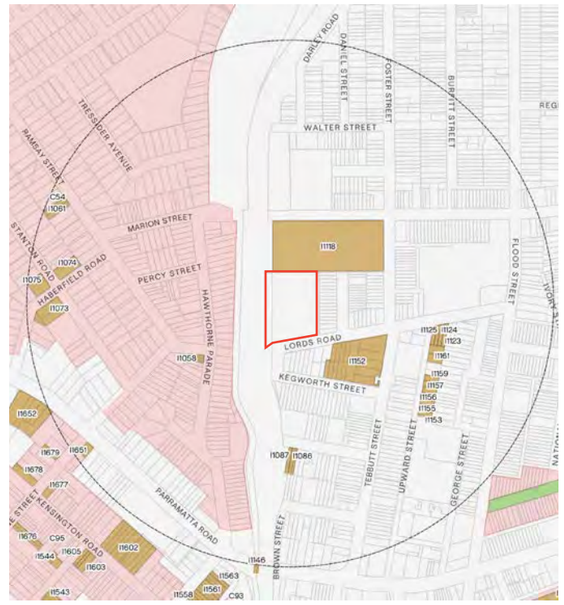
1:1

Residential areas surrounding the site are labelled as 0.5:1 while other areas such as Kegworth Public School and Leichhardt Marketplace are 1:1.

Height of Building

N/A

The site and the majority of areas within Leichhardt do not have a Height of Building classification.



Heritage

N/A

The site has no heritage items and is not in a conservation area. Lambert Park to the north and Kegworth Public School to the south-east are both labelled as heritage items. The Haberfield Conservation Area is located approximately 80m to the west, beyond the light rail embankment.

KEY

Site Boundary

2.3 Design Excellence

The policies referenced below have been prepared by Government Architect NSW (GANSW) to guide and improve the design process from the outset. Both the overriding intent and the specific principles within them have been considered for the proposal for the site.

Better Placed is the overarching policy by GANSW. It establishes seven criteria which define a ‘good built environment’;

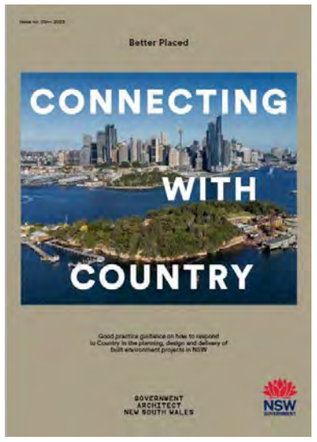
Implementing Good Design is the complementary policy to Better Placed and outlines the approach for measuring places and spaces to assess whether they meet the expectations and requirements of GANSW policy.

The draft Greener Places policy outlines the importance of green spaces in towns and cities and the approach to integrating them into broader connected networks which support recreation for people and biodiversity in the urban environment.

The Design Guide for Heritage is a guideline for preserving, restoring and integrating heritage into spaces, buildings and precincts. Formulated in collaboration with the Heritage Council of NSW it defines heritage places and thematically unpacks key practical considerations for design.

The Good Urban Design Guidance note builds on the Draft Urban Design Guide which is currently being updated. It builds on the objectives in Better Placed and focuses on the strategic scale and design process for running masterplanning projects.

Aligning Movement and Place seeks to outlay the functional, aesthetic and communal importance of roads and streets. It has been produced in collaboration with Transport for NSW and provides advice and a toolkit for approaching transit oriented development at many scales.



The Connecting with Country framework provides a guidance on creating a culturally sensitive foundation for urban design. Embracing indigenous ways of designing fosters a harmonious integration of cultural values, environmental sustainability, and community engagement, ensuring that projects resonate authentically with the rich tapestry of local and cultural heritage.

- Better fit
- Better performance
- Better for community
- Better for people
- Better working
- Better value
- Better look and feel

2.4 Strategic Priorities

The following priorities summarise the key findings of the policy review. These priorities have been used to guide the proposal and visioning for the site to develop a solution that is balances strategic opportunities across all levels.

Supporting local businesses with employment uses

The ability to support local economies through employment generating uses is a key part of Councils local strategies. Preserving jobs and ensuring local businesses can operate successfully enables strong place-making practice and communicates keen interest in supporting communities.

Things to consider:

- Job potential of the site
- Alternative forms of employment uses
- Place-making opportunities

Prioritise diverse residential development in transit-oriented locations

State policy highly advocates for transit-oriented development as it allows density to increase in areas of high accessibility, thereby removing need from other areas to meet housing targets. It also advocates for a diverse mix of dwelling typologies to cater to multiple occupiers such as families, individuals or seniors.

Things to consider:

- Leveraging sites access to Light Rail
- Flexibility to create diverse dwellings
- Future development on neighbouring sites

Build on and enhance local character through integrated development

Local character is a big part of state and local policy. Understanding the current local character allows places to utilise that as a target to maintain for future developments. It also allows a more refined approach to urbanism where you can change or enhance certain qualities through good urban design

Things to consider:

- Appropriate scale and bulk
- Edge interfaces with existing residential
- Materiality and architectural expression

Access to open space and embracing existing natural assets

Providing good access to open spaces for more people helps reduce health issues experienced by the community and creates safer and more active places to live. Embracing these places and enhancing existing assets such as tree canopy create more comfortable spaces that are more resilient to urban heat island effects

Things to consider:

- Increasing connectivity to existing open space
- Provision of a new local open space
- Preservation of existing trees and enhances landscaping, canopy cove and street trees

Connect communities with public amenity and activation

Strong public amenity such as shops, retail, schools, child care, and open spaces facilitate regions with greater populations and help drive growth whilst building on local character. Creating connections between these places helps build a community and supports local businesses with economic stability

Things to consider:

- Providing the right kind of amenity on site
- Not detracting from nearby shops
- Need for community infrastructure

Improve walkability and active transport connections

Walkability is a key factor of creating a good place that people want to live. With good walkability and access to active transport opportunities such as walking trails and cycleways, places often see a reduction in car use, thus reducing pollution and creating safer and more welcoming environments

Things to consider:

- Leverage existing active transport links
- Encourage walkability and healthy lifestyles
- Pedestrian prioritisation and reduced car use

Contextual Analysis

3

3.1 Amenity & Land Use

The site is serviced by a high level amenity including schools, childcare, town centres, shopping villages and public transport options (including two light rail stops).

Leichhardt Marketplace within the Marion Street Town Centre provides multiple shops and supermarkets. The town centre also provides additional amenity including boutique shops, cafés and restaurants.

Kegworth Public School and Preschool is on Lords Road and supports students from kindergarten to year 6. Fort Street High School located on Parramatta Road to the south-east is a 20 min. walk from the site.

The site is north of Parramatta Road and it's associated adjacent land uses. This area is subject to the PRCUTS framework which also includes this site. This land is predominantly industrial and business related uses with some hotels/motels and shop-top housing.

There is also multiple open spaces including the Hawthorne Canal section of the Greenway corridor, Lambert Park (and sports field) and Haberfield Tennis Courts. Details of the sports field have been provided on the following page.

Constraints

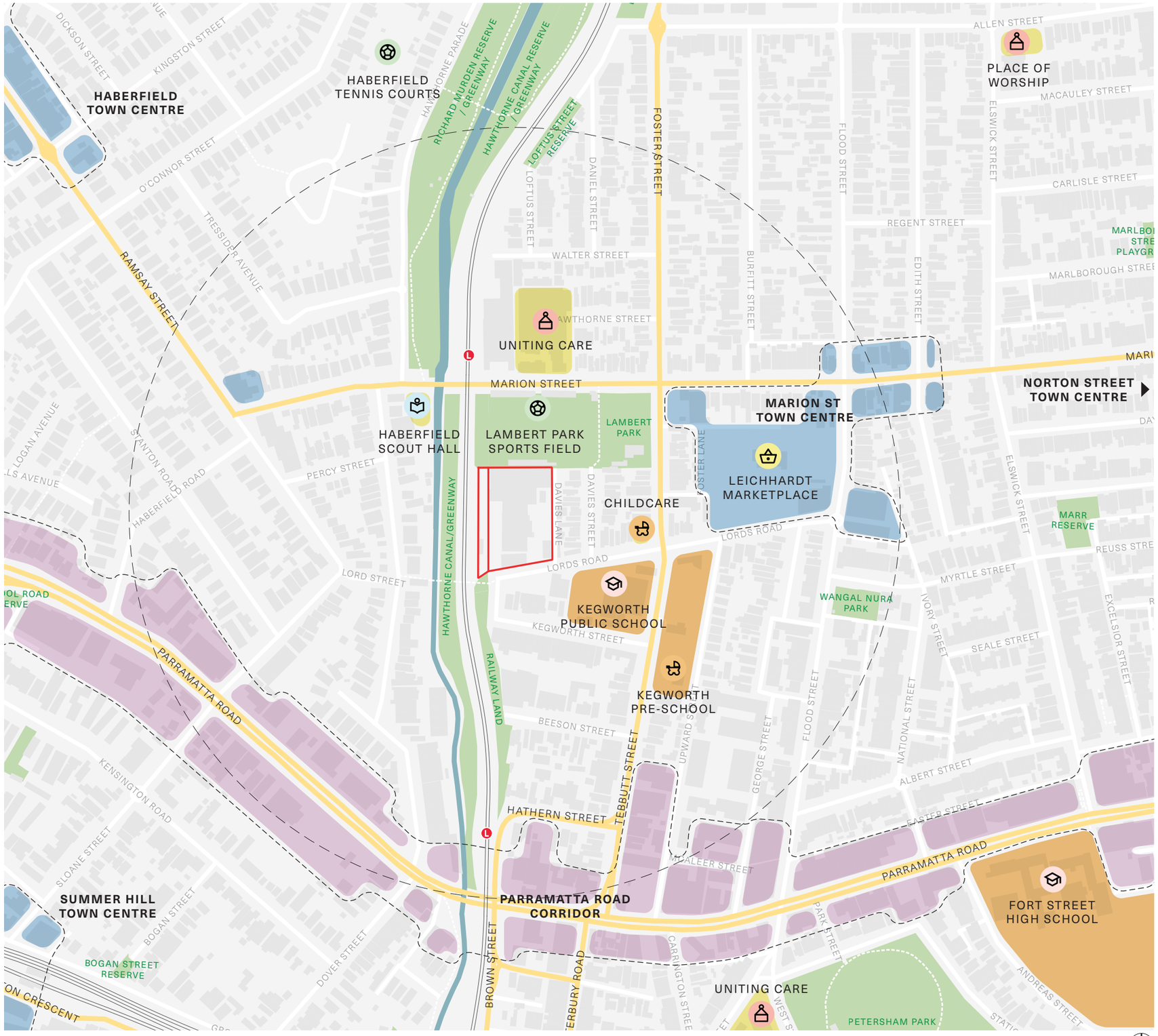
- Sports field to north may impact amenity (see next page)

Opportunities

- Walking distance to shops/shopping centre
- Walking distance to local school and childcare
- Close to multiple additional town centres
- Close to two light rail stops

KEY

- Site Boundary
- 400m Buffer
- Open Space
- Town Centre
- Corridor
- Education
- Community & Services



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Contextual Analysis

Lambert Park Sports Field

The sports field is a purpose built soccer stadium used by APIA Leichhardt Tigers FC as their home ground since inception in 1954. There are several key opportunities and constraints regarding the sports fields.

1. Light towers at each corner of the field provide lighting for night-time sports events. A note provided by Ecolight from September 2018 highlights that the older form of lighting is prone to light spill and glare which can have an impact on the site at night. The previous PP included a VPA to provide new, low-spill lighting for the field to minimise issues.
2. There are two main stands. The stand to the south contains dressing room facilities, a social club, and press and media facilities. The stand is two-storeys and contains no apertures facing the site.
3. Access to the field is via Lords Road, Davies Street, through Lambert Park and through the entrance located on Marion Street. This is also one of the most direct routes to the Marion Street Light Rail station.
4. A potential alternative link to the Light Rail could be accommodated along the western edge of the sports field in a piece of land that is mostly unused by the club.

Noise from the field and additional acoustic sources was considered in a noise assessment prepared by Acoustic Logic in 2022. The conclusion states no serious concerns but a detailed examination of building constructions and treatment should be undertaken during detailed design to ensure compliance.

Constraints

- Light spill and glare from light towers
- Noise from events day and night
- Interface with southern grandstand

Opportunities

- Potential direct connection to Marion Street

KEY

▭	Site Boundary
▭	Lambert Park Sports Field
▭	Lambert Park
→	Existing Pedestrian Connection
--→	Potential Connection

Aerial Image - Source: MetroMap 2016

Light spill on Davies Street

Light glare within the sports field

Light spill on Davies Lane

Images - Source: Ecolight note September 2018

3.2 Open Space & Public Domain

Open Space Catchment

The GANSW Greener Places Design Guide recommends that low density residential areas be serviced by open space of minimum size 3000sqm and within 400m. For high density areas this becomes 1500sqm and 200m. For the purpose of this analysis we have shown a buffer of both 200m and 300m from open spaces that are a minimum of 3000sqm. Lambert Park Sports Field has been excluded from this analysis as it is predominantly a private facility.

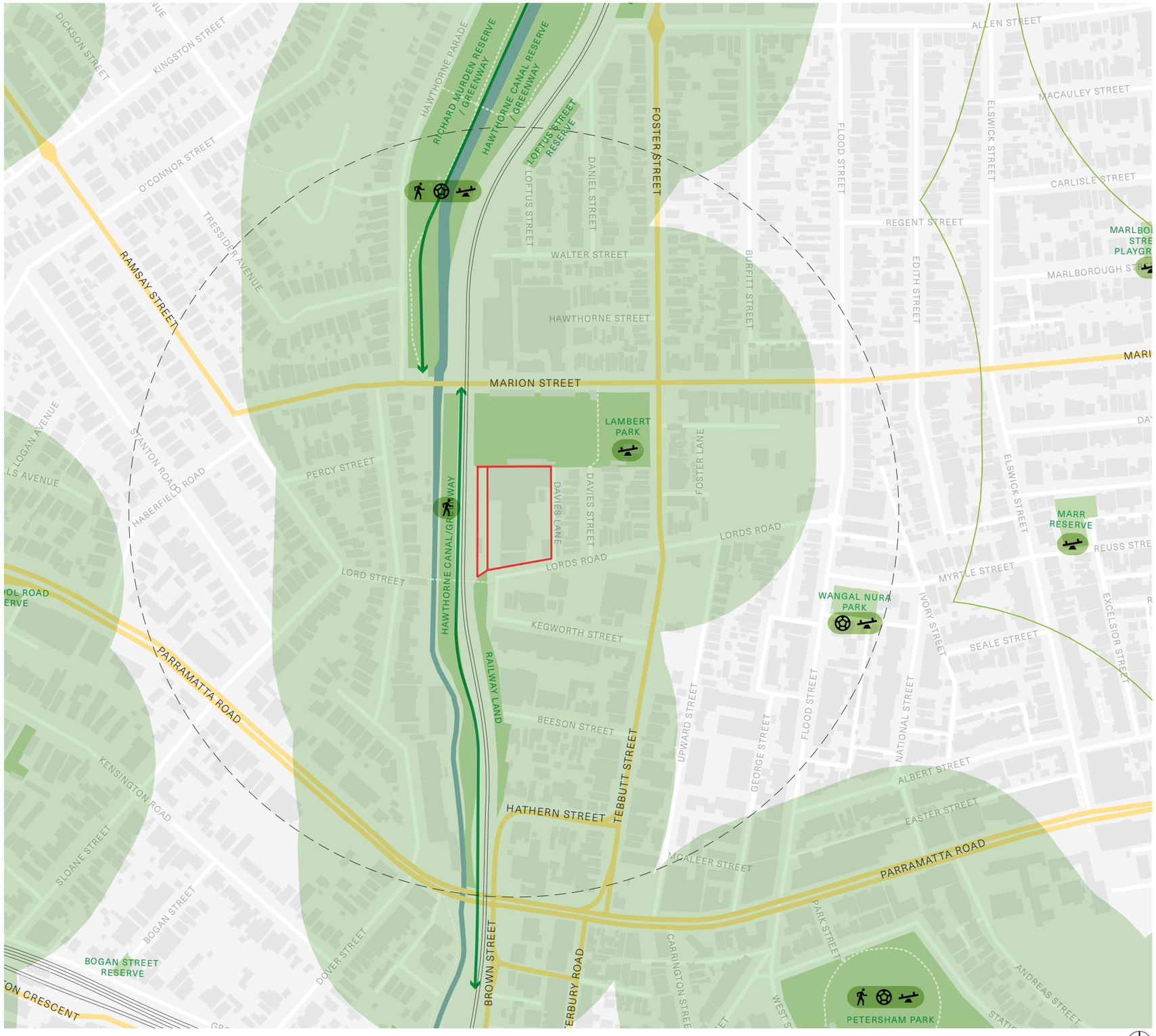
The site is shown to be well serviced by with entrances to over 10ha of open space accessible within 200m. A connection to Hawthorne Canal provides direct access to the Greenway which connects north-south between several open spaces. These open spaces provide key amenity such as walking trails, passive open spaces, sports courts and playgrounds. This is a very valuable connection to promote healthy lifestyles and a key part of Inner West Council open space policy.

Constraints

- N/A

Opportunities

- Direct access to Greenway corridor
- Choice of multiple open spaces within walking distance
- Increase connectivity to open space



KEY

	Site Boundary
	400m Site Buffer
	Open Space
	The Greenway
	200m from Open Space
	400m from Open Space
	Playground
	Sports
	Walking Trails

1:5000 @ A3

Contextual Analysis

Tree Canopy Cover & Arborist Input

The site exhibits a very low tree canopy cover (<10%) which is commonly representative of industrial uses and dense areas. The Marion Street Town Centre also demonstrates a generally low tree canopy coverage whilst residential areas have increased cover.

State policy aims to increase general tree canopy coverage to 40% by 2030.

The trees on the site have also been assessed for quality by an arborist in 2022. The trees show a mix of low, medium and high qualities. There are 17 trees on the site with the below qualities and recommendations:

Low - consider removal - 5
Medium - consider retention - 9
High - priority retention - 3

The low amount of trees is most likely due to the existing uses that typically prohibit large tree planting zones and deep soil. To accommodate the tree minimum root protection zones a minimum offset of 10.5m along the south-eastern and eastern boundary would be necessary. Tree replacement was recommended as opposed to retention due to the quality issues and value of new planting.

Constraints

- Trees of varying quality may limit development along the eastern boundary
- Health of trees is questionable due to level changes and materiality around the tree footings

Opportunities

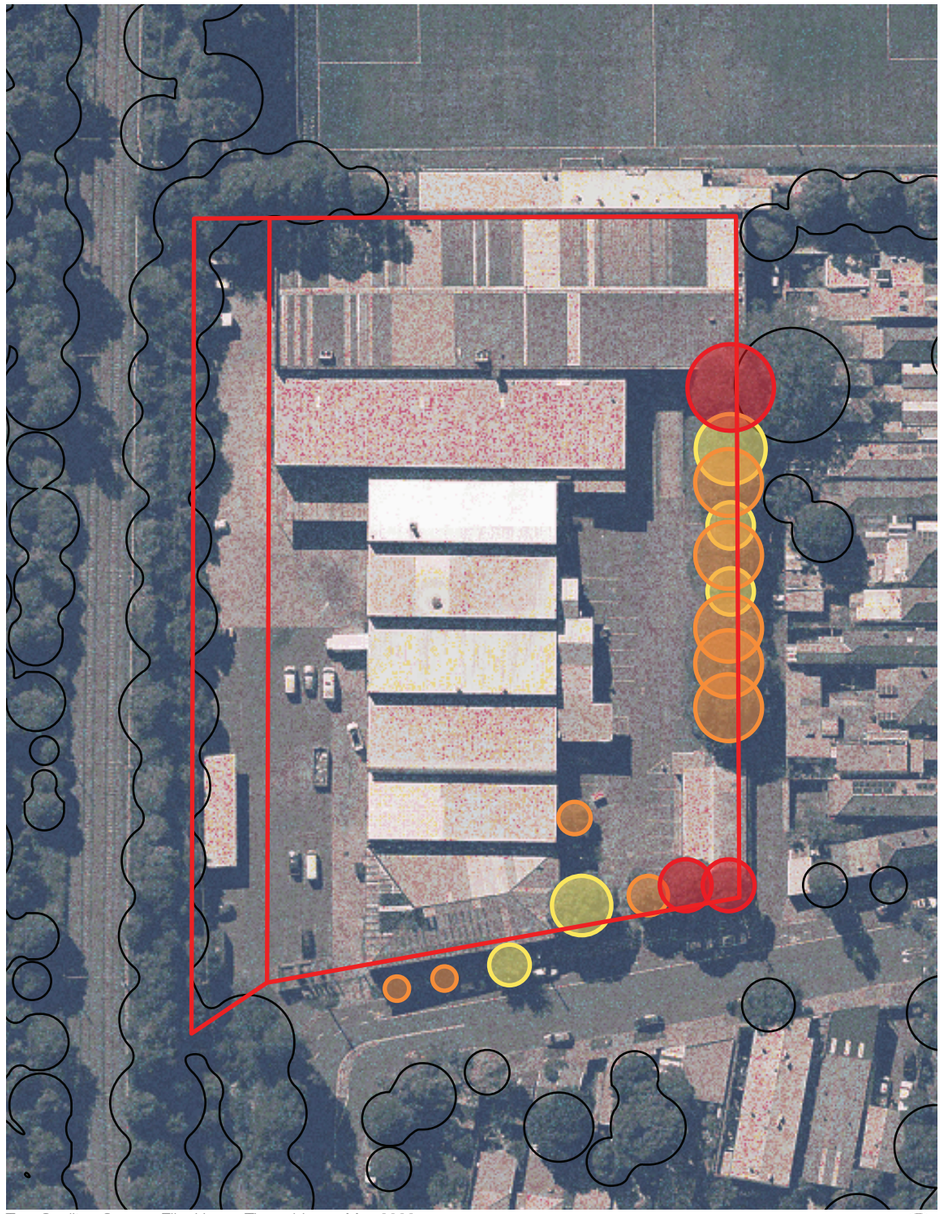
- Increase tree canopy coverage within the site
- Increase deep soil zones within the site
- New tree planting would improve street character
- Ability to plant 2:1 trees to align with council aspirations
- Recommended tree replacement allows for more trees and better quality outcomes

Tree Canopy Cover 2019 - Source: DPE

NTS

KEY ^

	Site Boundary
	400m Site Buffer
	Less than 10%
	10% to 20%
	20% to 30%
	30% to 40%
	More than 40%



KEY >

	Site Boundary
	Trees outside site
	Low Quality (remove)
	Medium Quality (consider)
	High Quality (retain)

Tree Quality - Source: Elke Haege Thorvaldson - May 2022
Aerial Image - Source: MetroMap 2022

1:1000 @ A3

Contextual Analysis

Topography & Flooding

The site has a highly varied topography with the low end of the site to the west at ~3m and the high end at the east from ~6m (NE) to ~8.5m (SE). Internally the site is relatively flat due to the existing hard stand areas on either side of the building. Lords Road exhibits a slope of approximately 1:18 - 1:14 whilst Davies Lane is relatively flat but sloping down to the north.

A flood study prepared for Inner West Council (formerly Leichhardt) by Cardno in 2014 demonstrates a 100yr and PMF flood hazard area within the site. This is primarily along the western boundary.

Flood advice obtained in 2022 by Tooker and Associates advised that a minimum finished floor level of RL 4.60 would be required for the site and a minimum level of RL 6.80 for a carpark entry. This would result in raising the levels ~1.5m along the western boundary and limiting carpark entrance to the east of the site to avoid significant up ramping.

Constraints

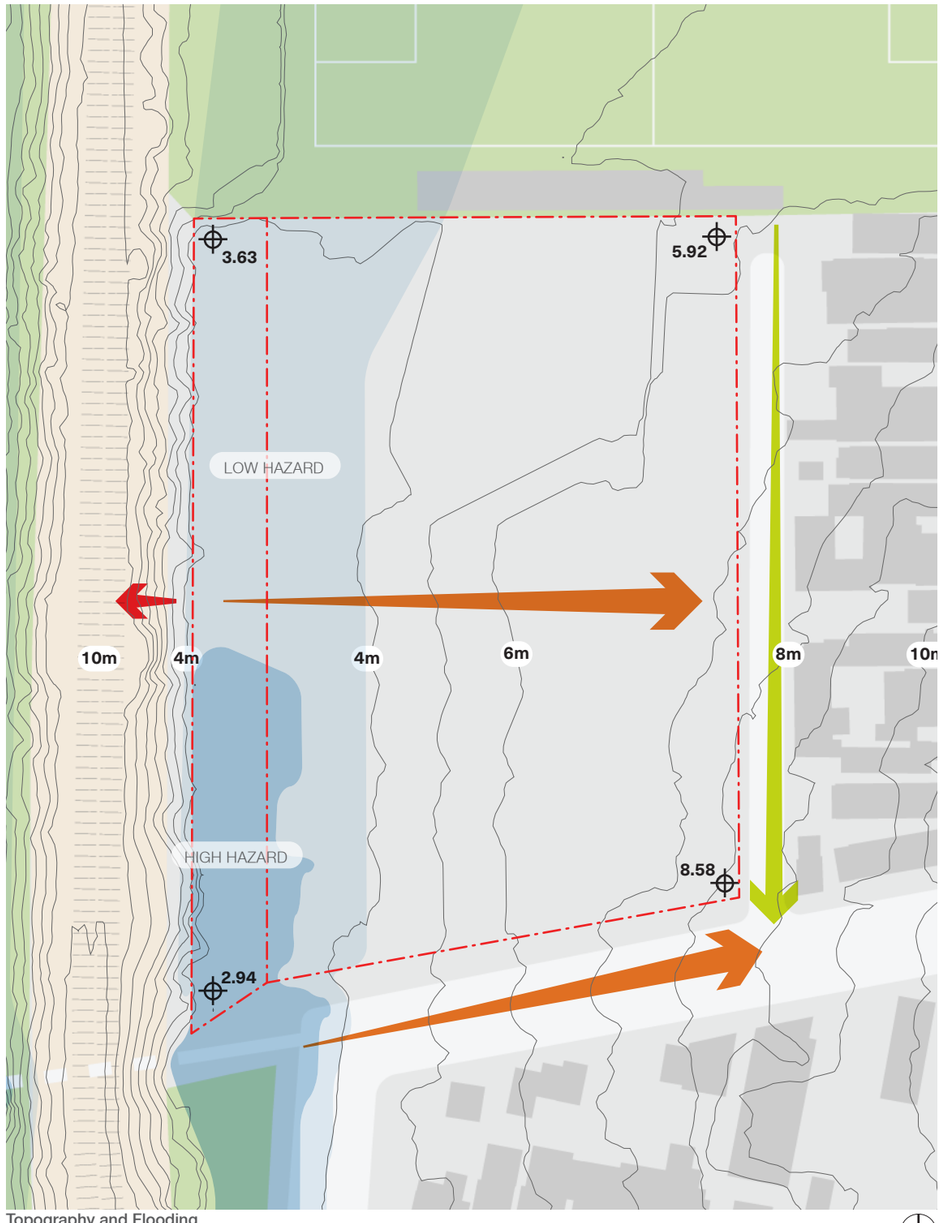
- A minimum RL 4.60m is required for typical buildings
- A minimum RL 6.80m for carpark is required, limiting entrance location to the east
- Slope along Lords Road and internally will need to managed effectively to aid in accessibility

Opportunities

- N/A

KEY

- Site Boundary
- High Hazard
- Low Hazard
- > 1:33
- 1:8 - 1:14
- < 1:8



Topography and Flooding
1m Contours - Source: ELVIS https://elevation.fsdf.org.au/
Spot Height - Source: Survey

1:1000 @ A3

100 yr Flood Hazard
Slope - Source: Leichhardt Flood Study 2014

PMF Flood Hazard
Slope - Source: Leichhardt Flood Study 2014

KEY

- Site Boundary
- High Hazard
- Low Hazard

3.3 Transport & Movement

Public Transport & Vehicular

The site is located along Lords Road which is a local road, connected to a secondary roads, Foster/Tebutt Streets, which aid in vehicular connectivity to the north and south. Marion Street is also to the north which helps connectivity east and west more locally. Parramatta road to the south also helps in more regional east-west connectivity as it is a primary road.

Several bus routes run near the site along Foster, Tebutt and Marion Streets. There are also some school bus routes servicing the area.

The light rail, which runs immediately adjacent the site to the west, has stops at Marion Street and on Parramatta Road. due to the close proximity to the light rail line, acoustics and vibrations will need to be considered in the design scheme.

