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Flood Investigation Report

For a Proposed Seniors Housing Development

Prepared for: Barry Rush and Associates Pty Ltd

Project address: Lots 2, 3, and 4 DP 215342 (No.26) Rose Crescent
North Parramatta

Document No.: CC210393_FIA

Version No.: 4.0

Dated: 17 March 2023

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VERSION HISTORY

Version	Date	Purpose	Prepared By	Approved By
1.0	29.11.2022	Flood Investigation Report	Nathan Broadbent	Bruce Kenny
2.0	15.12.2022	Flood Investigation Report	Nathan Broadbent	Bruce Kenny
3.0	08.03.23	Flood Investigation Report – Final Review	Nathan Broadbent	Bruce Kenny
4.0	17.03.23	Flood Investigation Report – Final	Nathan Broadbent	Bruce Kenny

Review Panel	
Division/Office	Name

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Table of Contents

1	Introduction	4
2	Site Description	4
3	Flood Characteristics.....	5
4	Available Data	5
	4.1 Published flood data	5
	4.2 Survey and level data	5
5	Hydrologic Modelling	5
	5.1 Hydrologic modelling approach.....	5
	5.2 Design storm event data.....	6
	5.3 Design rainfall losses.....	6
	5.4 Critical duration.....	6
6	Flood Model Results.....	7
	6.1 Design flowrates	7
	6.2 Design flood characteristics	7
7	Flood Risk Management	8
	7.1 Land Use and City of Parramatta Flood Risk Precincts.....	8
	7.2 Recommendations.....	9
	7.3 Evacuation.....	9
8	Conclusion	9
9	References.....	9

Annexures

Annexure A	ACOR Consultants (CC) Pty Ltd Flood Plans, Reference CC210393, Sheets F1 to F12, Revision B, Dated 8 December 2023.
Annexure B	Architectural Plans prepared by Barry Rush and Associates Pty Ltd, Project No. BGXWX, Sheets A01-A17, Issue A, various dates.
Annexure C	Email correspondence issued by City of Parramatta Council dated 23 February 2023.

1 Introduction

ACOR Consultants (CC) Pty Ltd (ACOR) has been commissioned to prepare a Flood Investigation Report in accordance with the relevant requirements of Parramatta Development Control Plan (DCP) 2011 Chapter 2 and Parramatta Local Environmental Plan (LEP) 2011 Clause 5.21.

This includes the analysis of:

- Surface runoff across the catchment.
- Existing drainage infrastructure near the site

A two-dimensional computer model of the catchment was established to analyse flood behaviour under existing and proposed catchment conditions. The model provides information on the extent of flood inundation, flood depths and flood velocities throughout the catchment for the 1% AEP, 5% AEP and Probable Maximum Flood (PMF) flood events. Results from this study form the technical basis for the subsequent flood risk management plan which identifies problem areas and investigates options to reduce the risk of flooding.

In the preparation of this report ACOR has relied upon certain data and information contained within the following documents:

- Architectural Plans prepared by Barry Rush and Associates Pty Ltd, Project No. BGXWX, Sheets A01-A17, Issue A, various dates (copies enclosed under Annexure B).
- 'Australian Disaster Resilience Guideline 7-3: Flood Hazard.' published by the Australian Institute for Disaster Resilience (AIDR), dated 2017.
- City of Parramatta – Development Engineering Design Guidelines, dated June 2018.
- Email correspondence issued by Parramatta City Council dated 23 February 2023.
- Parramatta Development Control Plan (DCP) 2011
- Parramatta Local Environmental Plan (LEP) 2011
- 'Floodplain Development Manual: the management of flood liable land' published by NSW Department of Infrastructure, Planning and Natural Resources (NSW DIPNR), dated April 2005.
- Site Survey prepared by Total Surveying Solutions, Job No. 210719, Sheets 1 of 4 and 2 of 4, Issue 1, dated 5 May 2021.

The purpose of this report is to provide the City of Parramatta with sufficient information to assess the proposed development in relation to flood risk management.

2 Site Description

The subject site is known as Lots 2, 3, and 4 DP 215342 (No.26) Rose Crescent, North Parramatta. The site is located on southern side of Bourke Street and located amongst residential development. Land use on the northern side of Bourke Street consists of Public Recreation and Environmental Management.

The site is a developed site of area 2229 square metres and falls generally to Bourke Street. Current site improvements include 3 detached multi-unit buildings and associated landscape features.

A 1.83 m wide stormwater easement traverses the site's eastern boundary. The easement contains a 450 mm diameter pipe which drains stormwater from a sag in Rose Crescent to the existing stormwater system in Bourke Street.

The Applicant proposes to demolish the existing structures on the site and construct a Seniors Housing development. The primary features of the proposed development are depicted on architectural plans prepared by Barry Rush and Associates Pty Ltd, Project No. BGXWX, Sheets A01-A17, Issue A, various dates (copies enclosed under Annexure B).

3 Flood Characteristics

The site is located downstream of a small overland flow catchment draining to a sag occurring in Rose Crescent. The catchment area draining to the sag is approximately 0.75 ha, however, there are several existing low level vehicular crossovers associated with the properties east of the subject site which will allow gutter flows within Rose Crescent to exit the carriageway prior to reaching the site. This will significantly reduce the flows arriving at the site during heavy rainfall events.

It is anticipated the site will only be impacted by overland flow during storm events exceeding the 1% AEP storm event, and these flows only occur within the drainage easement.

The site is not mapped as being located within any of Council's Flood Risk Precincts.

During the local catchment PMF event, the drainage easement within the site experiences shallow inundation posing Low Hazard to occupants of the site.

Pedestrian and vehicular egress from the site is available during all storm events up to and including the PMF event. The site is not impact by floodwater during any flood event up to and including the 1% AEP flood event.

4 Available Data

This flood study used topographic and flood related data obtained from a number of sources. The origin and types of information underpinning the assumptions used in this study are presented below.

4.1 Published flood data

A published description of flood behaviour in the vicinity of the site was not available at the time of preparation of this report.

4.2 Survey and level data

Survey information adopted for this study has been collated from the following sources:

- Site Survey prepared by Total Surveying Solutions, Job No. 210719, Sheets 1 of 4 and 2 of 4, Issue 1, dated 5 May 2021.
- LiDAR survey provided by NSW Spatial Services consisting of tiles:
 - Sydney201906-LID1-AHD_3146258_56_0002_0002_
- GIS layers of cadastre and satellite imagery provided by NSW Spatial Services.
- High resolution aerial imagery provided by NearMap, dated 12 December 2022.
- Proposed surface levels depicted on Architectural Plans prepared by Barry Rush and Associates Pty Ltd, Project No. BGXWX, Sheets A01-A17, Issue A, various dates (copies enclosed under Annexure B).

5 Hydrologic Modelling

This section describes the adopted hydrologic modelling approach and hydrologic model development.

5.1 Hydrologic modelling approach

Hydrologic modelling was undertaken within TUFLOW using the Direct Rainfall ('rainfall on the grid') methodology. In the hydraulic model, rainfall is applied directly to the 2D terrain, and the hydraulic model automatically routes the flow as determined by the elevation and roughness grids and any included 1D pipeline network. 100% blockage of Council's drainage system was assumed for all hydraulic simulations.

5.2 Design storm event data

This study uses design rainfall intensity-frequency-duration (IFD) data, derived for the latitude and longitude of the study area. This design rainfall data was issued by the Hydrometeorological Advisory Service of the Australian Bureau of Meteorology.

The IFD data provides rainfall burst depths of design storm events for recurrence intervals up to and including the 1% AEP and 5% AEP events.

Rainfall burst depths were developed for the 1% AEP and 5% AEP storm events using techniques described in Australian Rainfall and Runoff (Ball et al. 2019). Given the small size of the study area, a uniform spatial pattern of rainfall was assumed.

Pre-burst rainfall was developed in accordance with techniques described in Australian Rainfall and Runoff, advice provided in NSW OEH (2019) and values provided by the ARR DataHub. Note that for burst durations of less than 1 hour, the 1 hour pre-burst ratio was adopted. Pre-burst rainfall was applied uniformly over a 30 minute period.

Rainfall depths and temporal patterns were determined for the PMP design storms in accordance with the Generalised Short-Duration Method (GSDM) (BoM 2003).

5.3 Design rainfall losses

Design rainfall losses for the 1% AEP and 5% simulations were modelled using an Initial Loss/Continuing Loss (IL/CL) infiltration model. Initial losses and continuing loss rates were defined for each land use category and are based on loss rates adopted in Ball et al. (2019), the ARR DataHub and advice provided in NSW OEH (2019).

Land use categories were assigned to areas of the catchment based on examination of aerial photography and satellite imagery. These land use categories were used to assign roughness and rainfall loss parameters during modelling.

All PMF simulations assume a saturated catchment. Subsequently, zero losses were assumed for both pre-development and post-development model scenarios.

As sensitivity assessment was conducted to determine the impact of zero initial and continuing losses during the 1% AEP and 5 % AEP flood event. It was determined that reducing the losses to zero resulted in a minor increase in 5% AEP flows arriving at the site and a negligible impact on 1% AEP flows arriving at the site.

5.4 Critical duration

In accordance with the procedure described in Australian Rainfall and Runoff, an ensemble of 10 temporal patterns was run through the hydrologic model for storm durations 10 minute to 4.5 hours for the 5% AEP and 1% AEP storm events. The median water profile was determined for each duration.

A maximum water level profile was determined for the hydrologic model domain. The maximum profile was determined from the pool of median water levels profiles and the 5 minute duration water level profile. The duration resulting in the highest median water level at a given point in the hydrologic model domain was taken to be the critical duration storm event for that location.

Based on the foregoing, the 10 minute duration 1% AEP, and 15 minute duration 5% AEP storm events were found to be the critical duration for flows in the vicinity of the site.

The critical PMF duration was determine the be the duration that provided the highest flow rate across the site. In this regard, the critical PMF duration for the site was found to be the 15 minute duration.

6 Flood Model Results

This section summarises the results of the hydrologic and hydraulic modelling of 5% AEP, 1% AEP and PMF flows within the catchment. The peak flowrates through the site is presented and the behaviour of overland flows within the vicinity of the subject site are described in general terms.

6.1 Design flowrates

The peak 5% AEP and 1% AEP flowrate leaving the sag in Rose Crescent is 60 L/s and 105 L/s respectively. We note that the flowrates are very minor and will be conveyed wholly within the underground stormwater. The minor stormwater flows report did not result in conditions that exceed Parramatta Council's description of floodwaters, subsequently, the site is not impacted by 1% AEP or 5% AEP floodwaters.

6.2 Design flood characteristics

The water level, depth, velocity, velocity-depth product and hazard of the PMF overland flows in the vicinity of the subject site were mapped for both pre- and post-development scenarios. The flood mapping was filtered in line with the requirements outlined in Email correspondence issued by City of Parramatta, dated 23 February 2023 (copy enclosed under Annexure C). In this regard, the following maps are enclosed under Annexure A:

- Post-development PMF flood depth and level plan (refer CC210393/F2/B)
- Post-development PMF flood velocity plan (refer CC210393/F3/B)
- Post-development PMF flood velocity-depth product plan (refer CC210393/F4/B)
- Post-development PMF provisional flood hazard plan (refer CC210393/F5/B)
- Post-development PMF flood hazard vulnerability classification plan (refer CC210393/F6/B)
- Post-development PMF flood depth and level plan (refer CC210393/F7/B)
- Post-development PMF flood velocity plan (refer CC210393/F8/B)
- Post-development PMF flood velocity-depth product plan (refer CC210393/F9/B)
- Post-development PMF provisional flood hazard plan (refer CC210393/F10/B)
- Post-development PMF flood hazard vulnerability classification plan (refer CC210393/F11/B)
- Post-development 1% AEP flood depth plan (refer CC210393/F12/B)

During the 1% AEP storm event, the site is not impacted by floodwaters.

Under post-development conditions PMF overland flows occur within the existing drainage easement traversing the site. PMF overland flows do not occur on any other part of the site except within the drainage easement.

PMF flows impact the drainage easement at elevations within the range RL 53.8 m AHD to RL 51.6 m AHD, inundating the site to depths within the range 0 m to 0.34 m. Peak PMF velocities through the drainage easement are not expected to exceed 1.1 m/s, and generally do not exceed 0.5 m/s. PMF flows fall within hazard vulnerability classification H1 creating low hazard conditions.

Reliable vehicular and pedestrian access to the site is available during all storm events up to and including the PMF event.

It is anticipated that the existing 450 diameter stormwater pipe located within the site has sufficient capacity to convey local catchment flows generated by all storm events up to and including the 1% AEP storm event.

Notwithstanding, provision should be made on site to ensure buildings are adequately protected against stormwater ingress in the event of a stormwater system blockage (refer to Section 7.2).

7 Flood Risk Management

Based on the foregoing, we offer the following response, having regard for the requirements of Parramatta DCP 2011 Chapter 2, Table 2.4.2.1.2 (refer figure 1 below), Table 2.4.2.1.3 and 'Floodplain Development Manual' (NSW PINR 2005).

Flood Plain Matrix Planning and Development Controls								
Flood Risk Precincts (FRPs)	Planning Consideration	Floor Level	Building Components	Structural Soundness	Flood Affection	Car Parking & Driveway Access	Evacuation	Management & Design
High Flood Risk	Concessional Development	4, 5	1	1	1	1, 5	3, 4, 6	2, 3, 4
	Open Space & Non-Urban	1, 5	1	1	1	2, 4, 6, 7	1, 4	2, 3, 4
	Tourist Related Development	X	X	X	X	X	X	X
	Commercial & Industrial	X	X	X	X	X	X	X
	Residential*	X	X	X	X	X	X	X
	Filling	X	X	X	X	X	X	X
	Subdivision	X	X	X	X	X	X	X
	Critical Uses & Facilities	X	X	X	X	X	X	X
Medium Flood Risk	Concessional Development	4, 5	1	1	1	1, 5	3, 6	2, 3, 4
	Open Space & Non-Urban	1, 5	1	1	2	2, 4, 6, 7	1, 4	2, 3, 4
	Tourist Related Development	2, 5	1	1	1	1, 3, 5, 6, 7	3, 4, 6	2, 3, 4
	Commercial & Industrial	2, 5	1	1	1	1, 3, 5, 6, 7	3, 4, 6	2, 3, 4
	Residential*	2, 5	1	1	1	1, 3, 5, 6, 7	3, 4, 6	2, 3, 4
	Filling	X	X	X	X	X	X	X
	Subdivision				1		5, 3, 4	1
	Critical Uses & Facilities	X	X	X	X	X	X	X
Low Flood Risk	Concessional Development							
	Open Space & Non-Urban					2, 4, 6, 7		
	Tourist Related Development	2, 5			2	1, 3, 5, 6	4	
	Commercial & Industrial	2, 5			2	1, 3, 5, 6	4	
	Residential*	2, 5			2	1, 3, 5, 6	3, 4	
	Filling				1			
	Subdivision				2		5	1
	Critical Uses & Facilities	3	2	2	2	1, 3, 5, 6	2, 4, 6	2, 3, 4
	Sensitive Uses & Facilities	X	X	X	X	X	X	X

Figure 1 City of Parramatta Flood Plain Matrix

7.1 Land Use and City of Parramatta Flood Risk Precincts

In accordance with the requirements Parramatta DCP Table 2.4.2.1.1, a Senior Housing development is defined as a sensitive use facility.

