25-27 Leeds St Flood Assessment

(for SSDA SSD-67419241)

Prepared for Billbergia Pty Ltd

September 2024 – Revision G
Project Number S22164

OPPORTUNITIES THROUGH EXCELLENCE

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BG&E

Contents

Appendices

Document Control				
Revision	Date	Prepared	Reviewed	Approved
A – Draft	9/12/2022	C. Paganelli	L. Baxter	L. Baxter
B – Draft for Client review	27/3/2023	L. Baxter	S. Hazlewood	L. Baxter
C – For DA	23/06/2023	S. Hazlewood	S. Hazlewood	pp. L. Baxter
D – Updated for SSDA (SSD-67419241)	24/06/2024	L. Baxter	S. Hazelwood	L. Baxter
E – Updated for SSDA (SSD-67419241) – minor client updates	06/08/2024	L. Baxter	L. Baxter	L. Baxter
F – Updated for SSDA (SSD-67419241) – minor client updates	03/09/2024	N. Honan	I. Varga	I. Varga
F – Updated for SSDA (SSD-67419241) – updated report reference	04/09/2024	N. Honan	I. Varga	I. Varga

1. Introduction

1.1 Project Summary

BG&E have been engaged by Billbergia Pty Ltd to provide a Flood Assessment for the proposed development at 25-27 Leeds St, Rhodes. This document has been prepared to support the State Significant development Application SSD-67419241.

The site is located on 25-27 Leeds St, Rhodes within the City of Canada Bay Council. As shown in the locality plan in Figure 1-1, the site is bordered to the north by Parramatta River, to the west by Blaxland Road and to the south by Leeds Street. The proposed development comprises six buildings including residential apartments, retail, community facilities, public open space, and associated infrastructure.

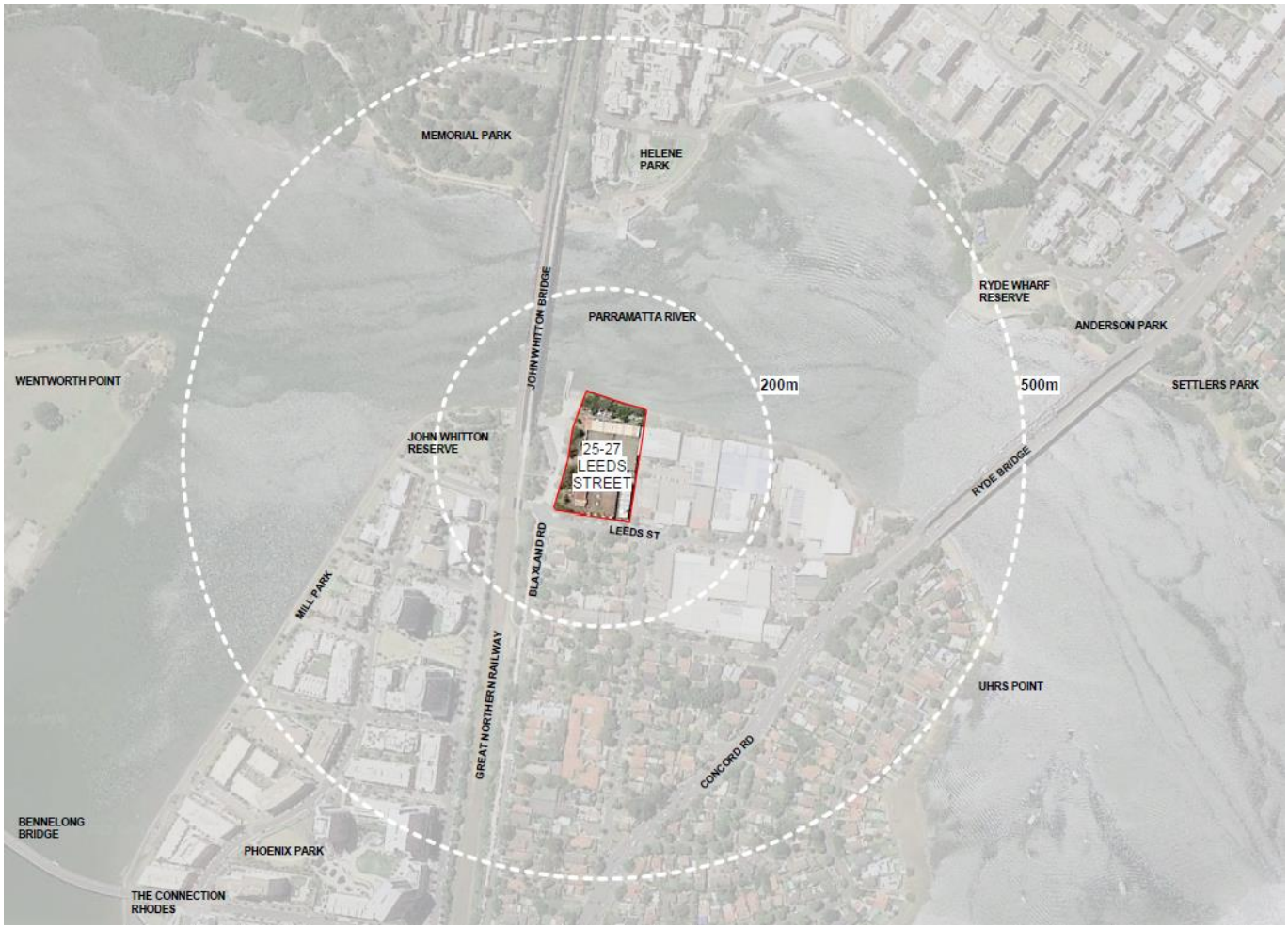


Figure 1-1 Site Locality Plan (SJB Architects 6924-DA-0100/2)

1.2 Purpose of Report and Legislative Context

The site is identified as being within a Flood Planning Area, according to the information available to Council from the *Rhodes East Priority Investigation Area Hydrology and Flooding Report* commissioned by the NSW Government.

The development would be subject to the flooding controls of the City of Canada Bay Local Environmental Plans (LEP), Development Control Plan (DCP) and the Rhodes Place Strategy which identifies that “development proposals needed to consider flood risk and avoid impacts on flood behaviour particularly in Leeds Street character area”.

This document has been prepared to support the State Significant development Application SSD-67419241 and is also subject to the Planning Secretary's Environmental Assessment Requirements (SEARs). This document forms the Flood Risk Assessment required to address the SEARs.

Issue and Assessment Requirements	Documentation
15. Flooding Risk • Identify any flood risk on-site having regard to adopted flood studies, the potential effects of climate change, and any relevant provisions of the *NSW Flood Risk Management Manual*. • Assess the impacts of the development, including any changes to flood risk on-site or off-site, and detail design solutions and operational procedures to mitigate flood risk where required.	• Flood Risk Assessment

1.3 Project Documents

In preparing this report, BG&E have consulted the following documentation:

- *Rhodes East Priority Investigation Area Hydrology and Flooding Report (Jacobs, 2016).* The document is available online at https://www.canadabay.nsw.gov.au/development/plans-policies-and-controls/planning-controls-LEP-DCP.
- *Lower Parramatta River Floodplain Risk Management Study - Flood Study Review (SKM, 2005).* The document was consulted to extract river flood levels.
- *Exile Bay Catchment Flood Study (GRC Hydro, 2020).* The document was consulted to extract sea rise levels.
- *Floodplain Development Manual (DIPNR, 2005).* This document defines flood hazard.
- Survey plan by SDG Revision C dated 10 March 2023 provided by the Client in August 2024 (Appendix A).
- 1% Annual Exceedance Probability (AEP) and the Probable Maximum Flood (PMF) flood depth mapping and levels (Appendix B) provided by City of Canada Bay Council in November 2022. The depths and levels are understood to have been extracted from the data from the *Rhodes East Priority Investigation Area Hydrology and Flooding Report*.
- Site visit summary (Appendix C) prepared by BG&E in November 2022 following a site visit undertaken on 24 November 2022.
- Architectural drawings of the proposed development (Appendix D) provided by the Client in June 2024.
- City of Canada Bay Development Control Plan Part B8 – Flooding Control.
- NSW Flood Risk Management Manual 2023 and associated toolkit documents

The Rhodes East Priority Investigation Area Hydrology and Flooding Report flood model was requested but not released by the NSW Department of Planning and Environment (DPE) at this project stage.

2. Development Proposal

The proposed development consists of the demolition of the existing structures and the construction of six new mixed-use building with two levels of basement. Basement car parking will be accessed from Blaxland Road and is interconnected below all buildings. The proposed development plan and cross sections are shown in Appendix D.