Constraints

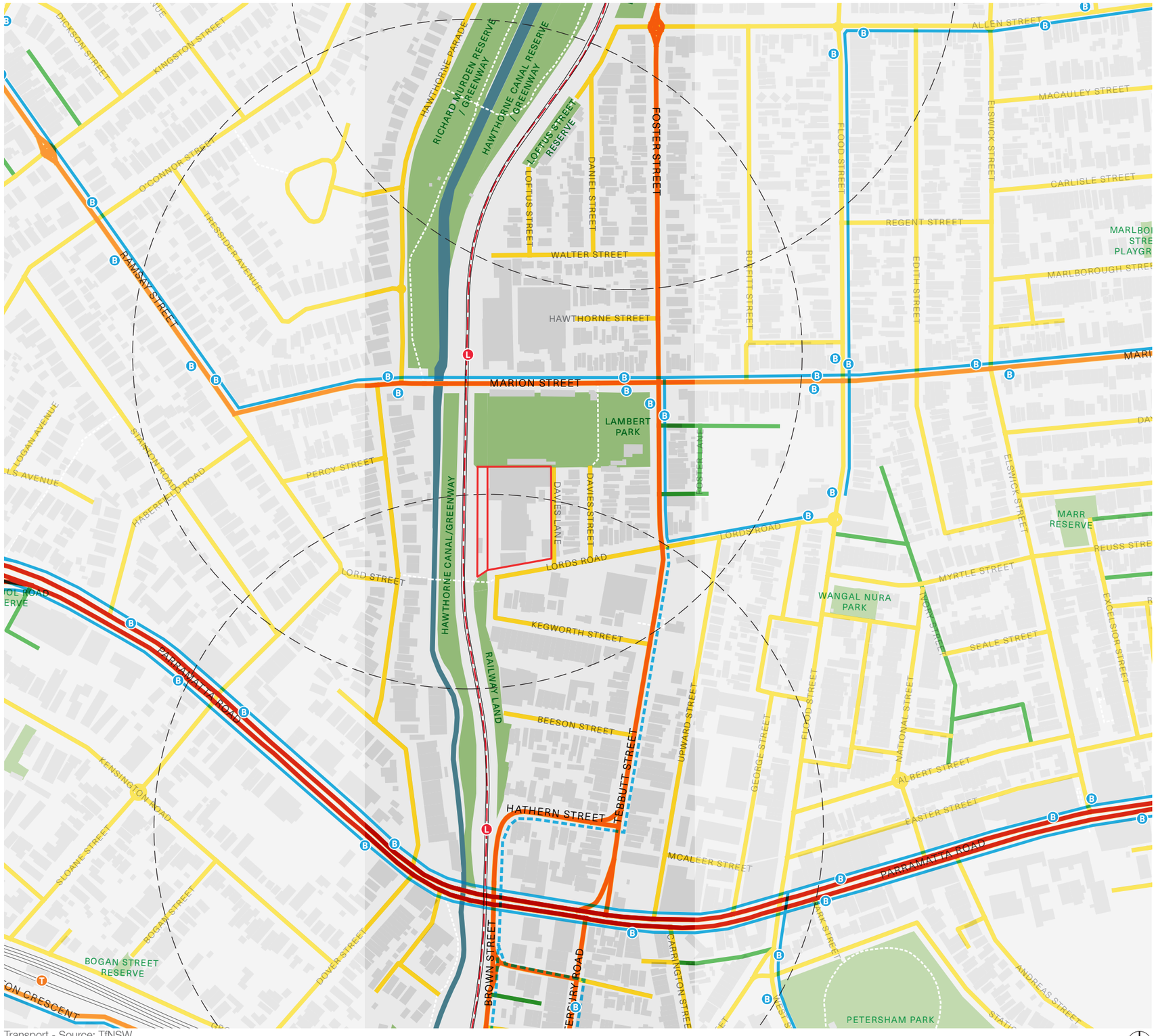
- Acoustics/vibrations from the light rail will need to be considered to mitigate impacts

Opportunities

- Well connected to local and regional areas via a strong network of secondary and primary roads nearby
- Good public transport access with light rail and bus routes

KEY

	Site Boundary
	400m Buffer from Light Rail
	Primary Road
	Secondary Road
	Local Road
	Service Lane
	Bus Route
	School Bus Route
	Light Rail
L	Light Rail Stop
B	Bus Stop



Transport - Source: TfNSW
Road Hierarchy - Source: Spatial Services NSW

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Contextual Analysis

Active Transport

The site is well connected to an active transport network, particularly given an on-surface bike lane that runs adjacent the site on Lords Road, connecting east-west towards Leichhardt and under the light rail.

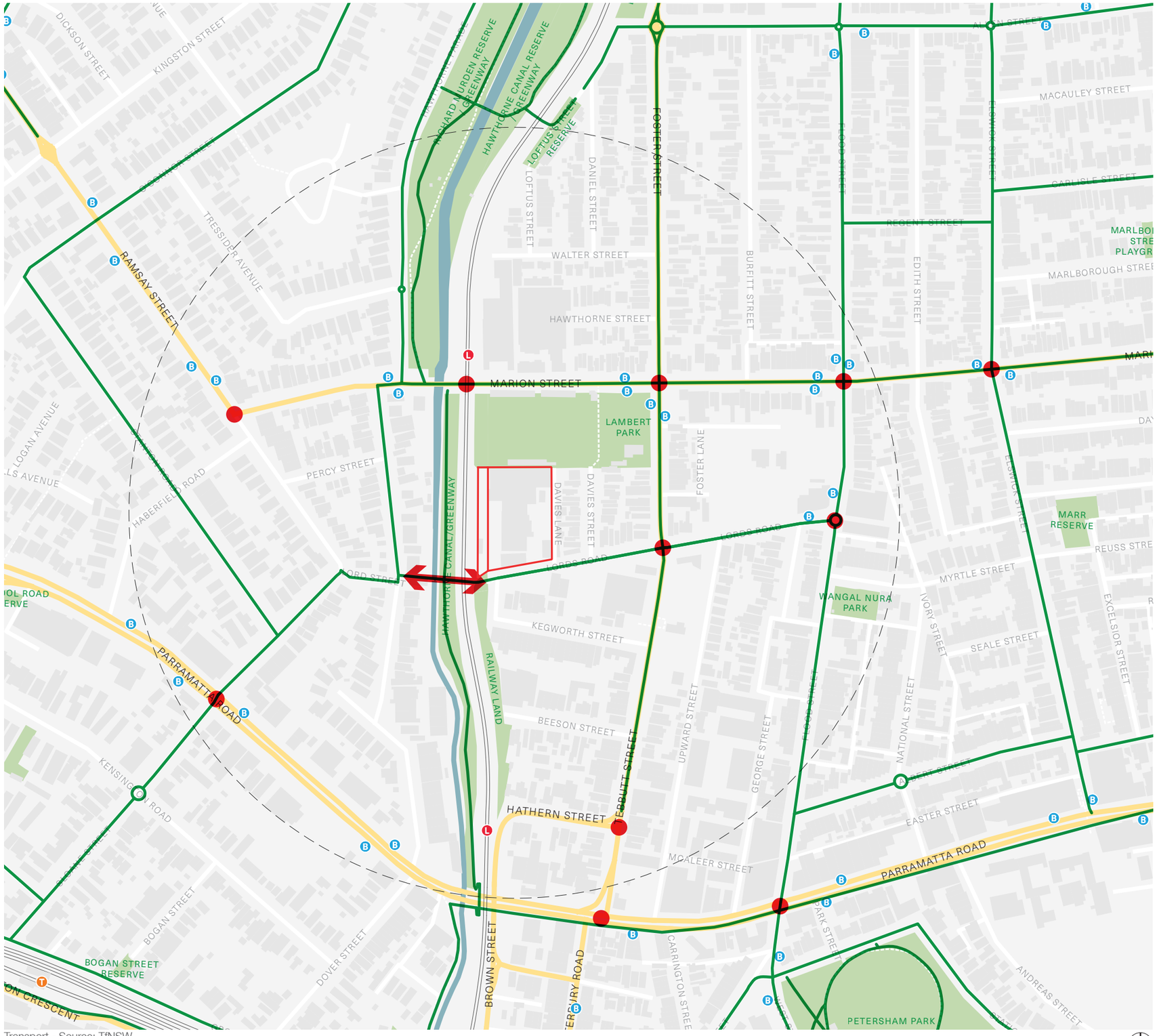
There are several pedestrian crossings around the area that aid in pedestrian accessibility across busy roads. A key pedestrian link immediately adjacent the site connects Lords Road to Haberfield and the Greenway under the light rail. This link is a strong pedestrian connections that is used throughout for the day for passive and active recreation and for commuters, particularly school children whom attend Kegworth Public School.

Constraints

- N/A

Opportunities

- Direct access to active transport network via Lords Rd cycleway that connects east-west
- Key east-west pedestrian link under light rail is immediately adjacent site. Ability to activate this more and provide internal amenity would increase walkability



KEY

▭	Site Boundary
◌	400m Site Buffer
▬	Cycleway
●	Pedestrian Crossing
↔	Key Pedestrian Link

Transport - Source: TfNSW
Road Hierarchy - Source: Spatial Services NSW

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Contextual Analysis

Existing Street Sections

The existing streetscape of Davies Lane is predominantly characterised as a thin laneway with limited mobility. The laneway abuts the sites eastern boundary on one side whilst the other side is the rear boundary line and garages etc. for the neighbouring properties.

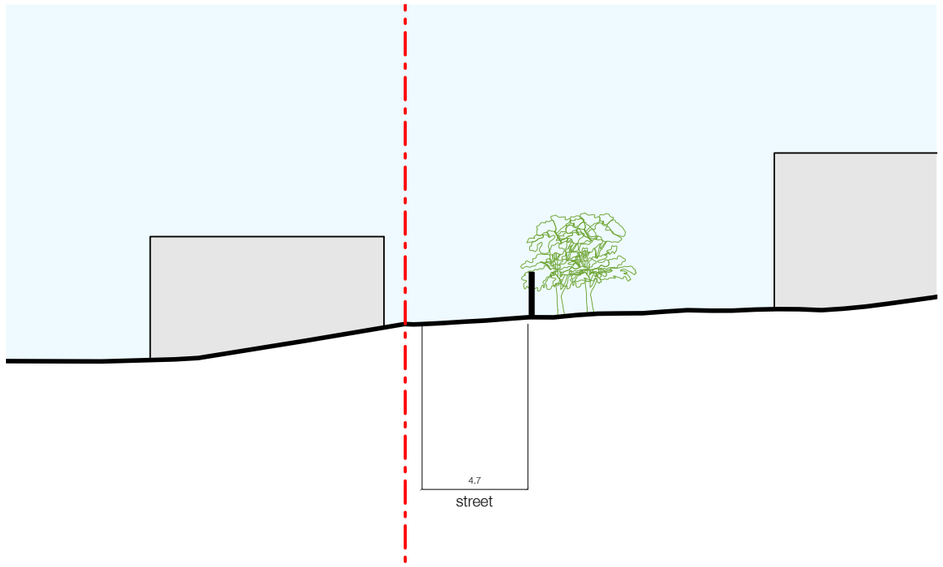
Lords Road is a very wide local road with varied setbacks to properties and typical street landscaping with grass verges and footpaths. There is some street tree planting along Lords Road however it is not consistent.

Constraints

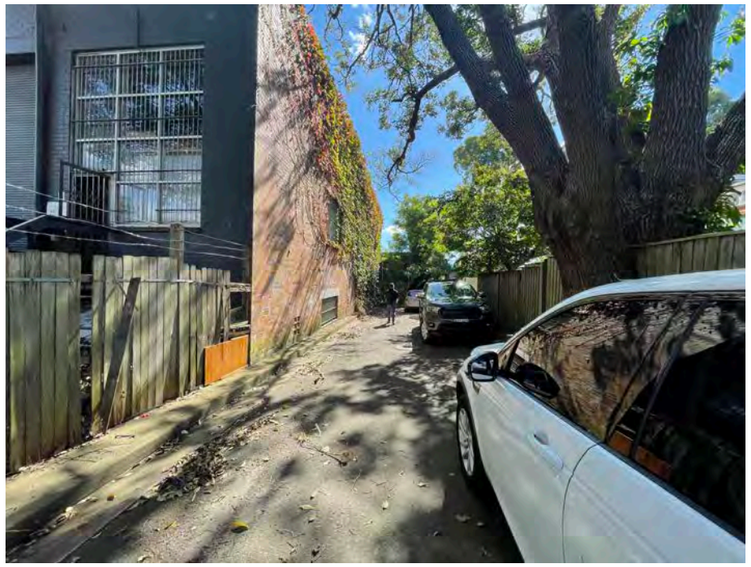
- Tight width of Davies Lane and backing onto rear of properties will need to be considered

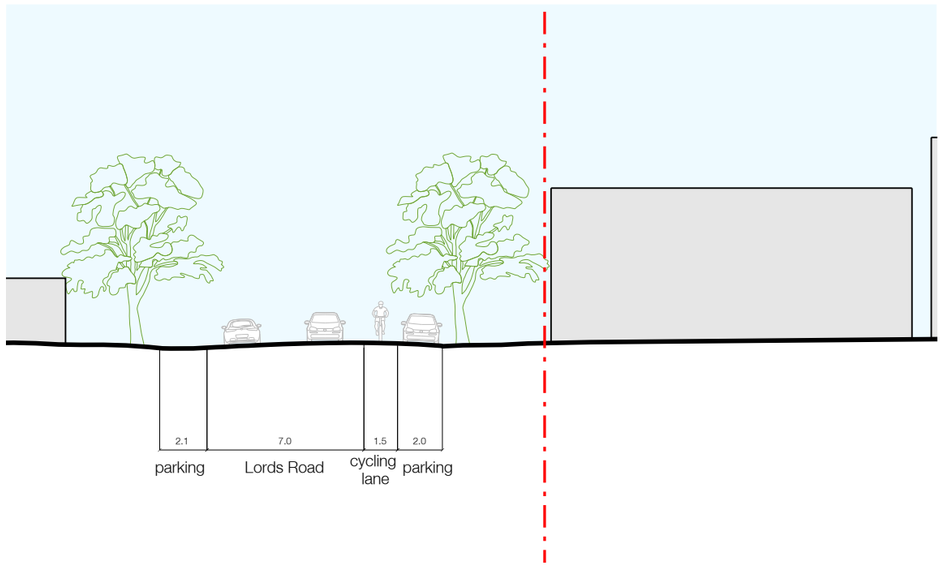
Opportunities

- Davies Lane is poorly activated and could be improved with streetscape interventions
- Width of Lords Road will aid in reducing impact on neighbouring properties and streetscape
- Additional street trees on Lords Road



Davies Lane





Lords Road

3.4 Built Form

The existing surrounding context is predominantly 1-2 storey residential dwellings with some 3-4 storeys buildings in scattered locations.

The site contains a mix of buildings of varying architectural styles within an industrial setting. Brick walls and metal roofs feature heavily on these buildings. None of the buildings or the site have any associated heritage elements however do have some redeeming qualities which may be renewed or recycled within a new development.

There is one nearby high density residential development that showcases a height range of 6-10 storeys spanning a large block close to Parramatta Road. This development demonstrates a good approach to height transition, architectural expression and materiality that aids in maintaining the existing local character and minimises impact on neighbouring properties.

The PRCUTS recommended controls see uplift to the neighbouring blocks from the existing 1-2 storeys to 3-5 storeys. This aids in establishing a height transition from the east to the west. The character principles for Lords Road in the PRCUTS Fine Grain Study also suggest that height can transition up to the Greenway which would include this site.

Constraints

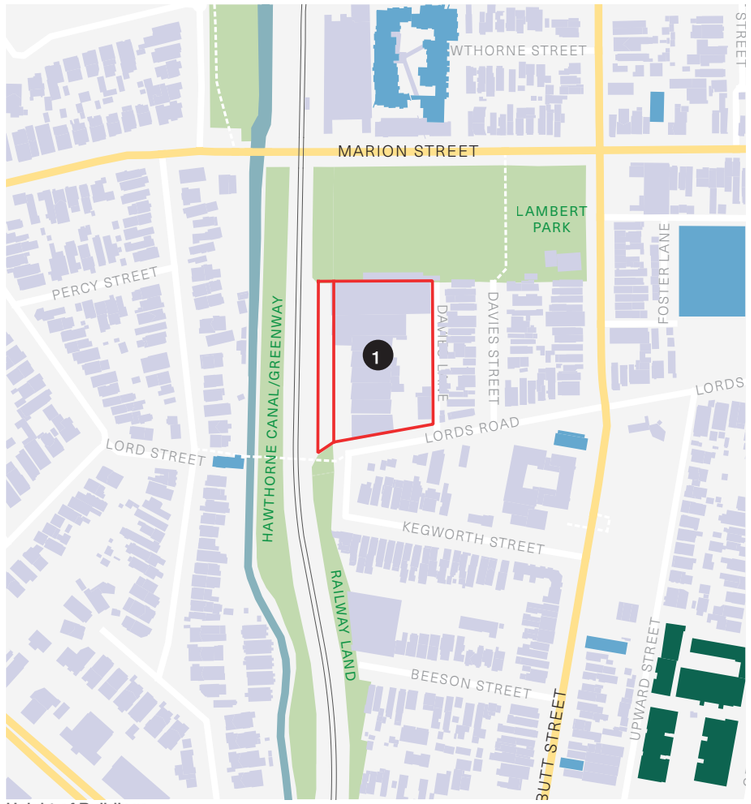
- Existing surrounds is predominantly 1-2 storeys. Approach to height and transition will need to be considered
- Heritage Conservation Area to west needs particular consideration to reduce visual impact

Opportunities

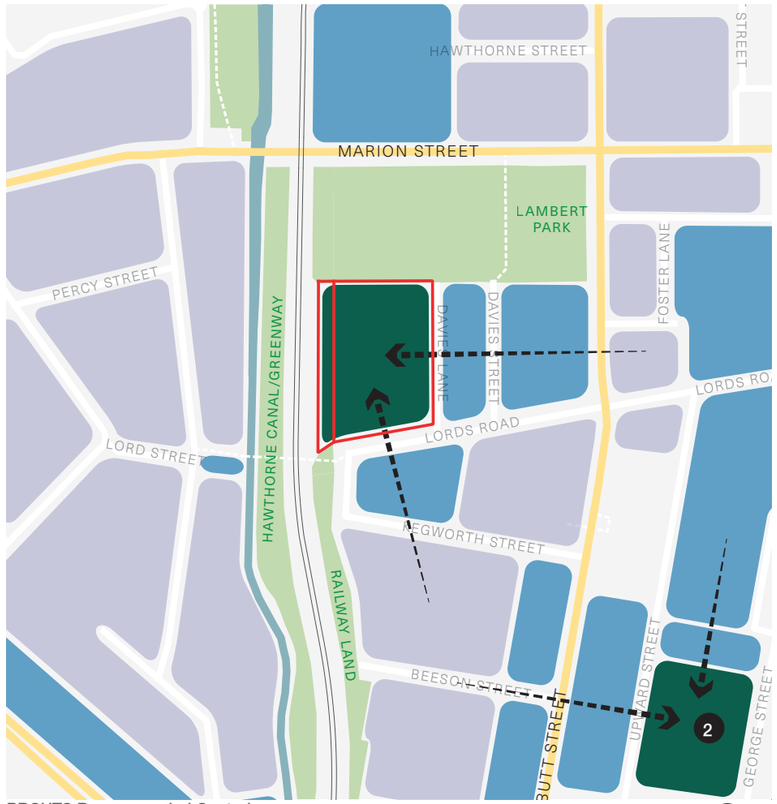
- Nearby high density development demonstrates a good example of height transition and materiality that responds well to the local character
- PRCUTS recommends height increases to neighbouring blocks to establish a height transition

KEY

- Site Boundary
- 1-2 Storeys
- 3-5 Storeys
- 6+ Storeys



Height of Buildings
Buildings - Source: Geoscape 2022



PRCUTS Recommended Controls
Buildings - Source: PRCUTS

NTS

Existing Site Buildings
Image - Source: MetroMap 2016

Nearby High Density Development
Image - Source: MetroMap 2016

3.5 Local Character

The existing local character is diverse but well established. Along Lords Road, there is a mix of medium to high quality dwellings with various styles and materiality. Brick tends to feature heavily across the local area but with no particular colour. There is one recent development on Lords Road, a dual occupancy adjacent to Kegworth Public School. Most dwellings have a 3-4m front setback and are predominantly single-storey.

Kegworth Public School is the largest building in the area with a 2-storey (but a tall as 3) structure on the corner of Lords Road and Tebbutt Street. The school has an older style and aesthetic with painted brick/stone on some buildings and a more recent red brick building towards the site.

Davies Lane is a rear lane providing garage parking and entrances to private open space for properties with an address to Davies Road. The materials and style here are very diverse with a range of brick and metal colours that appear to have been completely developed adhoc. They have a 0m setback along the laneway, directly fronting onto the road surface.

The landscape character along streets is typical with a green verge and established tree planting in most places. A small green space alongside the light rail, directly adjacent the site has no embellishment. The Greenway is a more tropical atmosphere with large overhanging trees and various low-scale planting.

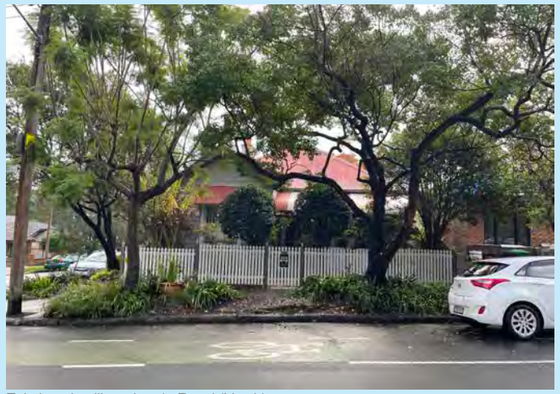
Constraints

- Established character will need to be considered in the short-term to mitigate impacts

Opportunities

- Davies Lane frontage is generally poorer quality and could be improved with increased setbacks and replacement trees

Built Form


Existing dwellings Lords Road (North)


Existing dwellings Lords Road (North)


New dual occupancy development on Lords Road (South)


Corner of Lords Road and Davies Street (looking towards site)


Kegworth Public School on Lords Road (South)


Garages and rear access on Davies Lane

Landscape


Corner of Lords Road and Davies Street (looking towards site)


Kegworth Public School on Lords Road (South)


Garages and rear access on Davies Lane

3.6 Constraints and Considerations

The following constraints have been formed through the contextual analysis. They have been consolidated to a series of categories that will carry through to the urban design principles.

Amenity Impacts from Lambert Sports Field

1	Light spill and glare from light towers
2	Noise from events, both day and night
3	2-storey blank facade of grandstand immediately abuts the northern boundary

Existing Trees

4	If trees are to be retained, setbacks along Davies Lane and Lords Rd will have to substantially increase

Topography and Flooding

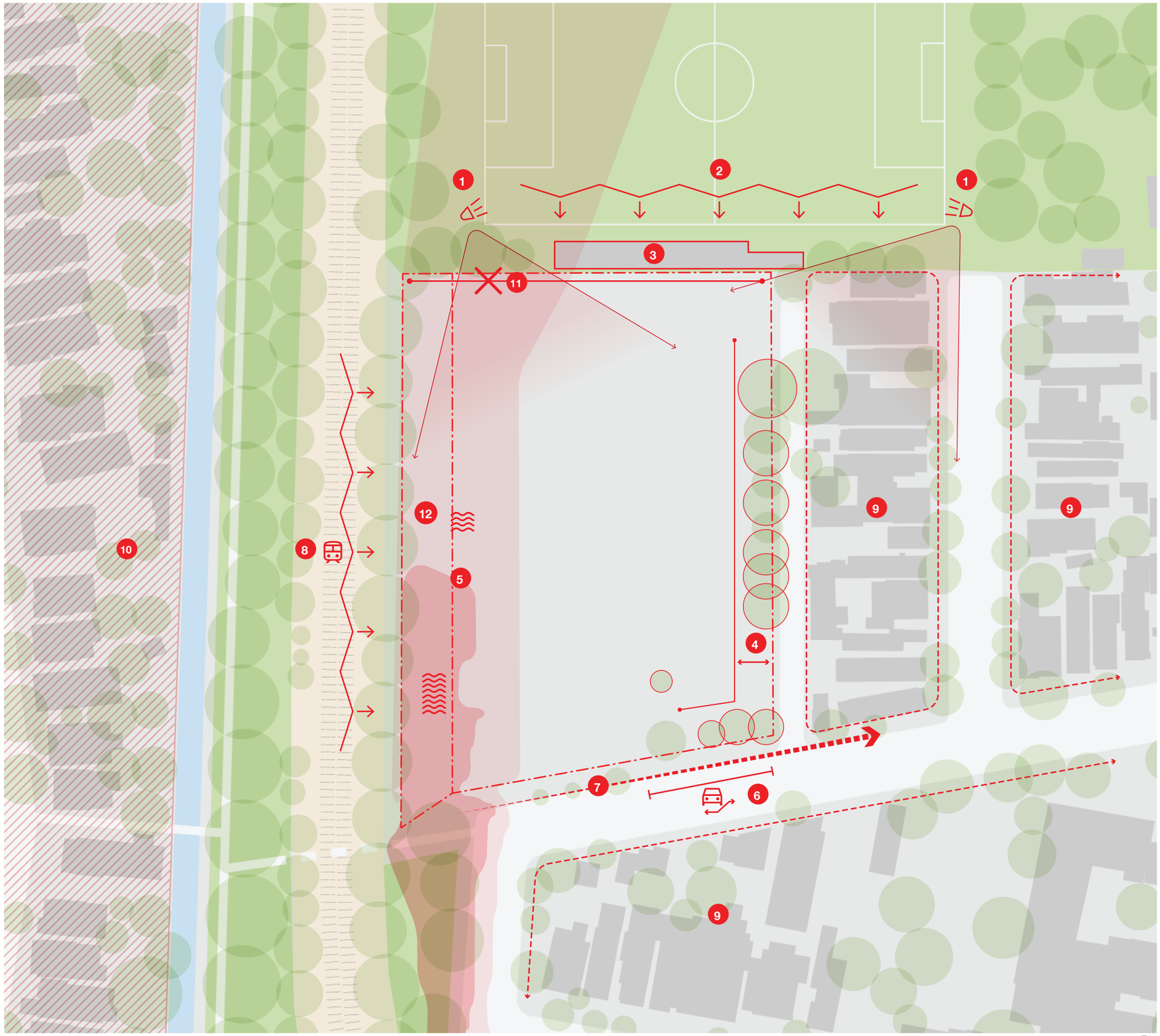
5	Flood hazard areas require a minimum FFL of 4.55 (~1.5m above min. existing level)
6	Flood hazard requires carpark entrance t a minimum RL 6.75 thus limiting entrance to the south-east corner of the site
7	Steep slope along Lords Road and internally will need to be managed to aid in accessibility

Light Rail Noise and Vibrations

8	Noise and vibrations along the western boundary will need to be mitigated with the proposed built form

Interface with Surrounding Areas

9	Existing surrounds are predominantly 1-2 storeys and will need to be considered for solar/visual impacts in the short-term
10	Heritage Conservation Area to the west will require particular attention to limit overshadowing and visual impact
11	Current hard edge to northern boundary lacks permeability
12	Lot 1 / DP550608 which forms the western edge of the site is required to be provided as RE1 Public Recreation



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3.7 Opportunities

The following opportunities have been formed through the contextual analysis. They have been consolidated to a series of categories that will carry through to the urban design principles.

Strong Amenity and Connectivity

1 Within walking distance of shops and shopping centre at Flood/Marion Streets and Leichhardt Marketplace. Also within short drive of other town centres

2 Within walking distance to local school and childcare

3 Within walking distance of multiple public transport options including bus and light rail

4 Direct access to dedicated bike lane

Potential New Connections

5 Lambert Park Sports Field could accommodate a extension of the through-site link to be provided as RE1 Public Recreation along the western edge of the site

Access to Open Space

6 Direct access to the Greenway open space corridor which connects directly to multiple additional open spaces

Ability to Increase Local Streetscape

7 Reducing hard stand can help increase tree canopy and deep soil within the site

8 Ability to replace existing trees with improved planting will create better outcomes

Built Form Controls Respond to Character

9 There are some redeeming qualities of the existing buildings that may be incorporated as architectural expression in a new scheme, even without explicitly keeping the existing building

10 PRCUTS recommended heights for surrounding blocks will enable an adequate height transition

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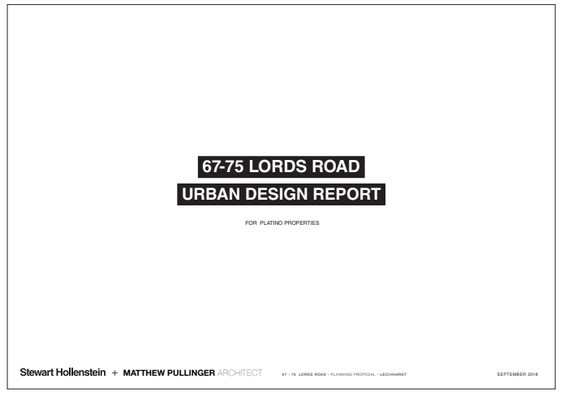
Previous Scheme & Recommendations

4

4.1 Urban Design Proposal

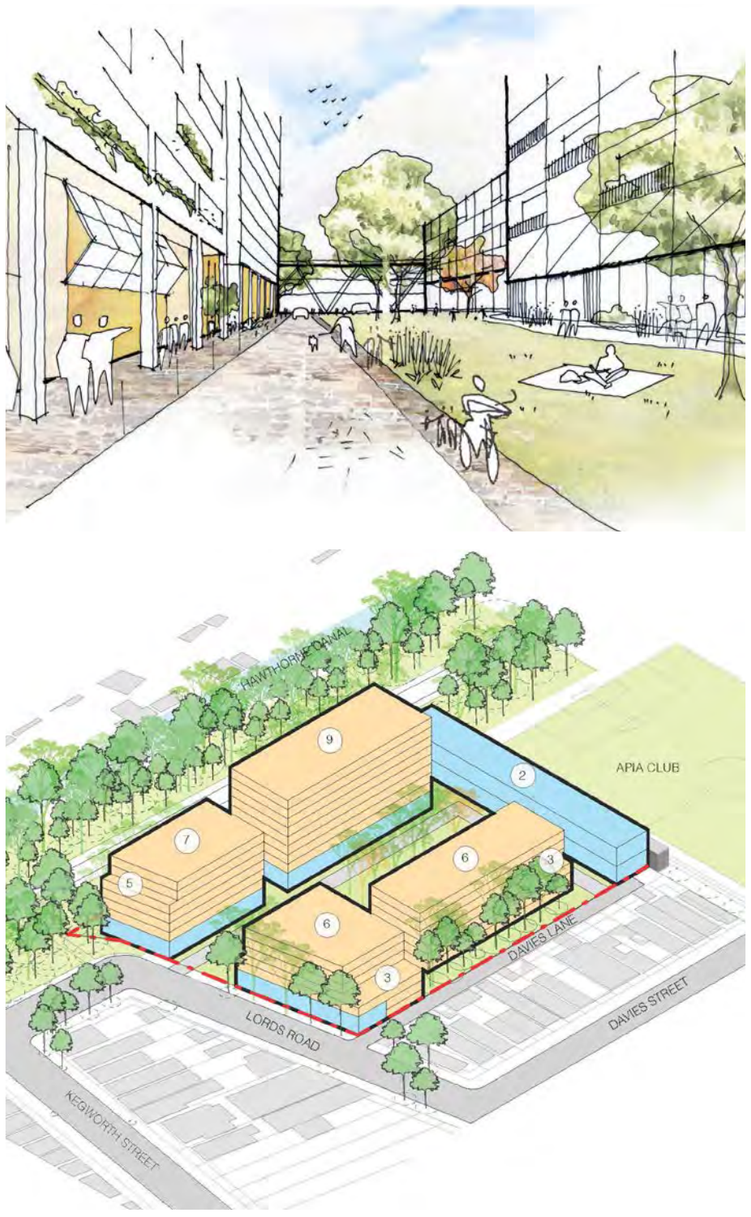


67-75 Lords Road Urban Design Report

Stewart Hollenstein + Metthew Pullinger Architect 2018

The previous urban design scheme for the site was prepared in 2018. It featured predominantly non-residential uses at ground floor with an internal public open space with multiple through-site links and proposed connections. The maximum building height was 9 storeys with a proposed maximum building height of 35m AHD - different to the PRCUTS height of 30m (above ground). The scheme exhibited an FSR of 2.4:1 in accordance with PRCUTS.