Sensitive use developments are not permissible within any of the three Flood Risk Precincts (FRPs) defined in Parramatta DCP 2011.

The Flood Risk Precincts are defined as follows:

High FRP – land below the 1% AEP flood that is either subject to a high hydraulic hazard or where there are significant evacuation difficulties.

Medium FRP – land below the 1% AEP flood that is not subject to high hydraulic hazard and where there may be some evacuation difficulties.

Low FRP – all other land within the floodplain (i.e. within the extent of the probable maximum flood) but not identified within either the High Flood Risk or the Medium Flood Risk Precinct.

Based on the post development flood mapping described in Section 6.2, only the drainage easement along the site's eastern boundary is located within the Low Flood Risk Precinct, however, the remainder of the site is flood free during all flood events.

7.2 Recommendations

Although it has been determined from our site specific assessment that the proposed development is not located within a Flood Risk Precinct and PMF floodwaters within the drainage easement do not pose any risk to occupants of the site, we recommend additional protection be provided to the units located adjacent to the drainage easement to RL 53.0 m AHD. This approach is typical for sensitive use development located adjacent to a drainage easement and provides additional protection from possible nuisance flows.

7.3 Evacuation

Reliable pedestrian and vehicular access and egress is available to and from the site during all storm events up to and including the PMF event.

8 Conclusion

Based on the foregoing, we have formed the view that the proposed seniors housing development is not located within any of the three Flood Risk Precincts defined by the City of Parramatta and subsequently meets the relevant flood related requirements of Parramatta DCP 2011. Additionally, the proposal is consistent with the principles outlined in the NSW Floodplain Development Manual for a development for this nature.

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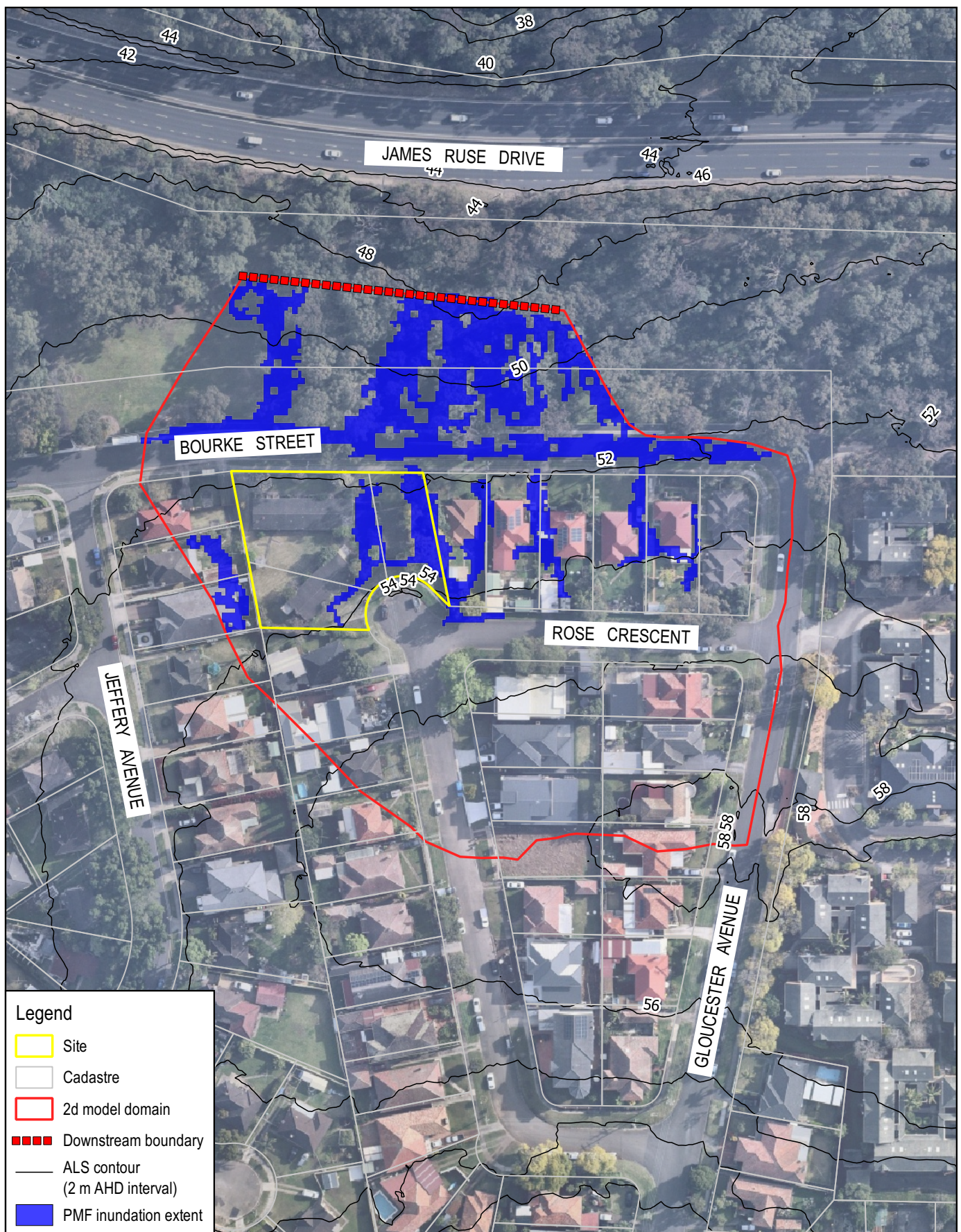
Nathan Broadbent
BEng (Civil)(Hons) MIEAust

9 References

Australian Institute for Disaster Resilience (AIDR). (2017). *Australian Disaster Resilience Guideline 7-3: Flood Hazard*. East Melbourne, VIC: Author.

New South Wales Department of Infrastructure, Planning and Natural Resources (NSW DIPNR). (2005). *Floodplain Development Manual: the management of flood liable land*. Sydney, NSW: Author.

Annexure A ACOR Consultants (CC) Pty Ltd Flood Plans, Reference CC210393, Sheets F1 to F12, Revision B, Dated 8 December 2023.



Legend

- Site
- Cadastre
- 2d model domain
- Downstream boundary
- ALS contour
(2 m AHD interval)
- PMF inundation extent

Title: TUFLOW MODEL PLAN



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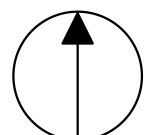


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Project: PROPOSED SENIORS LIVING
DEVELOPMENT
LOTS 2, 3 & 4 DP 215342 (No. 26)
ROSE CRESCENT
NORTH PARRAMATTA

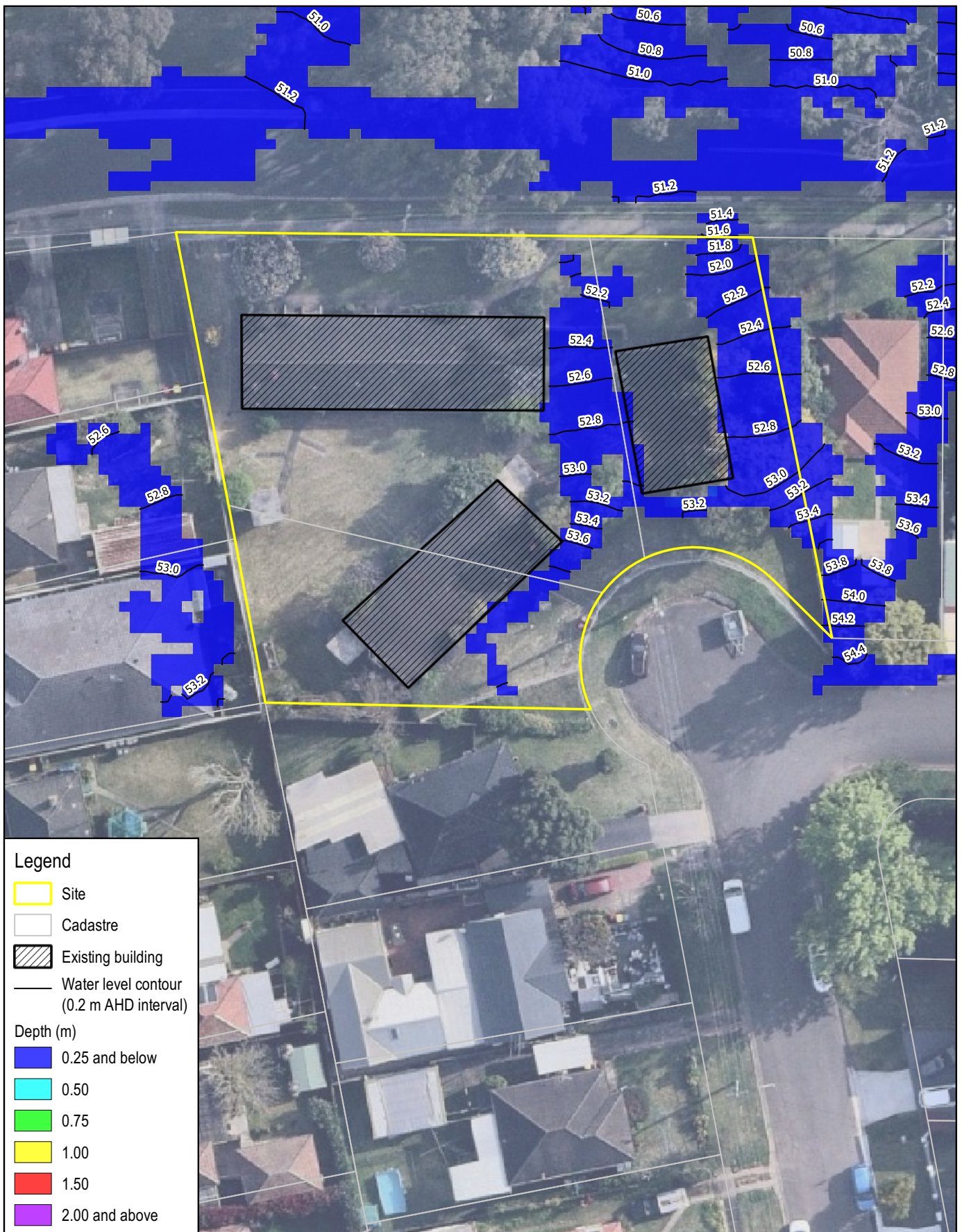
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Title: PRE-DEVELOPMENT PMF FLOOD DEPTH AND LEVEL PLAN



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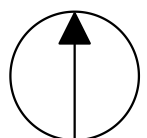


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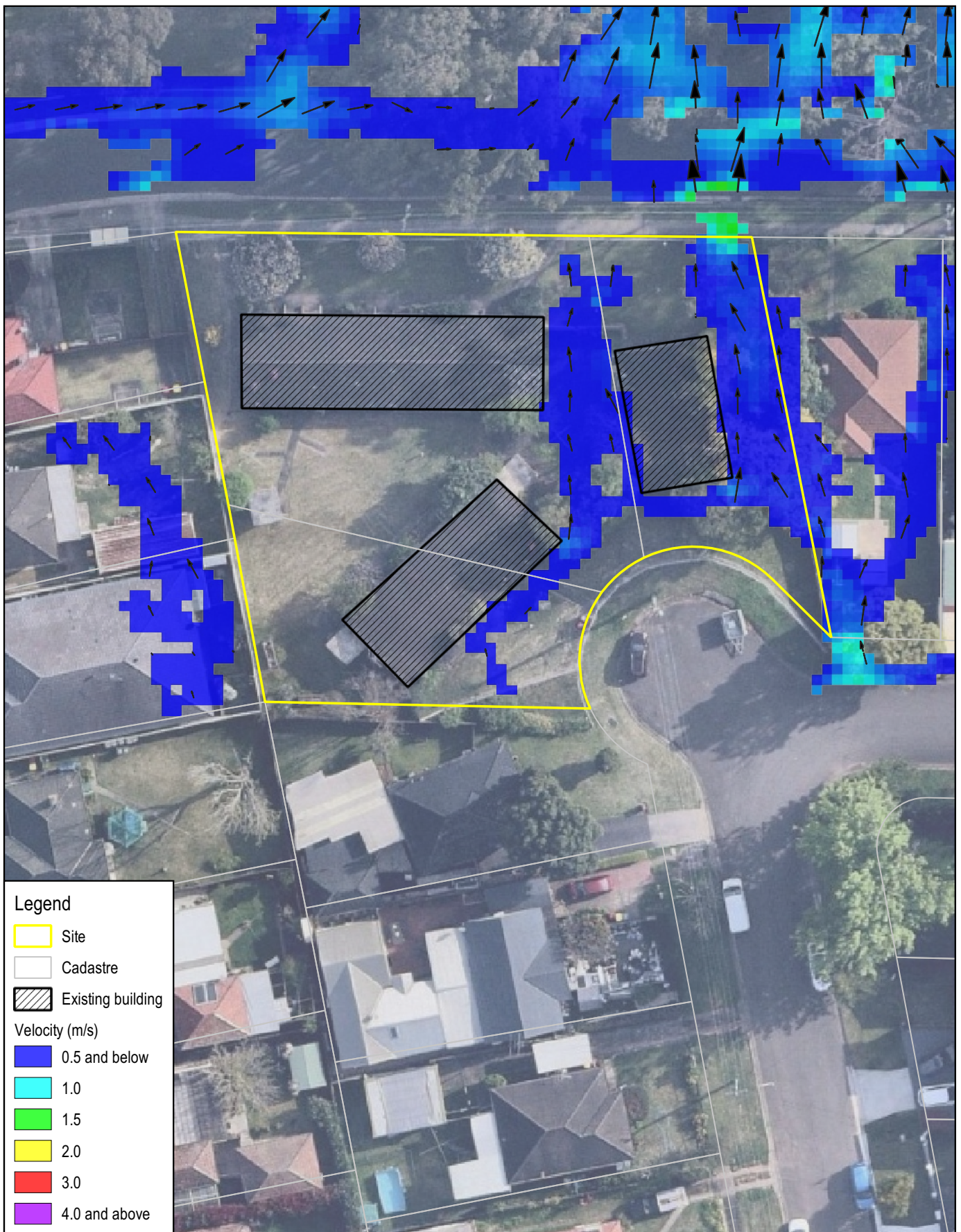
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Legend

- Site
- Cadastre
- Existing building
- Velocity (m/s)
- 0.5 and below
- 1.0
- 1.5
- 2.0
- 3.0
- 4.0 and above

Title: PRE-DEVELOPMENT PMF FLOOD VELOCITY PLAN



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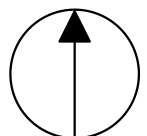