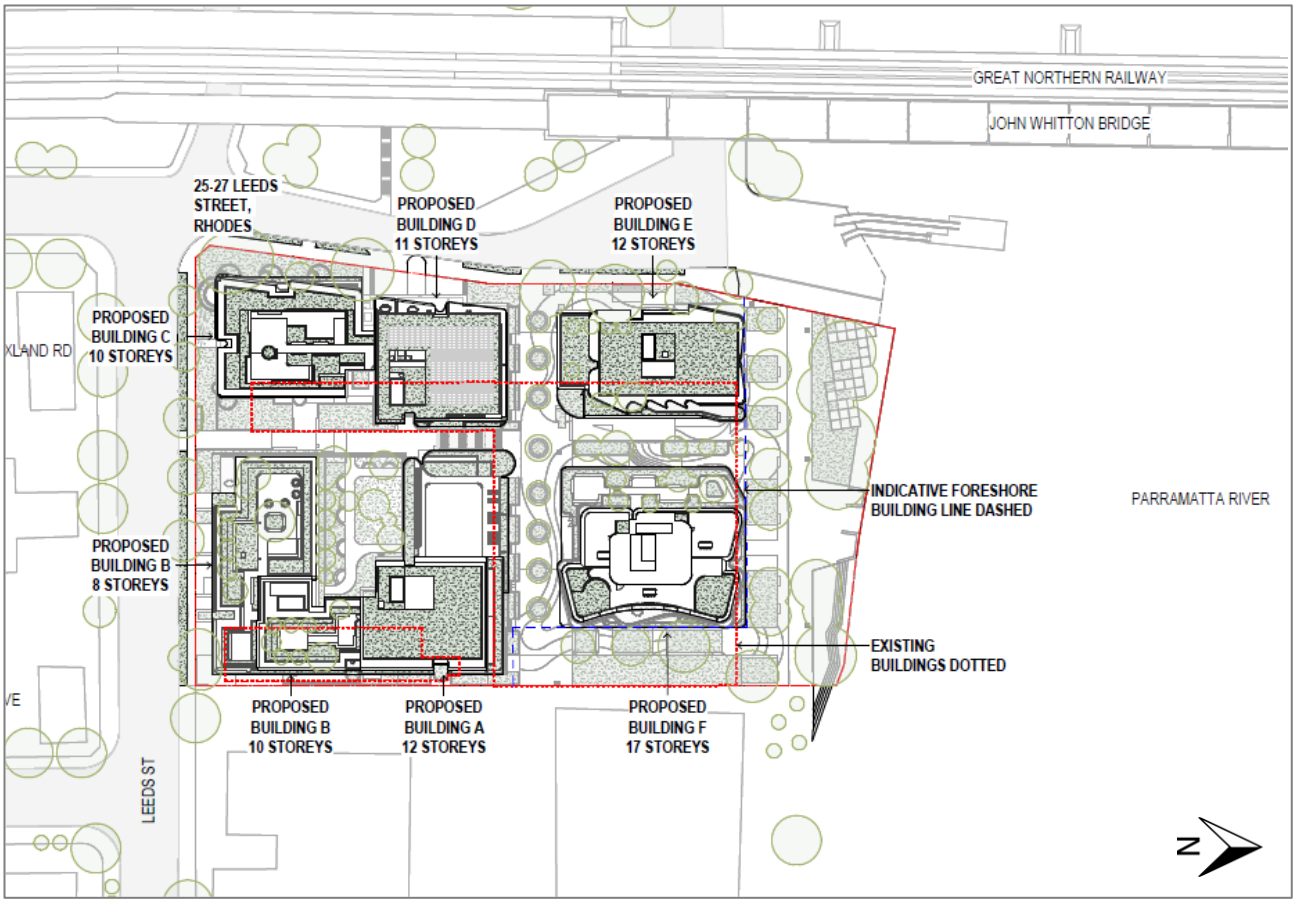


Figure 2-1 Site Plan (SJB Architects 6924-DA-0101/2)

2.1.1 Drainage System

The proposed pit and pipe network is in accordance with the natural topography of the site and will preserve existing stormwater overflow routes. The existing point of discharge is proposed to be maintained, given the site grades towards Parramatta River. Under this proposal, there are no downstream properties that could be affected, and the site stormwater discharge does not pass through any public drainage systems.

The discharge from site relative to Parramatta River is relatively small and will have little to no impact on neighbouring properties and the water level of the river. More drainage information can be found in *S22164 25-27 Leeds St Stormwater Report (Rev E).*

2.1.2 Ground Regrading

The ground level of the project site will be regraded away from the proposed buildings, toward Parramatta River, to generally mimic the slope of Blaxland Road.

3. Flood Behaviour and Flood Risk Assessment

3.1 Existing Site Information and Description

The site currently consists of two large industrial buildings. The site has an area of 11,962 sqm and is approximately 86% impervious. Stormwater on site is captured through an existing pit and pipe network and is discharged directly to Parramatta River. From a review of the survey by SDG, the site grades at approximately 5% towards Parramatta River.

Survey data (Appendix A), existing conditions flood maps (Appendix B) and site photos (Appendix C) indicate that there is a localised sag area on the west side of the existing building.

3.2 Existing (Pre-Development) Flood Behaviour

3.2.1 Overland Flows

The *Rhodes East Priority Investigation Area Hydrology and Flooding Report* shows shallow ponding of overland flows occurring on the west side of the existing building in the 1% AEP and PMF storm events in a trapped sag point.

The PMF maps also show localised stormwater flows on Leeds Street. In the PMF, flood depths on Leeds Street are shallow (less than 250 mm) and are expected to generally remain within the kerb and gutter.

West of the site, Blaxland Road falls steeply from Leeds Street towards the Parramatta River at about 5%. Shallow overland flows (typically less than 250 mm) in both the 1% AEP and PMF events are generally contained in the kerb and gutter and are not anticipated to enter the site.

The small catchment area and shallow nature of the overland flows means they can be considered as “minor”.

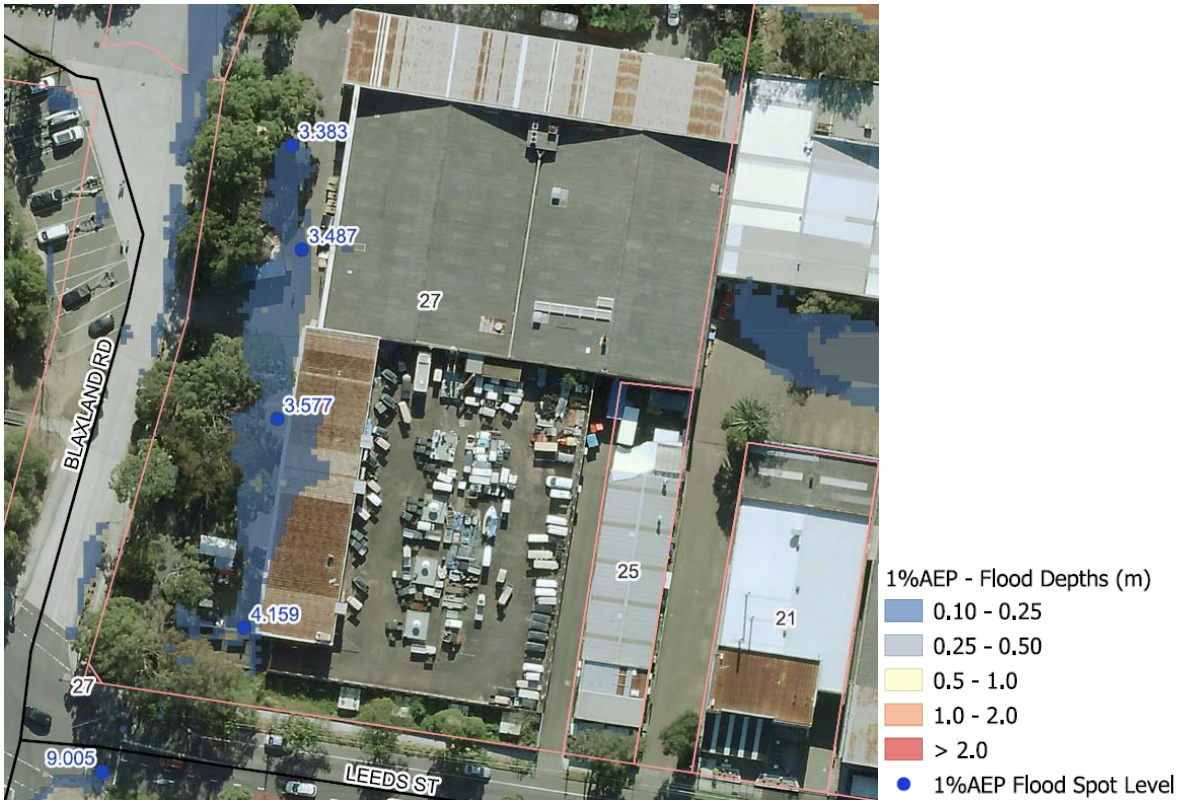


Figure 3-1 1% AEP Flood Depths and Flood Levels - Existing Scenario (Source: City of Canada Bay Council)