The proposal included a minimum of 3,000sqm non residential uses and approx. 235 dwellings.



4.2 Peer Review & Recommendations

Urban Design Peer Review

Conybeare Morrison (CM+) 2018

As part of Council's assessment of the Planning Proposal, Council enlisted an Urban Design Peer Review to provide input to the quality and intended outcomes of the scheme and provide recommendation for creating a an outcome more aligned to Councils desires.

The review provides a mixed review of the scheme with both positive comments and also recommendations for changes. It notes that the recommended changes would substantially alter the scheme and most likely cause it to be incapable of meeting the desired FSR of 2.4:1.

Some of the review recommendations included such things as the schemes retention of employment uses at ground floor, improved connectivity and permeability and the addition of residential.

The Peer Review provided a series of recommendations primarily targeted at the proponent to clarify and alter the urban design scheme and proposal. These have been consolidated within similar categories. These recommendations and categories have been listed to the right (yellow). These will be used to assess the proposed urban design scheme to ensure it meets the peer review expectations for the site.

Key Takeaways

The proposed height of 35m AHD is not aligned to the PRCUTS height of 30m.
2.4:1 FSR not achievable with the recommended changes to setbacks/height etc.
The suggested use of the central open space as public is not the likely outcome and will seem more privatised than community oriented
Suggests retention of trees on corner of Davies and Lords
Suggests view impact study be undertaken. Provides view locations.

Conclusion states pros

- Retention of employment uses
- Improved site permeability
- New residential offering
- Landscape and access initiatives

6M Setbacks

1	Further setbacks are to be introduced for the proposed building at the corner of Lords Road and Davies Lane; to mitigate the scale and to protect the existing mature trees along the Lords Road frontage (6m for Davies Lane & 3m For Lords Road)
2	A further ground level setback between 3m and 7m to Davies Lane is recommended to accommodate a minimum 3m footpath and landscaping

Residential Amenity

5	Review ADG building separation to ensure buildings and DCP reflect the minimum required. Also ensure all buildings achieve appropriate ADG cross ventilation and solar access
6	Minimise overshadowing of the central open space
7	Draft DCP should reflect individual residential dwellings at ground along Davies Lane

Open Space & Public Domain

6	Proponent to clarify traffic circulation strategy and confirm minimum clearance requirements
7	Confirm if a connection along the western boundary is in line with the Greenway masterplan
8	Proponent to clarify intended users of the central open space and extent of roof top gardens and communal open space for residents
9	Proponent should not present the open space as serving the wider community, but rather as the benefit for residents, commercial tenancies and community users of the site
10	Retain the row of trees at the Lords Road and Davies Lane corner to provide screening of the new development. Arborist advice should be sought to confirm conditions for longevity

Interfaces

11	Draft DCP should provide development controls that address roof form and building materiality, in line with the PRCUTS guideline
12	Before and after photo montages are to be prepared to assess visual impact. Eight vantage points have been identified
13	Provide articulation for long buildings to reduce scale

Proposed Controls

14	It is recommended to retain the maximum height limit for the site at eight storeys. A 30m height limit as indicated in the PRCUTS would provide adequate height
15	Test if an FSR is still appropriate for the site given the proposed built form recommendations
16	The proposal is to be reviewed from a socioeconomic viewpoint, as Criteria 1 of the PRCUTS Out of Sequence Checklist requires that the planning proposal demonstrate significant net community, economic and environmental benefits

Design Principles

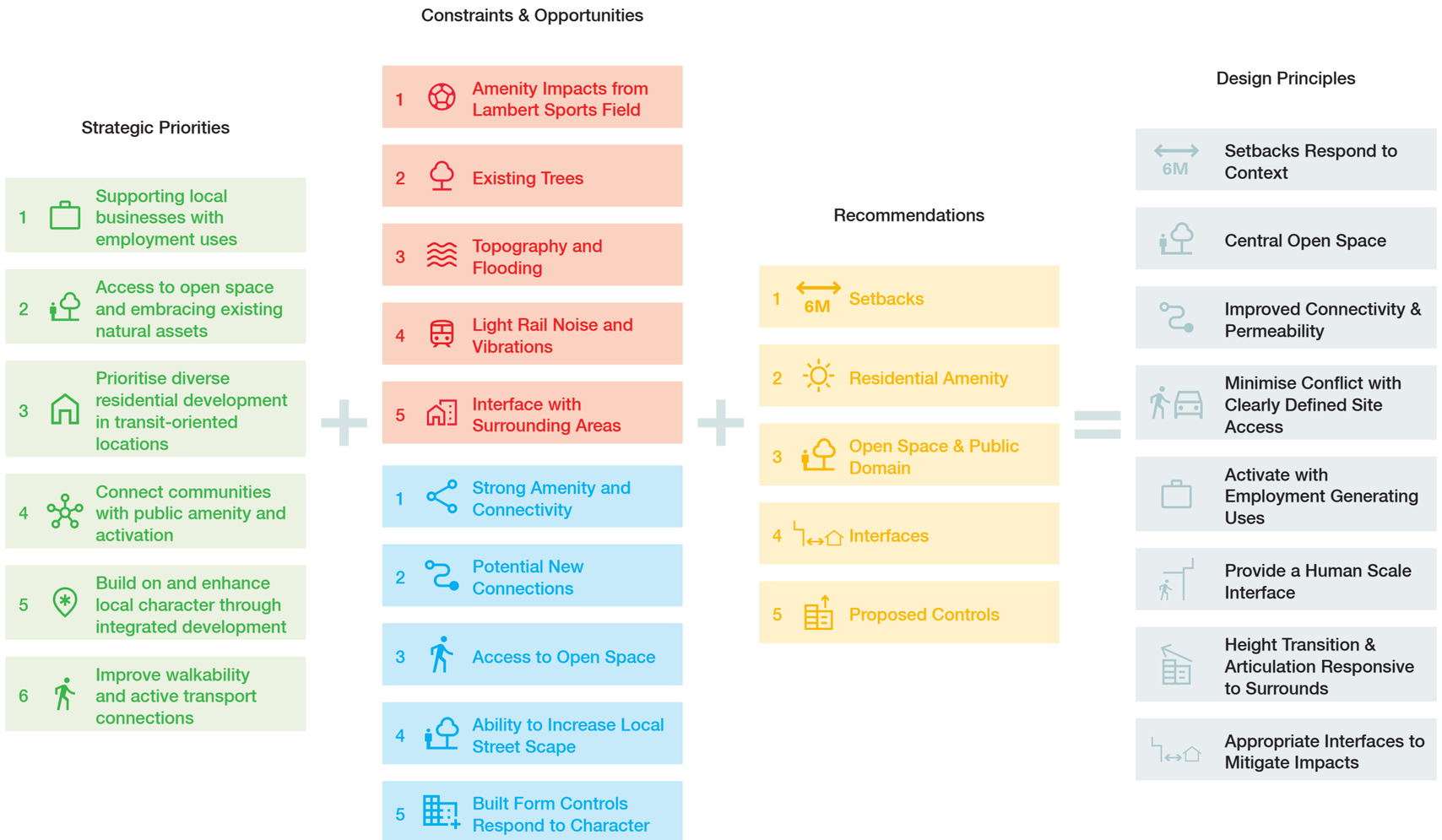
5

5.1 Development of Principles

The design principles have been generated through the combination and consolidation of all the criteria of assessment that was discovered through the strategic policy review, context analysis and previous urban design scheme review. The intent is that these principles will guide future built form and design across the site.

Each design principle responds to a number of the factors from each of the priorities, constraints, opportunities or recommendations. Collectively, they respond to all of these, creating a holistic response to the site that the urban design scheme can use to build a fully responsive proposal.

The following pages expand on the design principles and show which of each criteria they respond to and how.



5.2 Design Response

Principle

Setbacks Respond to Context

The edge conditions of the site require setbacks that are responsive to each individual requirement. Various environmental and spatial impacts such as the light rail, noise and light from the sports field, trees and prevailing setbacks will need to be taken into account within the proposal. Utilising setbacks will help reduce bulk and scale of development and respond to the existing neighbours.

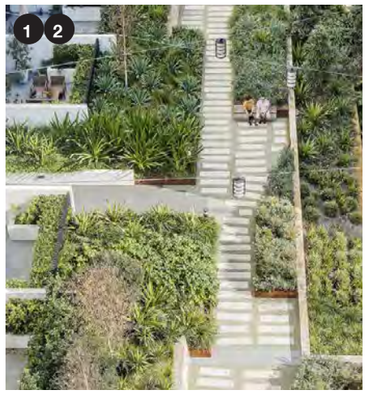
Design Response

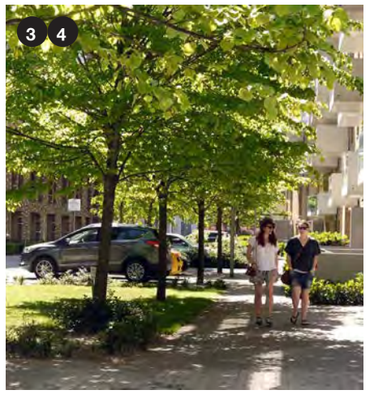
1. A 3m articulation zone is provided along the western boundary to interface with the open space
2. Min. 6m setback along the northern boundary to provide space for a private through-site link and to buffer from the noise of the sports field and the back of the grand stand. A 3m upper level setback also helps to reduce visual bulk along that edge and impacts on the sports field
3. Min. 6m setback along the eastern boundary to accommodate trees, footpath and landscaping. A 3m upper level setback also provides good separation to reduce bulk and scale along Davies Lane, reducing impact on neighbouring low density properties
4. Min. 6m setback along the south-eastern corner to provide for trees and landscaping and to reduce bulk on the corner creating an inviting presence at street level
5. 0m setback to the south-west corner to provide a strong street presence along Lords Road that is aligned to the existing front setback. An upper level setback of 6m brings the building in line with the eastern corner and reduces street scale along Lords Road.

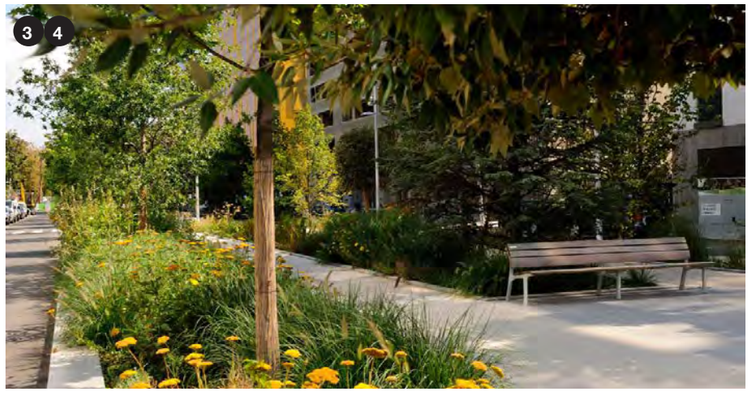
Responds to:

Strategic Priorities	Constraints	Opportunities	Recommendations
1	1 ✓	1	1 6M ✓
2 ✓	2 ✓	2 ✓	2
3	3	3	3 ✓
4	4 ✓	4 ✓	4 ✓
5 ✓	5 ✓	5 ✓	5
6			

Examples







KEY

- Site Boundary
- Open Space
- Connection
- Setback
- Upper Level Setback
- Noise

Design Principles

Principle

Central Open Space

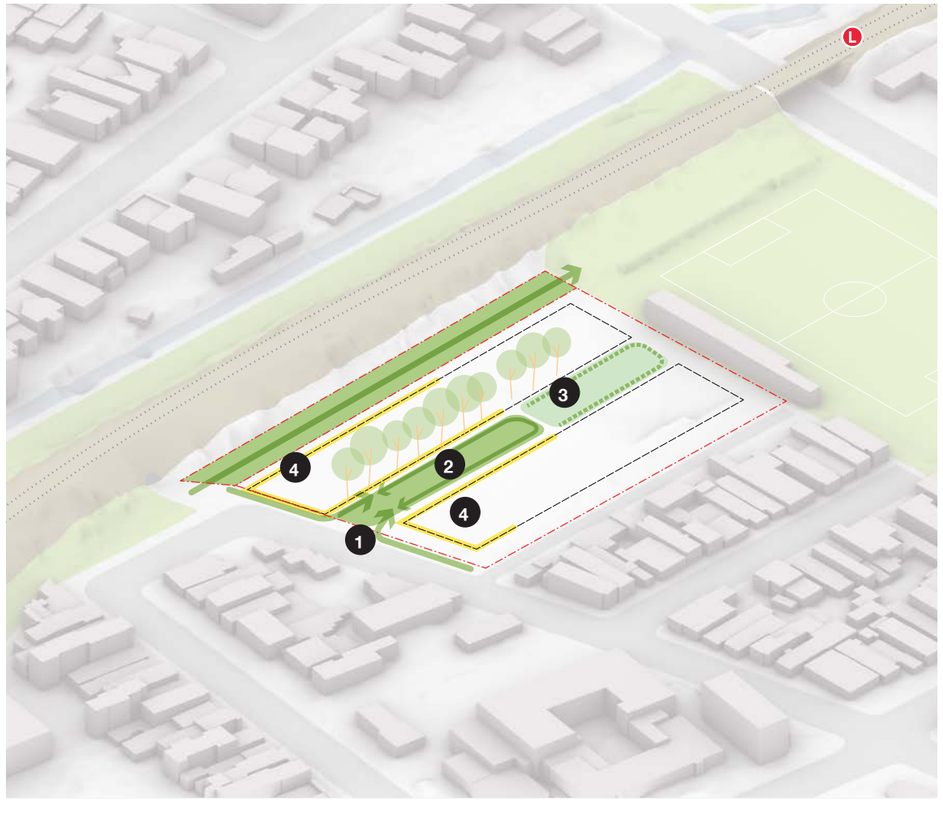
A central open space should be created to enhance the local street scape and provide deep soil and tree canopy. This open space would be oriented towards Lords Road to create a sense of openness and inviting nature. The perception of this space should be public with a mix of active uses such as a playground and passive spaces for people to relax.

Design Response

1. The open space fronts directly onto Lords Road with it's full width to draw movement into the site. The increased setback on the south-east corner allows a strong visual link from that direction.
2. A primary area will be a publicly accessible private open space with adequate deep soil and tree canopy to create a safe and welcoming environment. It will host passive and active (childs play) spaces.
3. Deeper into the site a secondary open space will provide communal open space for residents at ground floor. This will also host deep soil and tree canopy
4. The edges of the primary open space will be activated at ground with active uses, particularly at corners to draw movement, and supported with passive surveillance from residential dwellings above ground. These building pads will be used to mitigate flood impacts and the open space will handle level change between them

Responds to:

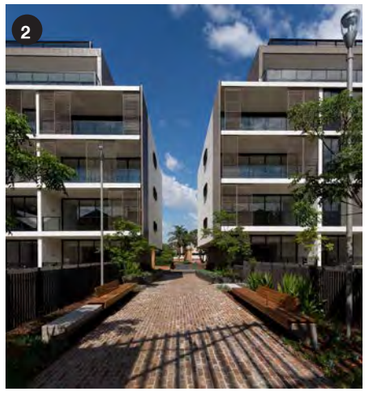
Strategic Priorities	Constraints	Opportunities	Recommendations
1	1	1 ✓	1 6M
2 ✓	2	2	2
3	3 ✓	3 ✓	3 ✓
4 ✓	4	4 ✓	4
5	5	5	5
6 ✓			



KEY

- Site Boundary
- Primary Open Space
- Secondary Open Space
- Footprint Zone
- Active Edge

Examples



Design Principles

Principle

Improved Connectivity & Permeability

Improved permeability through the site and connectivity with surrounding places will allow the proposal to stitch into the existing neighbourhood and improve access to key local amenity. Connections through and beyond the site will draw people in, creating activity and a central gathering space.

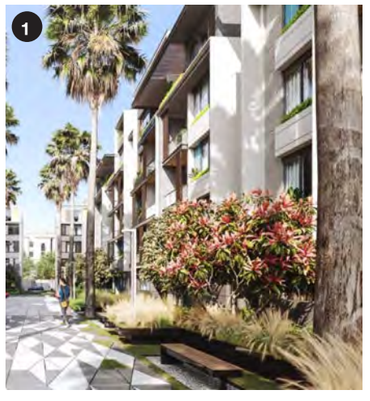
Design Response

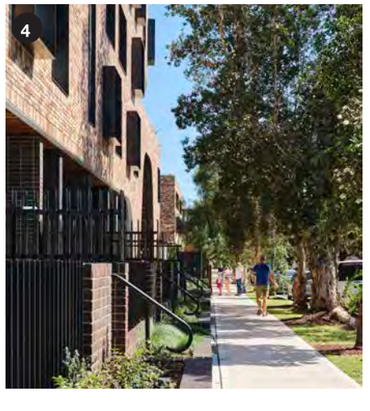
1. Proposed potential future connection along the western boundary and through Lambert Park Sports Field connecting to Marion Street Light Rail. The new RE1 land within the site will facilitate the start of this connection
2. Min. 9m through-site link mid-way through the block to create a connection east-west and additional entry points. This laneway would be activated with non-residential uses at ground
3. Draw movement in from the Lords Road frontage at a central point of the site. Either side of this space is flanked by buildings to create enclosure
4. Provide a secondary connection along the eastern boundary to provide more room for Davies Lane and creating a setback to protect existing and future trees along this edge
5. Provide private through-site links along the north to provide direct access to residential at ground and communal open space

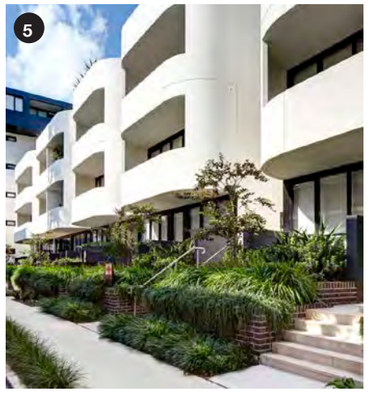
Responds to:

Strategic Priorities	Constraints	Opportunities	Recommendations
1	1	1 ✓	1 6M ✓
2 ✓	2	2 ✓	2
3 ✓	3	3 ✓	3 ✓
4 ✓	4	4	4 ✓
5	5 ✓	5	5
6 ✓			

Examples







KEY

- Site Boundary
- Primary Connection
- Secondary Connection
- Private Connection
- Footprint Zone
- Active Edge

Design Principles

Principle

Minimise Conflict with Clearly Defined Site Access

Vehicular access should be minimal and clearly legible to reduce conflict with pedestrian, prioritising active transport movement over car use. Car park entry/entrance should be from a singular point, most likely along the south-east corner due to flood requirements. The carpark should also have the height clearance to allow servicing in basement rather than at ground floor. A separate shared road may enter and exit the site from Lords Road only, providing an address to all properties and also reducing car use of Davies Lane for servicing the site.

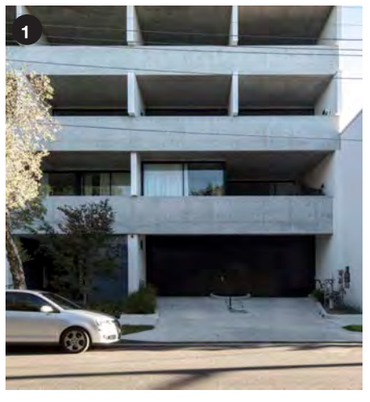
Design Response

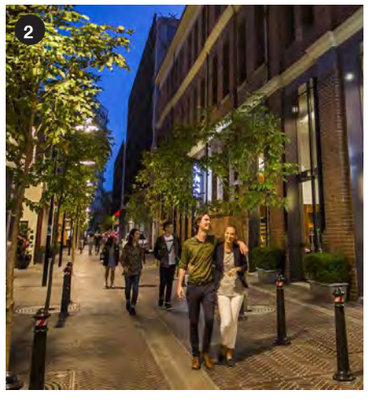
1. A singular carpark entry on Lords Road with clear height for servicing in a single level of below-ground basement parking. This provides for both residential move in day and for non-residential services, negating the need to use Davies Lane for servicing entirely. The entrance would be concealed, setback and activated on either side and the crossing would be a shared path to reduce impacts on pedestrian movement
2. A shared zone enters the central open space from Lords Road and terminates in a turning bay and few short-term parking spaces. This provides an address to the rear dwellings and provides space for pick-up/drop-off that is closer than Lords Road. The shared zone will be fully accessible and prioritised for pedestrians to create a safe and welcoming environment.
3. Residential lobbies are accentuated to provide clear legibility. These are located towards the east and west providing residents with dual access.

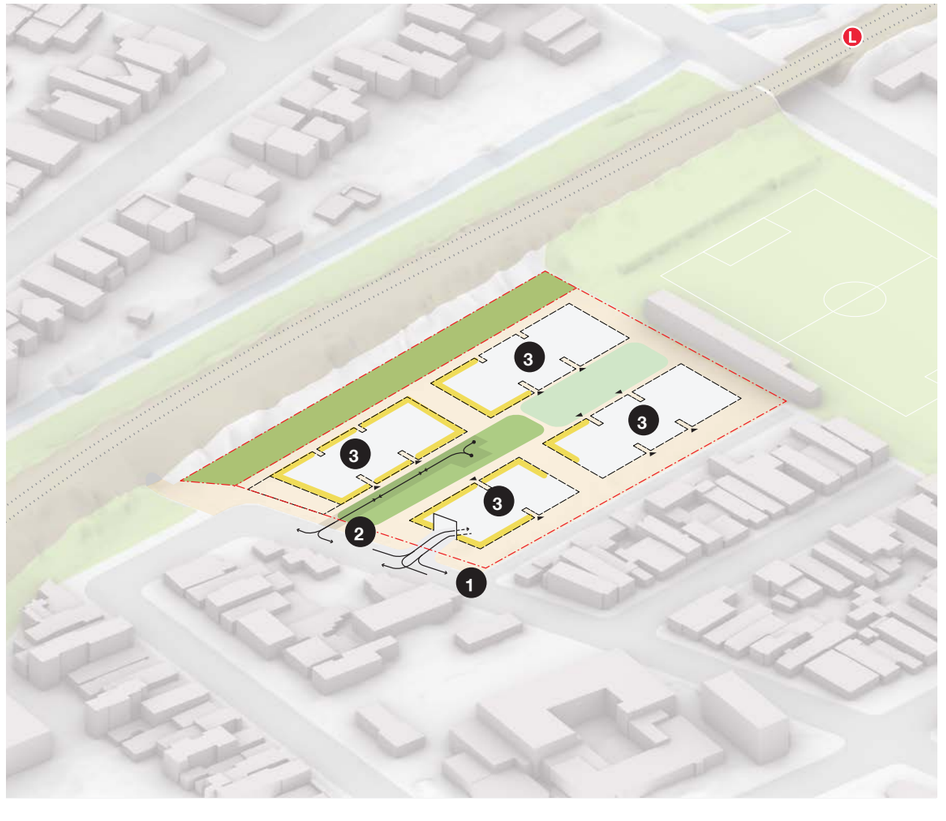
Responds to:

Strategic Priorities	Constraints	Opportunities	Recommendations
1	1	1	1 6M
2	2	2	2
3	3 ✓	3	3 ✓
4	4	4 ✓	4
5 ✓	5 ✓	5	5
6 ✓			

Examples







KEY

- Site Boundary
- Vehicular Movement
- Footprint Zone
- Residential Entrance
- Active Edge

Design Principles

Principle

Activate with Employment Generating Uses

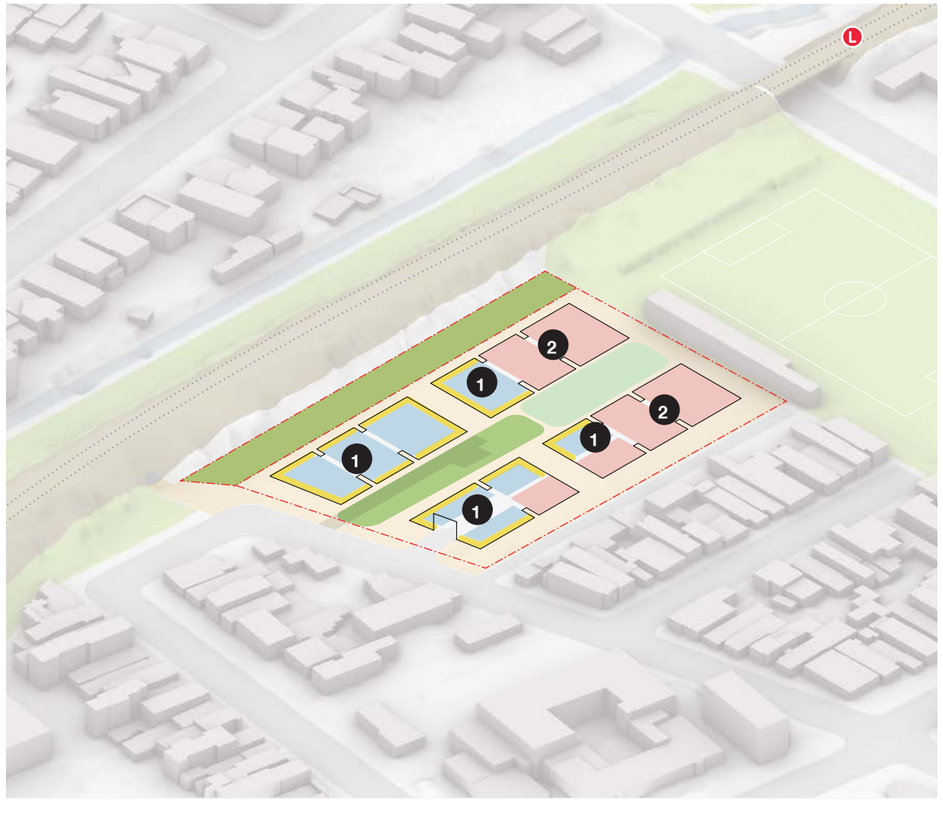
The central open space should be activated through the establishment of employment generating uses. These will provide strong public activation of that space, drawing people in and supporting local businesses. These non-residential units will be connected around the open space to create a community. The rear of the site should be maintained for residential uses to provide alternate activation at ground floor and limit depth of non-residential uses.

Design Response

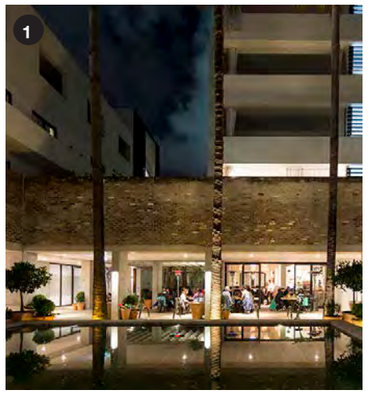
1. Non-residential uses are provided towards Lords Road and surrounding the courtyard. These uses would activate the central open space and RE1 Public Recreation area, and provide employment generating uses that support local business. Active frontages to these uses ensure that they are appropriately perceived as non-residential and create movement within the site. These non-residential tenancies will be designed as fully adaptable and flexible to accomodate a wide rnage of potential future uses.
2. Residential uses are maintained at the rear of the site, circulating the communal open space. These ground floor units have larger private terrace open spaces that provide articulation and scale to the buildings. They help activate the through-site links towards the outside of the site particularly at night, creating a safer environment.

Responds to:

Strategic Priorities	Constraints	Opportunities	Recommendations
1 ✓	1	1	1 6M
2	2	2	2
3 ✓	3	3	3
4 ✓	4	4 ✓	4 ✓
5 ✓	5 ✓	5	5
6			



Examples



KEY

- Site Boundary
- Non-Residential
- Residential
- Non-Resi Active Edge

Design Principles

Principle

Provide a Human Scale Interface

Making the site more pedestrian friendly means creating a human scale interface to any built form. Centrally, the built form should have a very low scale facing the courtyard to increase sky view and openness. Outward facing edges should respond to the street scale and aim to reduce bulk through upper level setbacks that respond to neighbouring areas that are existing and also any future potential developments.