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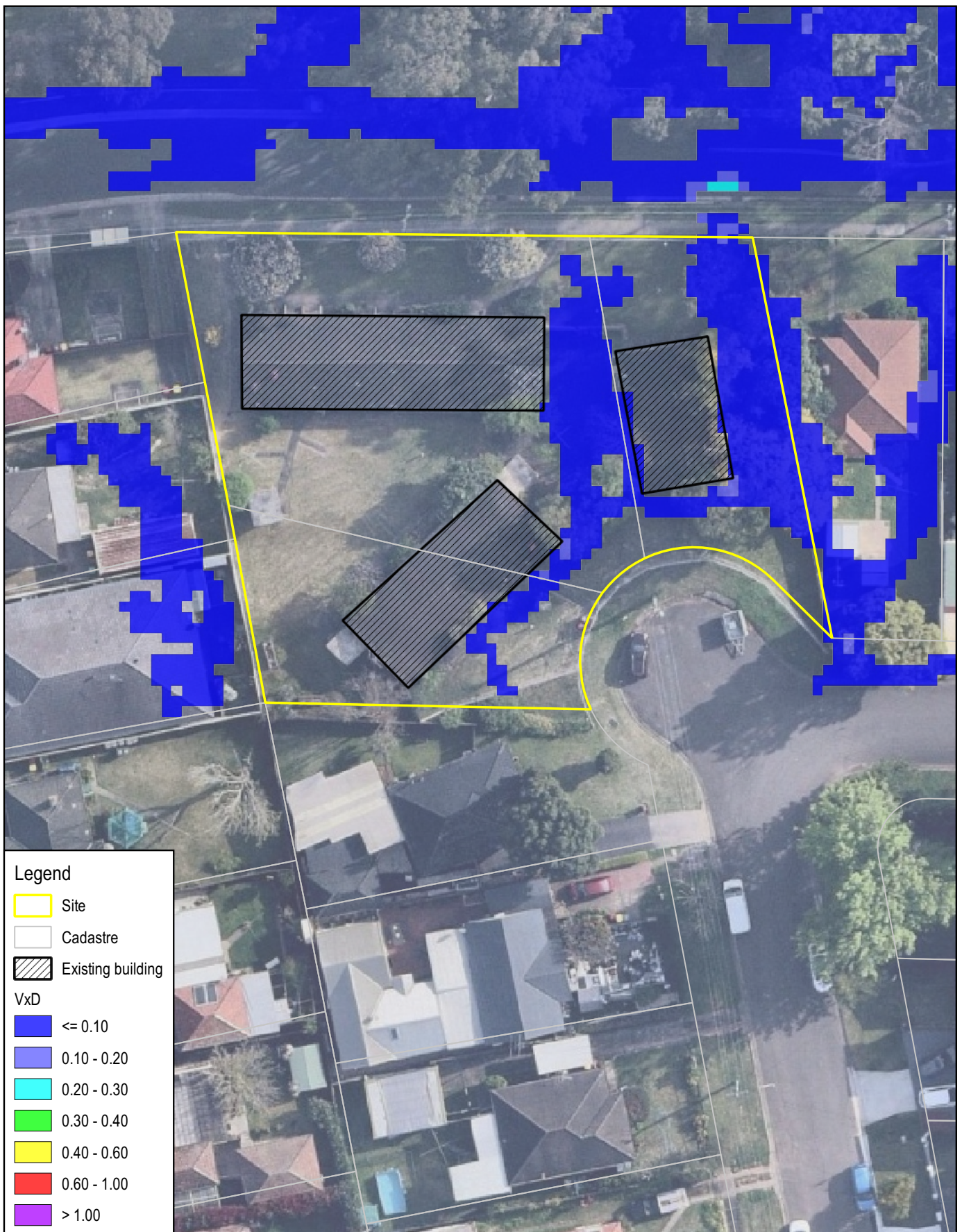
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Title: PRE-DEVELOPMENT PMF FLOOD VELOCITY x DEPTH PRODUCT PLAN



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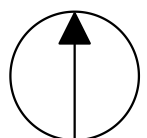


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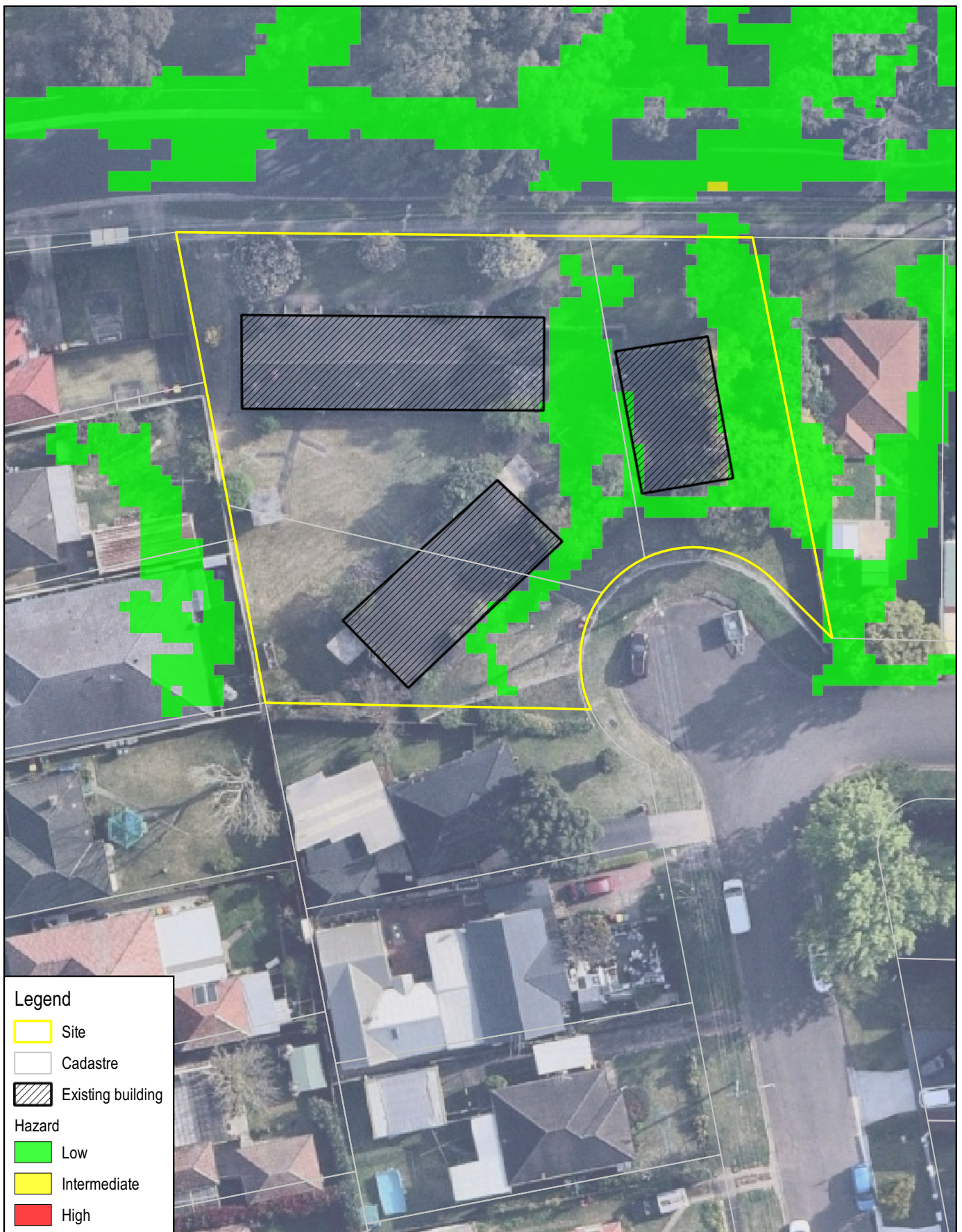
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Legend

- Site
- Cadastre
- Existing building
- Hazard
- Low
- Intermediate
- High

Title: PRE-DEVELOPMENT PMF PROVISIONAL FLOOD HAZARD PLAN



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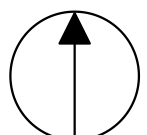


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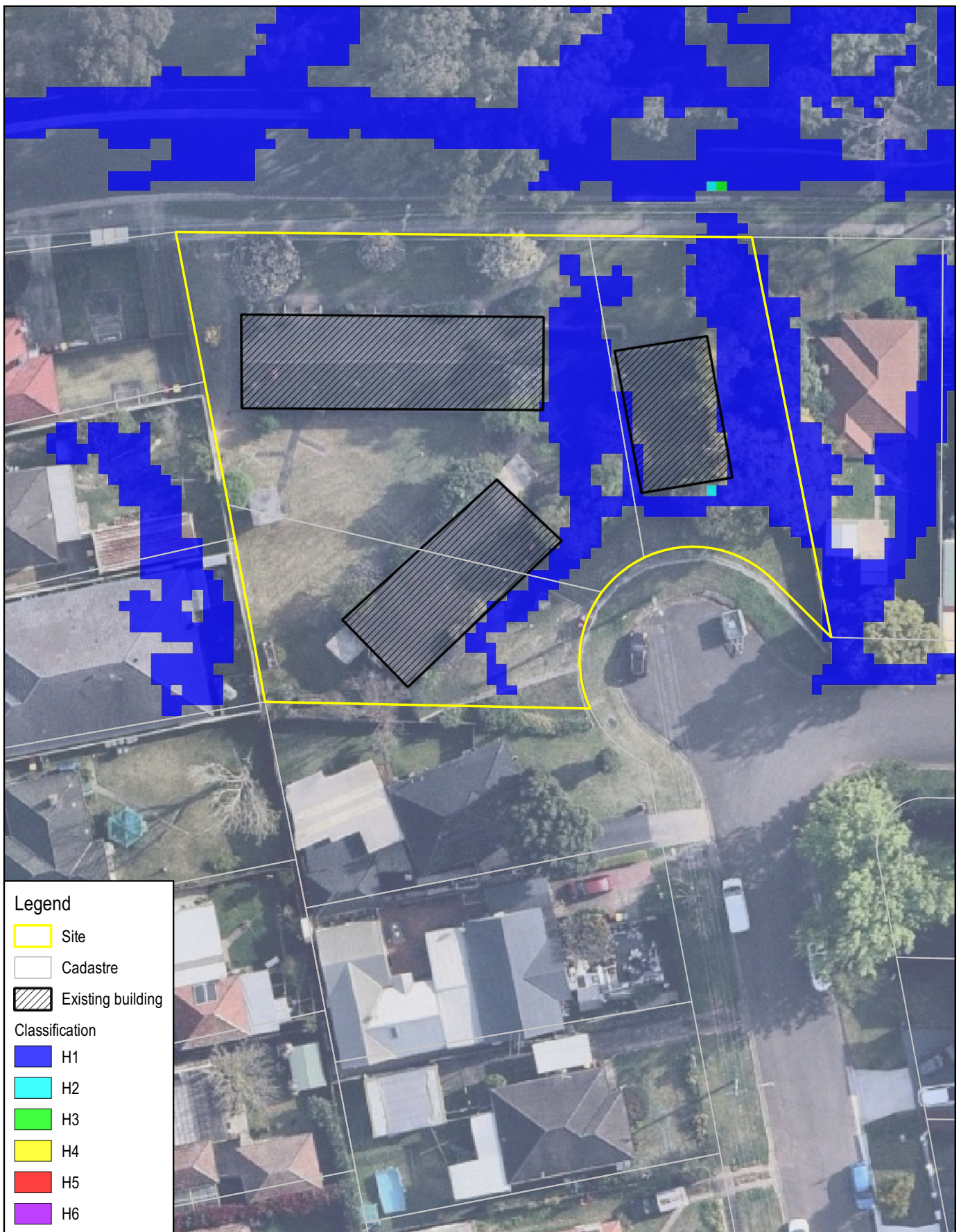
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Title: PRE-DEVELOPMENT PMF FLOOD HAZARD VULNERABILITY CLASSIFICATION PLAN



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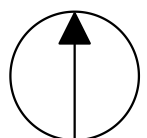


ENGINEERS | MANAGERS | INFRASTRUCTURE PLANNERS | DEVELOPMENT CONSULTANTS

Project: PROPOSED SENIORS LIVING
DEVELOPMENT
LOTS 2, 3 & 4 DP 215342 (No. 26)
ROSE CRESCENT
NORTH PARRAMATTA

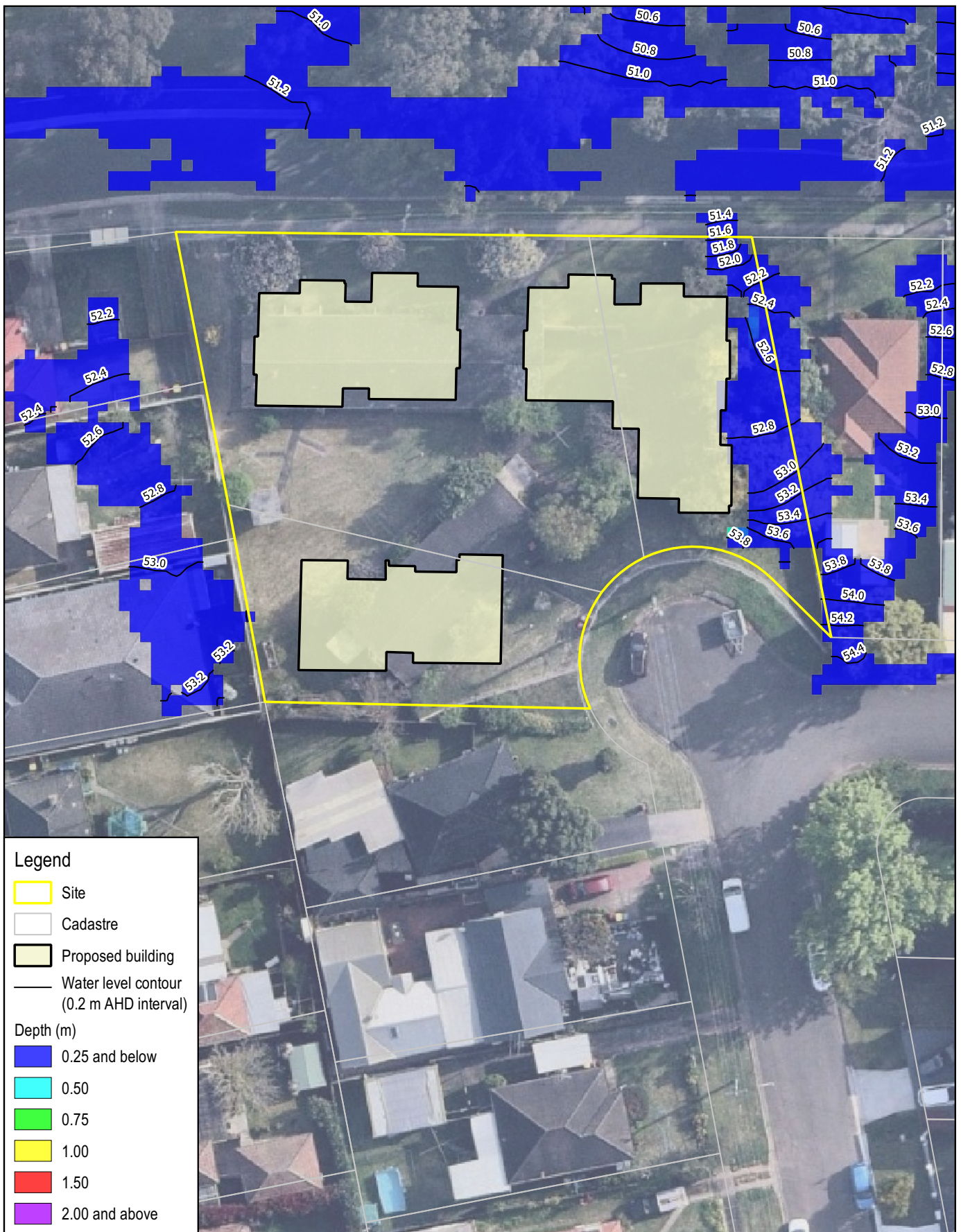
Client: BARRY RUSH & ASSOCIATES

North:



Job Number: CC210393	Sheet: F6	Revision: B	Date: 08.03.2023	Designed: BK	Drawn: NB	Scale: 1:500
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Title: POST-DEVELOPMENT PMF FLOOD DEPTH AND LEVEL PLAN



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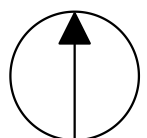


ENGINEERS | MANAGERS | INFRASTRUCTURE PLANNERS | DEVELOPMENT CONSULTANTS

Project: PROPOSED SENIORS LIVING
DEVELOPMENT
LOTS 2, 3 & 4 DP 215342 (No. 26)
ROSE CRESCENT
NORTH PARRAMATTA

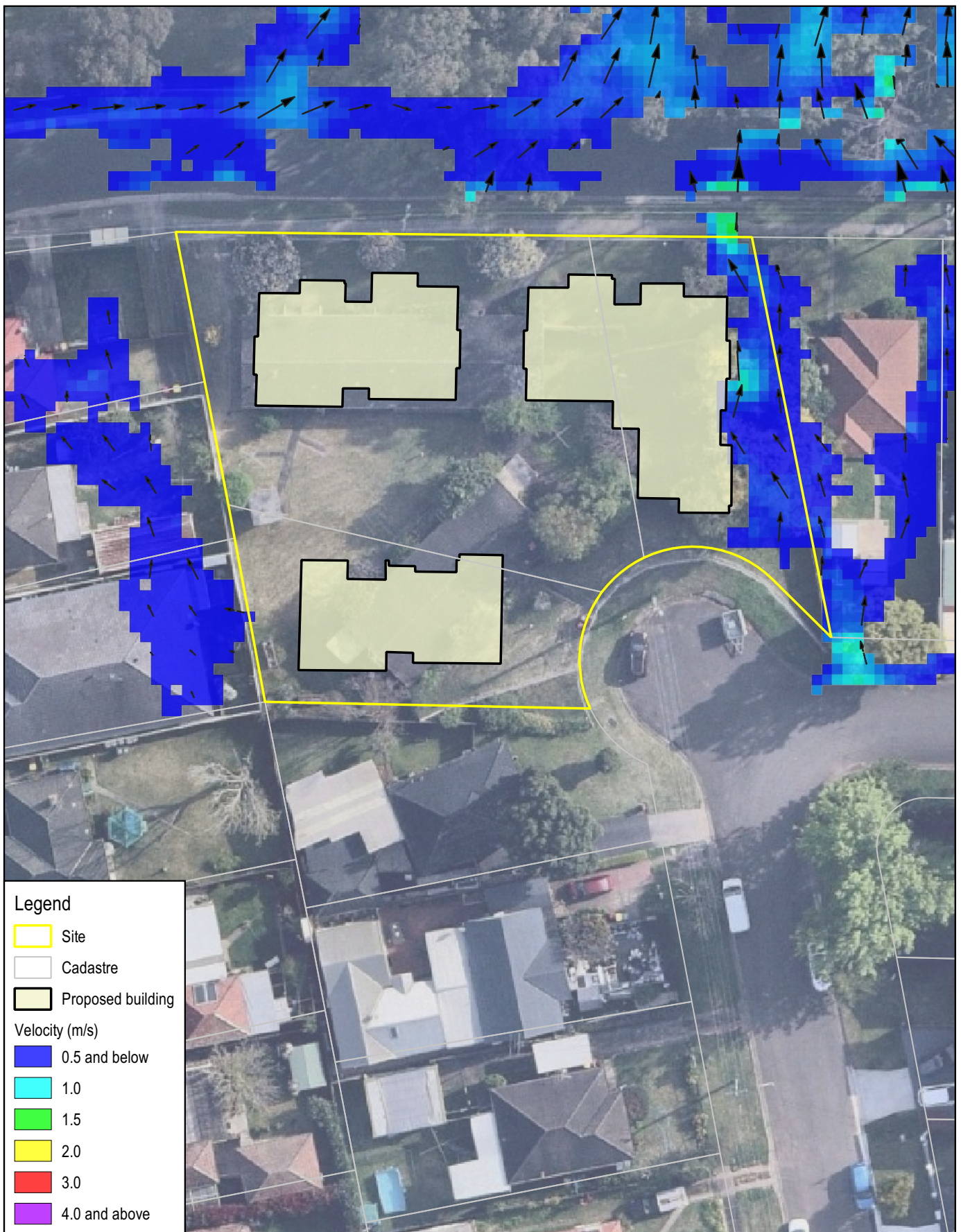
Client: BARRY RUSH & ASSOCIATES

North:



Job Number: CC210393	Sheet: F7	Revision: B	Date: 08.03.2023	Designed: BK	Drawn: NB	Scale: 1:500
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Legend

- Site
- Cadastre
- Proposed building

Velocity (m/s)

- 0.5 and below
- 1.0
- 1.5
- 2.0
- 3.0
- 4.0 and above

Title: POST-DEVELOPMENT PMF FLOOD VELOCITY PLAN



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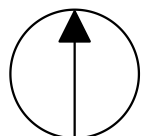


ENGINEERS | MANAGERS | INFRASTRUCTURE PLANNERS | DEVELOPMENT CONSULTANTS

Project: PROPOSED SENIORS LIVING
DEVELOPMENT
LOTS 2, 3 & 4 DP 215342 (No. 26)
ROSE CRESCENT
NORTH PARRAMATTA

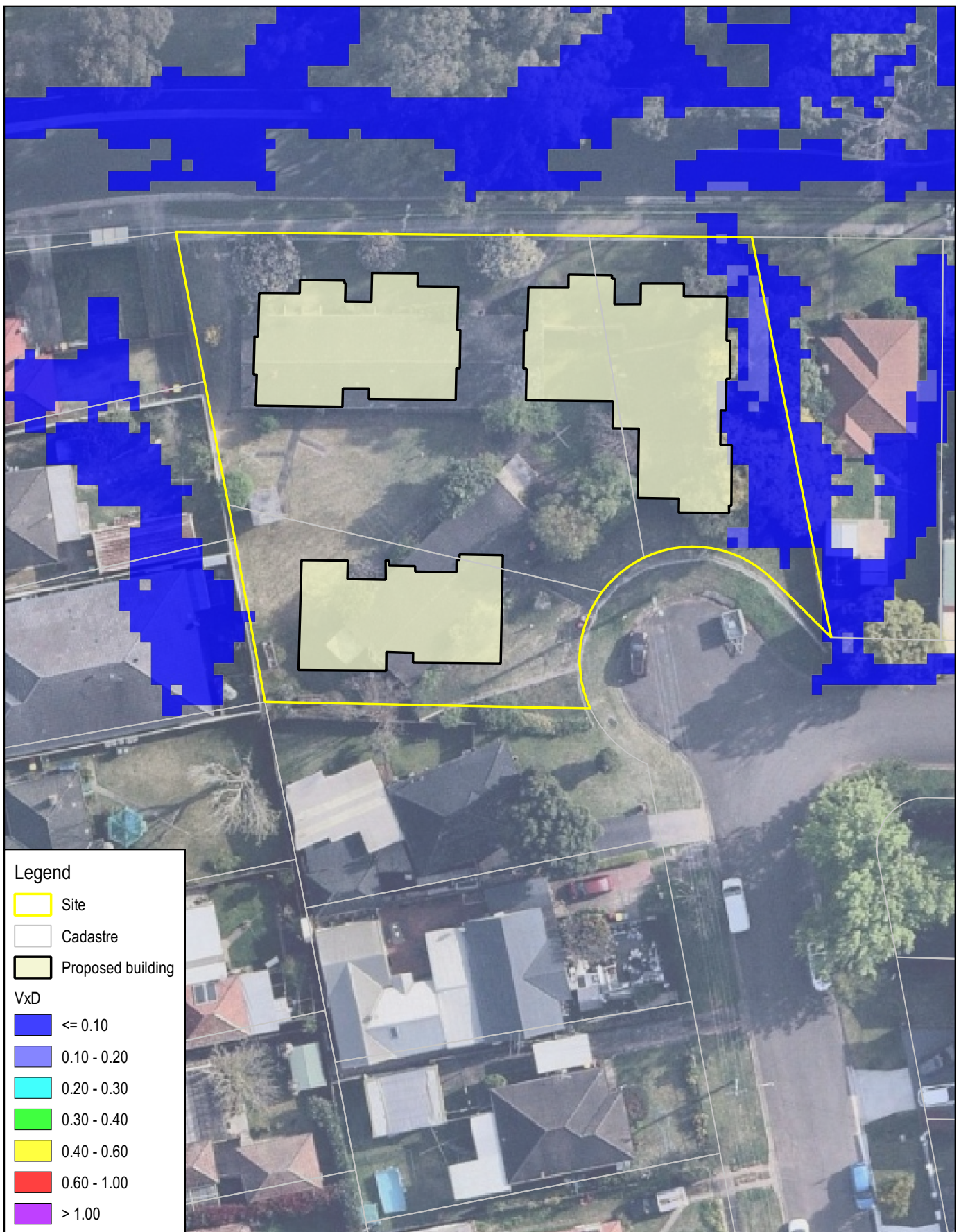
Client: BARRY RUSH & ASSOCIATES

North:



Job Number: CC210393	Sheet: F8	Revision: B	Date: 08.03.2023	Designed: BK	Drawn: NB	Scale: 1:500
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Legend

- Site
- Cadastre
- Proposed building

VxD

- <= 0.10
- 0.10 - 0.20
- 0.20 - 0.30
- 0.30 - 0.40
- 0.40 - 0.60
- 0.60 - 1.00
- > 1.00

Title: POST-DEVELOPMENT PMF FLOOD VELOCITY x DEPTH PRODUCT PLAN



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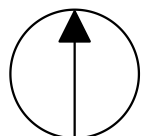


ENGINEERS | MANAGERS | INFRASTRUCTURE PLANNERS | DEVELOPMENT CONSULTANTS

Project: PROPOSED SENIORS LIVING
DEVELOPMENT
LOTS 2, 3 & 4 DP 215342 (No. 26)
ROSE CRESCENT
NORTH PARRAMATTA

Client: BARRY RUSH & ASSOCIATES

North:



Job Number: CC210393	Sheet: F9	Revision: B	Date: 08.03.2023	Designed: BK	Drawn: NB	Scale: 1:500
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Legend

- Site
- Cadastre
- Proposed building
- Hazard
- Low
- Intermediate
- High

Title: POST-DEVELOPMENT PMF PROVISIONAL FLOOD HAZARD PLAN



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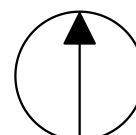


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Project: PROPOSED SENIORS LIVING
DEVELOPMENT
LOTS 2, 3 & 4 DP 215342 (No. 26)
ROSE CRESCENT
NORTH PARRAMATTA

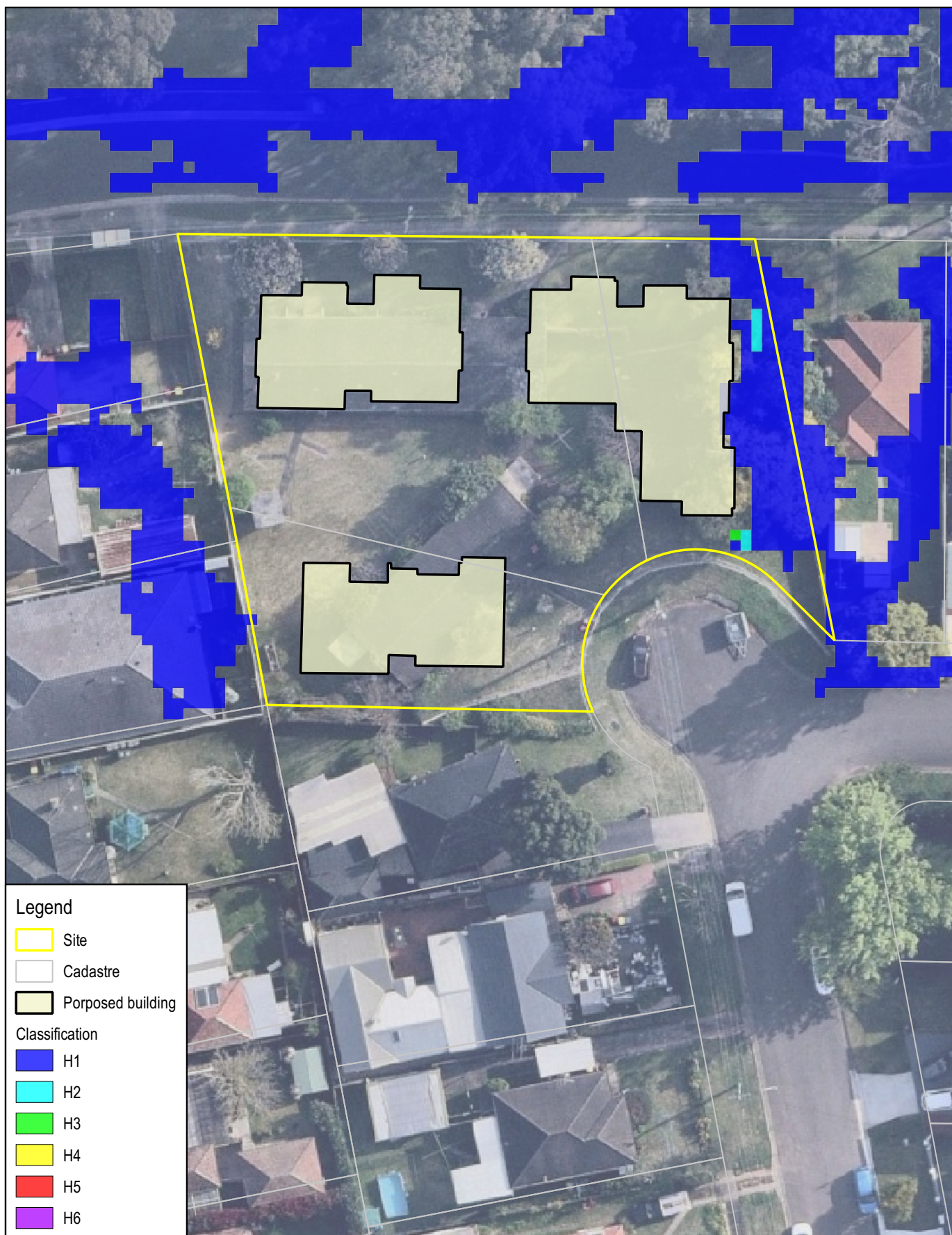
Client: BARRY RUSH & ASSOCIATES

North:



Job Number: CC210393	Sheet: F10	Revision: B	Date: 08.03.2023	Designed: BK	Drawn: NB	Scale: 1:500
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Title: POST-DEVELOPMENT PMF FLOOD HAZARD VULNERABILITY CLASSIFICATION PLAN



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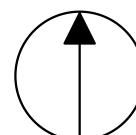


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Project: PROPOSED SENIORS LIVING
DEVELOPMENT
LOTS 2, 3 & 4 DP 215342 (No. 26)
ROSE CRESCENT
NORTH PARRAMATTA

Client: BARRY RUSH & ASSOCIATES

North:



Job Number: CC210393	Sheet: F11	Revision: B	Date: 08.03.2023	Designed: BK	Drawn: NB	Scale: 1:500
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IF NO RESULTS ARE SHOWN THE SITE IS NOT IMPACTED BY 1% AEP FLOODWATERS



Legend

- Site
- Cadastre
- Proposed building
- Depth (m)
- 0.25 and below
- 0.50
- 0.75
- 1.00
- 1.50
- 2.00 and above

Title: POST-DEVELOPMENT 1% AEP FLOOD DEPTH PLAN



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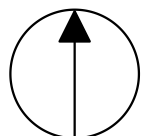


ENGINEERS | MANAGERS | INFRASTRUCTURE PLANNERS | DEVELOPMENT CONSULTANTS

Project: PROPOSED SENIORS LIVING
DEVELOPMENT
LOTS 2, 3 & 4 DP 215342 (No. 26)
ROSE CRESCENT
NORTH PARRAMATTA

Client: BARRY RUSH & ASSOCIATES

North:



Job Number: CC210393	Sheet: F12	Revision: B	Date: 08.03.2023	Designed: BK	Drawn: NB	Scale: 1:500
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Annexure B Architectural Plans prepared by Barry Rush and Associates Pty Ltd, Project No. BGXWX, Sheets A01-A17, Issue A, various dates.

DA PLANS

SENIORS HOUSING DEVELOPMENT

26 ROSE CRESCENT AND 69-73 BOURKE STREET, NORTH PARRAMATTA

LOTS 2, 3 & 4 in DP 215342

BSA Reference: 18084

DEVELOPMENT DATA



February 2022		BSA Reference: 10008	
Building Sustainability Assessments		Ph: (02) 4962 3439	
enquiries@buildingsustainability.net.au		www.buildingsustainability.net.au	
<p align="center">Important Note</p> <p>The following specification was used to achieve the thermal performance values indicated on the Assessor Certificate. If the proposed construction varies to those detailed below then the Assessor and NatHERS certificates will no longer be valid. Assessments assume that the BCA provisions for building sealing & ventilation are complied with at construction.</p> <p>In NSW both BASIX & the BCA variations must be complied with, in particular the following:</p> <ul style="list-style-type: none"> - Thermal construction in accordance with Vol 1 Section J1.2 or Vol 2 Part 3.12.1.1 - Thermal breaks for Class 1 dwellings in accordance with Part 3.12.1.2(c) & 3.12.1.4(d) - Floor insulation for Class 1 dwellings as per Part 3.12.1.5(a)(iii), (iii) & (e) or (c), (d) & (e) - Building sealing in accordance with Section J3 or Part 3.12.3.1 to 3.12.3.6. 			
Thermal Performance Specifications (does not apply to garage)			
External Wall Construction		<i>Added Insulation</i>	
Cavity Brick	R0.74 to inside face of masonry under plasterboard		
Reverse Brick Veneer	R2.0		
Internal Wall Construction		<i>Added Insulation</i>	
Brick (internal to units)	none		
Cavity Brick (common area walls)	R0.74 to inside face of masonry under plasterboard		
Cavity Brick (party walls)	none		
Ceiling Construction		<i>Added Insulation</i>	
Plasterboard	R3.5 to ceilings adjacent to roof space		
Roof Construction	Colour (Solar Absorptance)	<i>Added Insulation</i>	
Metal	Any	Foil + R1.0 blanket	
Floor Construction		Covering	<i>Added Insulation</i>
Concrete	As drawn (if not noted default values used)		None
Windows	Glass and frame type	U value	SHGC Range Area sq m
Performance glazing Type A		2.90	0.40 - 0.48 Units 1,3,5 only
Performance glazing Type B		2.90	0.46 - 0.56 Units 1,3,5 only
Performance glazing Type A		4.30	0.42 - 0.52 Units 2,4,6,9 only
Performance glazing Type B		4.30	0.48 - 0.58 Units 2,4,6,9 only
Performance glazing Type A		5.40	0.44 - 0.54 All other glazing
Performance glazing Type B		5.40	0.52 - 0.64 All other glazing
Type A windows are awning windows, bifolds, casements, tilt 'n' turn windows, entry doors, french doors			
Type B windows are double hung windows, sliding windows & doors, fixed windows, stacker doors, louvers			
Skylights	Glass and frame type	U SHGC Area sq m	Detail
U and SHGC values are according to AFRC. Alternate products may be used if the U value is lower & the SHGC is within the range specified			
Shade elements		(eaves, verandahs, awnings etc)	
All shade elements modelled as drawn			
Ceiling Penetrations		(downlights, exhaust fans, flues etc)	
Modelled as drawn and/or to comply with the ventilation and sealing requirements of the BCA			
Ducting is modelled at 150mm. No insulation losses from downlighting have been modelled.			
Additional Notes			
Nil			

LEGEND

AGL	ADJUSTABLE GLAZED LOUVRES	P	PANTRY
AN. AL.	ANODISED ALUMINIUM	PR1	PAINTED RENDER COLOUR 1
BOE	BRICK ON EDGE	PR2	PAINTED RENDER COLOUR 2
BR	BROOM CUPBOARD	PVC	PHOTOVOLTAIC CELLS
CC	COLOURED CONCRETE COLOUR	R	ROBE
CL	CLOTHES LINE	REF	REFRIGERATOR LOCATION
CP	CONCRETE PAVING BROOM FINISH	RHD	RANGEHOOD
CPT	CARPET	RL	RELATIVE LEVEL
CT	CERAMIC TILE	RWT	RAINWATER TANK
DP	DOWNPIPE	S	KITCHEN SINK
F1	FENCE 1000mm HIGH METAL PALISADE FENCE	SB	STAIR BALUSTRADE
F2	FENCE 1800mm HIGH COLORBOND METAL FENCE	SC	STEEL COLUMN
F3	FENCE 1500/1800mm HIGH SLATTED METAL FENCE	SHR	SHOWER
FAL	FIXED ALUMINIUM LOUVRES	SMC	STANDING SEAM METAL CLADDING
FB1	FACE BRICK COLOUR 1	STC	STEEL TROWEL CONCRETE FINISH
FB2	FACE BRICK COLOUR 2	SWP	STORMWATER PIT
FCL	FINISHED CEILING LEVEL	T	LAUNDRY TUB
FFL	FINISHED FLOOR LEVEL	TOF	TOP OF FENCE
G	GATE	TOK	TOP OF KERB
GD	GRATED STRIP DRAIN	TOW	TOP OF WALL
HP	HOTPLATE	TOP	TOP OF PARAPET
HR	HANDRAIL	TPZ	TREE PROTECTION ZONE
HT	GARDEN HOSE TAP	UBO	UNDER BENCH OVEN
HWU	HOT WATER UNIT	VJ	VERTICAL JOINT
LB	LETTERBOXES - RECESSED INTO WALL	VTY	VANITY
LN	LINEN CUPBOARD	WA	SUN AWNING
MC	METAL CLADDING	WC	TOILET SUITE
MDR	METAL DECK ROOF	WM	WASHING MACHINE
MSB	MAIN SWITCH BOARD	WO	WALL OVEN
NBN	NBN CONNECTION		

DRAWING SCHEDULE

ARCHITECTURAL
COVER SHEET
SITE ANALYSIS PLAN
EXISTING SITE PLAN
SITE/ GROUND FLOOR PLAN
FIRST FLOOR PLAN
ROOF PLAN
ELEVATIONS
SECTIONS
EXTERIOR COLOUR SCHEDULE
DEMOLITION PLAN
BLOCK ANALYSIS PLAN
SHADOW DIAGRAMS MID WINTER
VIEWS FROM SUN DIAGRAM
STREETSCAPE PERSPECTIVES
AREAS OF EXCAVATION AND FILL
LANDSCAPE DATA PLAN
ELEVATION SHADOW DIAGRAMS 23 ROSE CRES

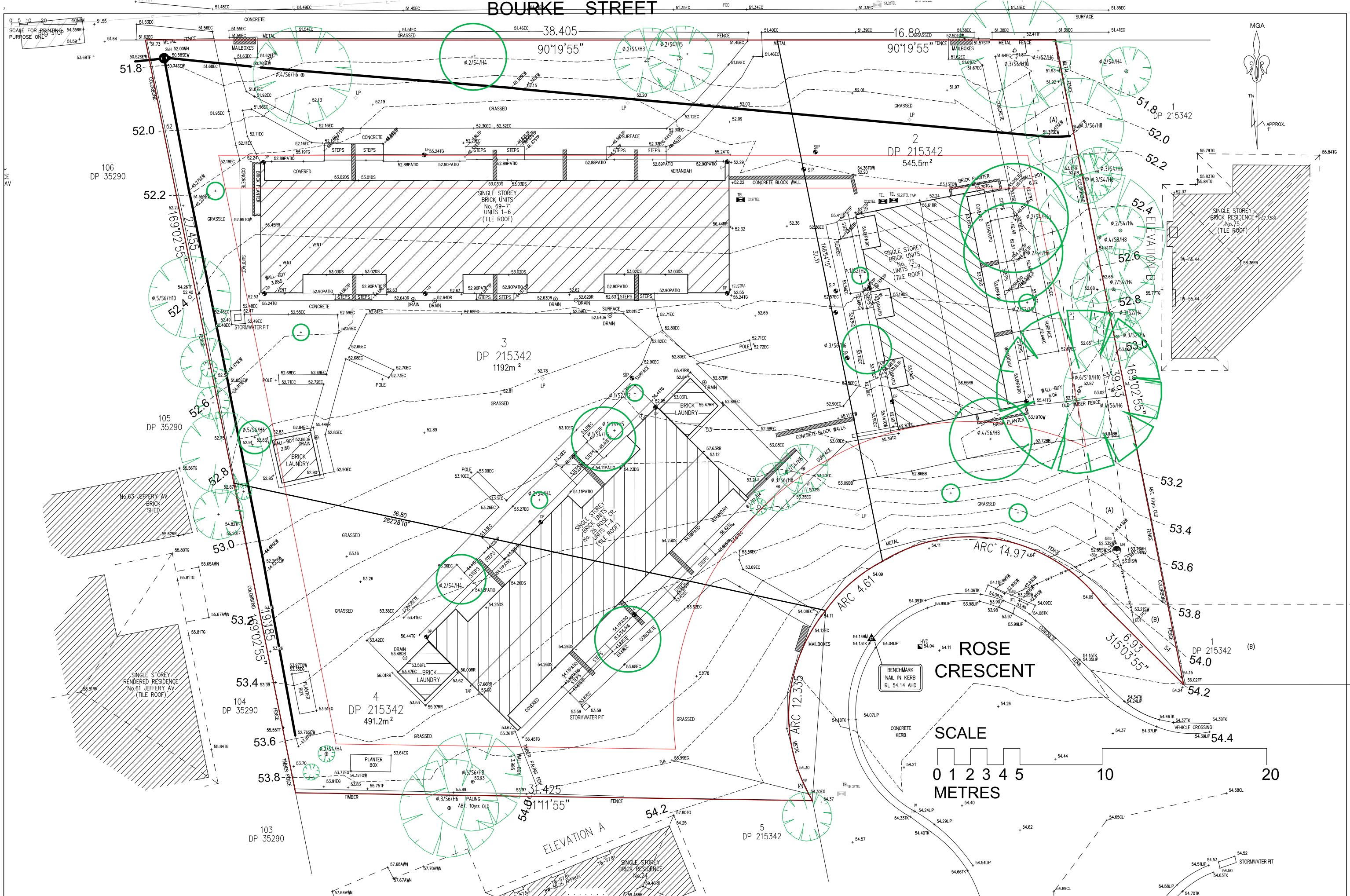
CIVIL
COVER SHEET & NOTES
STORMWATER MANAGEMENT PLAN
STORMWATER MANAGEMENT DETAILS SHEET No1
OSD CALCULATION SHEET & MAINTENANCE SCHEDULE
OSD CHECKLIST SHEET 1 OF 2
OSD CHECKLIST SHEET 2 OF 2
EROSION & SEDIMENT CONTROL PLAN
EROSION & SEDIMENT CONTROL NOTES & DETAILS

REFERENCE No

HYDRAULIC		
COVER SHEET	HY-DA-000	3
SITE SERVICES	HY-DA-100	3
ELECTRICAL		
COVER SHEET	EL-DA-000	3
SITE RETICULATION	EL-DA-100	3
LANDSCAPE		
LANDSCAPE PLAN	LA 1 OF 2	D
LANDSCAPE DETAILS AND SPECIFICATION	LA 2 OF 2	D
SURVEY		
BY: TSS TOTAL SURVEYING SOLUTIONS		
DETAIL & CONTOUR SURVEY	S 1 OF 4	1
DETAIL & CONTOUR SURVEY	S 2 OF 4	1
LONGITUDINAL SECTIONS	S 3 OF 4	-
LONGITUDINAL SECTIONS	S 4 OF 4	-
DATE: 23/04/2021		
DETAIL & CONTOUR SURVEY		

DWELLINGS					SOLAR ACCESS	
Number	Type*	Beds	Area (m ²)	POS*	LIVING	POS
1	Ground	2	75	22	6 hr	4 hr
2	First	2	75	11	6 hr	6 hr
3	Ground	2	75	23	6 hr	4 hr
4	First	2	75	11	6 hr	6 hr
5	Ground	2	75	23	6 hr	4 hr
6	First	2	75	11	6 hr	6 hr
7	Ground	2	75	73	6 hr	4 hr
8	First	2	75	11	6 hr	6 hr
9	Ground	1	60	85	3 hr	3 hr
10	First	1	60	11	3 hr	2 hr
11	Ground	1	56	47	6 hr	4 hr
12	First	1	56	11	6 hr	6 hr
13	Ground	1	56	81	6 hr	4 hr
14	First	1	56	11	6 hr	6 hr