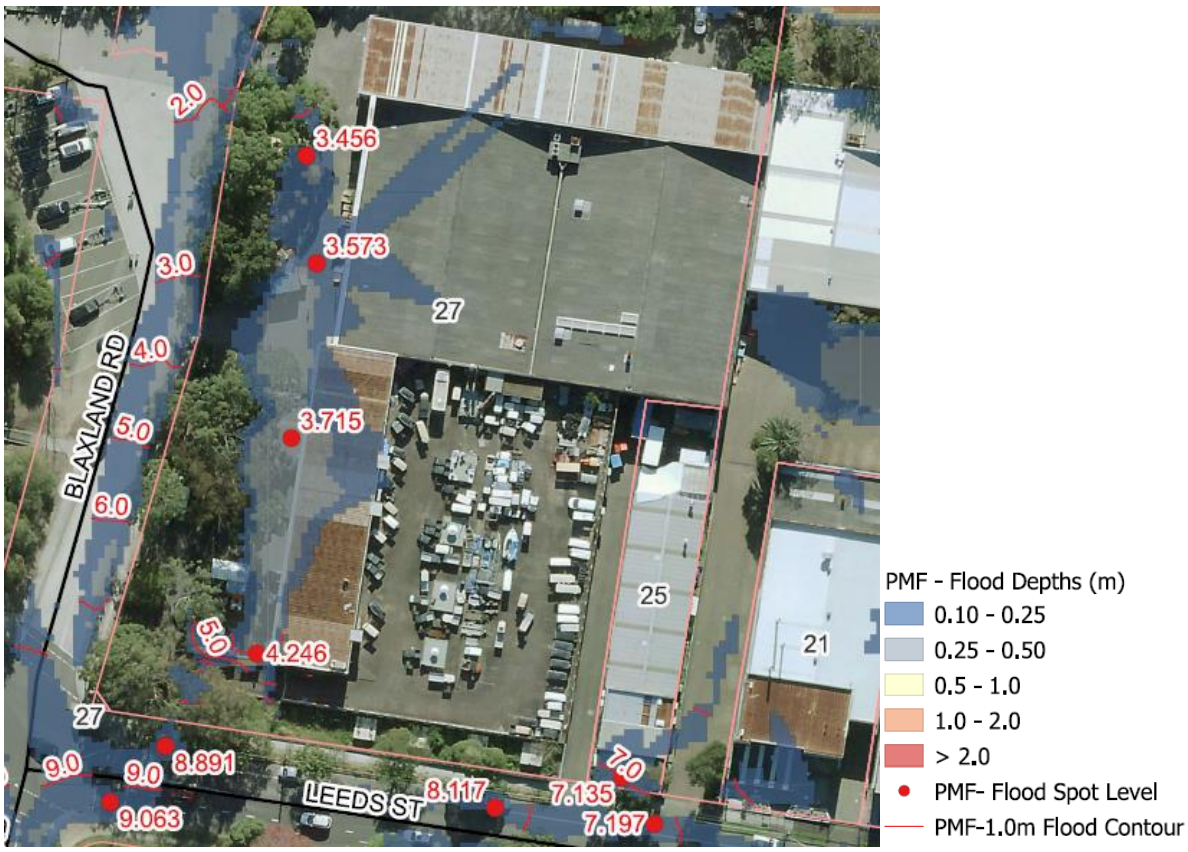


Figure 3-2 - PMF Flood Depths and Flood Levels - Existing Scenario (Source: City of Canada Bay Council)

3.2.2 Riverine Flooding

Council were unable to provide *Paramatta River flood levels for the site. Based on the Lower Parramatta River Floodplain Risk Management Study: Flood Study Review (LPRFRS) (SKM, 2005)* the following river flood levels apply:

- 5% AEP peak water level - 1.34 m AHD
- 1% AEP peak water level - 1.42 m AHD
- PMF peak water level - 2.07 m AHD
- 1% AEP with sea level rise – 2.35 m AHD

It should be noted that the 1% AEP flood level of 1.42m AHD from the *LPRFRS* is the same level as adopted in the *Rhodes East Priority Investigation Area Hydrology and Flooding report*. This 1% AEP flood level of 1.42m AHD for the river, referred to in both the *LPRFRS* and *Rhodes East Priority Investigation Area flood report*, is adopted on the basis that tidal levels would dominate at this location.

Survey shows the top of stone seawall at 1.85 m AHD. Therefore the PMF from the river is likely to overtop the wall and affect the lower portion of the site. However it is not predicted to affect the existing building.

With sea level rise applied to represent the potential year 2100 conditions, the 1% AEP river levels are predicted to increase to 2.35 m AHD as per Council's adopted *Exile Bay Catchment Flood Study (GRC Hydro, 2020).* This is based on a 1% AEP harbour level of 1.435 m AHD plus 0.9 m freeboard.

3.2.3 Flood Hazard

The provided flood mapping demonstrates low flood hazard in the 1% AEP and PMF design events within the project site boundary (under pre-development conditions).

At Blaxland Road high hazard flows are anticipated in the PMF event, though in the 1% AEP event minimal overland flows are anticipated on Blaxland Road and are contained to the kerb and gutter and road verge. Figure 3-3 and Figure 3-4 show an extract of the hazard maps at the area of interest.

Hazard is based on the Floodplain Development Manual (DIPNR, 2005) definition of hazard. Hazard is a product of the depth and velocity of water. High hazard is likely to be explained from the high velocity of the shallow flows caused by the steep grade of Blaxland Road. Depths remain shallow (typically less than 250 mm).

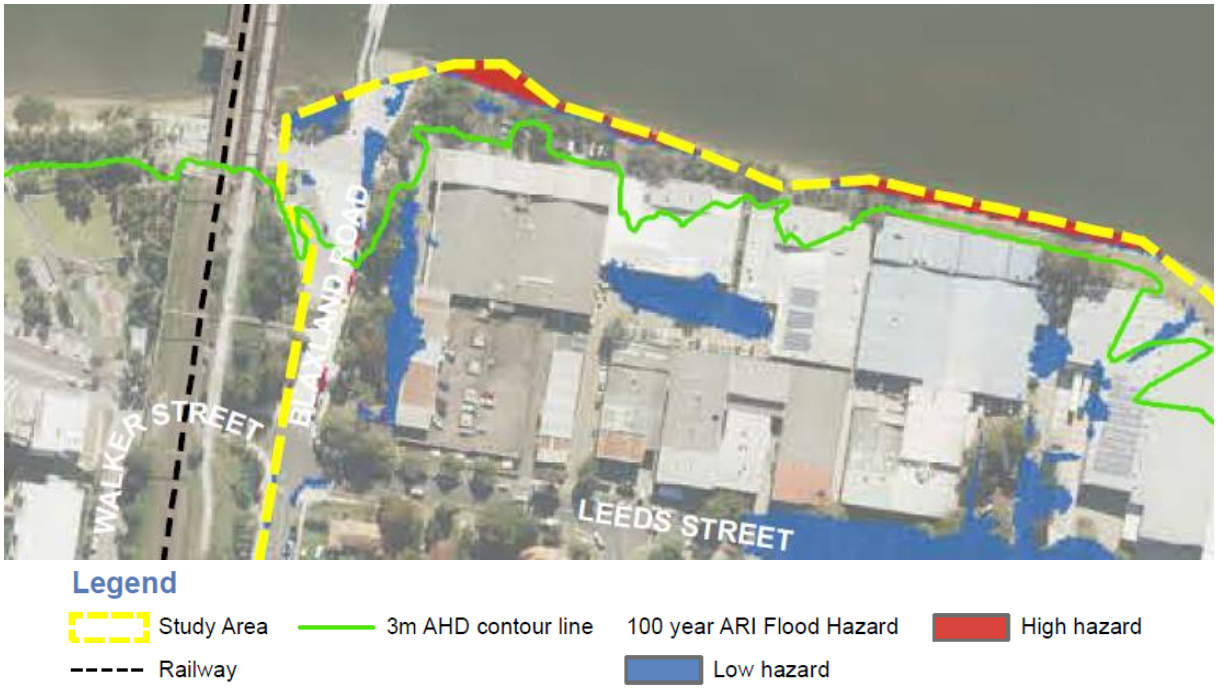


Figure 3-3 - 1% AEP Provisional Hazard Map (Source: 2016 Rhodes East Priority Investigation Area flood report)