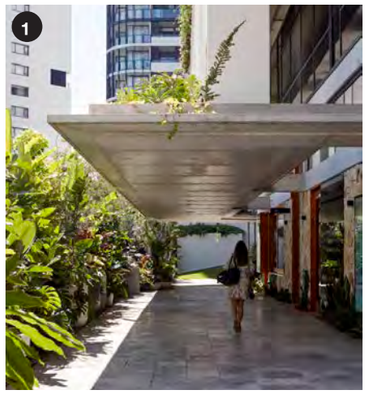
Design Response

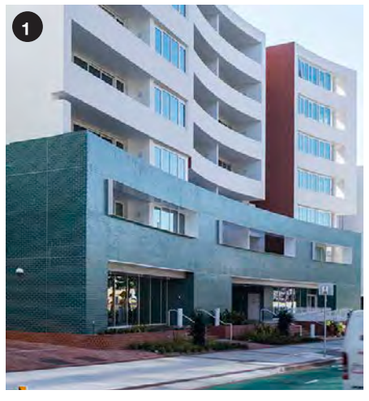
1. A 1-2 storey street wall that faces internally towards the open space provides a finer-grain human scale at ground floor. This would be facilitated through a 2-3m above ground setback that provides deeper residential terraces for further activation. The use of street canopies at ground will also aid in reducing scale whilst providing shade and reducing wind down wash, creating a more comfortable environment.
2. A 4 storey street wall for externally facing façades will be used to reduce street scale and bulk. An upper level setback of 3-6m along these edges will further reduce scale. This also helps to reduce visual impact and provide adequate articulation to satisfy ADG requirements.

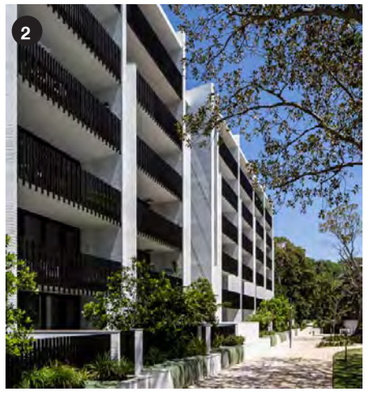
Responds to:

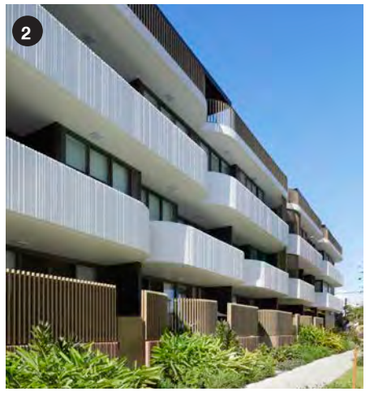
Strategic Priorities	Constraints	Opportunities	Recommendations
1	1 ✓	1	1 6M
2	2	2	2 ✓
3	3	3	3 ✓
4	4	4 ✓	4 ✓
5 ✓	5 ✓	5 ✓	5
6			

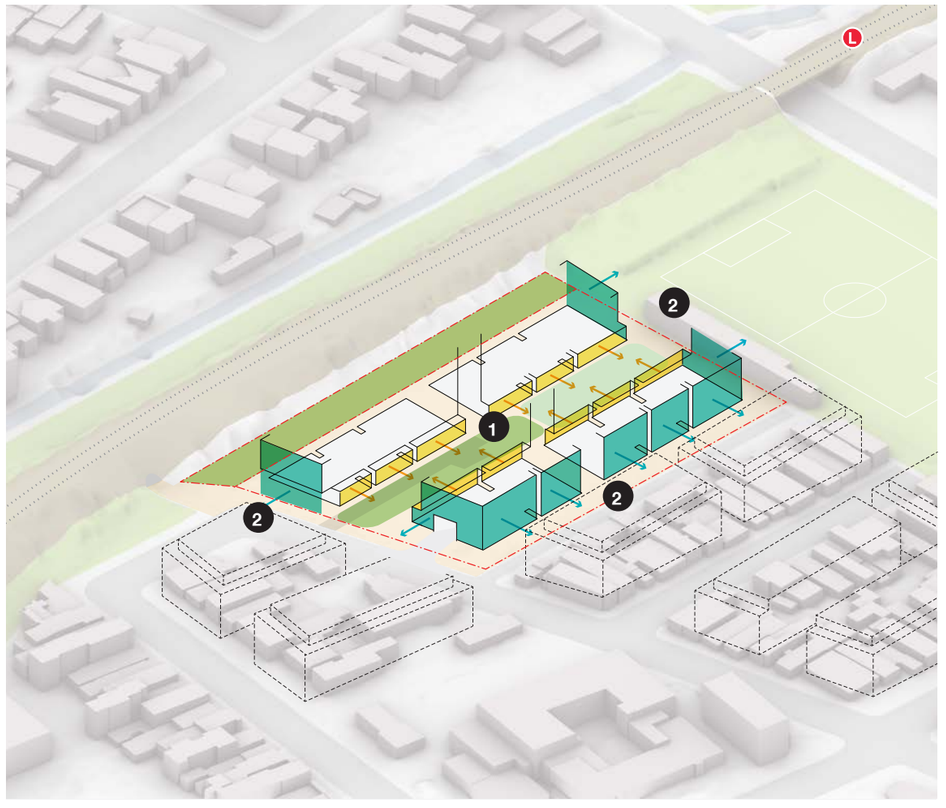
Examples











KEY

- Site Boundary
- 1-2 storey street wall
- 4 storey street wall

Design Principles

Principle

Height Transition and Articulation Responsive to Surrounds

Height should step up from the east to the west and provide stepped forms and setback from the south to the north to mitigate bulk and scale and to be responsive to surrounding areas. This should take into account additional proposed height for the surrounding blocks as advised in PRCUTS so that the built form is well placed within a future planning framework.

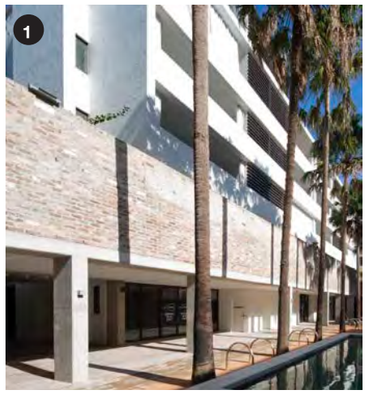
Design Response

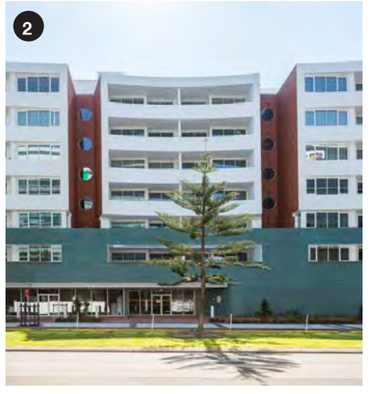
1. The 4 storey street wall would be accentuated through a material/style change, providing a heavier base to the building thereby reducing visual bulk and setting the street wall to match the surrounding heights that PRCUTS has recommended.
2. Vertical articulation would be emphasised to reduce horizontal scale and provide verticality to long building edges. This would allow the buildings to be momentarily perceived as individual blocks rather than one continuous frontage and the building would be more responsive to the fine-grain existing character of neighbouring properties
3. Combined, these architectural expression elements would reduce the bulk of the building and aid in creating a appropriate height transition in the short-term before neighbouring lots can develop. In the long-term, a maximum height of 8 storeys aligns with PRCUTS recommended height control of 30m and is only utilised along the western boundary, reducing scale in other areas of the site. A 6 storey limit to the east provides the height transition to neighbouring properties and a 4 storey street wall to the south provides transition in that direction.

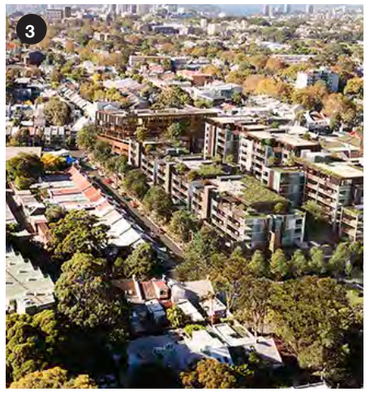
Responds to:

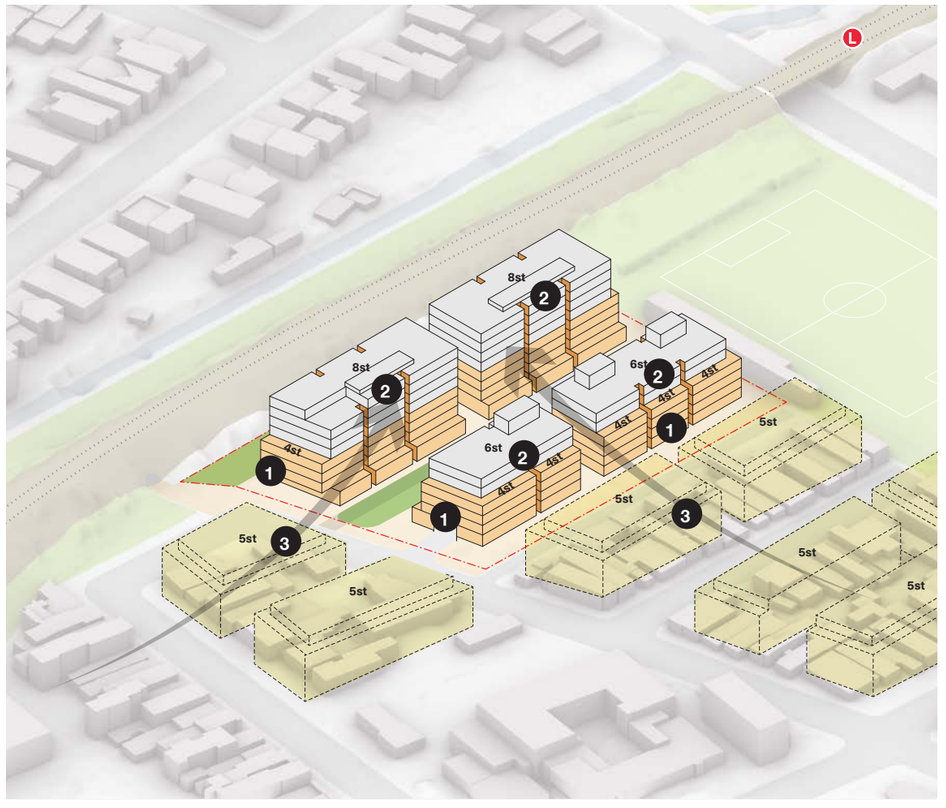
Strategic Priorities	Constraints	Opportunities	Recommendations
1	1	1	1 6M
2	2	2	2 ✓
3	3	3	3
4	4	4 ✓	4 ✓
5 ✓	5 ✓	5 ✓	5 ✓
6			

Examples









KEY

- Site Boundary
- Height Transition
- 4 storey Street Wall
- Vertical Articulation
- PRCUTS recommended buildings for surrounds

Design Principles

Principle

Appropriate Interfaces to Mitigate Impacts

Various edge conditions will need to be considered to appropriately respond to existing constraints imposed across the site. The northern interface will have to be designed to mitigate impacts of noise and light from the sports field, the west will need to mitigate noise from the light rail, and façades within close proximity to each other will need to be considered for internal and external building separation ADG compliance

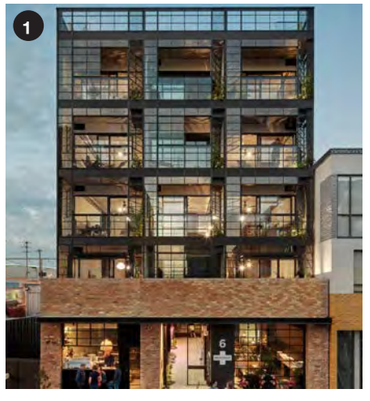
Design Response

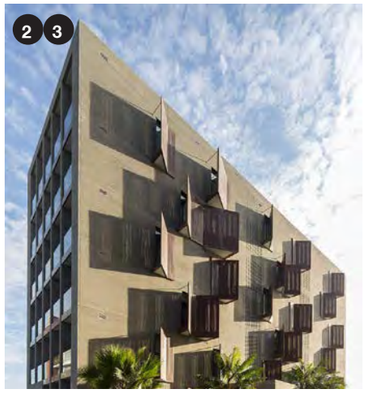
1. Façades facing the light rail will employ articulation to provide a noise buffer to the rail corridor. The raised rail corridor and trees along the site edge and the Greenway will help reduce visual impact of the largest facade in the development.
2. Northern facing walls will use architectural expression and articulation to direct views and openings away from the sports field. This is to reduce over-looking of the sports field and to mitigate noise and light spill from the field, particularly at night.
3. The internal façades along the mid-block through site link have a min. separation of 9m, thus requiring either non-habitable uses or articulation that limits direct views into opposing dwellings. There are various methods such as directional window slots and louvres that can be used to create a strong facade whilst still enabling habitable rooms.
4. Dwellings facing east along Davies Lane would be designed with balconies that reduce direct views into neighbouring private open spaces. This can be done via deep balcony setbacks and more solid elements that direct views whilst still maintaining internal residential amenity.

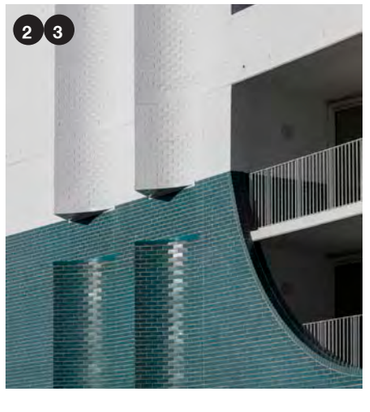
Responds to:

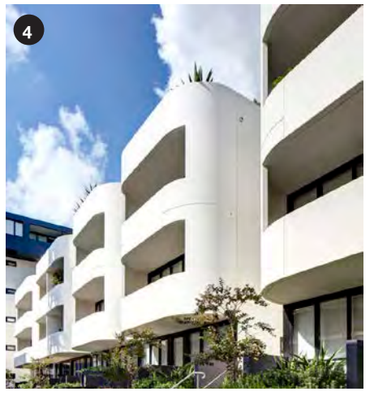
Strategic Priorities	Constraints	Opportunities	Recommendations
1	1 ✓	1	1 6M
2	2	2	2 ✓
3	3	3	3
4	4 ✓	4 ✓	4 ✓
5 ✓	5 ✓	5 ✓	5
6			

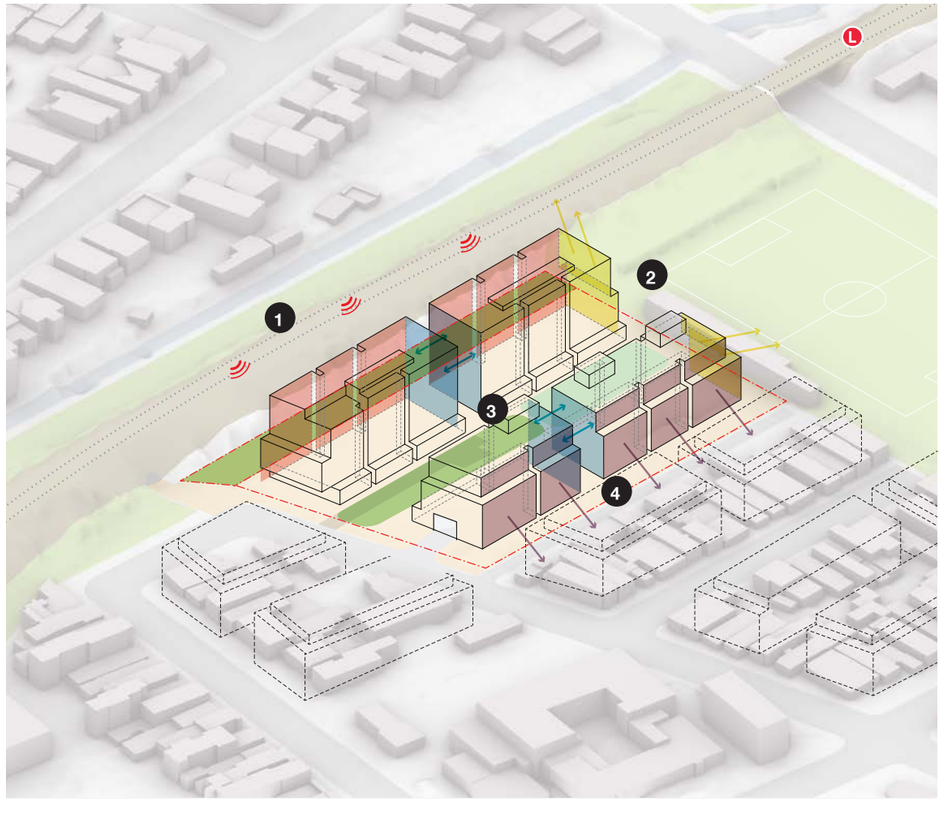
Examples











KEY

- Site Boundary
- Winter Garden Edge
- Directional Edge
- Enclosed Edge
- Non-Habitable Edge

Urban Design Scheme

6

6.1 Vision

Envisioned as a mixed-use intergenerational precinct, the proposal would generate vitality and activation for the site and to Lords Road and demonstrates Platino's commitment to the local community. It features improved pedestrian connectivity, permeability, streetscape, presence, open space and non-residential floorspace.

The ground floor would be activated by approximately 1,700sqm of non-residential floor space, providing for the local economy and encouraging movement within and through the site. Large non-residential spaces with high ceiling heights will be able to accommodate a diversity of uses to renew employment opportunities on the site. Activation could come from potential uses such as workshops, cafes, co-working spaces, creative outlets, wellness centres and boutique offices.

Approximately 210 dwellings will help generate long-term activation and help establish a strong community. An intergenerational approach has been envisioned that allows individuals, families, empty nesters, and key workers to coexist within the site. Co-working spaces will allow residents to work from home, whilst common areas, cafes and a playground will encourage socialisation and activity for young and old.

A publicly accessibly central courtyard supports the ground floor activation and residents. Fronting Lords Road, the courtyard aims to draw movement into the site and create a meeting place for the community. The courtyard is connected to the surrounding context via a series of public through-site links with the intent to connect to the Greenway, Davies Lane, a new RE1 public recreation open space along the western interface. This new open space could provide a potential future connection to Marion Street Light Rail via Lambert Park Sports Field to the north.

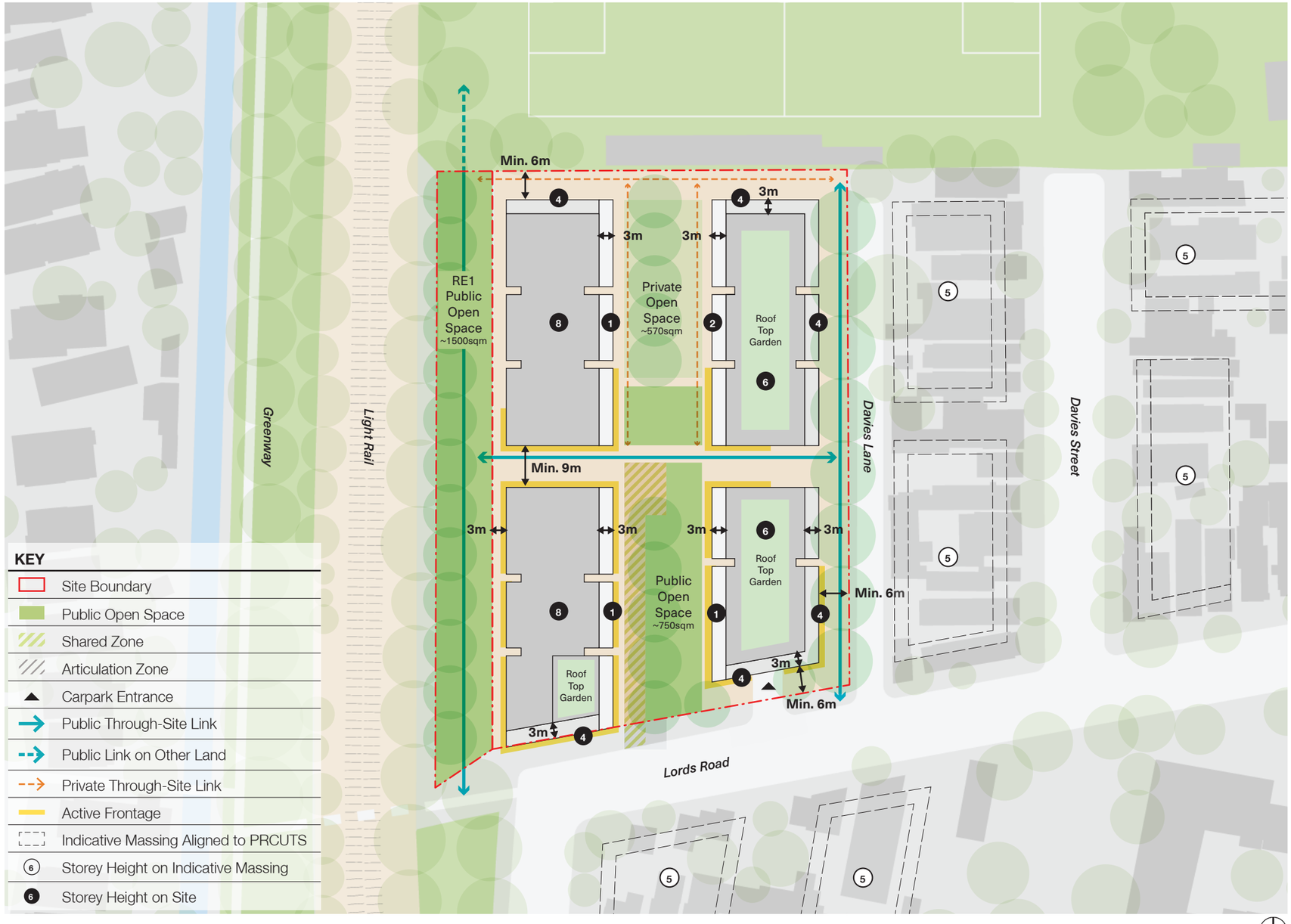
The design represents a holistic vision for the site that has been grounded in its response to strategic, local and place-specific requirements. A reference scheme has been prepared that demonstrates alignment with the proposed outcomes, controls and vision.

6.2 Concept Plan

The concept presents a scheme with 4 primary buildings. The central courtyard runs almost the full length of the site changing from public to private as it progress north. This open space is directly accessible from Lords Road and manages the level changes in the site whilst providing a diversity of spaces for relaxation and play.

The four primary buildings increase in height from 6 storeys to 8 storeys and each contain various levels of articulation at their edges to reduce bulk and scale and create a better interface with surrounding areas and landscape. Several through site links are provided enabling a much more permeable structure than currently existing on the site and providing potential connections to Marion Street and the Light Rail stop.

Existing		Proposed
52%	Site Coverage	42%
<5%	Deep Soil	min. 15%
5,500sqm	Non-Resi	1,700sqm
<10%	Tree Cover	min. 22% (15% in R3 zone)
0sqm	Open Space	2,200sqm



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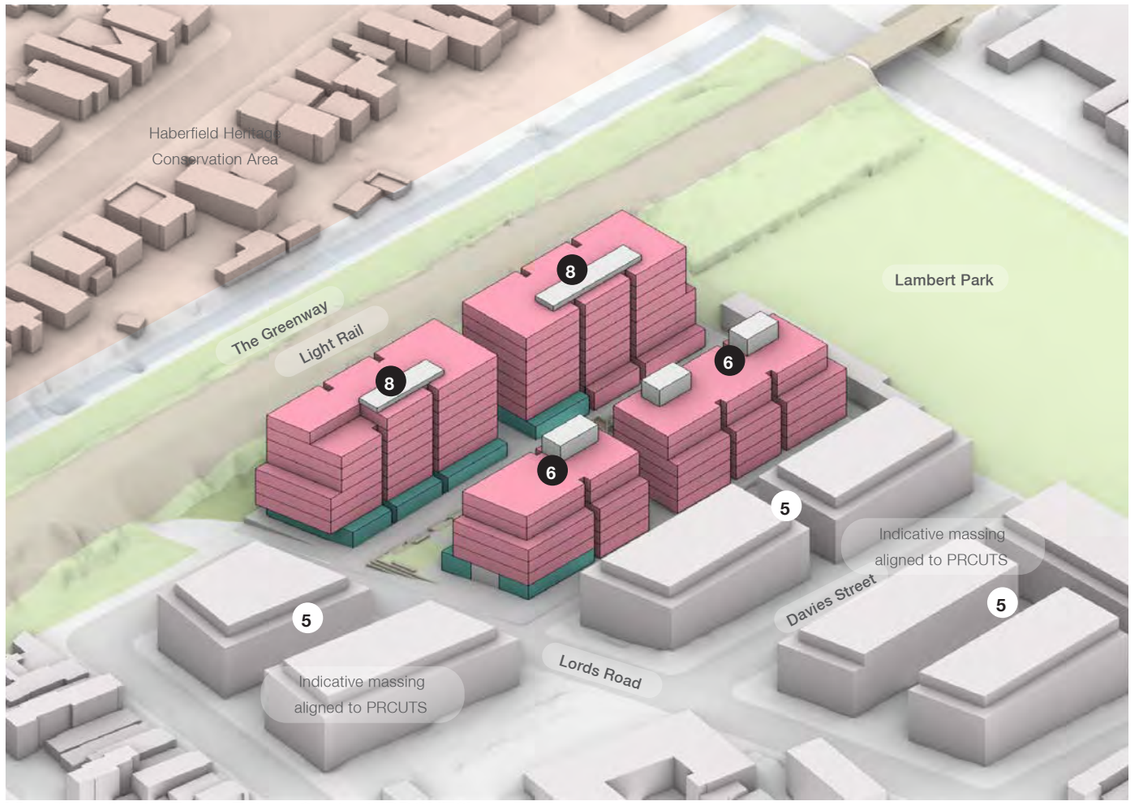
6.3 Massing

The scheme steps up from 6 storeys at the east to 8 storeys at the west. The below represents the scheme within the existing context and also within a future context that assumes indicative PRCUTS building massing up to 5 storeys on neighbouring sites.