 <p>LOCKED BAG 5022 PARRAMATTA NSW 2124 PHONE No 1800 738 718 https://www.dppe.nsw.gov.au/land-and-housing-corporation</p>	 Barry Rush & Associates Pty Ltd Architects, Nominated Architect: Barry John Rush ARB Registration No 3753 Suite 25A, 2 Beattie Street, Balmain, NSW Phone: (02) 9555 8028 Email: info@barryrush.com.au www.barryrush.com.au				ARCHITECT BARRY RUSH & ASSOCIATES PTY LTD PH (02) 9555 8028	CIVIL ACOR CONSULTANTS PTY LTD PH (02) 4324 3499	BUSINESS PARTNER:	PROJECT: SENIORS DEVELOPMENT 26 ROSE CRESCENT AND 69-73 BOURKE STREET NORTH PARRAMATTA LOTS 2, 3 & 4 in DP 215342	TITLE: COVER SHEET		STATUS: DA	
					PROJECT MANAGER LAND & HOUSING CORPORATION PH (02) 8753 9000	HYDRAULIC CONSULTANT MARLINE NEWCASTLE PTY LTD PH (02) 4925 9300 FAX (02) 4926 3811			DATE 2/05/22	SCALE 1:100	PROJ. -	PROJECT NO. BGXWX
		A	23/03/22	DA PLAN ISSUE					STAGE: MB	DRAWING: MB	CHECKED: BR	NOMINATED ARCHITECT: BR
		REV.	DATE	NOTATION/AMENDMENT								
					LANDSCAPE CONSULTANT MARLINE NEWCASTLE PTY LTD PH (0603) 164 198	ELECTRICAL CONSULTANT MARLINE NEWCASTLE PTY LTD PH (02) 4925 9300 FAX (02) 4926 3811						
		DO NOT SCALE DRAWINGS. CHECK ALL DIMENSIONS ON SITE. FIGURED DIMENSIONS TAKE PRECEDENCE.										
								FILE: DA Rose Cr N Parramatta Feb2022 Cover.dwg	PLOTTED: 24/05/2022 11:33 AM	TYPE: A	SHEET: A01	REV.: A



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PARRAMATTA NSW 2124
PHONE NO 1800 738 718
<https://www.dple.nsw.gov.au/land-and-housing-corporation>



Barry Rush & Associates Pty Ltd
Architects, Nominated Architect: Barry John Rush
ARS Registration No 3753
Suite 25A, 2 Beattie Street, Balmain, NSW
Phone: (02) 9555 8028 Email: info@barryrush.com.au
www.barryrush.com.au

REV	DATE	NOTATION/AMENDMENT
A	23/03/22	DA PLAN ISSUE
REV	DATE	NOTATION/AMENDMENT

DO NOT SCALE DRAWINGS. CHECK ALL DIMENSIONS ON SITE.
FIGURED DIMENSIONS TAKE PRECEDENCE.

ARCHITECT
BARRY RUSH & ASSOCIATES PTY LTD
PH (02) 9555 8028
PROJECT MANAGER
LAND & HOUSING CORPORATION
PH (02) 9753 9000
LANDSCAPE CONSULTANT
GREENLAND DESIGN PTY LTD
PH 0403 164 198

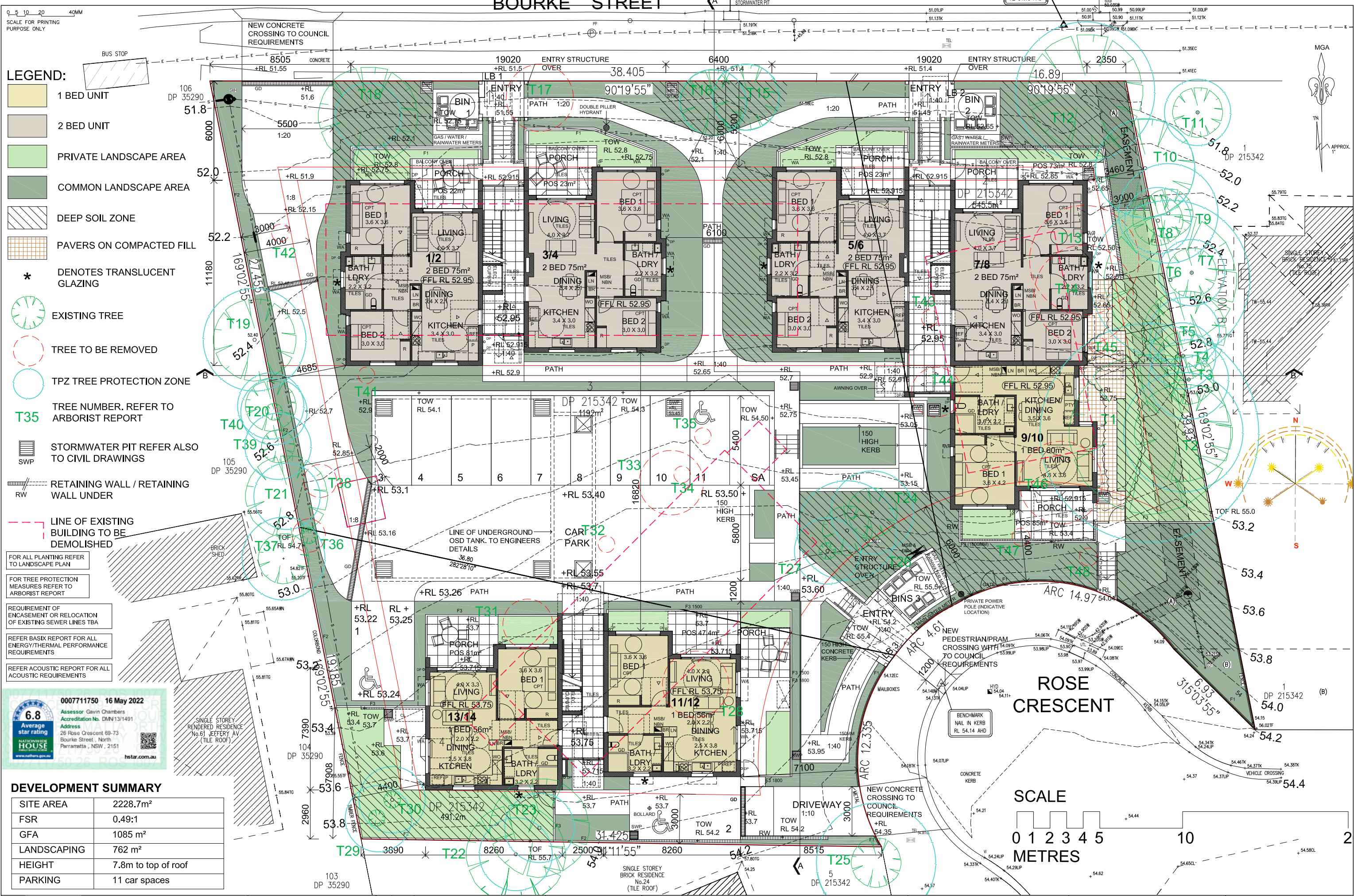
CIVIL
ACOR CONSULTANTS PTY LTD
PH (02) 4324 3489
HYDRAULIC CONSULTANT
MARLINE NEWCASTLE PTY LTD
PH (02) 4925 9300 FAX (02) 4928 3811
ELECTRICAL CONSULTANT
MARLINE NEWCASTLE PTY LTD
PH (02) 4925 9300 FAX (02) 4928 3811

BUSINESS PARTNER:

PROJECT:
**SENIORS DEVELOPMENT
26 ROSE CRESCENT AND
69-73 BOURKE STREET
NORTH PARRAMATTA
LOTS 2, 3 & 4 in DP 215342**

TITLE:
EXISTING SITE PLAN

STATUS:	DA	SCALE:	1:100	PROJ.:	BGXWX	PROJ. NO.:	
DATE:	2/05/22	DRAWN:	MB	CHECKED:	BR	DESIGNED/NOTED:	BR
TYPE:	A	SHEET:	A03	REV:	A		







0007711750 16 May 2022
Assessor: Gavin Chambers
Accreditation No. DMN13/1491
Address: 26 Rose Crescent 69-73
Bourke Street, North
Parramatta, NSW, 2151
www.nsw.gov.au
hstar.com.au

STOREY
RESIDENCE
EFFERY AV
(ROOF)

106
DP 35290

METAL WINDOW SUN
SHADE AWNING
POWDERCOAT FINISH

169'02'55"

27'45"

105
DP 35290

BRICK SHED

104
DP 35290

19'18"

169'02'55"

19'18"

169'02'55"

19'18"

169'02'55"

19'18"

169'02'55"

19'18"

169'02'55"

19'18"

169'02'55"

19'18"

169'02'55"

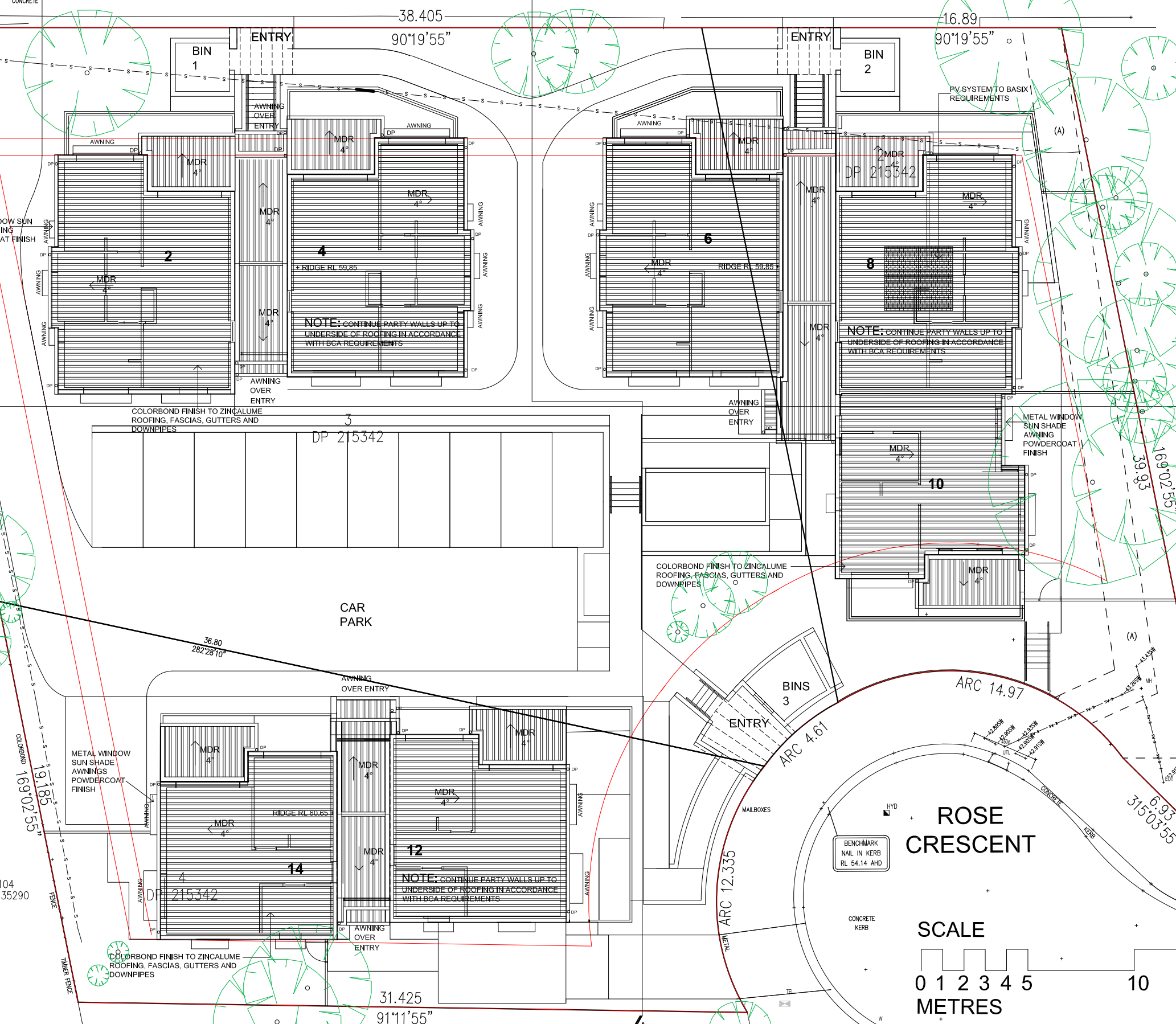
19'18"