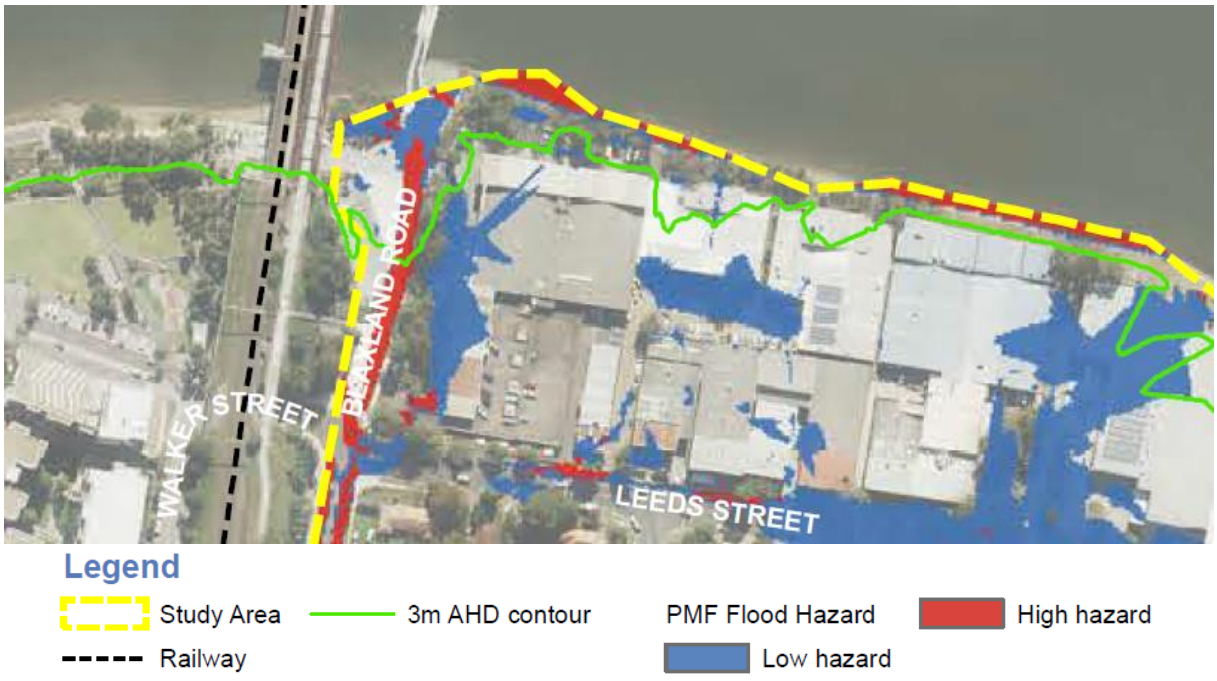


Figure 3-4 - PMF Provisional Hazard Map (Source: 2016 Rhodes East Priority Investigation Area flood report)

3.3 Flood Modelling Observations

The following observations have been made based on the *Rhodes East Priority Investigation Area Hydrology and Flooding report* and flood maps provided by Council.

3.3.1 Pits and pipes network

As reported in Section 2 of the *Rhodes East Priority Investigation Area Hydrology and Flooding report*, the stormwater pit and pipe network was not represented in the hydrology (DRAINS) model. Furthermore, the entire drainage network was not included in the TUFLOW model due to limited availability of data. Therefore, overland flows predicted by the flood modelling are likely to be conservative estimates as below ground flows and storages are not represented in the models. The actual flood depths of ponding during flooding are therefore likely to be less than reported.

4. Proposed Development Risk Assessment

4.1 Post-Development Site Flood Behaviour

4.1.1 Overland Flows

Figure 4-1 shows the existing conditions 1% AEP flood map overlayed with the proposed building footprints. The ponding within the site boundaries (west of the existing building) is not expected to be occur in the post-development scenario for the following reasons:

- The existing sag point will be removed and site drainage will be handled by the stormwater network.
- The external areas will be regraded to remove the sag area and to increase the slope towards the river.
- To minimise the risk of local overland flows entering the buildings, grading of all external areas will direct rainfall runoff away from the proposed buildings.
- Further details are given in the civil and stormwater report *S22164 25 Leeds St Stormwater Report.*

Based on the above, flooding internal to the site boundary is not expected to occur in post-development conditions.

Figure 4-1 - Proposed Buildings Overlayed to 1% AEP Flood Map

4.1.2 Riverine Flooding

The survey in Appendix A shows the top of stone wall at 1.85 m AHD. The 1% AEP river flood levels remain lower than the river wall. The PMF from the river overtops the wall and affects the lower portion of the site. However, the river PMF level (2.07 m AHD) is some 500 mm below the proposed ground floor levels of buildings and will remain in the landscaped areas of the development and will not be a significant risk to the occupants of the site.

With climate change applied, the 1% AEP river levels are predicted to increase to 2.35 m AHD but remain below the finished floor levels of the proposed buildings.

4.2 Flood Development Controls

As per City of Canada Bay Development Control Plan (DCP), the project site falls under a Flood Planning Area therefore flood control clauses apply. With reference to the Flood Planning Matrix in Section B8 of the DCP, flood controls for low flood risk areas apply.

4.2.1 Finished Flood Levels

The minimum freeboard requirement for flood prone lands in case of overland flow path identified as minor is assumed as 300 mm (Clause SW25 of Appendix 2 Engineering Specifications of Council's DCP). 500 mm freeboard is applied to mainstream (Paramatta River) flooding.

Table 4-1 shows the proposed buildings floors levels as per architectural drawings in Appendix D and flood levels as per flood maps in Appendix B (upper floors above PMF not included). Since flooding within the site is not expected to occur in the post-development scenario, the flood levels have been taken from Leeds Street and Blaxland Road and Parramatta River and represent a worst case scenario.

Table 4-1 Proposed Buildings Flood Development Control

Building Level / Usage	Finished Floor Level (m AHD)	1% AEP Flood Level or depth	PMF level or depth	Comment
Basement and carparking				
Basement 02 - carparking	-3.00 to -1.40	N/A	Blaxland Road overland flow level at site access location with depths typically <250 mm)	Access from Blaxland Road. Basement level linked between all buildings. Additional measures to raise carpark access to above Blaxland Road PMF level before entering the carpark will further minimise risk. **Compliant,** access not affected by PMF.
Basement 01 – carparking, loading / waste collection	0.00 to 1.60	N/A	Blaxland Road overland flow level at site access location with depths typically <250 mm	Access from Blaxland Road. Basement level linked between all buildings. Additional measures to raise carpark access to above Blaxland Road PMF level before entering the carpark will further minimise risk. **Compliant,** access not affected by PMF.
Ground Floor Level 01 – car parking including entrance	4.50	N/A	Blaxland Road overland flow level at site access location with depths typically <250 mm	Access from Blaxland Road. Below buildings A, B C and D. **Compliant,** access not affected by PMF.
Building A				
Level 01 – Retail, entry lobby and residential townhouses	4.50	N/A	N/A	**Compliant,** FFL not affected by 1% AEP
Level 02 – Community, plant and residential	8.50	N/A	N/A	**Compliant,** FFL not affected by 1% AEP

Building Level / Usage	Finished Floor Level (m AHD)	1% AEP Flood Level or depth	PMF level or depth	Comment
Building B				
Level 02 – Substation	8.00	N/A	7.0 – 8.0 m AHD (overland flows)	**Compliant**, PMF contained in Leeds Street. Not affected by 1% AEP
Level 02 – Entry lobby and residential	8.50			**Compliant,** FFL not affected by 1% AEP
Building C				
Level 02 – Residential	8.65	N/A	8.89 m AHD (overland flows)	**Compliant,** FFL not affected by 1% AEP. PMF contained in road corridor.
Building D				
Level 01 – Residential Townhouses	4.00	N/A	Blaxland Road overland flow level at site access location with depths typically <250 mm	**Compliant,** FFL not affected by 1% AEP
Level 02 – Residential	8.65	N/A	Blaxland Road overland flow level at site access location with depths typically <250 mm	**Compliant,** FFL not affected by 1% AEP
Building E				
Level 01 - Ground Floor – Retail and building E entry lobby	2.50 to 3.50	1.42 m AHD (Parramatta River level)	2.07 m AHD (Parramatta River level)	**Compliant**, FFL above the 1% AEP flood level plus freeboard (500 mm)
Fire Stair E03 (from basement)	2.60			**Compliant,** access not affected by PMF.
Level 02 – Residential	7.60			**Compliant**, FFL above the 1% AEP flood level plus freeboard (500 mm)
Building F				
Level 01 - Ground Floor – Retail and building F entry lobby	2.50 to 3.50	1.42 m AHD (Parramatta River level)	2.07 m AHD (Parramatta River level)	**Compliant**, FFL above the 1% AEP flood level plus freeboard (500 mm)
Fire Stair F03 (from basement)	3.05			**Compliant,** access not affected by PMF.
Level 02 – Residential	6.60			**Compliant**, FFL above the 1% AEP flood level plus freeboard (500 mm)

4.2.2 Compliance with DCP

DCP criteria compliance can be summarised as follows:

4.2.2.1 Substation

B8.6 Floor Level control C3 applies. The sub-station is out of the PMF extent and therefore the proposed development complies with this criteria.