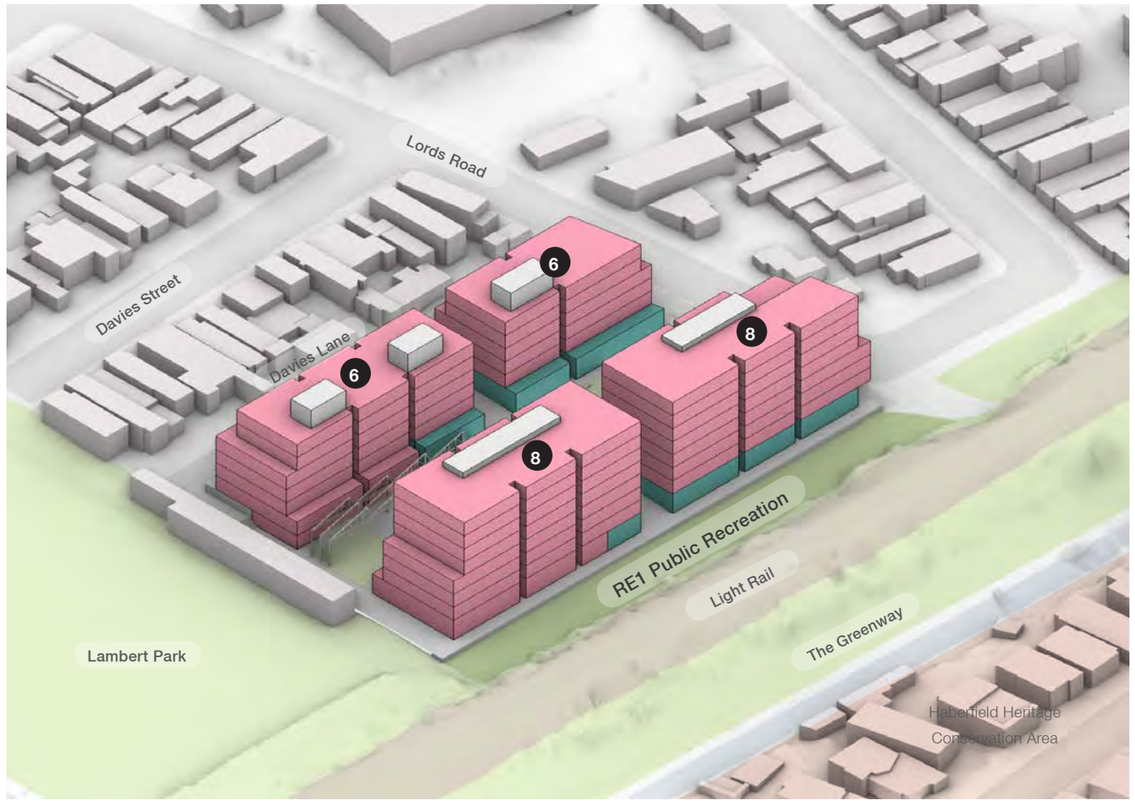
View from South-East - Existing Context



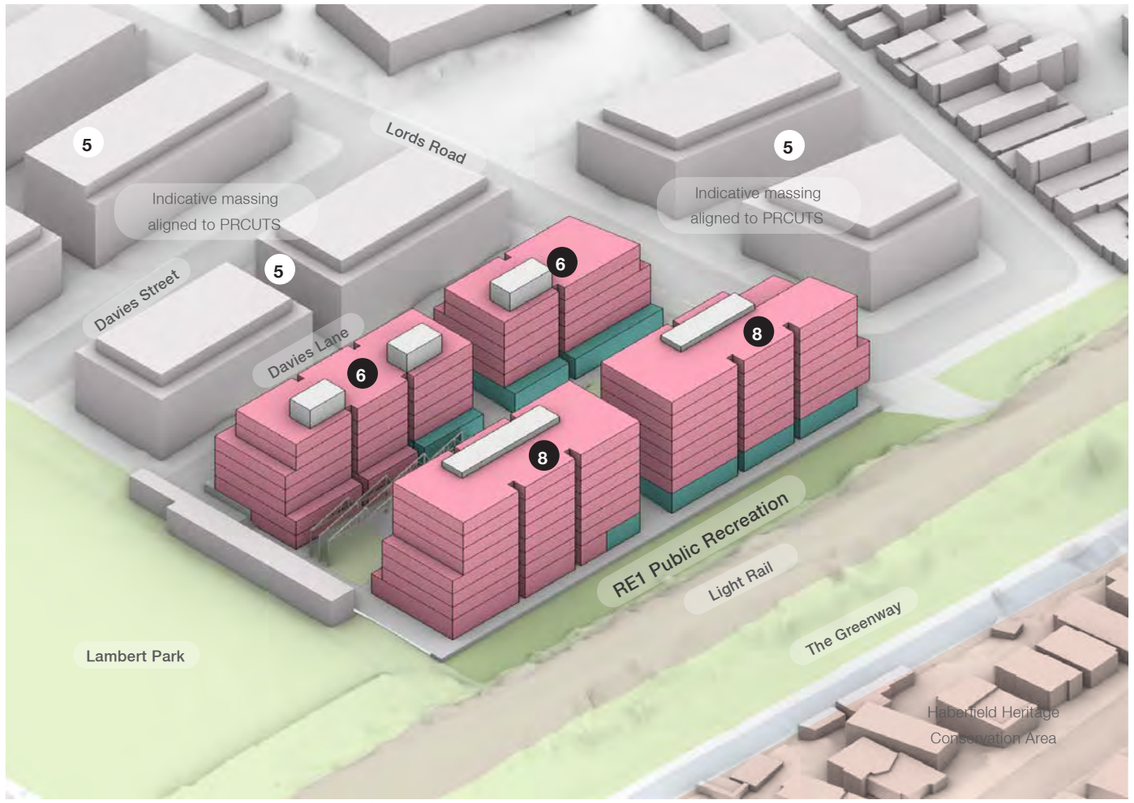
View from South-East - Future Context (PRCUTS)

KEY

- Site Boundary
- Residential
- Non-Residential
- 6 Storey Height



View from North-West - Existing Context

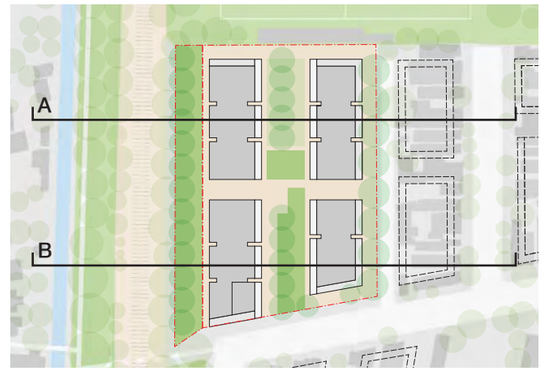


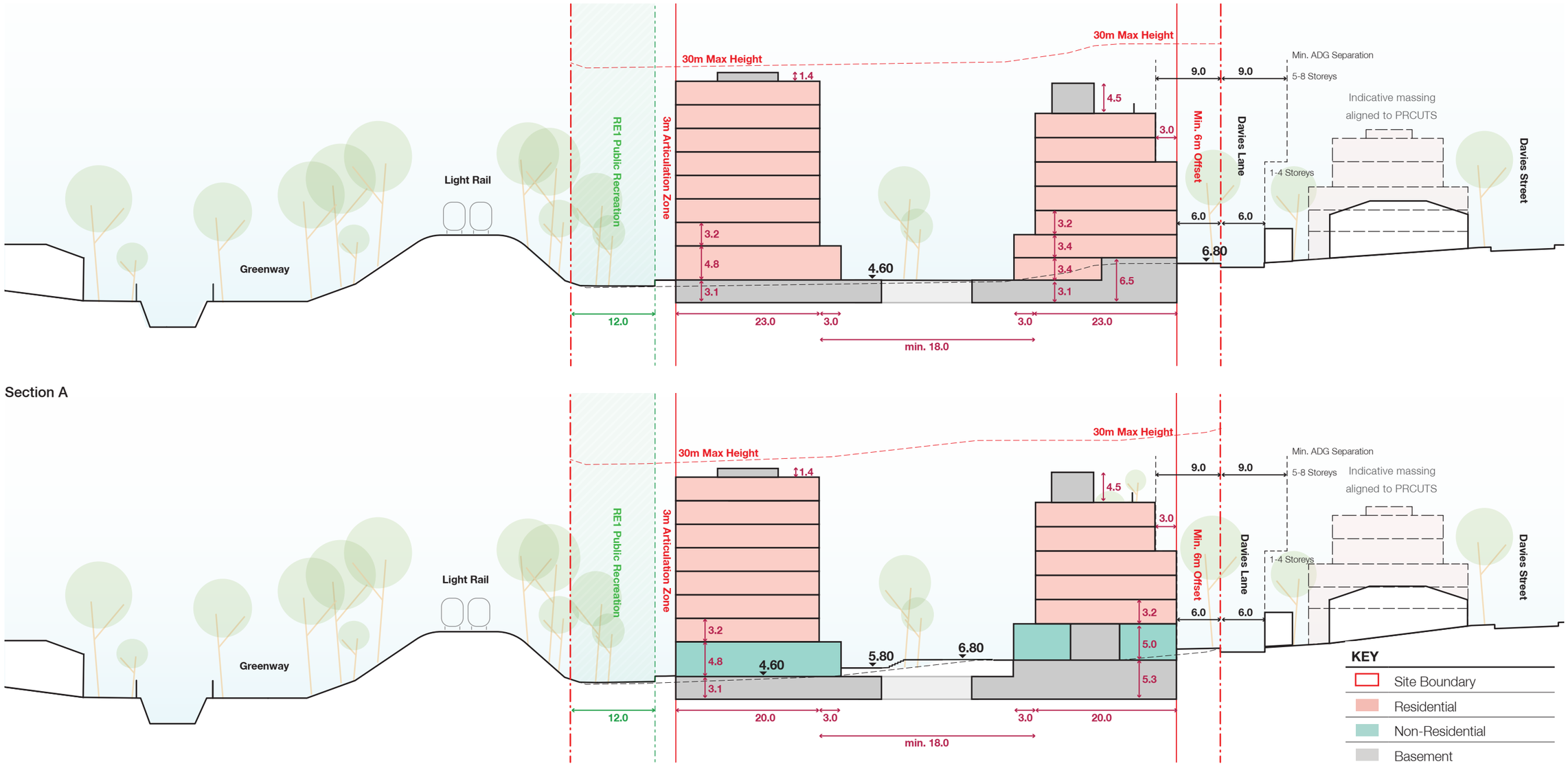
View from North-West - Future Context (PRCUTS)

KEY

- Site Boundary
- Residential
- Non-Residential
- 6 Storey Height

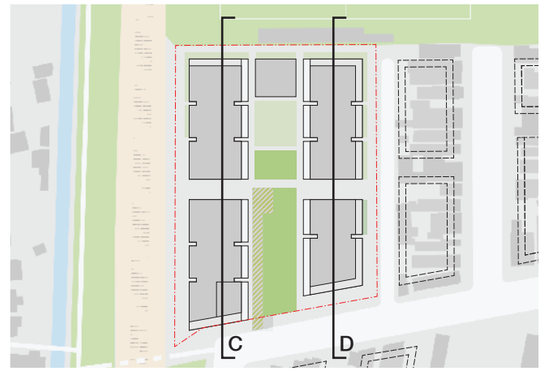
6.4 Sections

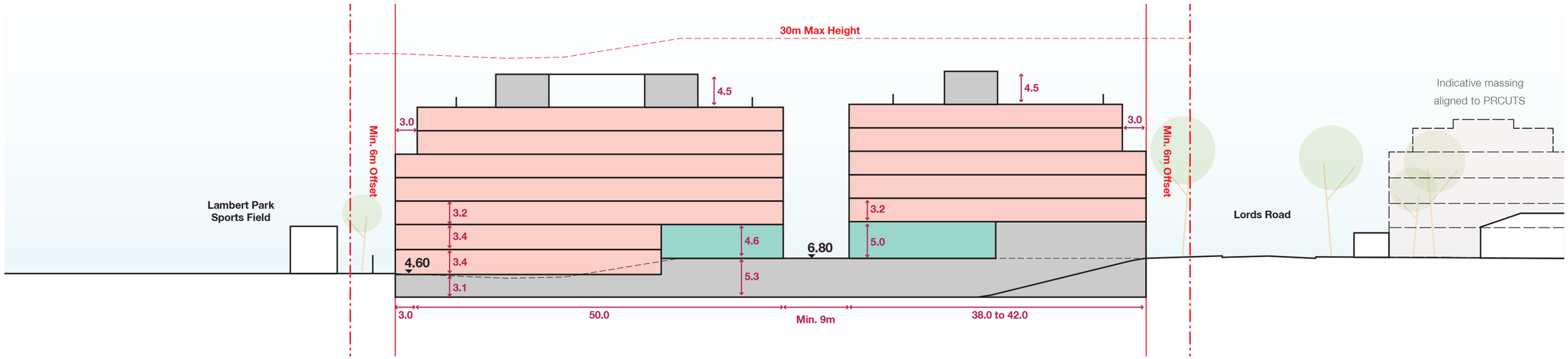




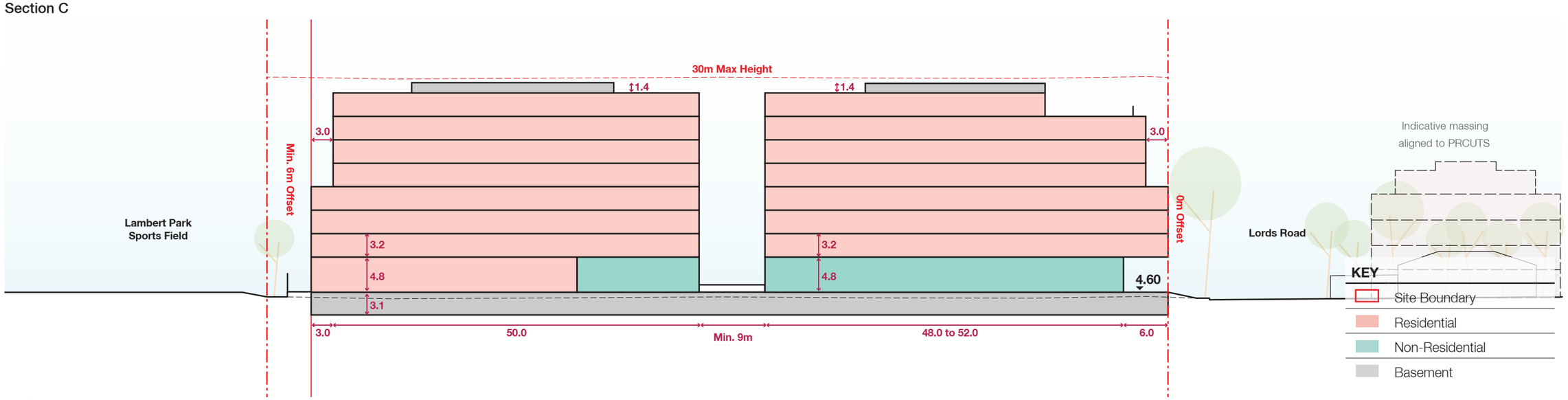
NTS

Urban Design Scheme





Section C



Section D

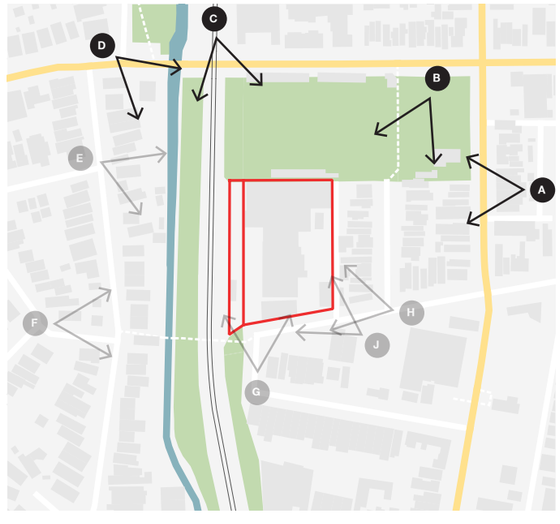
NTS

6.5 View Impact Analysis

Select vantage points have been used to determine view impact of the scheme to surrounding areas. The majority of these views were highlighted in the previous planning proposal peer review as recommended locations for analysis.

View A - Leichhardt Marketplace rooftop carpark

View B - Lambert Park

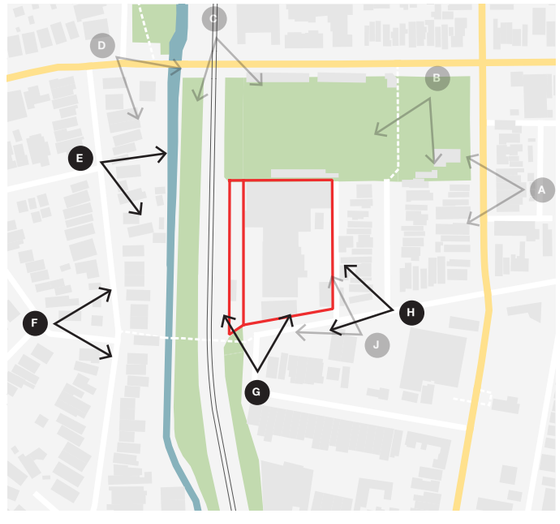


View C - Marion Street Light Rail

View D - Corner Marion Street / Hawthorne Parade

View E - Corner Hawthorne Parade / Percy Street

View F - Corner Lord Street / Ramsay Street



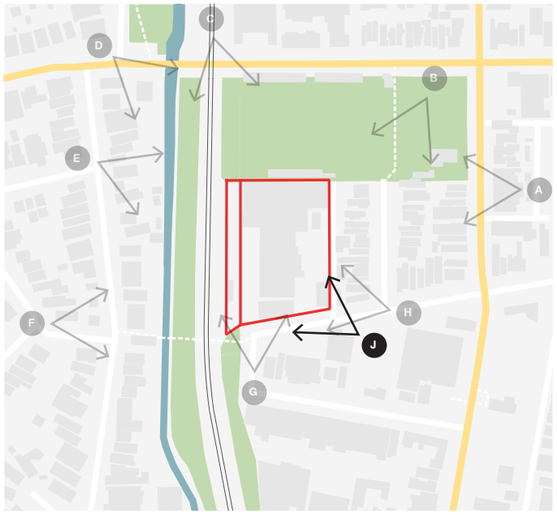
View G - Corner Lords Road / Kegworth Street

View H - Corner Lords Road / Davies Street

Urban Design Scheme

A more detailed view analysis along Lords Road has been prepared to demonstrate a potential approach to the site in terms of scale and materiality and to situate this within it's surrounding context. An indicative outline of potential massing on neighbouring sites has been shown based on PRCUTS recommended controls to demonstrate the proposal within a future scenario.

View J - Lords Road



6.6 Shadow Analysis

Overshadowing analysis of the surrounding context has been modelled based on the proposed scheme.

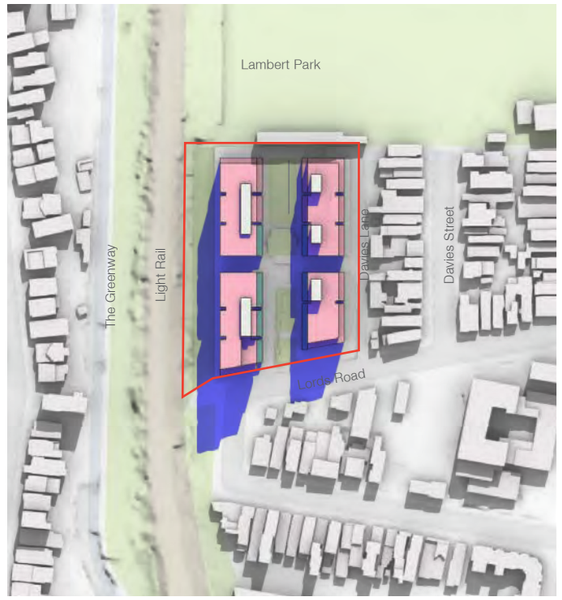
Solar compliance for neighbouring properties along Davies Lane and Lords Road have been tested based on relevant DCP controls. The scheme would be compliant with these controls, primarily by maintaining at least 3 hours of direct sunlight to 50% of the primary open space and into living rooms between 9am and 3pm on June 21st.

KEY

- Site Boundary
- Existing Shadow
- Proposed Shadow

9am

10am



11am

12pm

1pm

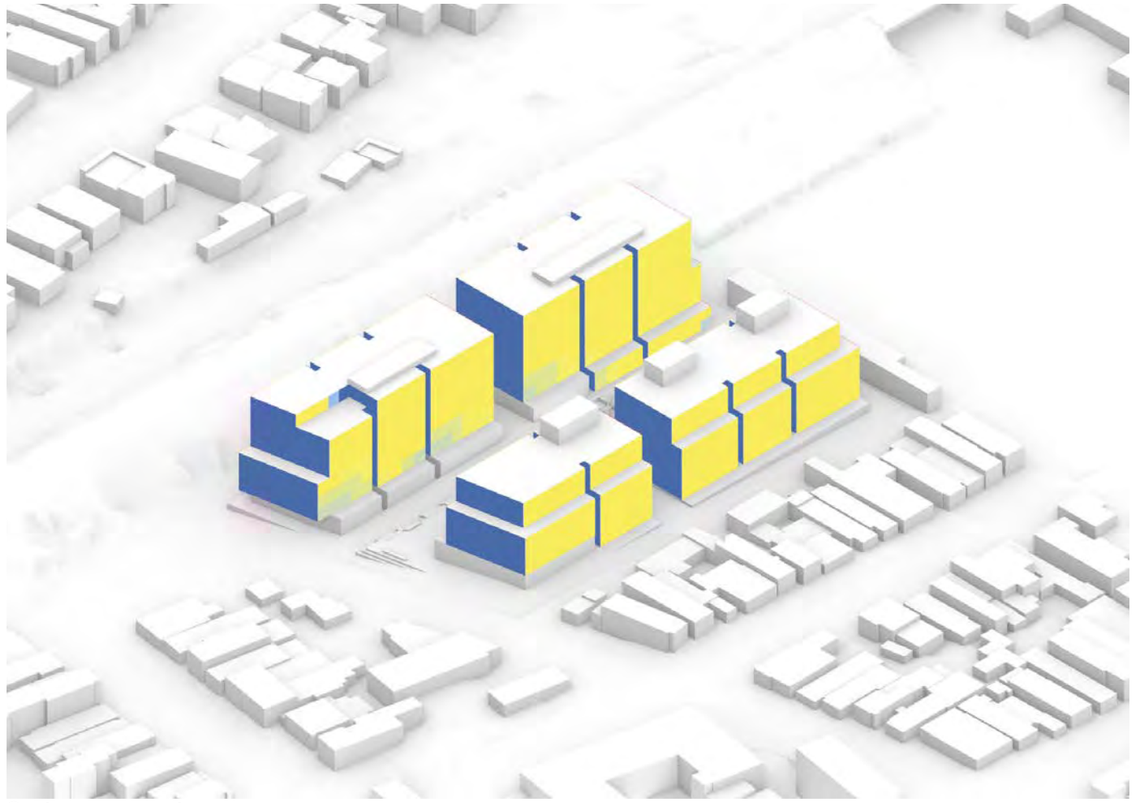
2pm

3pm

6.7 Solar Studies

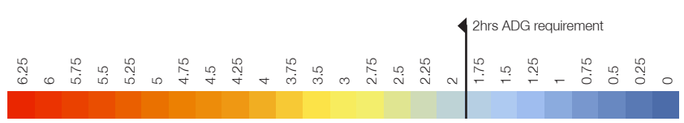
Residential Facades

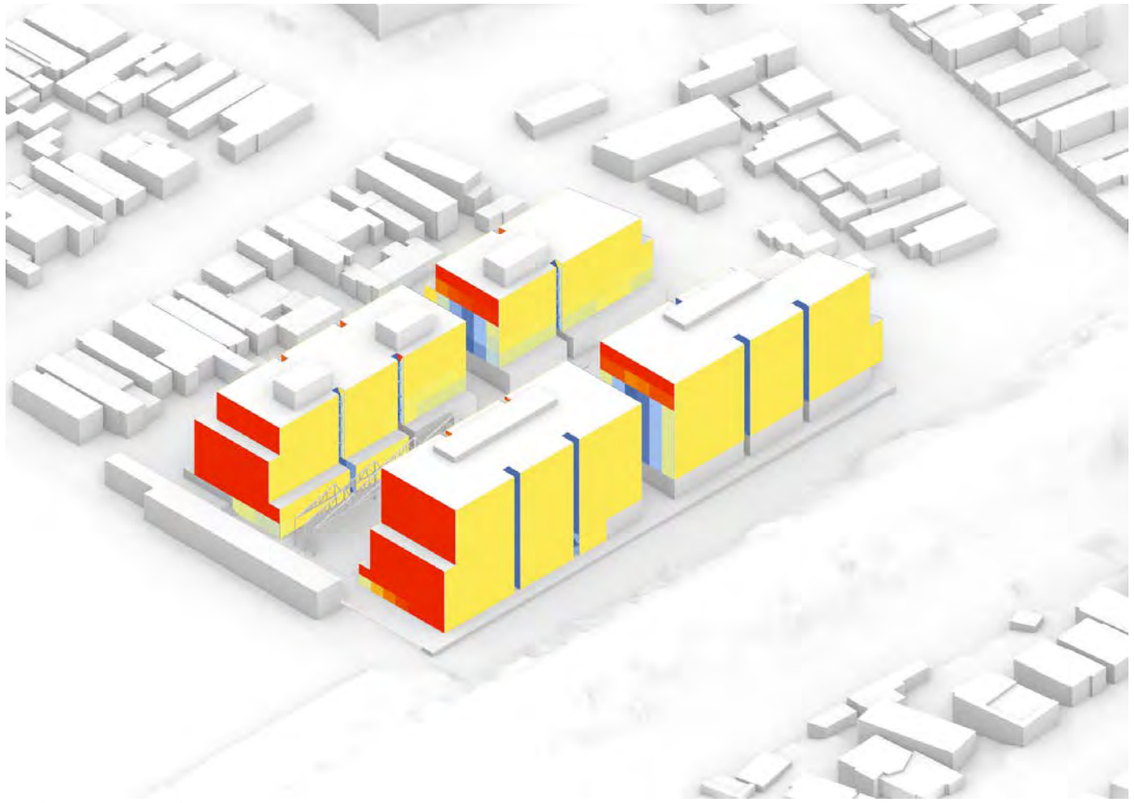
Measurements of the amount of direct sun the facade of any residential use receives between 9am and 3pm on 21st June (Winter Solstice) has been calculated. The intent is to demonstrate a high level understanding that the scheme would achieve ADG solar access compliance which is >= 2 hours.



Southern and Eastern

All eastern facing facades achieve are compliant. Dwellings on southern facades will prioritise living spaces to the east and west.





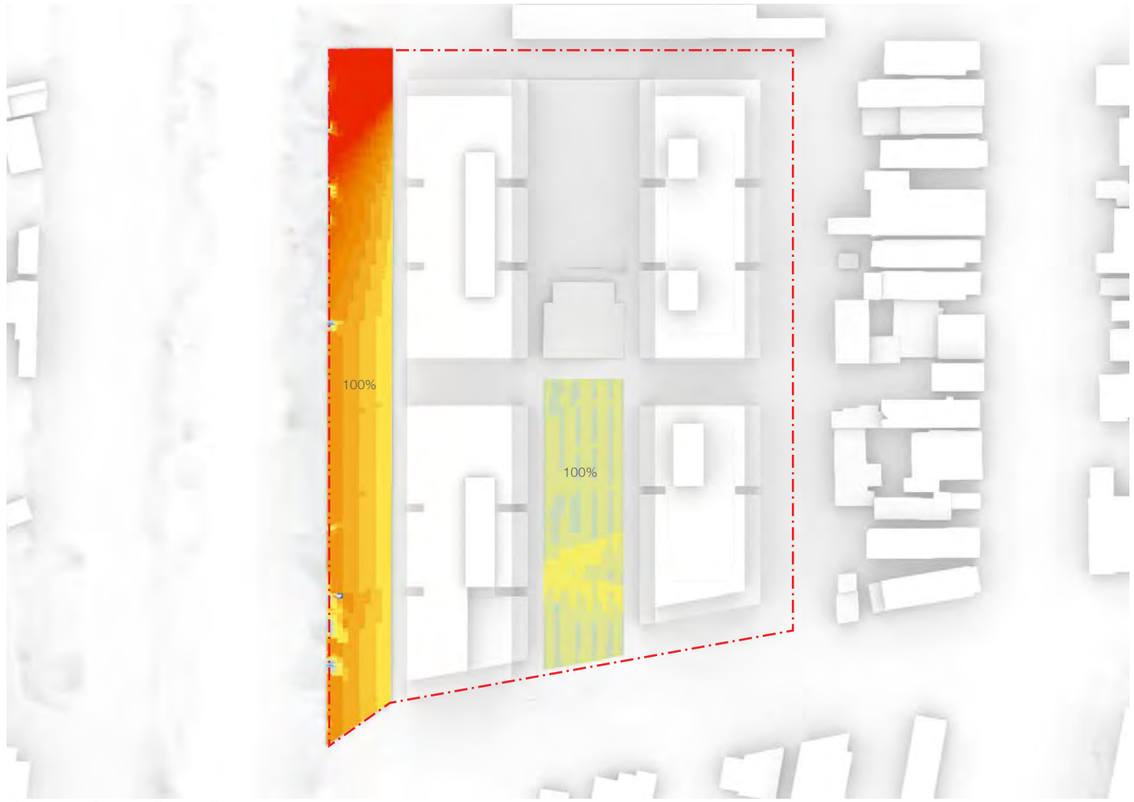
Northern and Western

All facades are compliant except for those between buildings. These facades will be non-habitable and dwellings here will prioritise living spaces to the east and west.

Urban Design Scheme

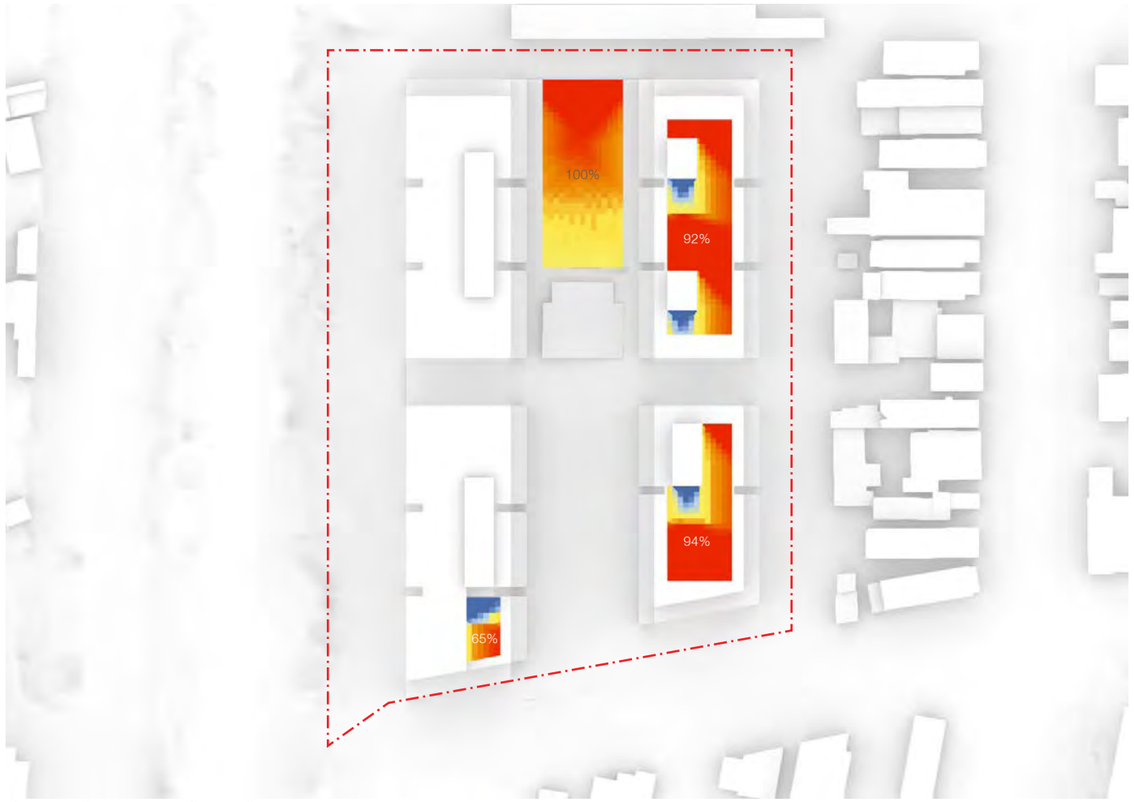
Open Space

Solar access has also been calculated for the public open space and private communal open spaces. The Apartment Design Guide requires 50% of the communal open space achieve greater than 2 hours sunlight between 9am and 3pm.



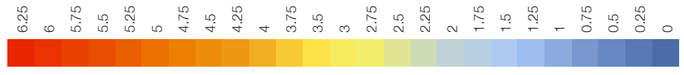
Primary Public Open Space

Both spaces achieve 100% > 2 hrs



Private Communal Open Space

Each space independently meets criteria and collectively achieves 94% > 2 hrs



6.8 Recommendations Response

The following responses are in regards to the recommendations from the previous planning proposal peer review process. This allows for a clearer understanding of the outcomes of the urban design scheme in response to previous concerns for the site.