4.2.2.2 Floor Levels

For commercial and residential uses B8.6 Floor Level controls C2 and C5 apply.

The proposed buildings are compliant with floor level flood controls. Buildings are not affected by the 1% AEP event overland flows or river flooding. In addition, the habitable floor levels are equal to or greater than the nearest 1% AEP flood level plus freeboard (300 mm for overland flows, 500 mm for mainstream (Parramatta River) flooding).

As per table 4-1, the finished floor levels comply with the requirements of the DCP.

4.2.2.3 Car Parking and Driveway Access

According to the DCP matrix, B8.6 Car Parking and Driveway Access controls C1, C3, C5, C6 and C8 apply. Given the belowground covered nature of the basement carpark C1 is not applicable.

Table 4-2 Proposed Buildings Flood Development Control

Control	Comment	Compliance
C3 Garages capable of accommodating more than 3 motor vehicles on land zoned for urban purposes, or enclosed car parking, must be protected from inundation by floods equal to or greater than the 100 year ARI flood. Ramp levels to be no lower than 0.5m above the 100 year ARI flood level.	The driveway providing access to the carpark is located on the west side of Building C and D providing access from Blaxland Road. No 1% AEP flood occurs nearby.	YES
C5 The level of the driveway providing access between the road and parking spaces shall be no lower than 0.2m below the 100 year ARI flood level.	The driveway providing access to the carpark is located on the west side of Building C and D providing access from Blaxland Road. No 1% AEP flood occurs nearby.	YES
C6 Enclosed car parking and car parking areas accommodating more than 3 vehicles, with a floor below the 100 year ARI flood level, shall have adequate warning systems, signage, exits and evacuation routes.	To be conditioned as a requirement.	YES
C8 Enclosed underground car parks shall have all potential water entry points protected from the PMF. The intent of this requirement is to mitigate the creation of life threatening circumstances and very high economic loss such as may occur with the complete inundation of an underground car park. Council may consider relaxation of this requirement if it can be shown by modelling that the catchment characteristics are such that the maximum depth of inundation is less than 300mm.	There is no direct access to the basement from areas affected by the PMF. The maximum PMF flood depth on Blaxland Road at the car park entry location is a maximum of 250 mm and contained in the road corridor (as per Appendix B). Overland flows move down the steep road and towards the river and are not expect to enter the site. However, to provide additional risk mitigation, the basement carpark access driveways will rise to up from the low point of the road before entering the basement to minimise risk of any overland flows from entering the basement.	YES

4.2.2.4 Evacuation

Controls B8.6 Evacuation C3 and C4 apply for residential and commercial use.

Evacuation is not required as the buildings are not affected in PMF event. In the case of PMF overland flows on Blaxland Street, high hazard flows are expected to be of short duration with flow depths remaining typically below 250 mm at the access to the site. Occupants of the site will be able to remain safe within the site for this short duration. Vehicles would be required to remain in the basement which is protected to the PMF.

4.2.3 Mean High Water Mark Setback

The Mean High Water Level (MHWL) for the Parramatta River at the site location is 0.6 m AHD. This is below the surveyed top of wall at the riverfront. As such the development complies with the objectives of clause 6.4 of the Canada Bay LEP 2013; “to ensure development in the foreshore area will not impact on natural foreshore processes”.

5. Conclusion

The proposed development is considered to satisfy the requirements of City of Canada Bay Development Control Plan (DCP).

Based on the available information provided from Council, the following can be concluded:

- The flood model results show shallow flooding (up to 250 mm) in the 1% AEP on Blaxland Road. The PMF results show localised stormwater ponding on Blaxland Road for a flood depth of less than 500 mm and typically less than 250 mm and depths less than 250 mm on Leeds Street.
- Overland flows are typically contained to the roadways around the site in both the 1% AEP and PMF events.
- The existing sag point on the site will be removed as part of the development proposals and no flooding is anticipated within the developed site. Local drainage will be handled by the stormwater network and the site open areas will be graded away from all buildings.
- Finished floor levels comply with the floor level DCP criteria and the carpark entrance and the driveway are compliant with the driveway DCP criteria.

Appendices

Appendix A - Survey Plan

SEE SHEET 1 TREE DETAILS, EASEMENT DETAILS (TABLE) AND UNDERGROUND SERVICES

GENERAL NOTES

ONLY TREES GREATER THAN 3.5 METRES IN HEIGHT ARE SHOWN ON THIS PLAN AND THEIR POSITIONS ARE DIAGRAMMATIC ONLY AND MAY REQUIRE ADDITIONAL SURVEY WHERE CRITICAL TO DESIGN.

CONTOURS ARE INDICATIVE AT GROUND FORM ONLY. SPOT LEVELS ONLY SHOULD BE USED FOR CALCULATIONS OF QUANTITIES WITH CAUTION.

LEVELS ARE ON AUSTRALIAN HEIGHT DATUM (AHD).

ALL SETOUT LEVELS MUST BE REFERRED TO THE BENCH MARK SHOWN ON THIS PLAN.

BOUNDARY NOTES

A BASIC BOUNDARY SURVEY HAS BEEN DONE SUITABLE FOR DA LODGEMENT PURPOSES.

BOUNDARIES HAVE NOT BEEN MARKED.

SURVEY INFORMATION NOTES

THE ORIGIN OF COORDINATES COMES FROM SSM112934 E323120.612 N6255692.909 CLASS B POSITIONAL UNCERTAINTY (PU) N/A (MGA2020) ADOPTED FROM SCIMS DATED 11/04/2022.

THE ORIGIN OF LEVELS COMES FROM SSM112934 RL8.742 CLASS LC POSITIONAL UNCERTAINTY (PU) 0.01 ADOPTED FROM SCIMS DATED 11/04/2022.

THE ORIENTATION OF THIS PLAN IS MGA NORTH WHICH HAS BEEN DETERMINED BY A COORDINATE JOIN BETWEEN SSM112934 AND SSM112942.

CERTIFICATE OF TITLE NOTES

THE FOLLOWING INFORMATION RELATES TO THE RESPECTIVE CERTIFICATE OF TITLE OF EACH LOTS:

- LOT 2 IN DP1192949
  (CT EDITION 3 DATED 09/09/2018 SEARCH DATE 11/04/2022)
  - AFFECTED BY:
    - RIGHT OF WAY 4.875 WIDE (F13557) SHOWN (A)
    - LEASE OF SUBSTATION PREMISES No.4369 TOGETHER WITH RIGHT OF WAY & EASEMENT FOR ELECTRICITY PURPOSES SHOWN (B) (P240119). A NUMBER OF VARIATIONS TO THIS LEASE ARE NOTED ON TITLE.
    - AN ADDITIONAL LEASE IS NOTED ON TITLE.
  - BENEFITTED BY:
    - PART OF THE LAND BY RIGHT OF WAY (F13557).
- LOT A IN DP329241
  (CT EDITION 19 DATED 21/11/2019 SEARCH DATE 11/04/2022)
  - AFFECTED BY:
    - COVENANT (695257)
- LOT C IN DP367132
  (CT EDITION C DATED 19 SEARCH DATE 11/04/2022)
  - AFFECTED BY:
    - EASEMENT AFFECTING THE LAND (DP367132)
    - COVENANT (F13557)
  - BENEFITTED BY:
    - RIGHT OF WAY 4.875 WIDE (F13557)

COVENANTS, RESTRICTIONS, CAVEATS & LEASES NOTED ON THE TITLE HAVE NOT BEEN INVESTIGATED. THESE SHOULD BE INVESTIGATED PRIOR TO DESIGN TO ENSURE ANY FUTURE DEVELOPMENT COMPLIES.

SERVICES NOTES

ONLY THOSE SERVICES VISIBLE AT THE TIME OF SURVEY HAVE BEEN LOCATED AND ARE QUALITY LEVEL A AS DEFINED BY AS 5488.1:2019.

UNDERGROUND SERVICES HAVE BEEN PLOTTED FROM 'DIAL-BEFORE'YOU-DIG' PLANS, ARE QUALITY LEVEL D AS DEFINED BY AS 5488.1:2019 AND ARE ONLY CURRENT AT THE DATE OF SEARCH.

ALL RELEVANT AUTHORITIES MUST BE CONTACTED TO DETERMINE THE FULL EXTENT OF SERVICES PRIOR TO ANY PLANNING OR WORKS NEAR THE SITE.