	Recommendation	Response
6M	**Setbacks**	
1	Further setbacks are to be introduced for the proposed building at the corner of Lords Road and Davies Lane; to mitigate the scale and to protect the existing mature trees along the Lords Road frontage (6m for Davies Lane & 3m For Lords Road)	Arborist advice has been sought and the recommendation was to consider the removal of all existing trees due to poor ground quality and substantial impacts on the scheme. The advice also recognised that removal of the trees and planting of new trees would improve the streetscape quality by allowing better quality trees to grow and the ability to increase the amount of trees along Davies Lane. Therefore, setbacks at the corner of Lords Road and Davies Lane and through the length of Davies Lane have been recommended for a minimum 6m setback.
2	A further ground level setback between 3m and 7m to Davies Lane is recommended to accommodate a minimum 3m footpath and landscaping	As per above, a minimum 6m setback has been provided along Davies Lane which would be sufficient to accommodate a 3m footpath, landscaping and private open space for ground level dwellings.
	Residential Amenity	
5	Review ADG building separation to ensure buildings and DCP reflect the minimum required. Also ensure all buildings achieve appropriate ADG cross ventilation and solar access	The ADG requirements for building separation have been considered and appropriately implemented within the scheme. The reference scheme in section 8 highlights the ability to achieve the required separation distances and to allow cross ventilation and solar access requirements. In some places, non-habitable façades are required, however these can be articulated to allow diffuse light and directional views without imposing on visual privacy of opposing dwellings.
6	Minimise overshadowing of the central open space	The scheme has been designed to limit overshadowing of the central open space by prioritising taller buildings to the east and west and maintaining a low scale building to the north. Internally facing the open space a 1 storey street wall has been introduced that limits bulk and increases solar access. In the reference scheme, 100% of the primary public open space achieves greater than 2 hours direct sunlight between 9am and 3pm. Communal open spaces achieve a minimum of 65% and collectively 94%.
7	Draft DCP should reflect individual residential dwellings at ground along Davies Lane	The DRAFT DCP diagrams in section 9 of this report have reflected this.
	Open Space & Public Domain	
6	Proponent to clarify traffic circulation strategy and confirm minimum clearance requirements	Traffic circulation is highlighted in the principles as a key factor of the scheme. A singular carpark entrance/exit is provided along Lords Road at the south-east corner of the site. The carpark would provide sufficient clearance (min. 4.5m) for a truck to service the site. A shared zone, also providing an entrance and exit on Lords Road allows for low-speed vehicular movement within the central open space to provide kiss-n-ride facilities closer to the buildings to the north. Davies Lane has not been considered for additional vehicular use in this scheme.
7	Confirm if a connection along the western boundary is in line with the Greenway masterplan	The Greenway Masterplan shows a secondary path along the eastern side of the Light Rail embankment adjacent the site and through the Lambert Park Sports Field. Refer to pp.111-114 of the Masterplan Report and pp.63-64 of the Route Options Assessment Report. This area of the site is to be provided as RE1 Public Recreation which can facilitate this connection.

	Recommendation	Response
8	Proponent to clarify intended users of the central open space and extent of roof top gardens and communal open space for residents	The central open space is to be a privately owned - publicly accessible open space. The southern portion will be public, whilst the rear portion will be a communal open space for residential tenants. The public component may be used by anyone - however it is expected that activation will occur from the non-residential tenancies that surround this space. Rooftop gardens have been provided on buildings A, C and D. Please refer to the reference scheme in the section 8 for clarification.
9	Proponent should not present the open space as serving the wider community, but rather as the benefit for residents, commercial tenancies and community users of the site	Noted. However, it is expected that the open space would be of benefit to the local community as it is accessible and highly visible from Lords Road and will be designed to appear public rather than private. The Western portion of the site will however be totally public access.
10	Retain the row of trees at the Lords Road and Davies Lane corner to provide screening of the new development. Arborist advice should be sought to confirm conditions for longevity	As noted on point 1, arborist advice has been sought and tree removal was recommended. New tree planting at this corner will provide screening of the new development.
	Interfaces	
11	Draft DCP should provide development controls that address roof form and building materiality, in line with the PRCUTS guideline	Noted.
12	Before and after photo montages are to be prepared to assess visual impact. Eight vantage points have been identified	View impact analysis has been prepared in the previous section of this report. The majority of these view locations were chosen based on the recommended vantage points.
13	Provide articulation for long buildings to reduce scale	Articulation is a key principle of the urban design scheme and has been demonstrated across this report. The reference scheme in the section 8 details how this could occur, primarily being used as light-well for reisdential corridors and to provide expressive entrances at ground floor lobbies. For the longest buildings in the site (50m+) articulation has been provided at two points along each facade, effectively splitting the mass into three seperate pieces. These slots may also be further articualted through material differences and architectural expression.
	Proposed Controls	
14	It is recommended to retain the maximum height limit for the site at eight storeys. A 30m height limit as indicated in the PRCUTS would provide adequate height	Noted. The maximum building height within PRCUTS (30m) has been used within this scheme. This includes lift overruns and rooftop gardens and a maximum storey height of 8.
15	Test if an FSR is still appropriate for the site given the proposed built form recommendations	This urban design scheme demonstrates an ability to achieve up to 2.4:1 as recommended in PRCUTS. The reference scheme in the section 8 demonstrates a compliant scheme at 2.38:1.
16	The proposal is to be reviewed from a socioeconomic viewpoint, as Criteria 1 of the PRCUTS Out of Sequence Checklist requires that the planning proposal demonstrate significant net community, economic and environmental benefits	Noted. Socio-economic advice has been sought and addressed in the social impact report and EIA submitted with the planning proposal.

Landscape Plan

7

Landscape Plan

7.1 Vision

A generous landscape interface with Lords Road will invite people passing by to stop and enjoy a moment on the lawns or to sit on the sandstone blocks that create an inviting edge to the proposed development. The dining opportunities that spill out into the public domain will activate the edges and create a vibrancy to the local area.

The communal spaces will be verdant, green landscapes with opportunities for the resident community to gather and enjoy a BBQ in their hidden garden. The history of the site will be celebrated by recycling the frame of the sawtooth roof to create a structure for vines to grow across.

Added permeability and new public access through the site will encourage greater activity, and allow people to traverse between key local attractions through the site. The public nature of these links will ensure that the wider site is accessible and welcoming to the broader community.

The network of spaces created across the site will cater for a range of users and allow everyone to find a space for outdoor activities and gathering. It will foster intergenerational activity and interaction, strengthening social ties in the broader neighbourhood.

The western portion of the site will be delivered as RE1 Public Recreation, to be used 100% by the community for open space. This space will serve as a buffer between the development and the light rail corridor and can facilitate the start of a connection north to Marion Street and the light rail stop.

Landscape Plan

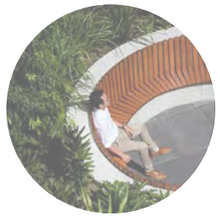
7.2 Concept

01 - Rear access lane and fire escape

03 - Public Recreation Space

03 - Peaceful Sunken Garden - Private communal open space

04 - Belvedere - Elevated platform with seating and outlook space



05 - Lawn and Terraced seating with shared street - Public open space

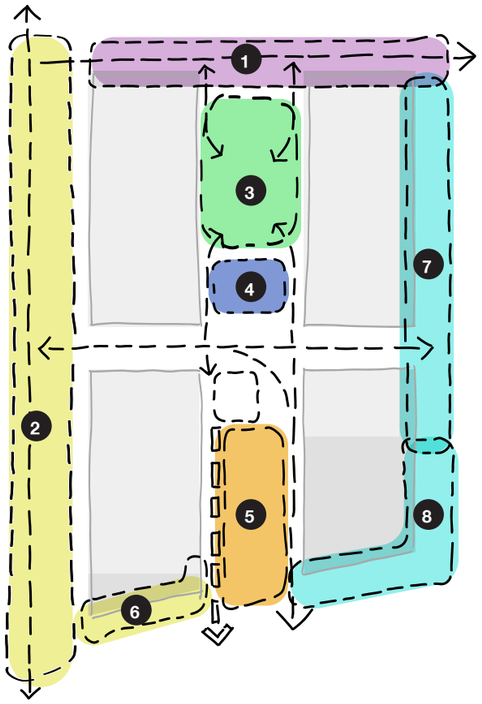
06 - Cafe Terrace

07 - Residential terraces with setback for tree canopy - Davies Lane

08 - Active frontage with setback

NTS

7.3 Landscape Characteristics



01 - Rear access lane and fire escape

The access lane will be a six meter wide easement with landscaped amenity and tree planting to minimise the light spill and acoustic impacts of the sports field to the North.

03 - Public Recreation Space

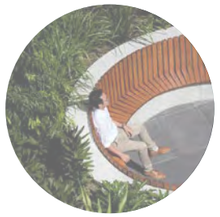
The RE1 Public Recreation interface will be a meandering pathway with dense planting that creates intimate spaces for people to spill out from the commercial and residential spaces and enjoy and quiet place to sit.

03 - Peaceful Sunken Garden - Private communal open space

The sunken garden will be a peaceful, resident-only space that is brought to life by a curtain of planting that appears suspended over the garden. Industrial trusses that have been reinstated as a unique place based feature will reference the industrial history of the site and celebrate the sawtooth roof that was once on the site.

04 - Belvedere - Elevated platform with seating and outlook space

The belvedere will be a pavilion situated at the centre of the site. The platform will be slightly elevated and separate the public and private communal space. Deep planting will frame an informal seating arrangement that allows people to work outdoors, share a coffee or take a break in a dedicated un-programmed space.



05 - Lawn and Terraced seating with shared street - Public open space

The public open space will be a generous landscape that offers significant community benefit by catering for a range of local users. There will be a lawn for people to spill out from the neighbouring commercial tenancies, space for children to play, and sandstone block seating where people can linger in the public domain. Deep soils that permeate into the middle of the site will allow for trees with wide canopies to establish at the heart of the site.

06 - Cafe Terrace

The terrace will be an elevated verandah that overlooks Lords Road - it will be activated by retail interfaces, making it a prime location for a future cafe and community gathering point where different paths intersect.

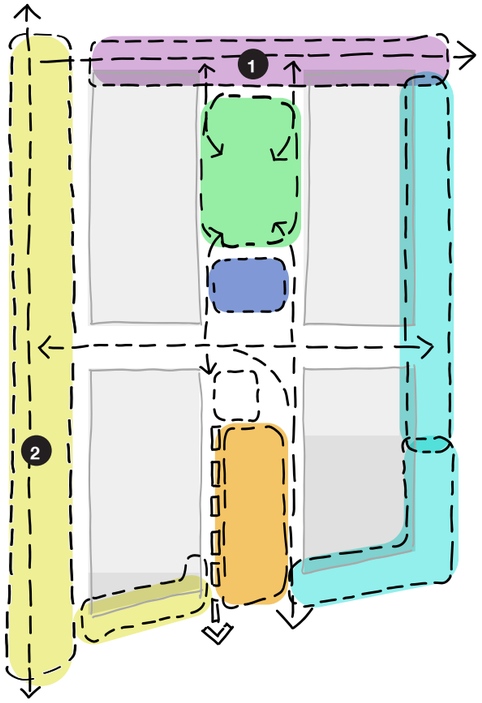
07 - Residential terraces with setback for tree canopy - Davies Lane

Davies lane will be enhanced with high quality streetscaping and pedestrian environment. Passive surveillance will be provided by resident that open out onto the lane. Replacement brush box trees will grow to form an avenue of trees.

08 - Active frontage with setback

The corner of Davies Lane and Lords Road will be setback from the street to allow for street tree planting and to widen the pedestrian interface with the commercial/retail uses at ground floor.

7.4 Precedent and planting scheme



Linear boardwalk that connects the dwellings on the western facade and provides a through site link

A meandering space with opportunities for people linger

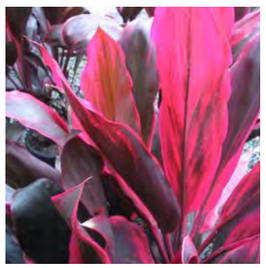
Native Australian rainforest style planting that leverages the moisture of the overland flow and established tree canopy

STROMANTHE TRICOLOUR
stromanthe sanguinea

CORDYLINE MANNERSSUTTONII
palm lily

LICUALA GRANDIS -
Fan Palm

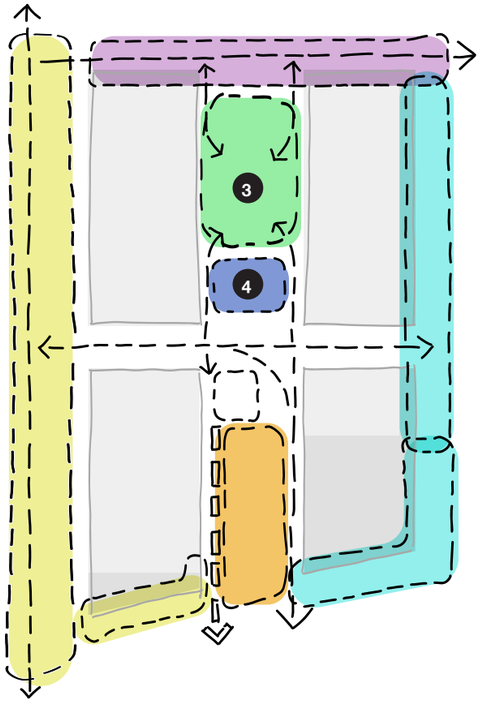
ALPINIA ZERUMBET
shell ginger



CORDYLINE RUBRA
cordyline fruticosa

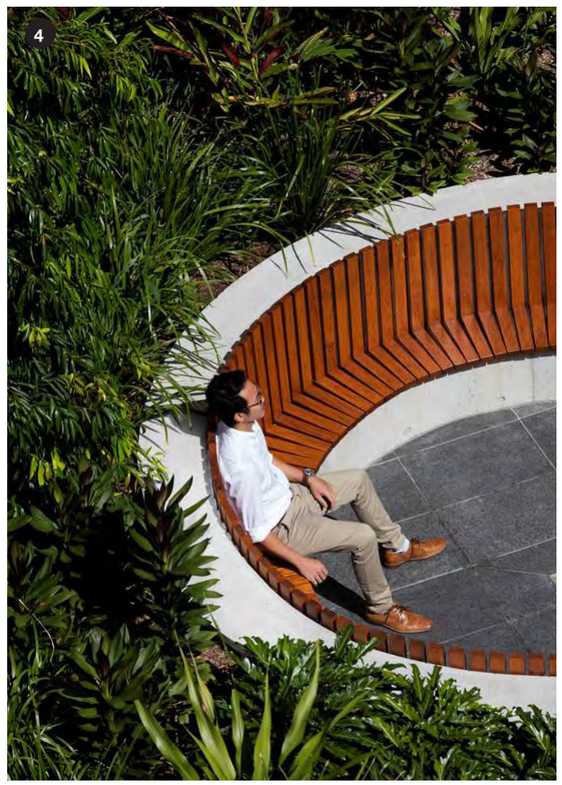
ASPLENIUM NIDUS
Birds Nest Fern

Landscape Plan



A curtain of planting that appears suspended over the garden by the trusses above

Reference the industrial history of the site and celebrate the sawtooth roof that was once on the site.



The belvedere will be a pavilion situated at the centre of the site - there with be dense planting around the edge

PYROSTEGIA
orange trumpet vine

CARDBOARD PALM
zamia furfuracea

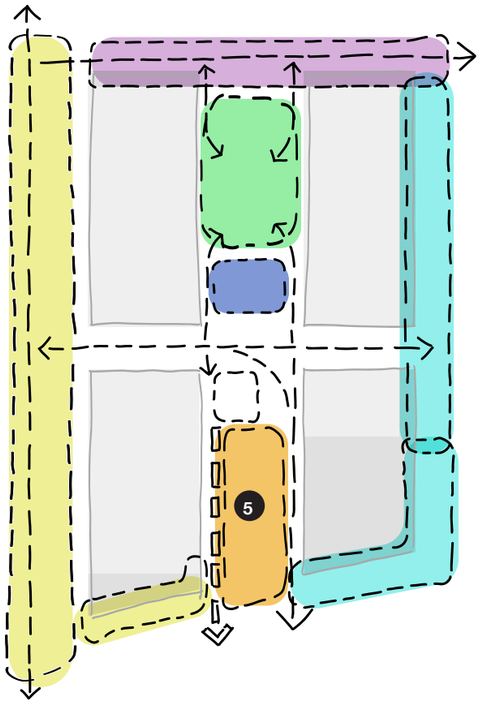
PHILODENDRON XANADU

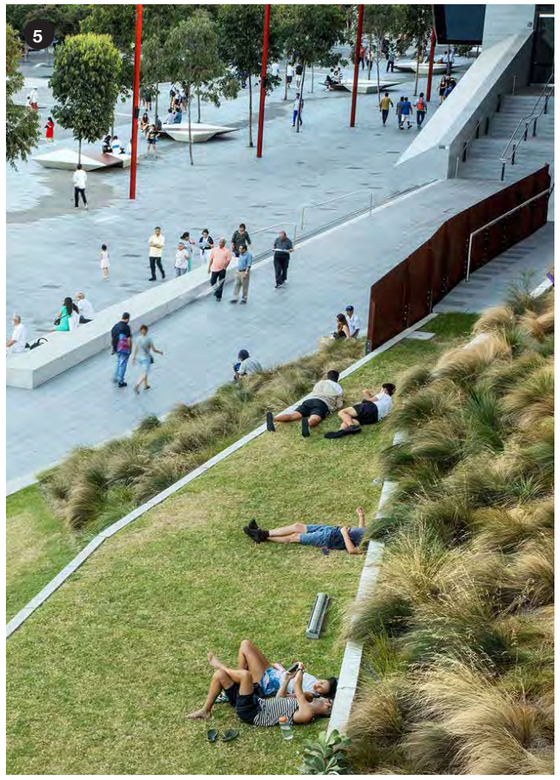
PHILODENDRON GOLD BULLION

CYCAS REVOLUTA
sago palm

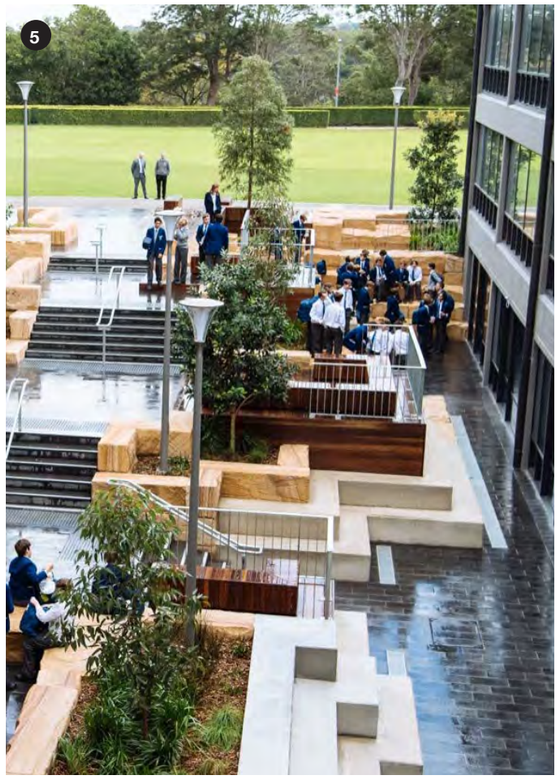
GLOCHIDION FERDINANDI
Cheese Tree

Landscape Plan





Generous grassy lawns where people can sit and linger



Teired seating to accomodate transition in tography and informal seating spaces

A sculptural piece at the heart that doubles as a childrens play space

DICHONDRA ARGENTEA
silver falls

LEUCADENDRON SALIGNUM
Blush Conebush

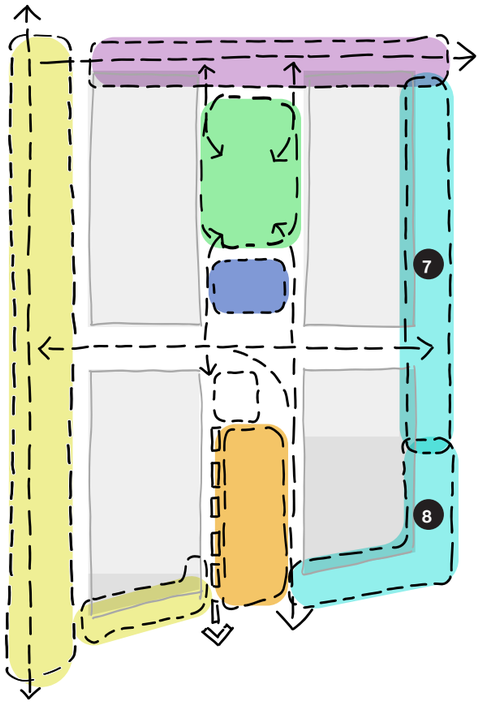
AGONIS FLEXUOSA
'after dark' - purple-leafed willow myrtle

EUPHORBIA CHARACIAS SSP. WULFENII
silver swan

BORONIA MEGASTIGMA

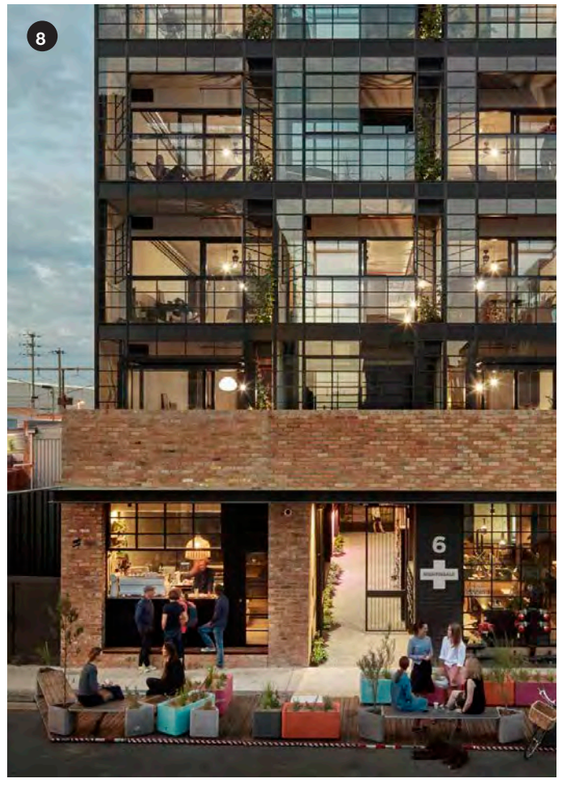
ANGOPHORA COSTATA
Sydney red gum

Landscape Plan

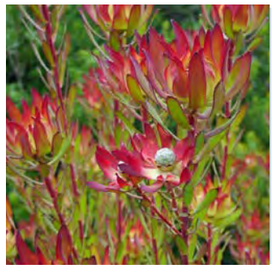


Landscaped interface with residential dwellings

Parking between avenue of brush box trees. Water sensitive urban design will enable passive watering of garden beds.



Active interface with retail tenancies that activates the street



LEUCADENDRON SALIGNUM
Blush Conebush

CARDBOARD PALM
zamia furfuracea

CYCAS REVOLUTA
sago palm

BORONIA MEGASTIGMA

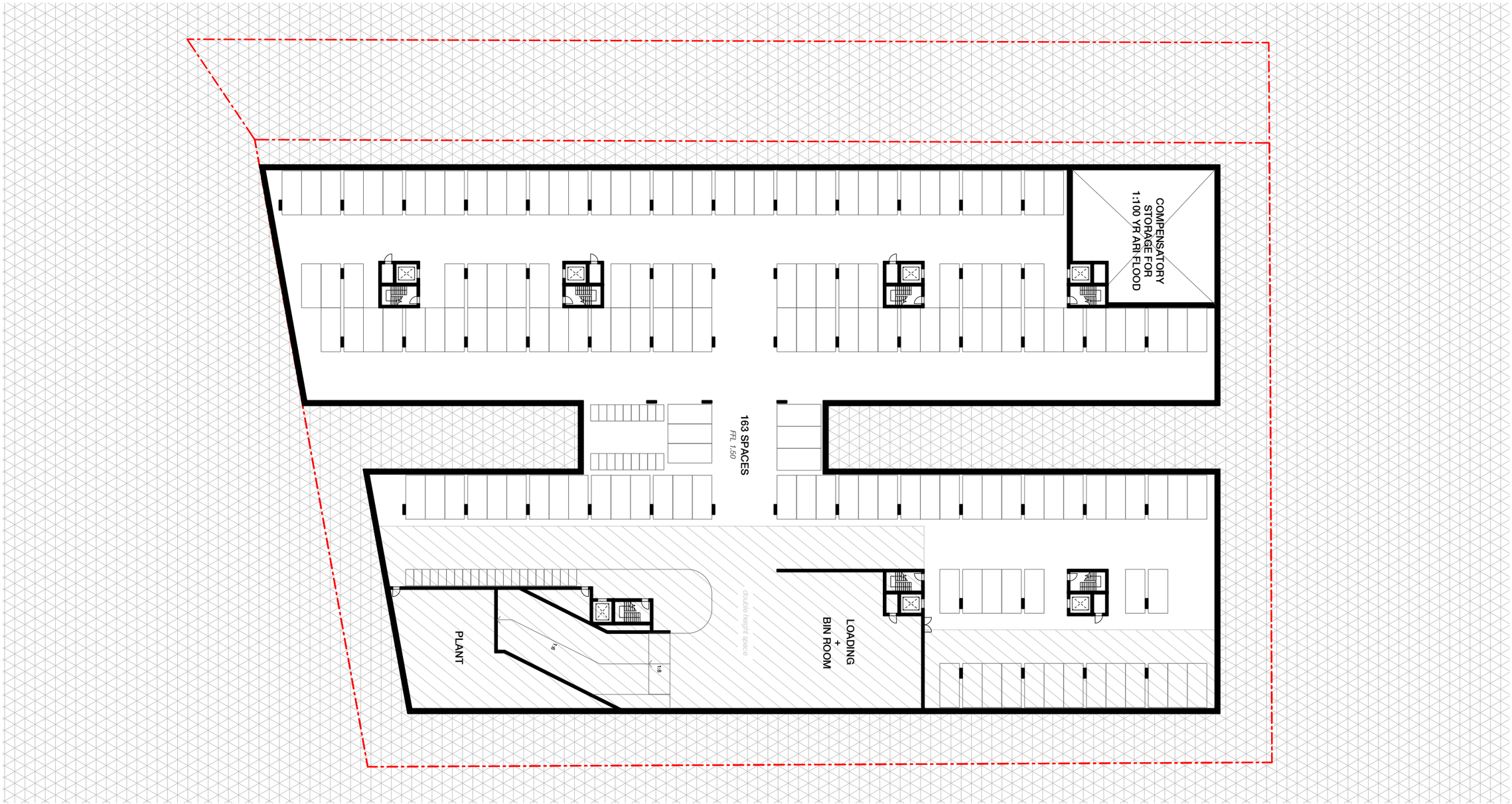
LILLY PILLY

ANGOPHORA COSTATA
Brush Box

Reference Scheme

8

8.1 Basement Plan



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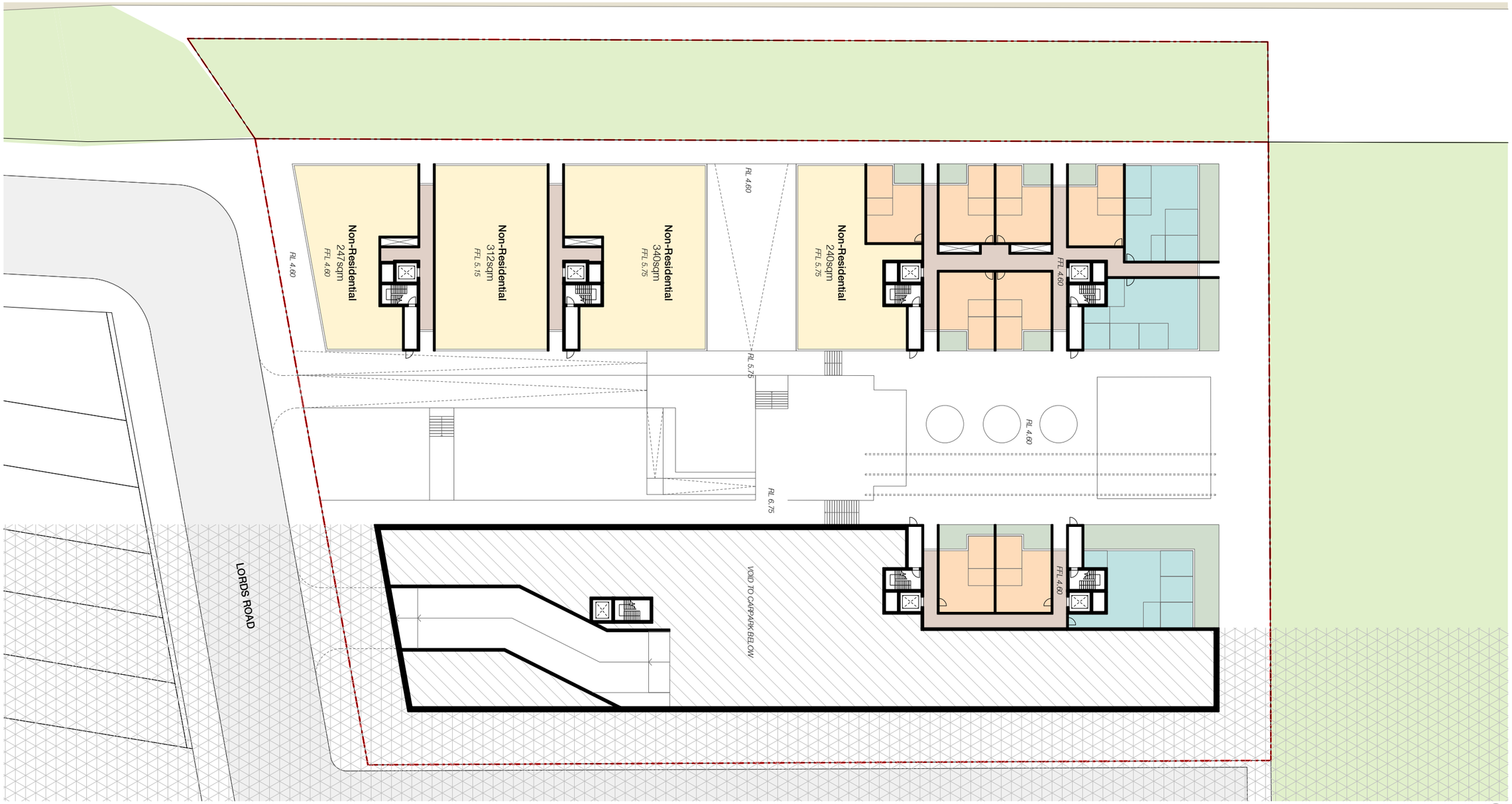
8.2 Ground Floor Plan (WEST)