LEGEND:

BOLLARD
COMMUNICATIONS PIT
ELECTRICITY PILLAR
ELECTRICITY PIT
GAS MARKER/LID
HYDRANT
LIGHT POLE
POWER POLE
UNCLASSIFIED MANHOLE
SEWER INSPECTION PIT
SEWER MANHOLE
STREET SIGN
STOP VALVE
TRAFFIC SIGNAL
TRAFFIC SIGNAL PIT
UNCLASSIFIED SERVICE
WATER METER
D:S:H (CODED 'T' IN FIELD)

BB	BOTTOM OF BANK
BK	BACK OF KERB
BW	BOTTOM OF WALL
CL	CENTRELINE
FL	FLOOR LEVEL
LIP	LIP LINE
PC	PEDESTRIAN CROSSING
SWP	STORMWATER PIT
TB	TOP OF BANK
TK	TOP OF KERB
TW	TOP OF WALL
VC	VEHICLE CROSSING
FL 3.54	INTERNAL FLOOR LEVEL

PROJECT:

DETAIL AND LEVEL SURVEY OF LOT 2 IN DP1192949, LOT A IN DP329241 & LOT C IN DP367132

25 LEEDS STREET
RHODES

CLIENT: BILLBERGIA PTY LTD

FILE: 8719_25 Leeds Street Rhodes_Rev C

LGA: CANADA BAY

REF: 8719	CONTOURS: 0.5m
ISSUE: C	DATUM: AHD
SURVEY DATE: 10/03/2023	AZIMUTH: MGA2020
SCALE: 1:200	SHEET 2 OF 3 SHEETS

ISSUE	DATE	AMENDMENT	SURV	CHK
A	14/04/22	ORIGINAL ISSUE	PS	MT
B	19/07/22	ADDITIONAL TREES ADDED	SY	MT
C	10/03/23	ADDITIONAL INTERNAL LEVELS	AZ	MT

DIAL BEFORE YOU DIG www.1100.com.au

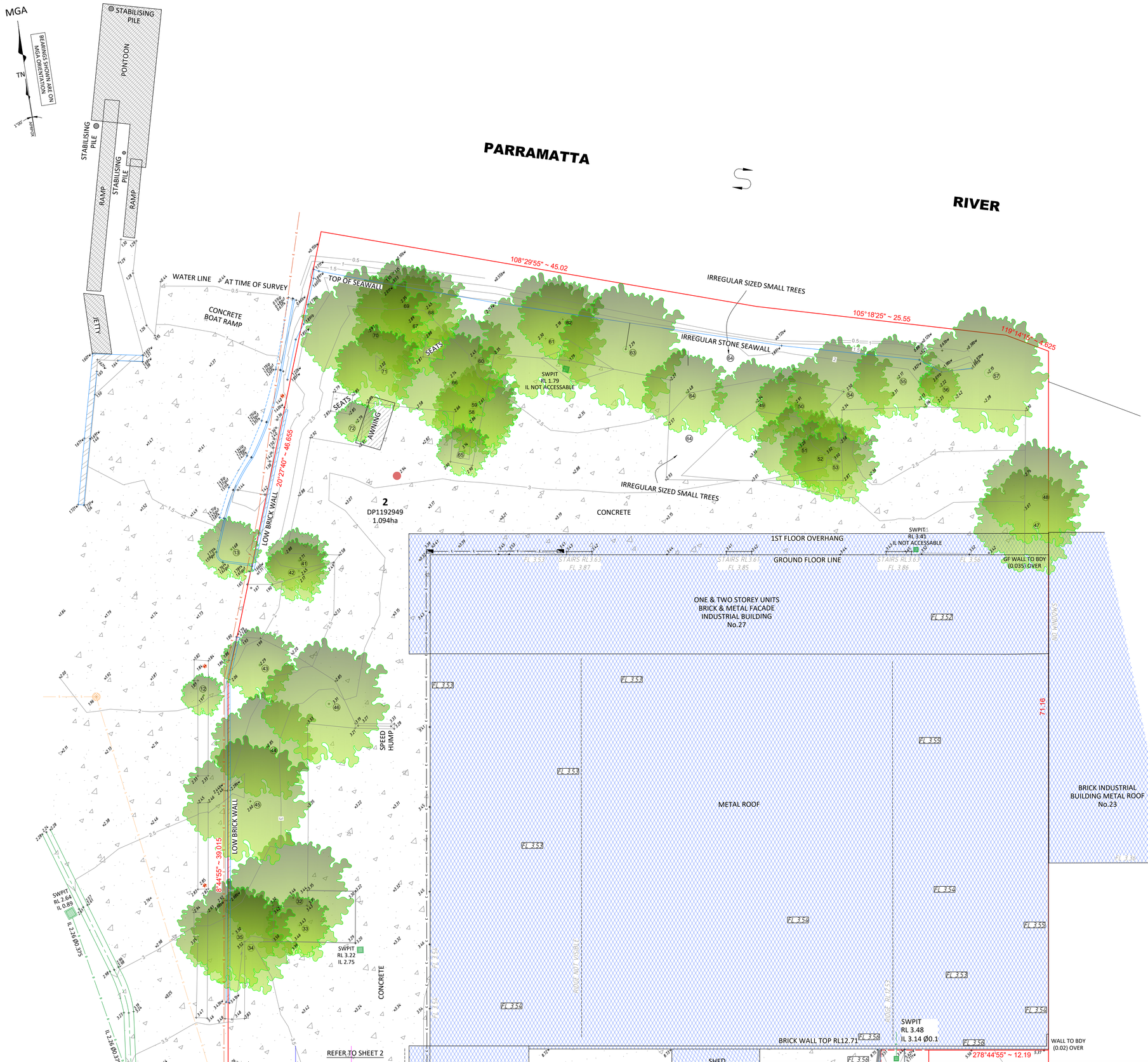
GDA2020

OHS Management System ISO 45001 Global-Mark.com.au® Quality Management ISO 9001 Global-Mark.com.au® Environmental Management ISO14001 Global-Mark.com.au®

MICHAEL TRIFIRO ID: SU008624
REGISTERED LAND SURVEYOR

SDG Pty Ltd
abn 85 213 523 621
Suite 1, 3 Railway Street, Baulkham Hills NSW 2153
t: (02) 9630 7955 w: sdg.net.au

A1



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SEE SHEET 1 TREE DETAILS, EASEMENT DETAILS (TABLE) AND UNDERGROUND SERVICES

ISSUE	DATE	AMENDMENT	SURV	CHK
A	14/04/22	ORIGINAL ISSUE	PS	MT
B	19/07/22	ADDITIONAL TREES ADDED	SY	MT
C	10/03/23	ADDITIONAL INTERNAL LEVELS	AZ	MT

DIAL BEFORE YOU DIG www.1100.com.au

GDA2020

GENERAL NOTES

ONLY TREES GREATER THAN 3.5 METRES IN HEIGHT ARE SHOWN ON THIS PLAN AND THEIR POSITIONS ARE DIAGRAMMATIC ONLY AND MAY REQUIRE ADDITIONAL SURVEY WHERE CRITICAL TO DESIGN.

CONTOURS ARE INDICATIVE AT GROUND FORM ONLY. SPOT LEVELS ONLY SHOULD BE USED FOR CALCULATIONS OF QUANTITIES WITH CAUTION.

LEVELS ARE ON AUSTRALIAN HEIGHT DATUM (AHD).

ALL SETOUT LEVELS MUST BE REFERRED TO THE BENCH MARK SHOWN ON THIS PLAN.

BOUNDARY NOTES

A BASIC BOUNDARY SURVEY HAS BEEN DONE SUITABLE FOR DA LODGEMENT PURPOSES.

BOUNDARIES HAVE NOT BEEN MARKED.

SURVEY INFORMATION NOTES

THE ORIGIN OF COORDINATES COMES FROM SSM112934 E323120.612 N6255692.909 CLASS B POSITIONAL UNCERTAINTY (PU) N/A (MGA2020) ADOPTED FROM SCIMS DATED 11/04/2022.

THE ORIGIN OF LEVELS COMES FROM SSM112934 RL8.742 CLASS LC POSITIONAL UNCERTAINTY (PU) 0.01 ADOPTED FROM SCIMS DATED 11/04/2022.

THE ORIENTATION OF THIS PLAN IS MGA NORTH WHICH HAS BEEN DETERMINED BY A COORDINATE JOIN BETWEEN SSM112934 AND SSM112942.