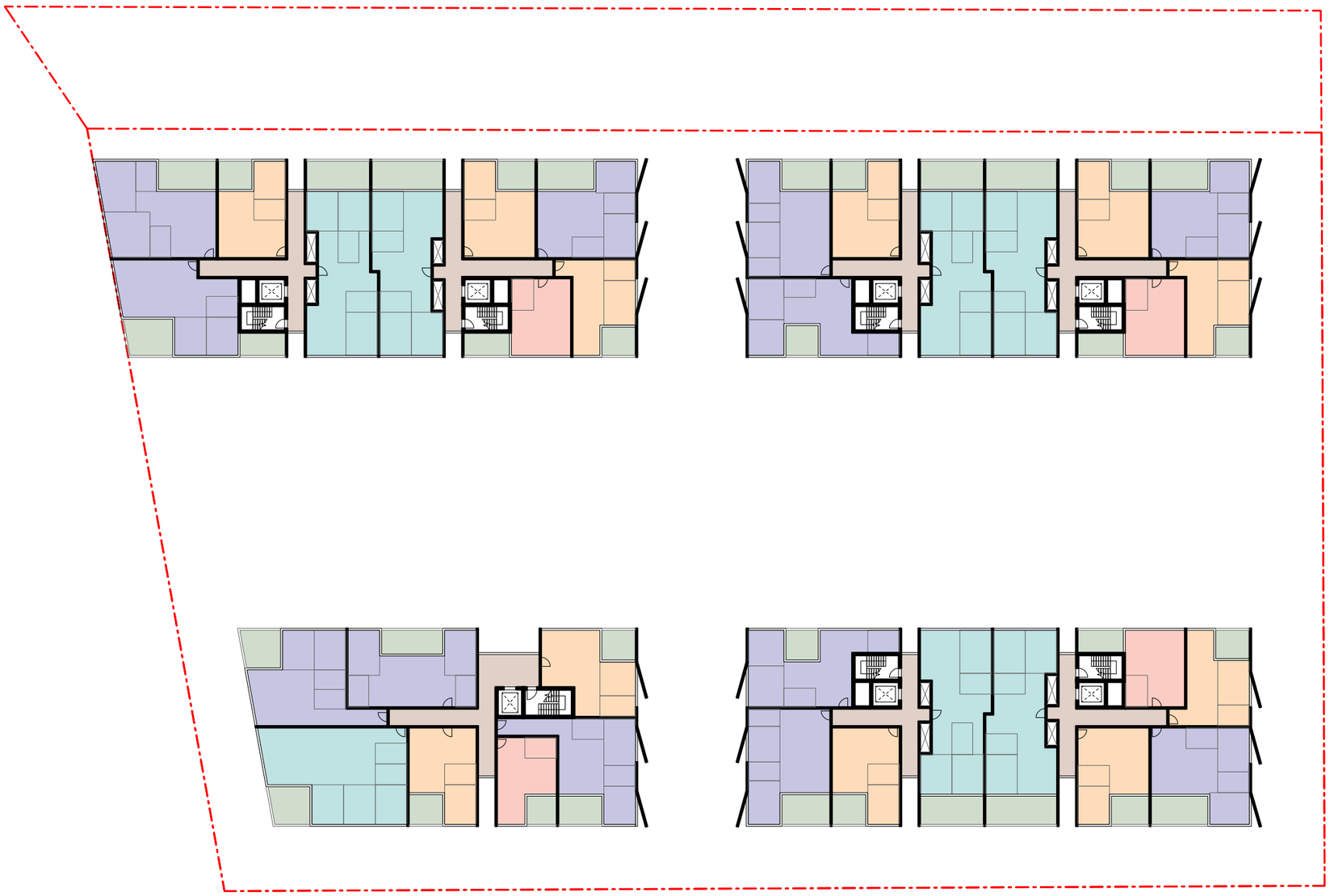


1:500 @ A3

8.3 Ground Floor Plan (EAST) + Level 1 Plan (WEST)

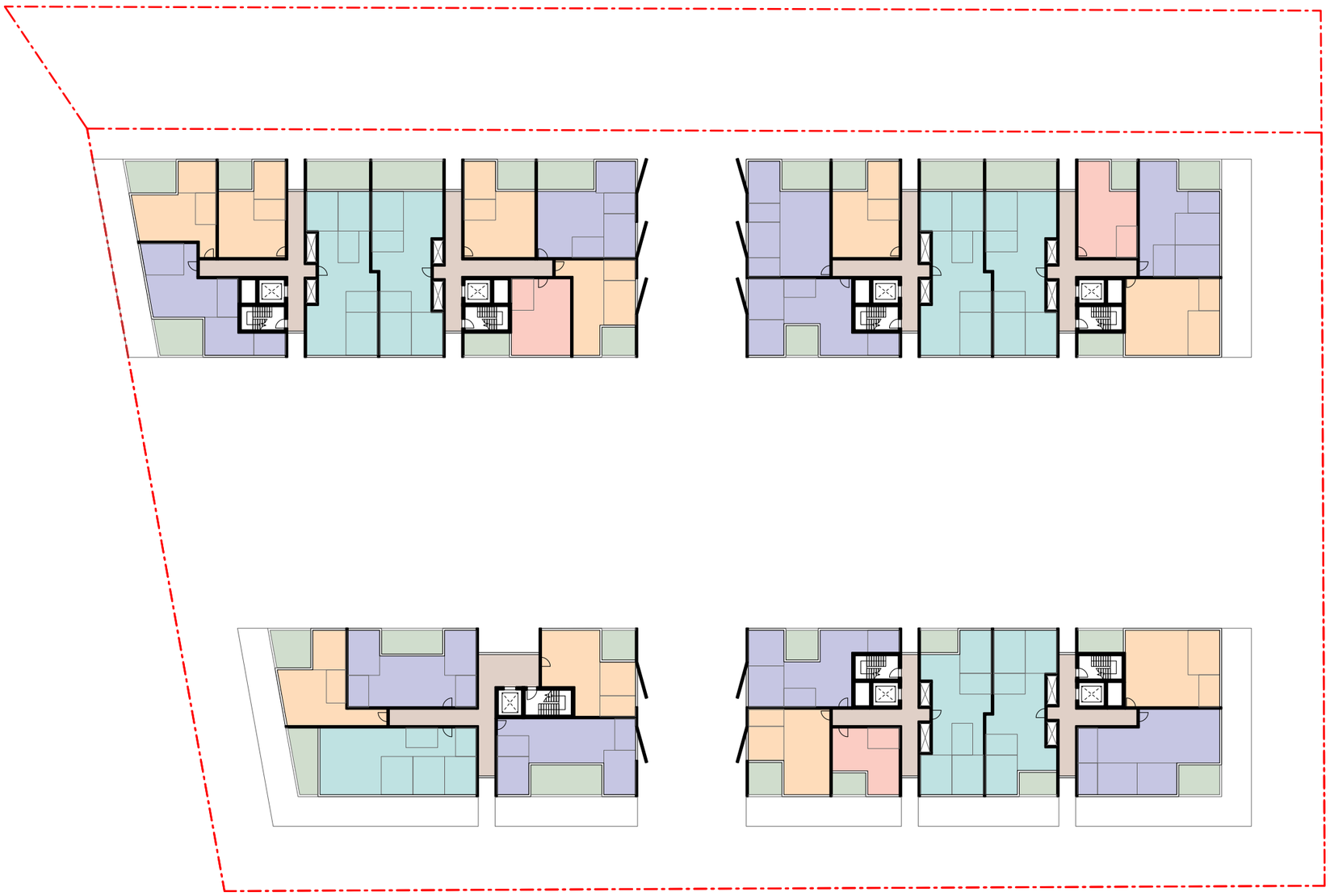
1:500 @ A3

8.4 Typical Lower Floor Plan



1:500 @ A3

8.5 Typical Upper Floor Plan



1:500 @ A3

8.6 Level 8 Floor Plan (WEST) + Roof Plan (EAST)

1:500 @ A3

8.7 ADG Compliance

Cross ventilation and solar access compliance has been tested for the reference scheme. To achieve compliance the site would require 60% of dwellings to allow appropriate cross ventilation and 70% to have adequate solar access.

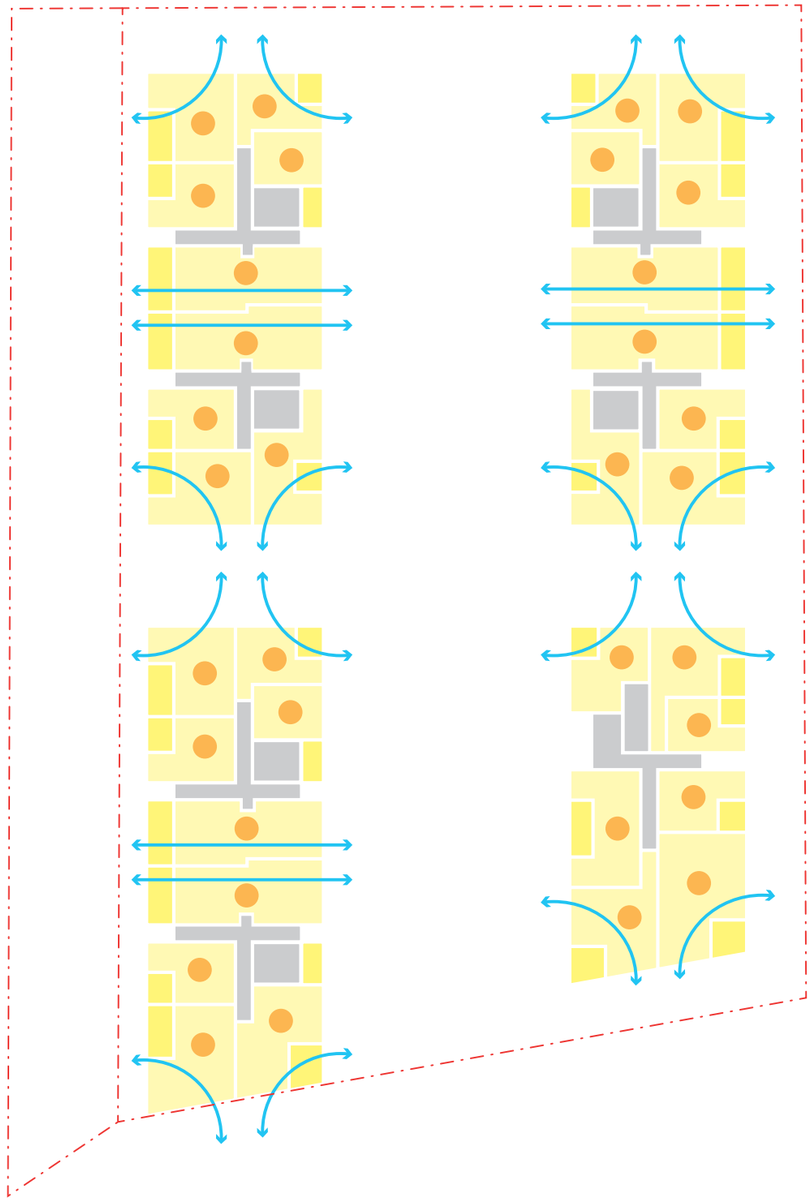
The floor plan to the right shows that any typical floor in the scheme is fully compliant with cross ventilation and solar access on a whole of site basis and per individual building. The following page contains a schedule that provides a detailed breakdown of each buildings compliance.

Building B

Cross vent: 6/9 = 66%
Solar: 9/9 = 100%

Building C

Cross vent: 6/9 = 66%
Solar: 9/9 = 100%



Building A

Cross vent: 6/9 = 66%
Solar: 10/9 = 100%

Building D

Cross vent: 4/7 = 57% *
Solar: 7/7 = 100%
** reduced yield at upper levels offsets results positively*

KEY

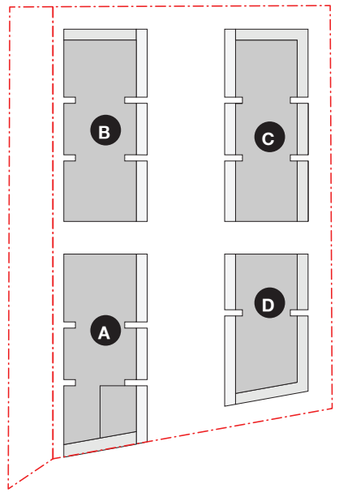
- Site Boundary
- Dwelling
- Balcony
- Cross Ventilation
- Solar Compliant

Typical floor plan ADG compliance

NTS

Reference Scheme

8.8 Yield schedule



Notes:

- Basement included in schedule for Building D

BUILDING A

	ALL	RESI	NON-RES	SERVICING	TOTAL		Dwellings					Compliance	
	GBA	GFA	GFA	GBA	GBA	GFA	Studio	1 bed	2 bed	3 bed	Total	CV	Solar
LVL 7	870	783			870	783	1	2	1		4	2	4
LVL 6	986	783			986	783	1	4	2	2	9	6	9
LVL 5	986	783			986	783	1	4	2	2	9	6	9
LVL 4	986	783			986	783	1	4	2	2	9	6	9
LVL 3	1,047	832			1,047	832	1	3	3	2	9	6	9
LVL 2	1,047	832			1,047	832	1	3	3	2	9	6	9
LVL 1	1,190	886			1,190	886	1	4	3	2	10	6	10
GROUND	1,109	80	900		1,109	980					-		
BASEMENT											-		
TOTAL	8,221	5,763	900	-	8,221	6,663	7	24	16	12	59	38	59

BUILDING B

	ALL	RESI	NON-RES	SERVICING	TOTAL		Dwellings					Compliance	
	GBA	GFA	GFA	GBA	GBA	GFA	Studio	1 bed	2 bed	3 bed	Total	CV	Solar
LVL 7	943	768			943	768	1	2	3	2	8	6	8
LVL 6	943	768			943	768	1	2	3	2	8	6	8
LVL 5	943	768			943	768	1	2	3	2	8	6	8
LVL 4	943	768			943	768	1	2	3	2	8	6	8
LVL 3	1,005	809			1,005	809	1	3	3	2	9	6	9
LVL 2	1,005	809			1,005	809	1	3	3	2	9	6	9
LVL 1	1,148	843			1,148	843	1	3	3	2	9	6	9
GROUND	1,175	750	240		1,175	990		6		2	8	2	8
BASEMENT											-		
TOTAL	8,105	6,282	240	-	8,105	6,522	7	23	21	16	67	44	67

BUILDING C

	ALL	RESI	NON-RES	SERVICING	TOTAL		Dwellings					Compliance	
	GBA	GFA	GFA	GBA	GBA	GFA	Studio	1 bed	2 bed	3 bed	Total	CV	Solar
LVL 5	802	662			802	662	1	2	2	3	8	6	8
LVL 4	802	662			802	662	1	2	2	3	8	6	8
LVL 3	999	809			999	809	1	3	3	2	9	6	9
LVL 2	999	809			999	809	1	3	3	2	9	6	9
LVL 1	999	809			999	809	1	3	3	2	9	6	9
GROUND	1,141	736	138		1,141	874	1	2	3	2	8	5	8
LOWER GROUND	502	305			502	305		2		1	3	1	3
BASEMENT											-		
TOTAL	6,244	4,793	138	-	6,244	4,931	6	17	16	15	54	36	54

BUILDING D

	ALL	RESI	NON-RES	SERVICING	TOTAL		Dwellings					Compliance	
	GBA	GFA	GFA	GBA	GBA	GFA	Studio	1 bed	2 bed	3 bed	Total	CV	Solar
LVL 5	591	472			591	472		2	2	1	5	4	5
LVL 4	591	472			591	472		2	2	1	5	4	5
LVL 3	750	622			750	622	1	2	3	1	7	4	7
LVL 2	750	622			750	622	1	2	3	1	7	4	7
LVL 1	750	622			750	622	1	2	3	1	7	4	7
GROUND	861	165	414	176	1,037	579		2			2	1	2
LOWER GROUND											-		
BASEMENT				6,722							-		
TOTAL	4,293	2,975	414	6,898	4,469	3,389	3	12	13	5	33	21	33

TOTAL

	ALL	RESI	NON-RES	SERVICING	TOTAL		Dwellings					Compliance	
	GBA	GFA	GFA	GBA	GBA	GFA	Studio	1 bed	2 bed	3 bed	Total	CV	Solar
TOTAL	26,863	19,813	1,692	6,898	27,039	21,505	23	76	66	48	213	139	213
							10.8%	35.7%	31.0%	22.5%		65.3%	100.0%

SITE	9,018
FSR	2.38

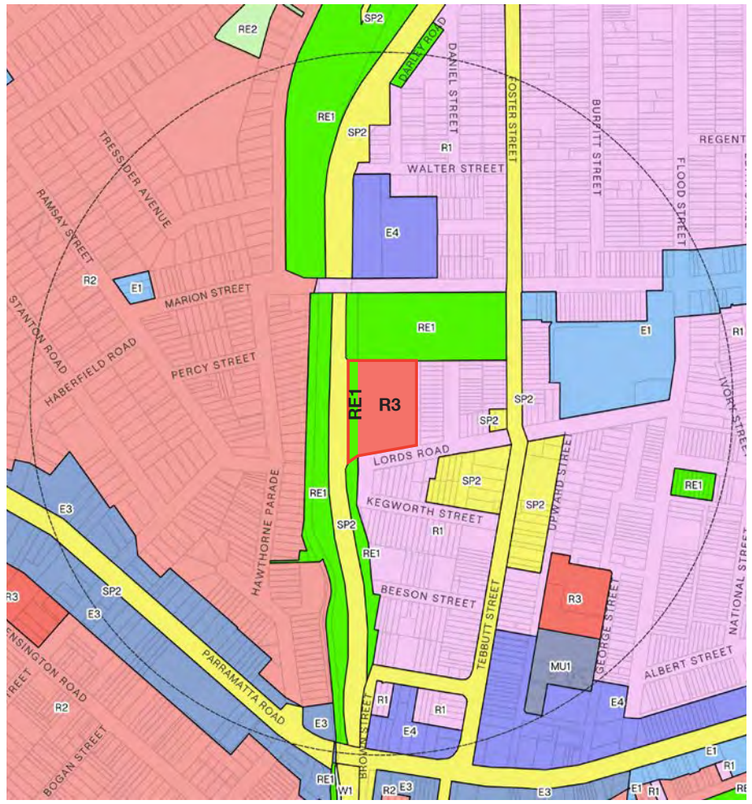
	Min. DCP Parking Rates						
	Studio	1 bed	2 bed	3 bed	Visitor	Non-Res	Total
Rate	-	3	2	1	11	100	
Required		25	33	48	19	22	148

	Max. DCP Parking Rates						
	Studio	1 bed	2 bed	3 bed	Visitor	Non-Res	Total
Rate	0.5	0.5	1.0	1.2	0.1	60	
Required	12	38	66	58	21	37	231

Planning Diagrams

9

9.1 Proposed LEP Maps

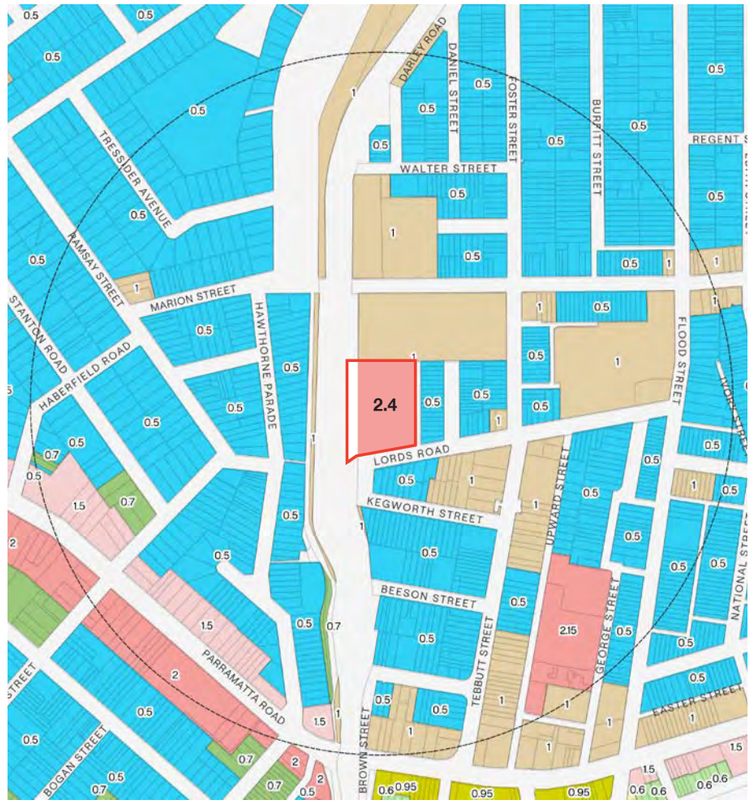


Land Zoning

RE1 Public Recreation
R3 Medium Density Residential

Height of Building

30m



Floor Space Ratio

2.4:1

9.2 Proposed DCP

Land Application Map

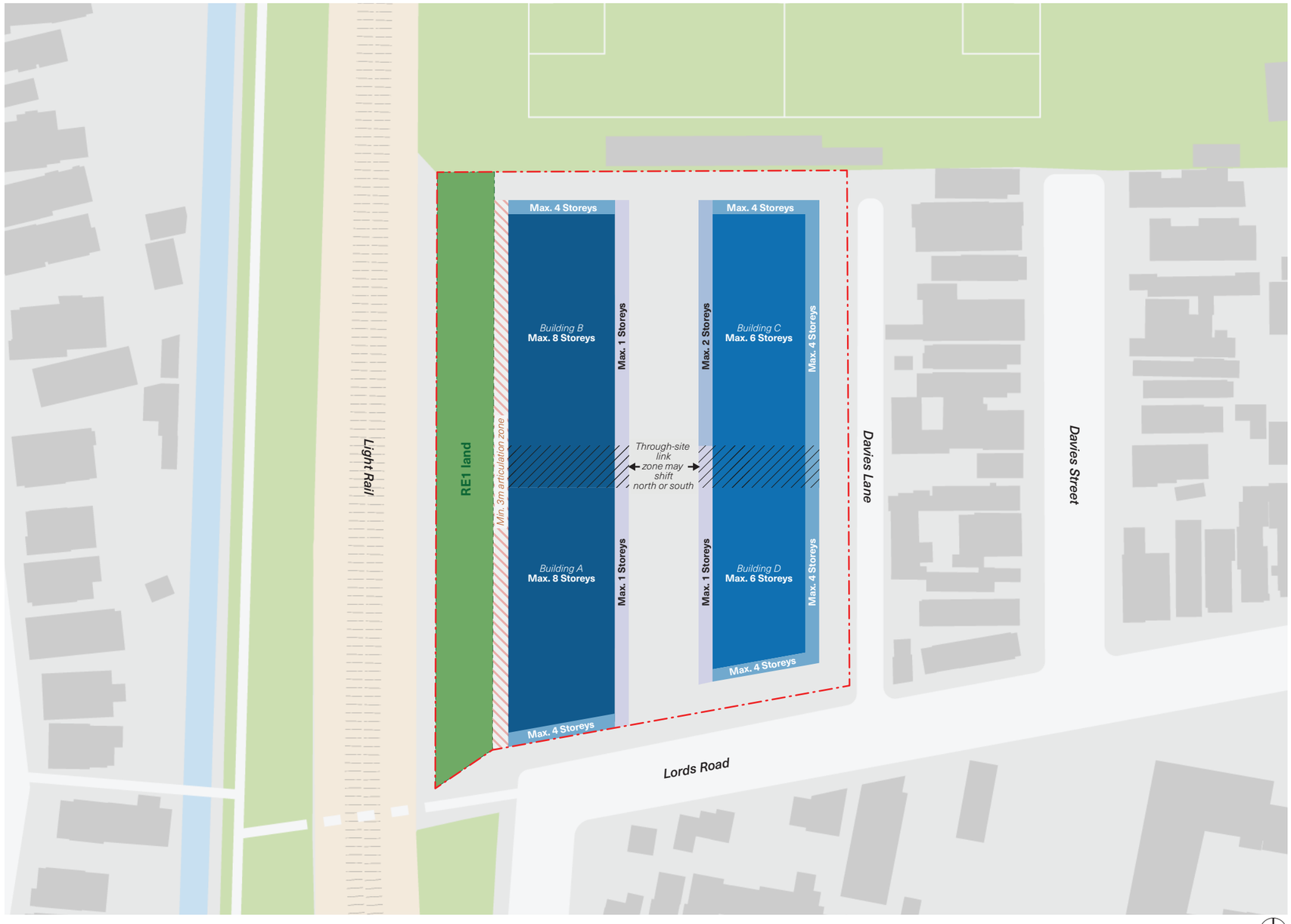
KEY

- Site Boundary
- RE1 land

1:1000 @ A3

Planning Diagrams

Building Heights



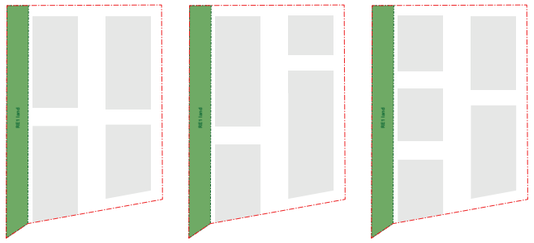
KEY

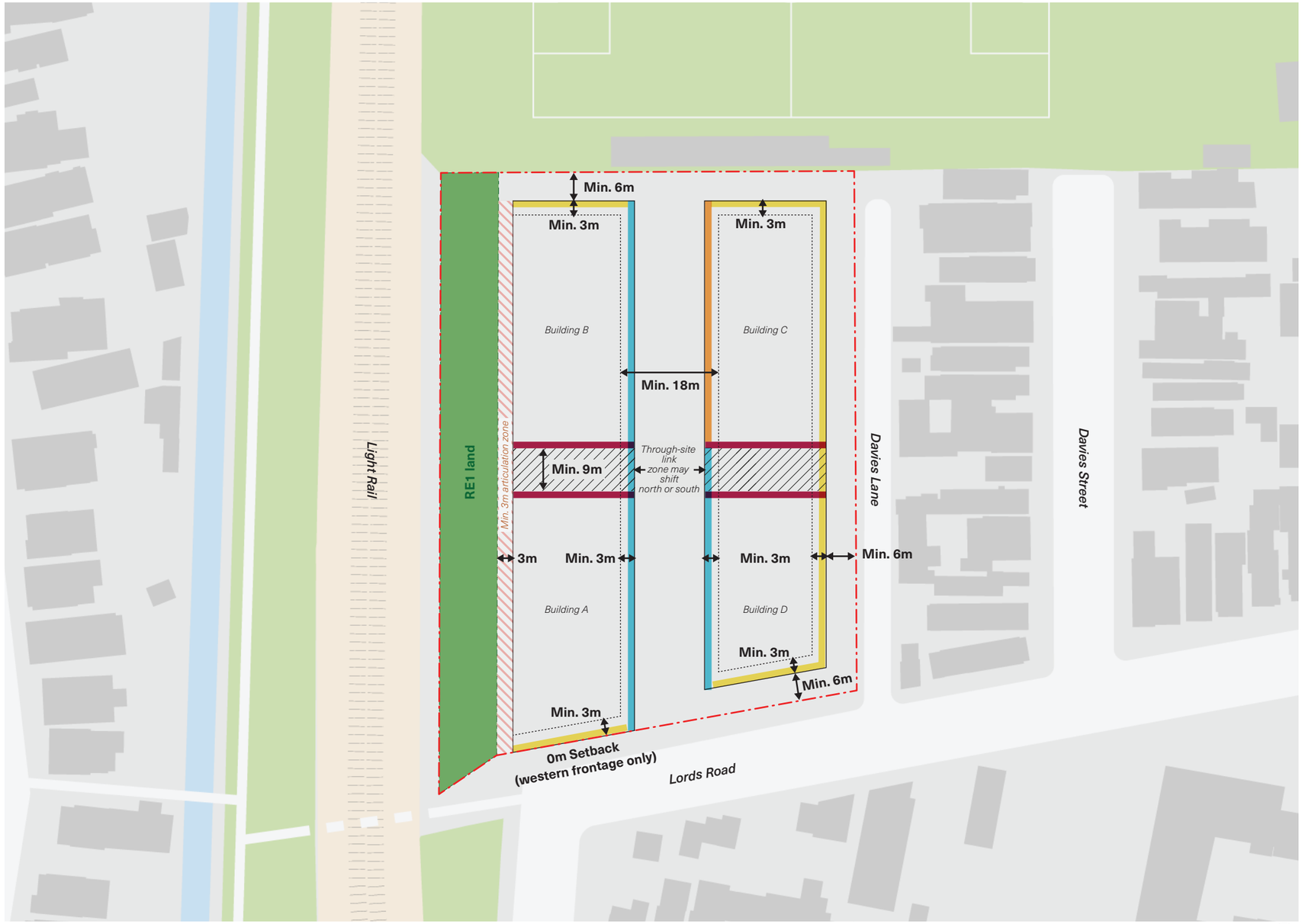
- Site Boundary
- 8 Storeys
- 6 Storeys
- 4 Storeys
- 2 Storeys
- 1 Storeys
- RE1 land
- Min. 3m Articulation zone
- Flexible Through-Site Link Zone

1:1000 @ A3

Setbacks & Separation

The following series of diagrams represent various ways in which the built form controls, in particular the through-site link, may be interpreted. Flexibility has been instilled in these controls to allow any future development application/ architectural scheme to approach the site without strict limitations. The below diagrams represent various ways in which the controls may be applied to the site.