CERTIFICATE OF TITLE NOTES

THE FOLLOWING INFORMATION RELATES TO THE RESPECTIVE CERTIFICATE OF TITLE OF EACH LOTS:

- LOT 2 IN DP1192949
  (CT EDITION 3 DATED 09/09/2018 SEARCH DATE 11/04/2022)
  - AFFECTED BY:
    - RIGHT OF WAY 4.875 WIDE (F13557) SHOWN (A)
    - LEASE OF SUBSTATION PREMISES No.4369 TOGETHER WITH RIGHT OF WAY & EASEMENT FOR ELECTRICITY PURPOSES SHOWN (B) (P240119). A NUMBER OF VARIATIONS TO THIS LEASE ARE NOTED ON TITLE.
    - AN ADDITIONAL LEASE IS NOTED ON TITLE.
  - BENEFITTED BY:
    - PART OF THE LAND BY RIGHT OF WAY (F13557).
- LOT A IN DP329241
  (CT EDITION 19 DATED 21/11/2019 SEARCH DATE 11/04/2022)
  - AFFECTED BY:
    - COVENANT (695257)
- LOT C IN DP367132
  (CT EDITION C DATED 19 SEARCH DATE 11/04/2022)
  - AFFECTED BY:
    - EASEMENT AFFECTING THE LAND (DP367132)
    - COVENANT (F13557)
  - BENEFITTED BY:
    - RIGHT OF WAY 4.875 WIDE (F13557)

COVENANTS, RESTRICTIONS, CAVEATS & LEASES NOTED ON THE TITLE HAVE NOT BEEN INVESTIGATED. THESE SHOULD BE INVESTIGATED PRIOR TO DESIGN TO ENSURE ANY FUTURE DEVELOPMENT COMPLIES.

SERVICES NOTES

ONLY THOSE SERVICES VISIBLE AT THE TIME OF SURVEY HAVE BEEN LOCATED AND ARE QUALITY LEVEL A AS DEFINED BY AS 5488.1:2019.

UNDERGROUND SERVICES HAVE BEEN PLOTTED FROM 'DIAL-BEFORE'YOU-DIG' PLANS, ARE QUALITY LEVEL D AS DEFINED BY AS 5488.1:2019 AND ARE ONLY CURRENT AT THE DATE OF SEARCH.

ALL RELEVANT AUTHORITIES MUST BE CONTACTED TO DETERMINE THE FULL EXTENT OF SERVICES PRIOR TO ANY PLANNING OR WORKS NEAR THE SITE.

LEGEND:

BOLLARD	BB	BOTTOM OF BANK
COMMUNICATIONS PIT	BK	BACK OF KERB
ELECTRICITY PILLAR	BW	BOTTOM OF WALL
ELECTRICITY PIT	CL	CENTRELINE
GAS MARKER/LID	FL	FLOOR LEVEL
HYDRANT	LIP	LIP LINE
LIGHT POLE	PC	PEDESTRIAN CROSSING
POWER POLE	SWP	STORMWATER PIT
UNCLASSIFIED MANHOLE	TB	TOP OF BANK
SEWER INSPECTION PIT	TK	TOP OF KERB
SEWER MANHOLE	TW	TOP OF WALL
STREET SIGN	VC	VEHICLE CROSSING
STOP VALVE	FL 352	INTERNAL FLOOR LEVEL
TRAFFIC SIGNAL		
TRAFFIC SIGNAL PIT		
UNCLASSIFIED SERVICE		
WATER METER		
D:S:H (CODED 'T' IN FIELD)		

PROJECT:

DETAIL AND LEVEL SURVEY OF
LOT 2 IN DP1192949,
LOT A IN DP329241 & LOT C IN DP367132

25 LEEDS STREET
RHODES

CLIENT: BILLBERGIA PTY LTD

FILE: 8719_25 Leeds Street Rhodes_Rev C

LGA: CANADA BAY

REF: 8719	CONTOURS: 0.5m
ISSUE: C	DATUM: AHD
SURVEY DATE: 10/03/2023	AZIMUTH: MGA2020
SCALE: 1:200	SHEET 3 OF 3 SHEETS

SDG Pty Ltd
abn 85 213 523 621
Suite 1, 3 Railway Street, Baulkham Hills NSW 2153
t: (02) 9630 7955 w: sdg.net.au
Liability limited by a scheme approved under Professional Standards Legislation

MICHAEL TRIFIRO ID: SU008624
REGISTERED LAND SURVEYOR

A1


BEARINGS SHOWN ARE ON MGA ORIENTATION
MGA
TN
GN
BLAXLAND
ROAD
LEEDS
STREET
PARRAMATTA
RIVER
BOX KERB
CONCRETE
LOW BRICK WALL
CONCRETE FOOTPATH
RAMP
SPEED HUMP
AWNING
1ST FLOOR OVERHANG
GROUND FLOOR LINE
EXTERNAL WINDOW LOUVRES
SHED
VENT SHAFT
METAL ROOF
BRICK WALL TOP RL10.85
BRICK WALL TOP RL10.79
BRICK WALL TOP RL9.93
BRICK WALL TOP RL10.84
BITUMEN
DRIVEWAY
CONCRETE CART PARKING UNITS' WORKSHOPS UNDER
ONE & TWO STOREY BRICK INDUSTRIAL BUILDING WITH METAL ROOF No.25
ONE & TWO STOREY BRICK & METAL FACADE INDUSTRIAL BUILDING No.27
ONE & TWO STOREY BRICK INDUSTRIAL BUILDING WITH METAL ROOF No.23
ONE & TWO STOREY BRICK INDUSTRIAL BUILDING WITH METAL ROOF No.21
STABILISING PILE
RAMP
PONTOON
GANGWAY
WATER LINE AT TIME OF SURVEY
TOP OF BANK RL1.742
IRREGULAR SIZED SMALL TREES
IRREGULAR SIZED SMALL TREES
IRREGULAR SIZED SMALL TREES
CONCRETE
METAL ROOF
GROUND FLOOR LINE
1ST FLOOR OVERHANG
AWNING
TOP OF BANK RL1.742
WALL TOP RL1.93
WALL TOP RL1.84
WALL TOP RL1.93
WALL TOP RL1.84
WALL TOP RL1.93
WALL TOP RL1.84

Appendix B - 1% AEP and PMF Flood Maps (Existing Pre-Development Conditions)

Appendix C -
Site Visit Summary

Legend

Study Area
Railway
3m AHD contour line

100 year ARI Flood Depth (m)
< 0.25
0.25 - 0.5
0.5 - 1
1 - 2
> 2

0 100 200m
1:5,000 @ A3

N

Data sources

Jacobs 2015
Ausimage 2015
LPI 2015

Figure A-3 | 100 year ARI flood depth map

Flood depths below 0.1m have been trimmed from this map
The flood extent outside the study area has been trimmed from this map

RHODES EAST

JACOBS NSW SPATIAL - GIS MAP file: - IA102900_Hyd_F003_100yrFloodDepth_r1v3_10_1 | 9/12/2016

STORMWATER
OUTLET

IMAGE 1

REAR OF SITE
TWO DISCHARGE
POINTS TO RIVER
VISIBLE

ON SITE GRADES

IMAGE 2 FACING LEEDS ST

LOCAL SAG ON SITE
RUNNING TOWARDS RIVER

IMAGE 3
SITE FACING PARRAMATTA RIVER.
LOCAL SAG IN CARPARK

IMAGE 4
SITE FACING NORTH EAST

IMAGE 5 FACING BLAXLAND STREET
WEST BOUNDARY OF SITE SHOWING
LOCAL HIGH POINT ALONG BOUNDARY

IMAGE 6 FACING SITE
WEST BOUNDARY OF SITE SHOWING
LOCAL HIGH POINT ALONG BOUNDARY

IMAGE 7
NEIGHBOURING PROPERTY
CARPARK SURROUNDED BY INDUSTRIAL BUILDINGS
LOCAL SAG POINT

IMAGE 8 FACING PARRAMATTA RIVER
CORRIDOR BETWEEN BUILDINGS TOWARDS RIVER
VEGETATION LIKELY CAUSED INACCURATE LIDAR READINGS