KEY

- Site Boundary
- Non-Habitable Facade
- Max 1-Storey Street Wall
- Max 2-Storey Street Wall
- Max 4-Storey Street Wall
- RE1 land
- Flexible Through-Site Link Zone
- Min. 3m Articulation zone
- Above Street Wall Setback

1:1000 @ A3

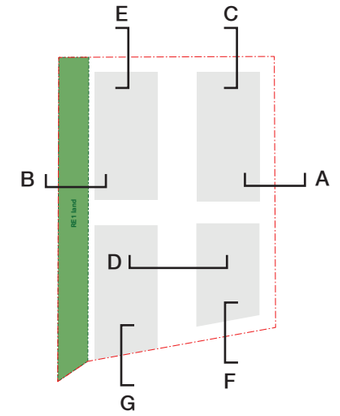
Open Space & Public Domain

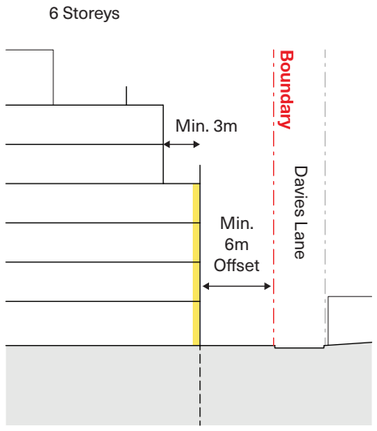
KEY

- Site Boundary
- Publicly Accessible Area
- Privately Accessible Communal Open Space
- RE1 land
- Shared Zone
- Flexible Through-Site Link Zone
- Min. 3m Articulation zone
- Building with Rooftop Communal Open Space
- Non-Residential Active Edge At Ground
- Residential Edge At Ground with Private Entrance
- Residential Private Open Space At Ground
- Residential Lobby Entrance
- Carpark Entrance
- Vehicular Movement (within Shared Zone only)

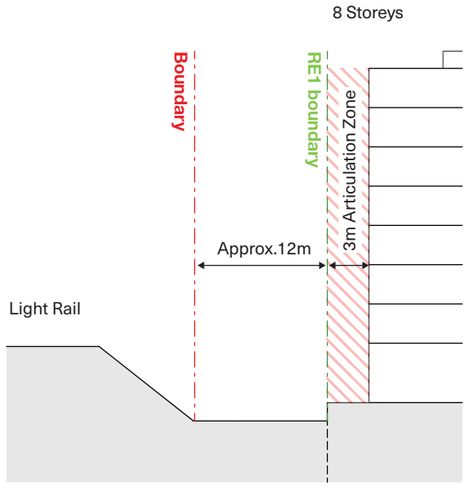
1:1000 @ A3

Planning Diagrams

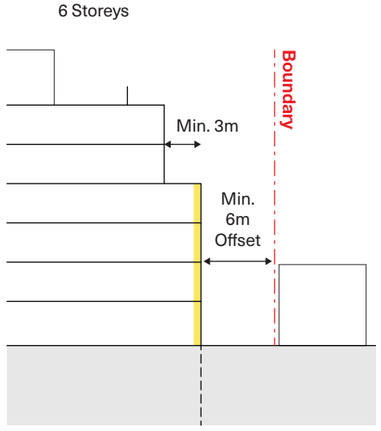




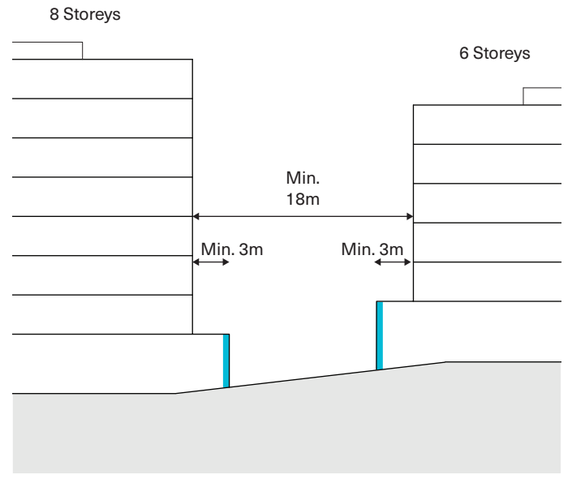
Section A - Davies Lane



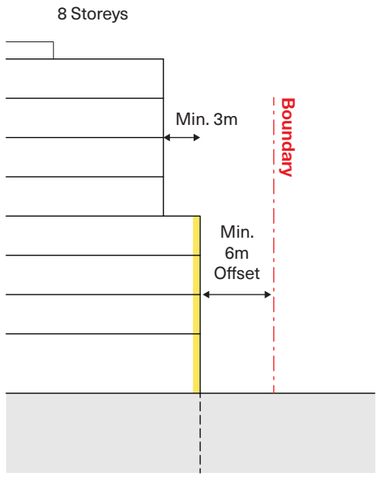
Section B - Western Boundary



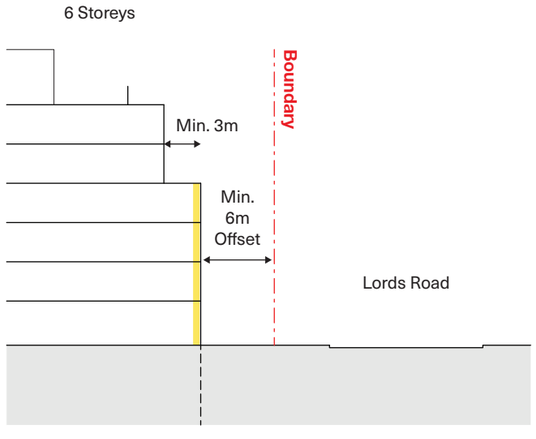
Section C - North-East



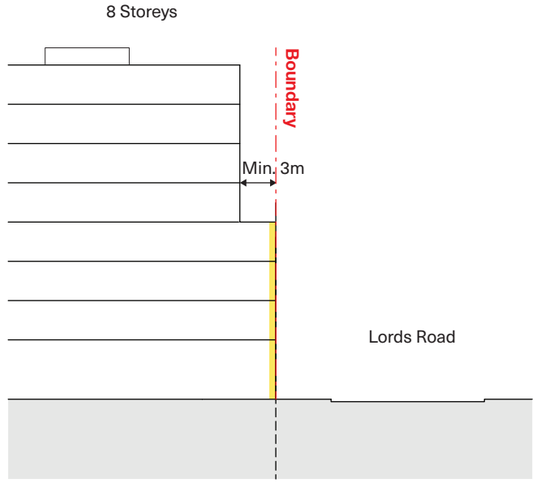
Section D - South Central



Section E - North-West



Section F - South-East



Section G - South-West

KEY

- Site Boundary
- Max 4-Storey Street Wall
- Max 1-Storey Street Wall

1:500 @ A3

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APPENDIX C: NATA ACCREDITED LABORATORY CERTIFICATES

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 298144

Client Details

Client	Foundation Earth Sciences Pty Ltd
Attention	Michael Silk
Address	PO Box 4405, East Gosford, NSW, 2250

Sample Details

Your Reference	**E2843-2, Leichhardt**
Number of Samples	27 Soil
Date samples received	16/06/2022
Date completed instructions received	16/06/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

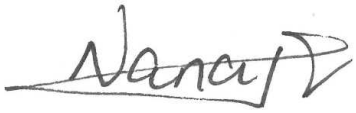
Date results requested by	21/06/2022
Date of Issue	21/06/2022

NATA Accreditation Number 2901. This document shall not be reproduced except in full.

Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Nick Sarlamis, Assistant Operation Manager

Authorised By



Nancy Zhang, Laboratory Manager

sPOCAS field test						
Our Reference		298144-1	298144-2	298144-3	298144-4	298144-5
Your Reference	UNITS	ASS1	ASS1	ASS1	ASS1	ASS1
Depth		0.1	0.5	1	1.5	2
Date Sampled		15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/06/2022	21/06/2022	21/06/2022	21/06/2022	21/06/2022
Date analysed	-	21/06/2022	21/06/2022	21/06/2022	21/06/2022	21/06/2022
pH_F (field pH test)	pH Units	7.4	8.3	8.3	7.2	8.0
pH_{FOX} (field peroxide test)	pH Units	8.2	7.2	7.2	5.1	6.3
Reaction Rate*	-	Volcanic reaction	Volcanic reaction	Medium reaction	Medium reaction	Low reaction

sPOCAS field test						
Our Reference		298144-6	298144-7	298144-8	298144-9	298144-10
Your Reference	UNITS	ASS1	ASS1	ASS1	ASS2	ASS2
Depth		2.5	3	3.3	0.1	0.5
Date Sampled		15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/06/2022	21/06/2022	21/06/2022	21/06/2022	21/06/2022
Date analysed	-	21/06/2022	21/06/2022	21/06/2022	21/06/2022	21/06/2022
pH_F (field pH test)	pH Units	8.1	7.9	6.9	9.3	7.8
pH_{FOX} (field peroxide test)	pH Units	6.1	2.7	3.4	9.1	5.9
Reaction Rate*	-	Low reaction	High reaction	Low reaction	Extreme reaction	Medium reaction

sPOCAS field test						
Our Reference		298144-11	298144-12	298144-13	298144-14	298144-15
Your Reference	UNITS	ASS2	ASS2	ASS2	ASS2	ASS2
Depth		1	1.5	2	2.5	3
Date Sampled		15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/06/2022	21/06/2022	21/06/2022	21/06/2022	21/06/2022
Date analysed	-	21/06/2022	21/06/2022	21/06/2022	21/06/2022	21/06/2022
pH_F (field pH test)	pH Units	6.8	6.5	6.2	4.9	4.7
pH_{FOX} (field peroxide test)	pH Units	3.9	3.7	3.9	3.7	3.8
Reaction Rate*	-	Low reaction	Low reaction	Low reaction	Low reaction	Low reaction

sPOCAS field test						
Our Reference		298144-16	298144-17	298144-18	298144-19	298144-20
Your Reference	UNITS	ASS3	ASS3	ASS3	ASS3	ASS3
Depth		0.1	0.5	1	1.5	2
Date Sampled		15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/06/2022	21/06/2022	21/06/2022	21/06/2022	21/06/2022
Date analysed	-	21/06/2022	21/06/2022	21/06/2022	21/06/2022	21/06/2022
pH_F (field pH test)	pH Units	8.8	8.7	8.9	7.7	5.9
pH_{FOX} (field peroxide test)	pH Units	8.5	9.2	9.0	5.3	4.3
Reaction Rate*	-	Low reaction	Extreme reaction	Extreme reaction	High reaction	Low reaction

sPOCAS field test						
Our Reference		298144-21	298144-22	298144-23	298144-24	298144-25
Your Reference	UNITS	ASS3	ASS4	ASS4	ASS4	ASS4
Depth		2.5	0.1	0.5	1	1.5
Date Sampled		15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/06/2022	21/06/2022	21/06/2022	21/06/2022	21/06/2022
Date analysed	-	21/06/2022	21/06/2022	21/06/2022	21/06/2022	21/06/2022
pH_F (field pH test)	pH Units	5.3	8.4	6.3	7.6	7.0
pH_{FOX} (field peroxide test)	pH Units	4.3	6.5	4.6	6.6	4.3
Reaction Rate*	-	Low reaction	Medium reaction	Medium reaction	Low reaction	Low reaction

sPOCAS field test			
Our Reference		298144-26	298144-27
Your Reference	UNITS	ASS4	ASS4
Depth		2	2.5
Date Sampled		15/06/2022	15/06/2022
Type of sample		Soil	Soil
Date prepared	-	21/06/2022	21/06/2022
Date analysed	-	21/06/2022	21/06/2022
pH_F (field pH test)	pH Units	5.7	5.5
pH_{FOX} (field peroxide test)	pH Units	4.1	4.0
Reaction Rate*	-	Low reaction	Low reaction

Method ID	Methodology Summary
Inorg-063	pH- measured using pH meter and electrode. Soil is oxidised with Hydrogen Peroxide or extracted with water. Based on section H, Acid Sulfate Soils Laboratory Methods Guidelines, Version 2.1 - June 2004. To ensure accurate results these tests are recommended to be done in the field as pH may change with time thus these results may not be representative of true field conditions.

QUALITY CONTROL: sPOCAS field test						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			21/06/2022	1	21/06/2022	21/06/2022		21/06/2022	[NT]
Date analysed	-			21/06/2022	1	21/06/2022	21/06/2022		21/06/2022	[NT]
pH_F (field pH test)	pH Units		Inorg-063	[NT]	1	7.4	7.5	1	102	[NT]
pH_{FOX} (field peroxide test)	pH Units		Inorg-063	[NT]	1	8.2	8.0	2	102	[NT]

QUALITY CONTROL: sPOCAS field test						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	11	21/06/2022	21/06/2022		[NT]	[NT]
Date analysed	-			[NT]	11	21/06/2022	21/06/2022		[NT]	[NT]
pH_F (field pH test)	pH Units		Inorg-063	[NT]	11	6.8	6.4	6	[NT]	[NT]
pH_{FOX} (field peroxide test)	pH Units		Inorg-063	[NT]	11	3.9	4.0	3	[NT]	[NT]

QUALITY CONTROL: sPOCAS field test						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	21	21/06/2022	21/06/2022		[NT]	[NT]
Date analysed	-			[NT]	21	21/06/2022	21/06/2022		[NT]	[NT]
pH_F (field pH test)	pH Units		Inorg-063	[NT]	21	5.3	5.6	6	[NT]	[NT]
pH_{FOX} (field peroxide test)	pH Units		Inorg-063	[NT]	21	4.3	4.4	2	[NT]	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

FOUNDATION EARTH SCIENCES

Chain of Custody Record

Client Details:	Foundation Earth Sciences PO Box 4405, East Gosford NSW 2250 email: ben@foundationes.com.au michael@foundationes.com.au; ray@foundationes.com.au ph: +61466 385 221	**Project Manager:**	Michael Silk
		Sampled By:	EY
Delivery Details:	Envirolab Pty Ltd 12 Ashley Street, Chatswood NSW 2067 email: ahie@envirolab.com.au ph: +612 9910 6200	**Purchase Order #:**	N/A
		Page #:	1 of 1

Project #: E2843-2

Project Name: Leichhdardt

Quote #:

Turnaround: 3day TAT

#	Sample ID	Depth	Date Sampled	Matrix	Analytes													Sample Comments
					ph	CEC	%CLAY	ASS Field Test pH f & pH fox	TRH	BTEXN	PAH	OC	PCB	Asbestos ID	Asbestos %w/w (NEPM /WA)	TRH C6-C10 & BTEXN		Envirolab Suites	
1	ASS1	0.1	15.6.2022	Soil				x											Keep
2	ASS1	0.5	15.6.2022	Soil				x											Keep
3	ASS1	1	15.6.2022	Soil				x											Keep
4	ASS1	1.5	15.6.2022	Soil				x											Keep
5	ASS1	2	15.6.2022	Soil				x											Keep
6	ASS1	2.5	15.6.2022	Soil				x											Keep
7	ASS1	3	15.6.2022	Soil				x											Keep
8	ASS1	3.3	15.6.2022	Soil				x											Keep
9	ASS2	0.1	15.6.2022	Soil				x											Keep
10	ASS2	0.5	15.6.2022	Soil				x											Keep
11	ASS2	1	15.6.2022	Soil				x											Keep
12	ASS2	1.5	15.6.2022	Soil				x											Keep
13	ASS2	2	15.6.2022	Soil				x											Keep
14	ASS2	2.5	15.6.2022	Soil				x											Keep
15	ASS2	3	15.6.2022	Soil				x											Keep
16	ASS3	0.1	15.6.2022	Soil				x											Keep
17	ASS3	0.5	15.6.2022	Soil				x											Keep
18	ASS3	1	15.6.2022	Soil				x											Keep
19	ASS3	1.5	15.6.2022	Soil				x											Keep
20	ASS3	2	15.6.2022	Soil				x											Keep
21	ASS3	2.5	15.6.2022	Soil				x											Keep
22	ASS4	0.1	15.6.2022	Soil				x											Keep
23	ASS4	0.5	15.6.2022	Soil				x											Keep
24	ASS4	1	15.6.2022	Soil				x											Keep
25	ASS4	1.5	15.6.2022	Soil				x											Keep
26	ASS4	2	15.6.2022	Soil				x											Keep
27	ASS4	2.5	15.6.2022	Soil				x											Keep

ENVIROLAB

Envirolab Ser...
12 Ashley
Chatswood NS...
Ph: (02) 9910 6200

Job No: 298144

Date Received: 16/06/22

Time Received: 16:50

Received by: VC

Temp: Cool/Ambient

Cooling: Ice/Icepack

Security: Intact/Broken

Special Directions and Coments: Kept in freezer within same day of sampling

Relinquished by	EY	**Received By**	Victoria Chan
Signature		**Signature**	
Date	16.6.2022	**Date**	16/06/22

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Foundation Earth Sciences Pty Ltd
Attention	Michael Silk

Sample Login Details

Your reference	E2843-2, Leichhardt
Envirolab Reference	298144
Date Sample Received	16/06/2022
Date Instructions Received	16/06/2022
Date Results Expected to be Reported	21/06/2022

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	27 Soil
Turnaround Time Requested	3 days
Temperature on Receipt (°C)	2
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	sPOCAS field test
ASS1-0.1	✓
ASS1-0.5	✓
ASS1-1	✓
ASS1-1.5	✓
ASS1-2	✓
ASS1-2.5	✓
ASS1-3	✓
ASS1-3.3	✓
ASS2-0.1	✓
ASS2-0.5	✓
ASS2-1	✓
ASS2-1.5	✓
ASS2-2	✓
ASS2-2.5	✓
ASS2-3	✓
ASS3-0.1	✓
ASS3-0.5	✓
ASS3-1	✓
ASS3-1.5	✓
ASS3-2	✓
ASS3-2.5	✓
ASS4-0.1	✓
ASS4-0.5	✓
ASS4-1	✓
ASS4-1.5	✓
ASS4-2	✓
ASS4-2.5	✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

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Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

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CERTIFICATE OF ANALYSIS 298144-A

Client Details

Client	Foundation Earth Sciences Pty Ltd
Attention	Michael Silk
Address	PO Box 4405, East Gosford, NSW, 2250

Sample Details

Your Reference	**E2843-2, Leichhardt**
Number of Samples	additional analysis
Date samples received	16/06/2022
Date completed instructions received	21/06/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	28/06/2022
Date of Issue	28/06/2022

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Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Priya Samarawickrama, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

sPOCAS + %S w/w					
Our Reference		298144-A-2	298144-A-7	298144-A-9	298144-A-12
Your Reference	UNITS	ASS1	ASS1	ASS2	ASS2
Depth		0.5	3	0.1	1.5
Date Sampled		15/06/2022	15/06/2022	15/06/2022	15/06/2022
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	28/06/2022	28/06/2022	28/06/2022	28/06/2022
Date analysed	-	28/06/2022	28/06/2022	28/06/2022	28/06/2022
pH $_{kcl}$	pH units	8.2	6.5	8.8	5.1
TAA pH 6.5	moles H^+ /t	<5	<5	<5	13
s-TAA pH 6.5	%w/w S	<0.01	<0.01	<0.01	0.02
pH $_{Ox}$	pH units	7.8	2.4	8.9	4.4
TPA pH 6.5	moles H^+ /t	<5	110	<5	16
s-TPA pH 6.5	%w/w S	<0.01	0.18	<0.01	0.03
TSA pH 6.5	moles H^+ /t	<5	110	<5	<5
s-TSA pH 6.5	%w/w S	<0.01	0.18	<0.01	<0.01
ANC_E	% $CaCO_3$	0.75	[NT]	1.3	[NT]
a-ANC_E	moles H^+ /t	150	[NT]	250	[NT]
s-ANC_E	%w/w S	0.24	[NT]	0.40	[NT]
S_{KCl}	%w/w S	0.05	0.05	0.009	0.02
S_P	%w/w	0.1	0.35	0.03	0.03
S_{POS}	%w/w	0.04	0.30	0.02	<0.005
a-S_{POS}	moles H^+ /t	28	190	12	<5
Ca_{KCl}	%w/w	0.41	0.21	0.22	0.13
Ca_P	%w/w	0.51	0.15	0.50	0.07
Ca_A	%w/w	0.10	<0.005	0.27	<0.005
Mg_{KCl}	%w/w	0.11	0.013	0.031	0.016
Mg_P	%w/w	0.16	0.016	0.073	<0.005
Mg_A	%w/w	0.052	<0.005	0.042	<0.005
S_{HCl}	%w/w S	[NT]	[NT]	[NT]	[NT]
S_{NAS}	%w/w S	[NT]	[NT]	[NT]	[NT]
a-S_{NAS}	moles H^+ /t	[NT]	[NT]	[NT]	[NT]
s-S_{NAS}	%w/w S	[NT]	[NT]	[NT]	[NT]
Fineness Factor	-	1.5	1.5	1.5	1.5
a-Net Acidity	moles H^+ /t	<5	140	<5	15
s-Net Acidity	%w/w S	<0.01	0.22	<0.01	0.02
Liming rate	kg $CaCO_3$ /t	<0.75	10	<0.75	1.1
s-Net Acidity without -ANCE	%w/w S	0.04	0.22	0.02	0.02
a-Net Acidity without ANCE	moles H^+ /t	28	140	12	15
Liming rate without ANCE	kg $CaCO_3$ /t	2.1	10	0.89	1.1

SCr					
Our Reference		298144-A-2	298144-A-7	298144-A-9	298144-A-12
Your Reference	UNITS	ASS1	ASS1	ASS2	ASS2
Depth		0.5	3	0.1	1.5
Date Sampled		15/06/2022	15/06/2022	15/06/2022	15/06/2022
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	28/06/2022	28/06/2022	28/06/2022	28/06/2022
Date analysed	-	28/06/2022	28/06/2022	28/06/2022	28/06/2022
Chromium Reducible Sulfur	%w/w	0.05	0.26	0.02	0.006
a-Chromium Reducible Sulfur	moles H^+ /t	30	160	10	4

Method ID	Methodology Summary
Inorg-064	sPOCAS determined using titrimetric and ICP-AES techniques. Based on National acid sulfate soils identification and laboratory methods manual June 2018. Ideally samples should be received in the laboratory at <4oC. Please refer to SRA for sample temperature on receipt. Net acidity including ANC has a safety factor of 1.5 applied. Neutralising value (NV) of 100% is assumed for liming rate The recommendation that the SHCL concentration be multiplied by a factor of 2 to ensure retained acidity is not underestimated, has not been applied in the SHCL results reported.
Inorg-068	Chromium Reducible Sulfur - Hydrogen Sulfide is quantified by iodometric titration after distillation to determine potential acidity. Net acidity including ANC has a safety factor of 1.5 applied. Neutralising value (NV) of 100% is assumed for liming rate. Based on National acid sulfate soils identification and laboratory methods manual June 2018. The recommendation that the SHCL concentration be multiplied by a factor of 2 to ensure retained acidity is not underestimated, has not been applied in the SHCL results reported.

QUALITY CONTROL: sPOCAS + %S w/w					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			28/06/2022	[NT]	[NT]	[NT]	[NT]	28/06/2022	[NT]
Date analysed	-			28/06/2022	[NT]	[NT]	[NT]	[NT]	28/06/2022	[NT]
pH $_{kcl}$	pH units		Inorg-064	[NT]	[NT]	[NT]	[NT]	[NT]	105	[NT]
TAA pH 6.5	moles H^+/t	5	Inorg-064	<5	[NT]	[NT]	[NT]	[NT]	89	[NT]
s-TAA pH 6.5	%w/w S	0.01	Inorg-064	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pH $_{Ox}$	pH units		Inorg-064	[NT]	[NT]	[NT]	[NT]	[NT]	95	[NT]
TPA pH 6.5	moles H^+/t	5	Inorg-064	<5	[NT]	[NT]	[NT]	[NT]	111	[NT]
s-TPA pH 6.5	%w/w S	0.01	Inorg-064	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
TSA pH 6.5	moles H^+/t	5	Inorg-064	<5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
s-TSA pH 6.5	%w/w S	0.01	Inorg-064	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
ANC_E	% $CaCO_3$	0.05	Inorg-064	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
a-ANC_E	moles H^+/t	5	Inorg-064	<5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
s-ANC_E	%w/w S	0.05	Inorg-064	<0.05	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
S_{KCl}	%w/w S	0.005	Inorg-064	<0.005	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
S_P	%w/w	0.005	Inorg-064	<0.005	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
S_{POS}	%w/w	0.005	Inorg-064	<0.005	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
a-S_{POS}	moles H^+/t	5	Inorg-064	<5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ca_{KCl}	%w/w	0.005	Inorg-064	<0.005	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ca_P	%w/w	0.005	Inorg-064	<0.005	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ca_A	%w/w	0.005	Inorg-064	<0.005	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Mg_{KCl}	%w/w	0.005	Inorg-064	<0.005	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Mg_P	%w/w	0.005	Inorg-064	<0.005	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Mg_A	%w/w	0.005	Inorg-064	<0.005	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
S_{HCl}	%w/w S	0.005	Inorg-064	<0.005	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
S_{NAS}	%w/w S	0.005	Inorg-064	<0.005	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
a-S_{NAS}	moles H^+/t	5	Inorg-064	<5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
s-S_{NAS}	%w/w S	0.01	Inorg-064	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fineness Factor	-	1.5	Inorg-064	<1.5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
a-Net Acidity	moles H^+/t	5	Inorg-064	<5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
s-Net Acidity	%w/w S	0.01	Inorg-064	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Liming rate	kg $CaCO_3$/t	0.75	Inorg-064	<0.75	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
s-Net Acidity without -ANCE	%w/w S	0.01	Inorg-064	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]

QUALITY CONTROL: sPOCAS + %S w/w					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
a-Net Acidity without ANCE	moles H^+ /t	5	Inorg-064	<5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Liming rate without ANCE	kg $CaCO_3$ /t	0.75	Inorg-064	<0.75	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]

QUALITY CONTROL: SCr						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			28/06/2022	[NT]	[NT]	[NT]	[NT]	28/06/2022	[NT]
Date analysed	-			28/06/2022	[NT]	[NT]	[NT]	[NT]	28/06/2022	[NT]
Chromium Reducible Sulfur	%w/w	0.005	Inorg-068	<0.005	[NT]	[NT]	[NT]	[NT]	99	[NT]
a-Chromium Reducible Sulfur	moles H^+ /t	3	Inorg-068	<3	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

FOUNDATION EARTH SCIENCES

Chain of Custody Record

Client Details:	Foundation Earth Sciences PO Box 4405, East Gosford NSW 2250 email: ben@foundationes.com.au michael@foundationes.com.au; ray@foundationes.com.au ph: +61466 385 221	**Project Manager:**	Michael Silk
		Sampled By:	EY
Delivery Details:	Envirolab Pty Ltd 12 Ashley Street, Chatswood NSW 2067 email: ahie@envirolab.com.au ph: +612 9910 6200	**Purchase Order #:**	N/A
		Page #:	1 of 1

Project #: E2843-2

Project Name: Gosford

Quote #:

Turnaround: Standard

#	Sample ID	Depth	Date Sampled	Matrix	Analytes: ph	CEC	%CLAY	ASS Field Test pH f & pH fox	TRH	BTEXN	PAH	OC	PCB	Asbestos ID	SPOCAS & Chromium Reducible	TRH C6-C10 & BTEXN		Envirolab Suites	Sample Comments
1	ASS1	0.5	15.6.2022	Soil											x				Keep
2	ASS1	3	15.6.2022	Soil											x				Keep
3	ASS2	0.1	15.6.2022	Soil											x				Keep
4	ASS2	1.5	15.6.2022	Soil															Keep
5																			
6																			
7																			
8																			

(2) (7) (9) (12)

Special Directions and Coments: Refer to lab cert 298144

Relinquished by	EY	**Received By**	Ming Yan To.
Signature		**Signature**	MT
Date	21.6.2022	**Date**	21/06/2022 15:03.

298144-A

Ming To

From: Greta Petzold
Sent: Tuesday, 21 June 2022 3:07 PM
To: Samplereceipt
Subject: FW: Results for Registration 298144 E2843-2, Leichhardt
Attachments: E2843-2 ASS 21.6.2022 (SPOCAS).pdf

Categories: Additional

Ref: 297144-A
TAT: Standard,
Due: 28/06/2022
MT.

A job please ☺

From: Emerson You <emerson@foundationes.com.au>
Sent: Tuesday, 21 June 2022 3:03 PM
To: Greta Petzold <GPetzold@envirolab.com.au>
Cc: ray@foundationes.com.au; michael@foundationes.com.au; ben@foundationes.com.au
Subject: Re: Results for Registration 298144 E2843-2, Leichhardt

Hi Greta,

Can we please run further testing for the current lab cert

COC attached.

Thanks

Emerson YOU
Foundation Earth Sciences
Civil and Environmental Engineer

emerson@foundationes.com.au
0409784783

FOUNDATION EARTH SCIENCES

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Foundation Earth Sciences Pty Ltd
Attention	Michael Silk

Sample Login Details

Your reference	E2843-2, Leichhardt
Envirolab Reference	298144-A
Date Sample Received	16/06/2022
Date Instructions Received	21/06/2022
Date Results Expected to be Reported	28/06/2022

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	additional analysis
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	2
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

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Sample ID	sPOCAS + %S w/w	SCr	On Hold
ASS1-0.1			✓
ASS1-0.5	✓	✓	
ASS1-1			✓
ASS1-1.5			✓
ASS1-2			✓
ASS1-2.5			✓
ASS1-3	✓	✓	
ASS1-3.3			✓
ASS2-0.1	✓	✓	
ASS2-0.5			✓
ASS2-1			✓
ASS2-1.5	✓	✓	
ASS2-2			✓
ASS2-2.5			✓
ASS2-3			✓
ASS3-0.1			✓
ASS3-0.5			✓
ASS3-1			✓
ASS3-1.5			✓
ASS3-2			✓
ASS3-2.5			✓
ASS4-0.1			✓
ASS4-0.5			✓
ASS4-1			✓
ASS4-1.5			✓
ASS4-2			✓
ASS4-2.5			✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

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Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.