Appendix D - Architectural Drawings

PREMIUM STO. TOTALS	
Level	Count
BASEMENT 2	13
BASEMENT 1	6
Grand total	19

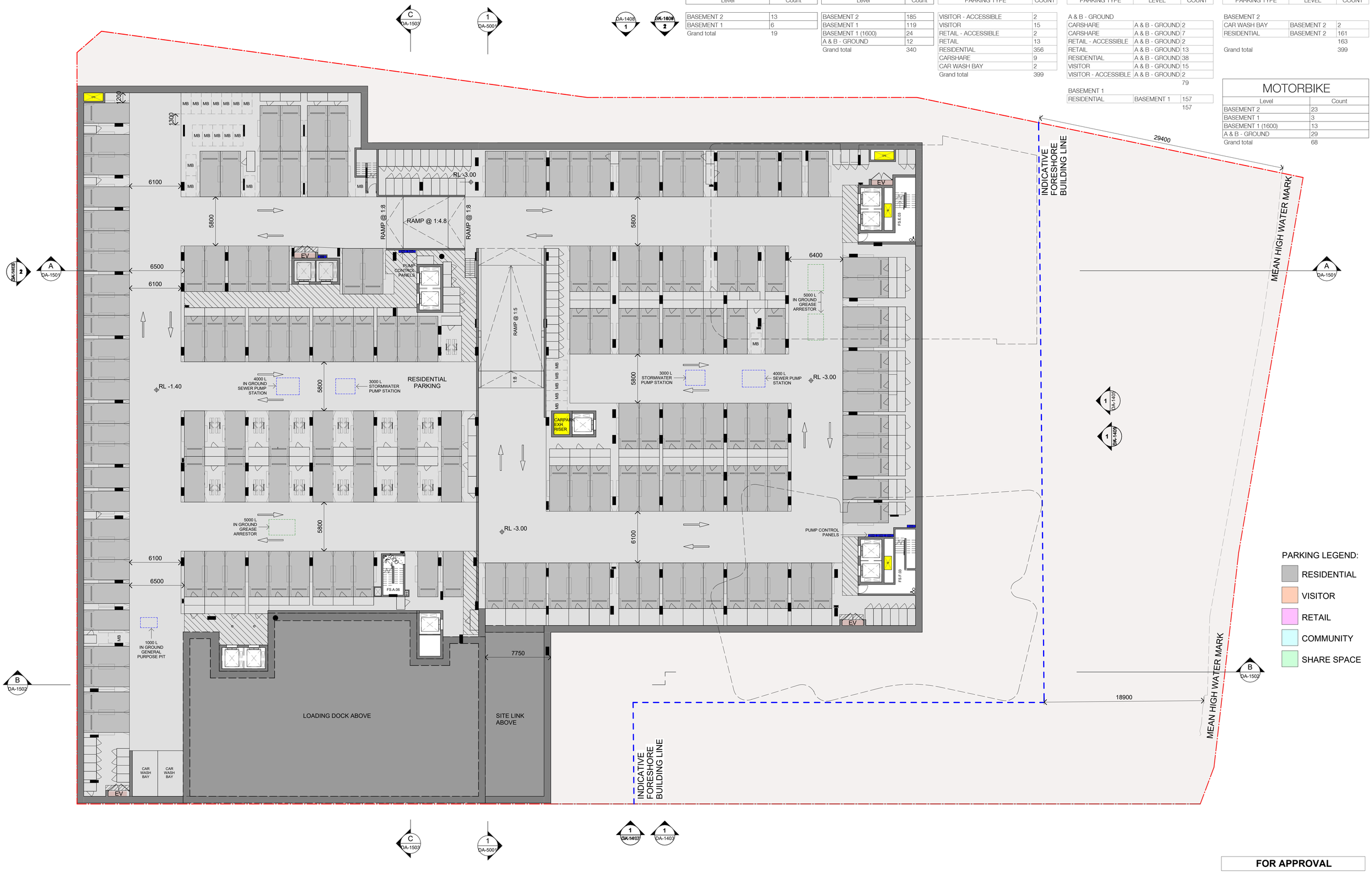
STORAGE TOTALS	
Level	Count
BASEMENT 2	185
BASEMENT 1	119
BASEMENT 1 (1600)	24
A & B - GROUND	12
Grand total	340

PARKING TOTALS	
PARKING TYPE	COUNT
VISITOR - ACCESSIBLE	2
VISITOR	15
RETAIL - ACCESSIBLE	2
RETAIL	13
RESIDENTIAL	356
CARSHARE	9
CAR WASH BAY	2
Grand total	399

PARKING BY LEVEL		
PARKING TYPE	LEVEL	COUNT
A & B - GROUND		
CARSHARE	A & B - GROUND	2
CARSHARE	A & B - GROUND	7
RETAIL - ACCESSIBLE	A & B - GROUND	2
RETAIL	A & B - GROUND	13
RESIDENTIAL	A & B - GROUND	38
VISITOR	A & B - GROUND	15
VISITOR - ACCESSIBLE	A & B - GROUND	2
		79
BASEMENT 1		
RESIDENTIAL	BASEMENT 1	157
		157

PARKING BY LEVEL		
PARKING TYPE	LEVEL	COUNT
BASEMENT 2		
CAR WASH BAY	BASEMENT 2	2
RESIDENTIAL	BASEMENT 2	161
		163
Grand total		399

MOTORBIKE	
Level	Count
BASEMENT 2	23
BASEMENT 1	3
BASEMENT 1 (1600)	13
A & B - GROUND	29
Grand total	68



PARKING LEGEND:

- RESIDENTIAL
- VISITOR
- RETAIL
- COMMUNITY
- SHARE SPACE

FOR APPROVAL

Nominated Architects: Adam Haddow-7188 | John Pradel-7004

0 1 2 5m

1:100 @A1

Rev	Date	Revision	By	Chk.
1	17.05.2024	FOR INFORMATION	JR	NH
2	28.05.2024	FOR INFORMATION	JR	NH
3	07.06.2024	FOR INFORMATION	LL	NH
4	14.06.2024	FOR INFORMATION	LL	NH
6	20.06.2024	FOR INFORMATION	LL	NH
7	28.06.2024	FOR INFORMATION	LL	NH
8	12.07.2024	FOR INFORMATION	JR	NH
9	19.07.2024	FOR INFORMATION	JR	NH
10	26.07.2024	SSDA ISSUE	JR	NH

Client

Billbergia
creating communities®

Project

25-27 LEEDS STREET
25-27 LEEDS STREET, RHODES
Country: WANGAL

Drawing Name

BASEMENT 02

Date	Scale	Sheet Size
26.07.2024	1 : 200	@ A1
Drawn	Chk.	Job No.
JR	NH	6924
Drawing No.		Revision
DA-1000		/ 10

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Surry Hills NSW
2010 Australia
T 61 2 9380 9911
www.sjb.com.au

PREMIUM STO. TOTALS	
Level	Count
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BASEMENT 1	6
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STORAGE TOTALS	
Level	Count
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		163
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Level	Count
BASEMENT 2	23
BASEMENT 1	3
BASEMENT 1 (1600)	13
A & B - GROUND	29
Grand total	68

SK-1408 2

SITE BOUNDARY

INDICATIVE FORESHORE BUILDING LINE

MEAN HIGH WATER MARK

29400

18900

RESIDENTIAL PARKING

RAMP @ 1:4.8

RAMP @ 1:8

RAMP @ 1:6.5

RAMP @ 1:16

RAMP @ 1:8 3200 IN / OUT

RESIDENTIAL WASTE 37.2 m²

RESIDENTIAL WASTE 37.1 m²

RESIDENTIAL WASTE 24.5 m²

RESIDENTIAL WASTE 45.7 m²

RESIDENTIAL WASTE 24.4 m²

RESIDENTIAL WASTE 199.5 m²

COMMERCIAL WASTE 50.6 m²

DOCK MANAGER 7.9 m²

WASTE 28.5 m²

LOADING / WASTE COLLECTION 265.2 m²

BULKY WASTE 57.5 m²

CAR PARK EX.

GAS METER 5.3 m²

RL 0.00 · RL 1.60 · RL -0.40

RESIDENTIAL FOGO BINS · RETAIL CONDENSER ZONE · RISER TRANSFER FROM ABOVE

LINK TO FUTURE STAGES

PARKING LEGEND:

- RESIDENTIAL
- VISITOR
- RETAIL
- COMMUNITY
- SHARE SPACE

FOR APPROVAL

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Rev	Date	Revision	By	Chk.
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10	26.07.2024	SSDA ISSUE	JR	NH

Client: Billbergia creating communities®

Project: 25-27 LEEDS STREET
25-27 LEEDS STREET, RHODES
Country: WANGAL

Drawing Name: BASEMENT 01

Date	Scale	Sheet Size
26.07.2024	1 : 200	@ A1
Drawn	Chk.	Job No.
JR	NH	6924
Drawing No.		Revision
DA-1000A		/ 10

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		163
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0 2 4 10m
1:200 @A1

Rev	Date	Revision	By	Chk.
1	17.05.2024	FOR INFORMATION	JR	NH
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10	26.07.2024	SSDA ISSUE	JR	NH

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25-27 LEEDS STREET, RHODES
Country: WANGAL

Drawing Name
GROUND FLOOR (LEVEL 01)

Date	Scale	Sheet Size
26.07.2024	1 : 200	@ A1
Drawn	**Chk.**	**Job No.**
JR	NH	6924
Drawing No.		**Revision**
DA-1001		/ 10

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0 2 4 10m
1:200 @A1

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9	19.07.2024	FOR INFORMATION	JR	NH
10	26.07.2024	SSDA ISSUE	JR	NH

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Project
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25-27 LEEDS STREET, RHODES
Country: WANGAL

Drawing Name
LEVEL 10

Date	Scale	Sheet Size
26.07.2024	1 : 200	@ A1
Drawn	Chk.	Job No.
JR	NH	6924
Drawing No.		Revision
DA-1010		/ 10

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