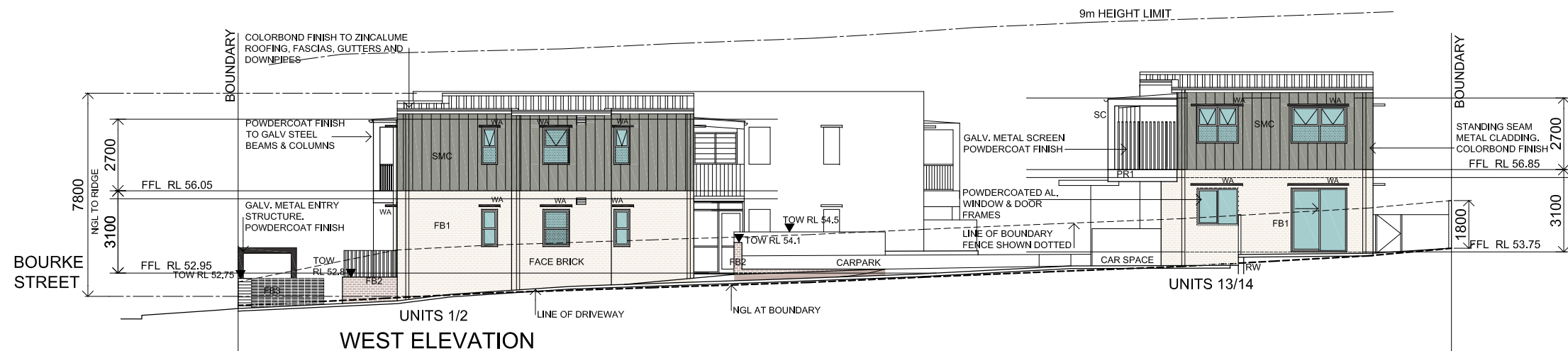
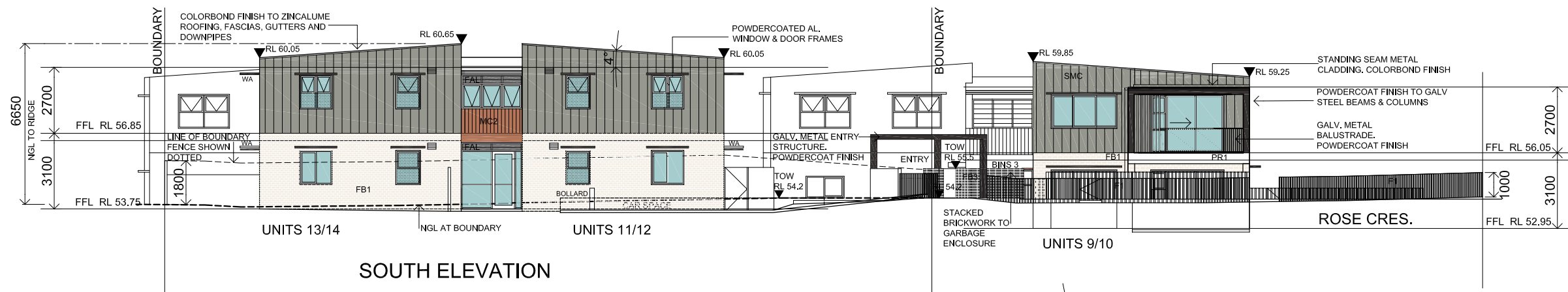
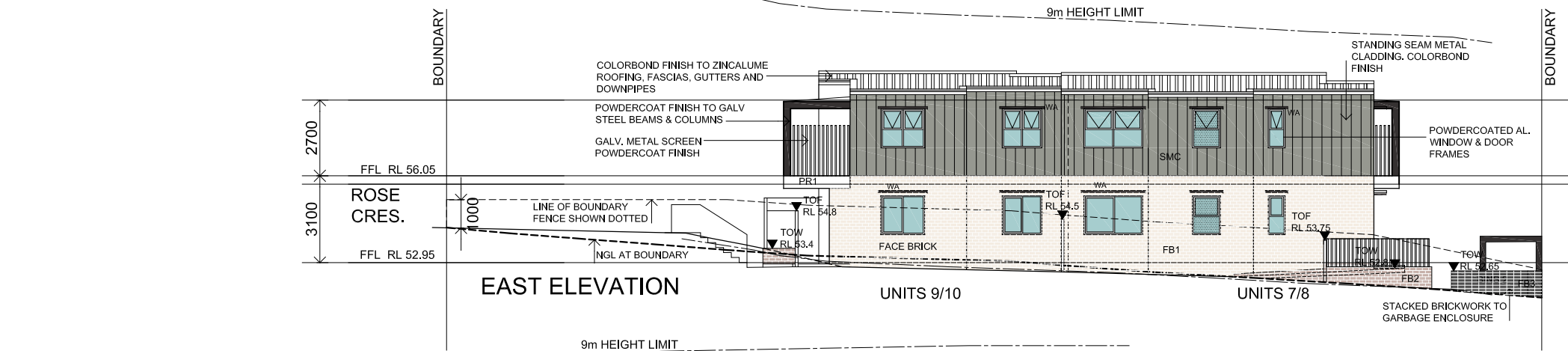
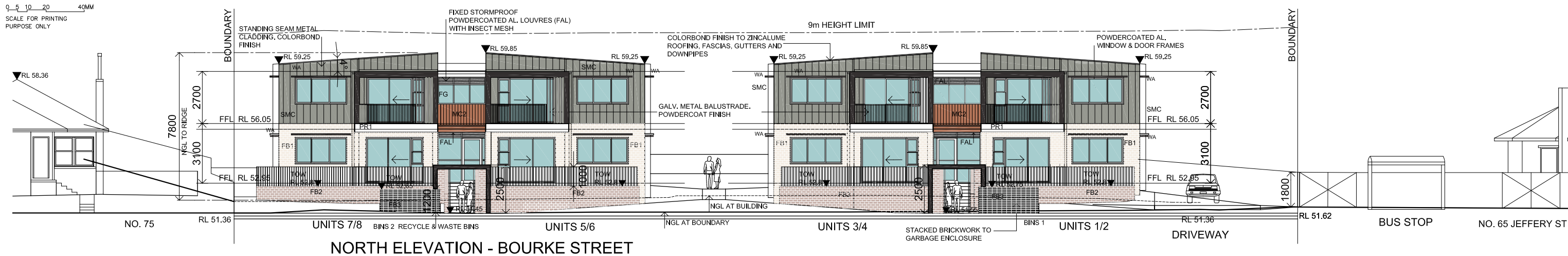
169'02'55"

19'18"

169'02'55"

19'18"





LEGEND

AGL	ADJUSTABLE GLAZED LOUVRES
AN. AL.	ANODISED ALUMINIUM
BOE	BRICK ON EDGE
BR	BROOM CUPBOARD
CC	COLOURED CONCRETE COLOUR
CL	CLOTHES LINE
CP	CONCRETE PAVING BROOM FINISH
CPT	CARPET
CT	CERAMIC TILE
DP	DOWNPIPE
F1	FENCE 1000mm HIGH METAL PALISADE FENCE
F2	FENCE 1800mm HIGH COLORBOND METAL FENCE
F3	FENCE 1500/1800mm HIGH SLATTED METAL FENCE
FAL	FIXED ALUMINIUM LOUVRES
FB1	FACE BRICK COLOUR 1
FB2	FACE BRICK COLOUR 2
FCL	FINISHED CEILING LEVEL
FFL	FINISHED FLOOR LEVEL
G	GATE
GD	GRATED STRIP DRAIN
HP	HOTPLATE
HR	HANDRAIL
HT	GARDEN HOSE TAP
HWU	HOT WATER UNIT
LB	LETTERBOXES - RECESSED INTO WALL
LN	LINEN CUPBOARD
MC	METAL CLADDING
MDR	METAL DECK ROOF
MSB	MAIN SWITCH BOARD
NBN	NBN CONNECTION
P	PANTRY
PR1	PAINTED RENDER COLOUR 1
PVC	PHOTOVOLTAIC CELLS
R	ROBE
REF	REFRIGERATOR LOCATION
RHD	RANGEHOOD
RL	RELATIVE LEVEL
RW	RETAINING WALL
RWT	RAINWATER TANK
S	KITCHEN SINK
SB	STAIR BALUSTRADE
SC	STEEL COLUMN
SHR	SHOWER
SMC	STANDING SEAM METAL CLADDING
STC	STEEL TROWEL CONCRETE FINISH
SWP	STORMWATER PIT
T	LAUNDRY TUB
TOF	TOP OF FENCE
TOK	TOP OF KERB
TOW	TOP OF WALL
TPZ	TREE PROTECTION ZONE
UBO	UNDER BENCH OVEN
VJ	VERTICAL JOINT
VTY	VANITY
WA	SUN AWNING
WC	TOILET SUITE
WM	WASHING MACHINE
WO	WALL OVEN

■ DENOTES TRANSLUCENT
GLAZING



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REV	DATE	NOTATION/AMENDMENT
A	18/02/22	DA PLAN ISSUE
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ARCHITECT
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LANDSCAPE CONSULTANT
GREENLAND DESIGN PTY LTD
PH 0403 164 198

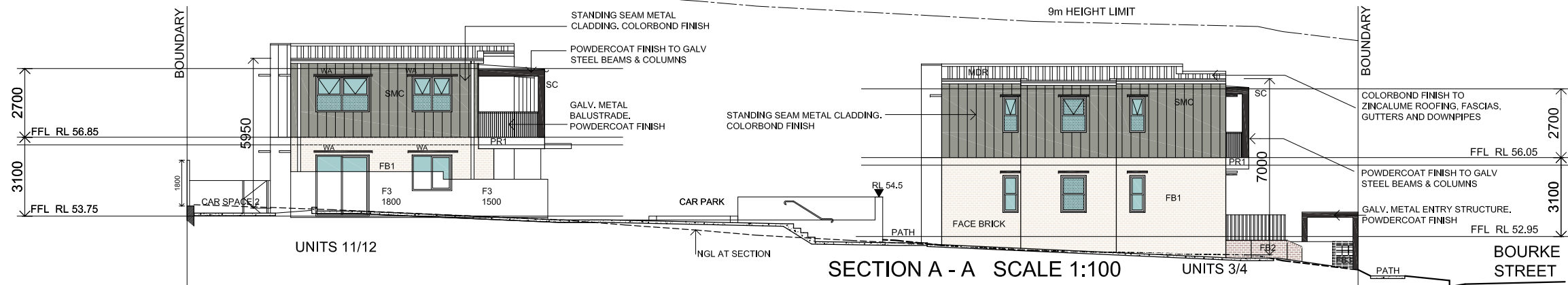
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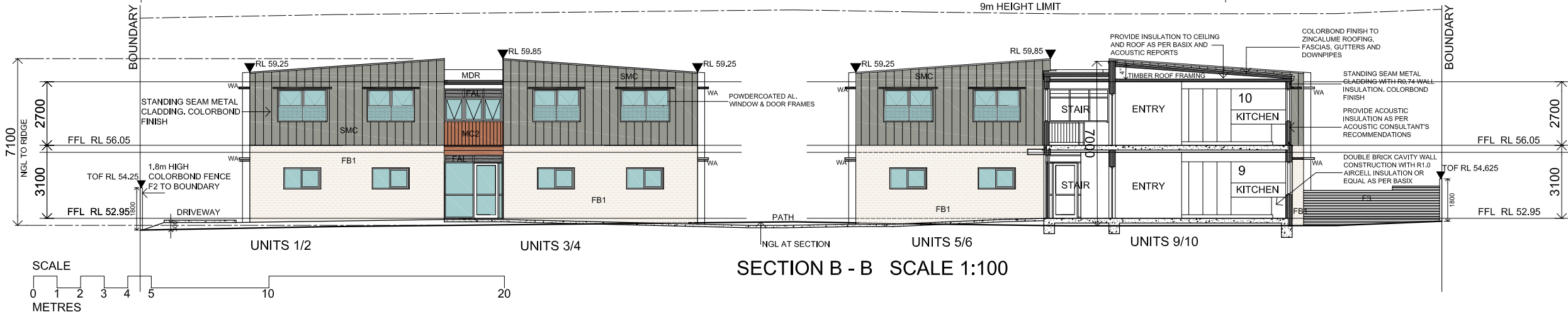
PROJECT:
**SENIORS DEVELOPMENT
26 ROSE CRESCENT AND
69-73 BOURKE STREET
NORTH PARRAMATTA
LOTS 2, 3 & 4 in DP 215342**

TITLE:
ELEVATIONS

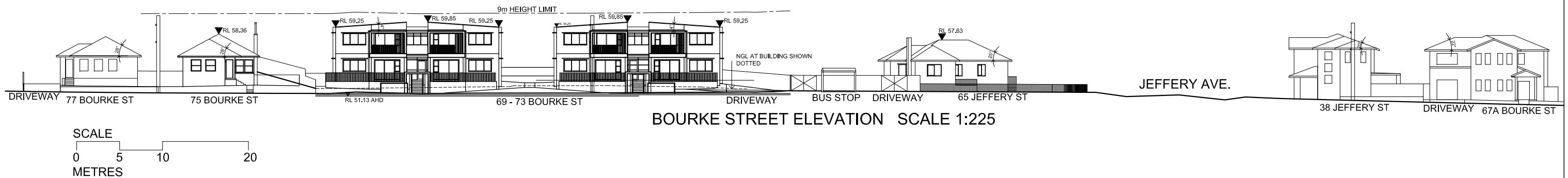
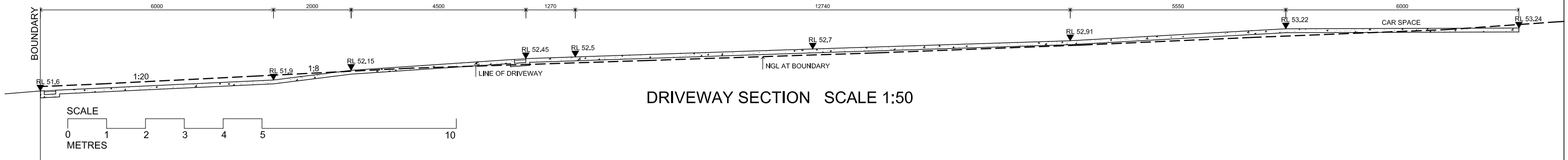
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STAGE MB	DRAWN MB	CHECKED BR	DESIGNED/NOTED BR
FILE DA Rose Cr N Parramatta Feb2022 Plans elevations	PLOTTED 16/05/2022 4:14 PM	TYPE A	SHEET A07
		REV. A	



TYPICAL ON SITE RETAINING WALL
DETAIL SCALE 1:10



DRIVEWAY SECTION SCALE 1:50



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ARCHITECT BARRY RUSH & ASSOCIATES PTY LTD PH (02) 9555 8028
PROJECT MANAGER LAND & HOUSING CORPORATION PH (02) 9753 9000
LANDSCAPE CONSULTANT GREENLAND DESIGN PTY LTD PH 0403 164 198

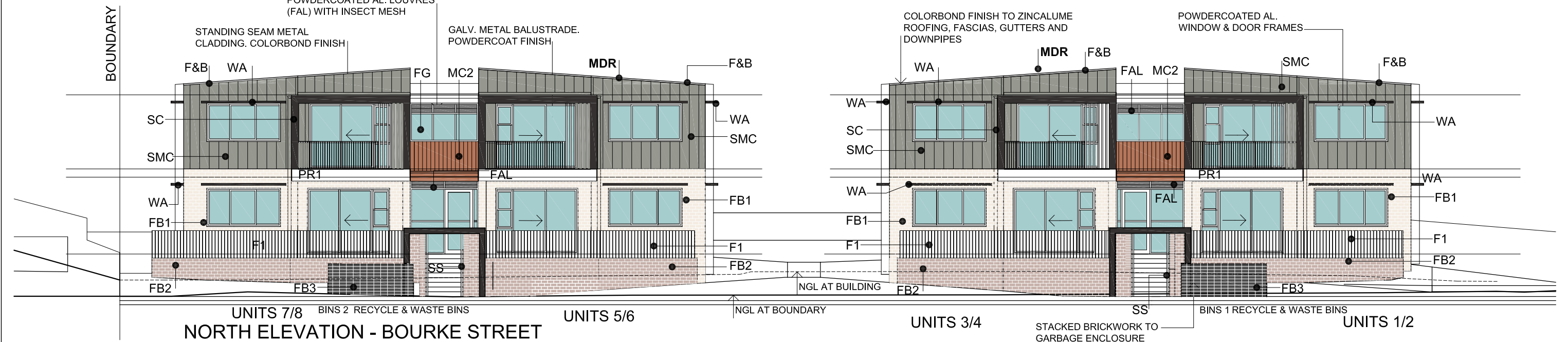
CIVIL ACOR CONSULTANTS PTY LTD PH (02) 4324 3489
HYDRAULIC CONSULTANT MARLINE NEWCASTLE PTY LTD PH (02) 4925 9300 FAX (02) 4926 3811
ELECTRICAL CONSULTANT MARLINE NEWCASTLE PTY LTD PH (02) 4925 9300 FAX (02) 4926 3811

BUSINESS PARTNER:

PROJECT: SENIORS DEVELOPMENT 26 ROSE CRESCENT AND 69-73 BOURKE STREET NORTH PARRAMATTA LOTS 2, 3 & 4 in DP 215342

SECTIONS

DATE 2/05/22	SCALE VARIES	PROJ. -	PROJECT NO. BGXWV
WAGE MB	DRAWN MB	CHECKED BR	DESIGNED/REVISED BR
TYPE A	SHEET A08	REV. A	



FINISHES SCHEDULE

CODE	LOCATION		DESCRIPTION	COLOUR
MDR	ROOFING/ GUTTER/ DOWNPIPE/		METAL DECK ROOFING	BASALT
	FASCIA & BARGE		METAL	BASALT
FB1	WALLS		FACE BRICK	BOWRAL CHILLINGHAM WHITE
FB2	LOW SITE WALLS		FACE BRICK	BOWRAL MURRAY GREY
FB3	ENTRY STRUCTURES & GARBAGE		FACE BRICK	PGH BLACK BEAUTY
SMC	WALLS		METAL WALL CLADDING STANDING SEAM	BASALT
MC2	STAIR WALLS		COLORBOND WALL CLADDING	TERRAIN
SC	BALCONY STRUCTURE		METAL POWDERCOATED	MONUMENT
PR1	BALCONYS		OFF-FORM CONCRETE SKIM COAT RENDER + GRANOSITE SMOOTH PAINT	WATTYL ASTOR WHITE
WA	WINDOW AWNINGS		METAL POWDERCOATED	MONUMENT
AL	WINDOWS, DOORS & AL LOUVRES		POWDERCOATED ALUMNIUM	MONUMENT
SS	HANDRAILS		STAINLESS STEEL	SS MATT
AWNING OVER ENTRY	AWNING ABOVE ENTRYS		COLORBOND	TERRAIN
FC1	BALCONY LINING & SOFFIT		PAINTED FIBER CEMENT SHEETING	WATTYL ASTOR WHITE
F1	FENCE		1200 OR 1800 HIGH VERTICAL SLATTED METAL FENCING TO DETAIL	DULUX MONUMENT
F2	FENCE		1800 HIGH COLORBOND METAL FENCE	DULUX SHALE GREY
F3	FENCE		1500 HIGH SLATTED METAL FENCE	DULUX SHALE GREY



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REV	DATE	NOTATION/AMENDMENT
A	23/03/22	DA PLAN ISSUE
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ARCHITECT BARRY RUSH & ASSOCIATES PTY LTD PH (02) 9555 8028
PROJECT MANAGER LAND & HOUSING CORPORATION PH (02) 9753 9000
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DVL ACOR CONSULTANTS PTY LTD PH (02) 4324 3489
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ELECTRICAL CONSULTANT MARLINE NEWCASTLE PTY LTD PH (02) 4925 9300 FAX (02) 4926 3811

BUSINESS PARTNER:

PROJECT:
SENIORS DEVELOPMENT
26 ROSE CRESCENT AND
69-73 BOURKE STREET
NORTH PARRAMATTA
LOTS 2, 3 & 4 in DP 215342

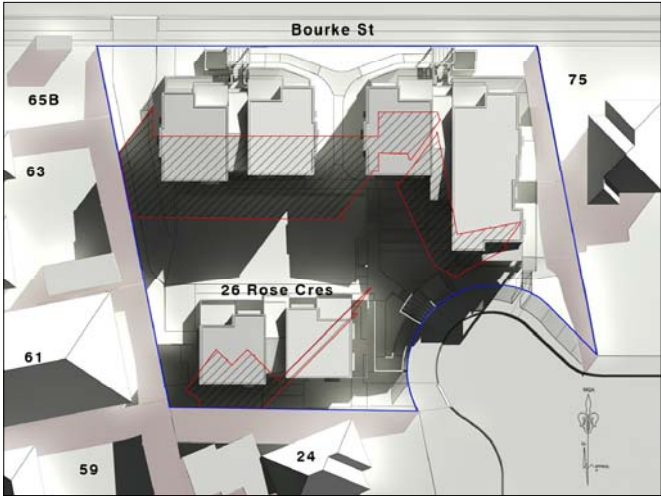
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BLOCK ANALYSIS PLAN

FILE:
DA Rose Cr N Parramatta Feb2022 Cover demo etc.dwg

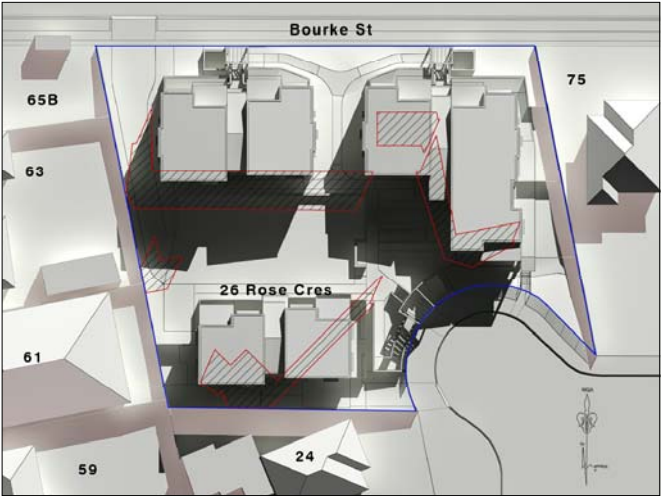
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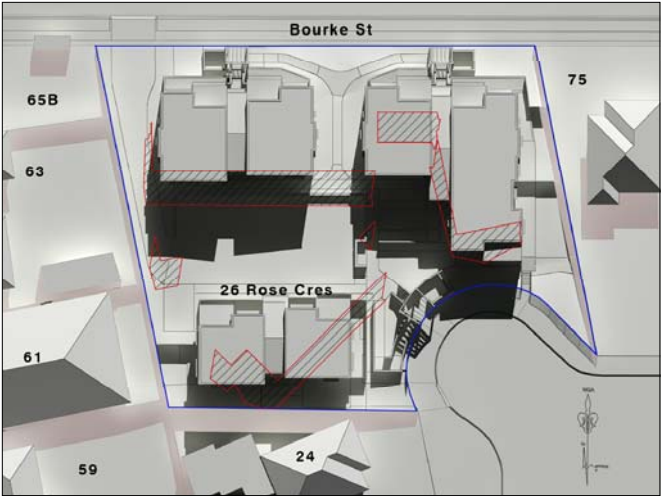
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DRAWN MB	NTS	CHECKED BR	DESIGNED/NOTED BR
TYPE A	SHEET A11	REV. A	



9AM 21ST JUNE



10AM 21ST JUNE



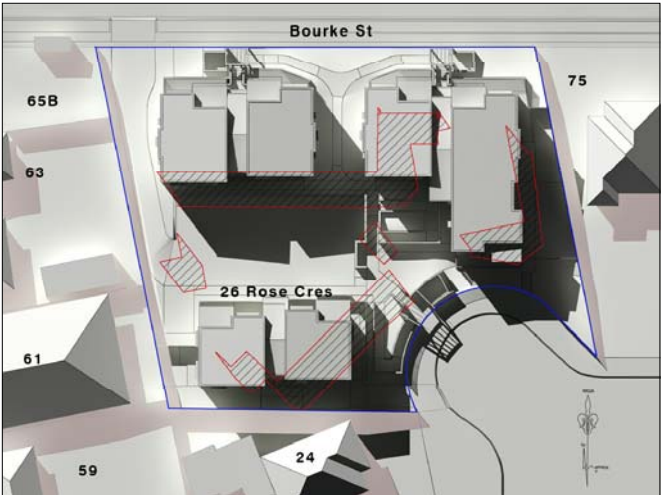
11AM 21ST JUNE



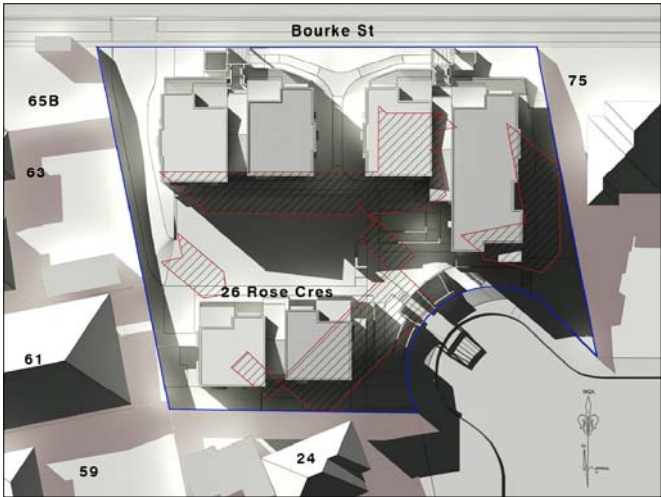
12NOON 21ST JUNE



1PM 21ST JUNE



2PM 21ST JUNE



3PM 21ST JUNE



LEGEND:

- Grey area indicates shadows cast by proposed development
- Shaded area indicates shadows cast by existing buildings on site
- Pink area indicates shadows cast by neighboring properties



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ARCHITECT	BARRY RUSH & ASSOCIATES PTY LTD PH (02) 9555 8028
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BUSINESS PARTNER:

PROJECT:
SENIORS DEVELOPMENT
26 ROSE CRESCENT AND
69-73 BOURKE STREET
NORTH PARRAMATTA
LOTS 2, 3 & 4 in DP 215342

TITLE:
SHADOW DIAGRAMS
MID WINTER

TITLE:
PLOTTED:

STATUS: DA

DATE	SCALE	PROJ.	PROJECT NO.
2/05/22	N.T.S.	-	BGXWX
DRAWN	CHECKED	DESIGNED/REVISED	REV.
A	A12	BR	A



9AM 21ST JUNE



10AM 21ST JUNE



11AM 21ST JUNE



12NOON 21ST JUNE



1PM 21ST JUNE



2PM 21ST JUNE



3PM 21ST JUNE



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PROJECT:
**SENIORS DEVELOPMENT
26 ROSE CRESCENT AND
69-73 BOURKE STREET
NORTH PARRAMATTA**
LOTS 2, 3 & 4 in DP 215342

TITLE:
VIEWS FROM SUN DIAGRAM

FILE:
A12-A14 SHADOWS 3D.dwg

PLOTTED:
14/02/2022 11:30 AM

STATUS: DA

DATE: 2/05/22

SCALE: N.T.S.

SPACE: MB

TYPE: A

PROJECT NO: BGXWX

DRAWN: MB

CHECKED: BR

SHEET: A13

REV: A

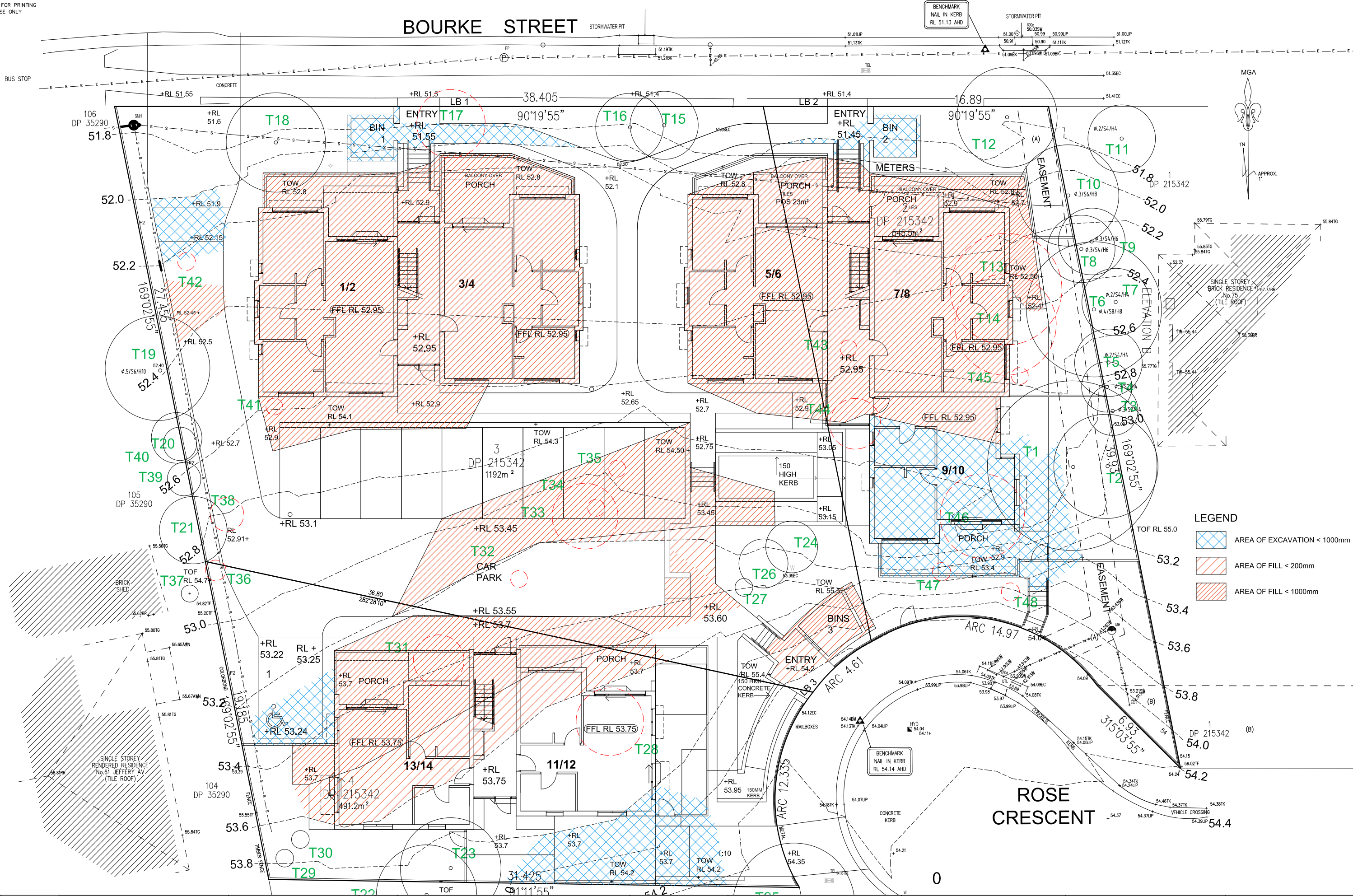


BOURKE STREET - STREETSCAPE PERSPECTIVE



ROSE CRESCENT - STREETSCAPE PERSPECTIVE

BOURKE STREET



LEGEND	
	AREA OF EXCAVATION < 1000mm
	AREA OF FILL < 200mm
	AREA OF FILL < 1000mm



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REV	DATE	NOTATION/AMENDMENT
A	23/03/22	DA PLAN ISSUE

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ARCHITECT
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BUSINESS PARTNER:

PROJECT:
**SENIORS DEVELOPMENT
26 ROSE CRESCENT AND
69-73 BOURKE STREET
NORTH PARRAMATTA
LOTS 2, 3 & 4 in DP 215342**

TITLE:
**AREAS OF EXCAVATION
AND FILL**

DATE:
2/05/22
SCALE:
1:100
DRAWN:
LP
CHECKED:
BR
REV:
A

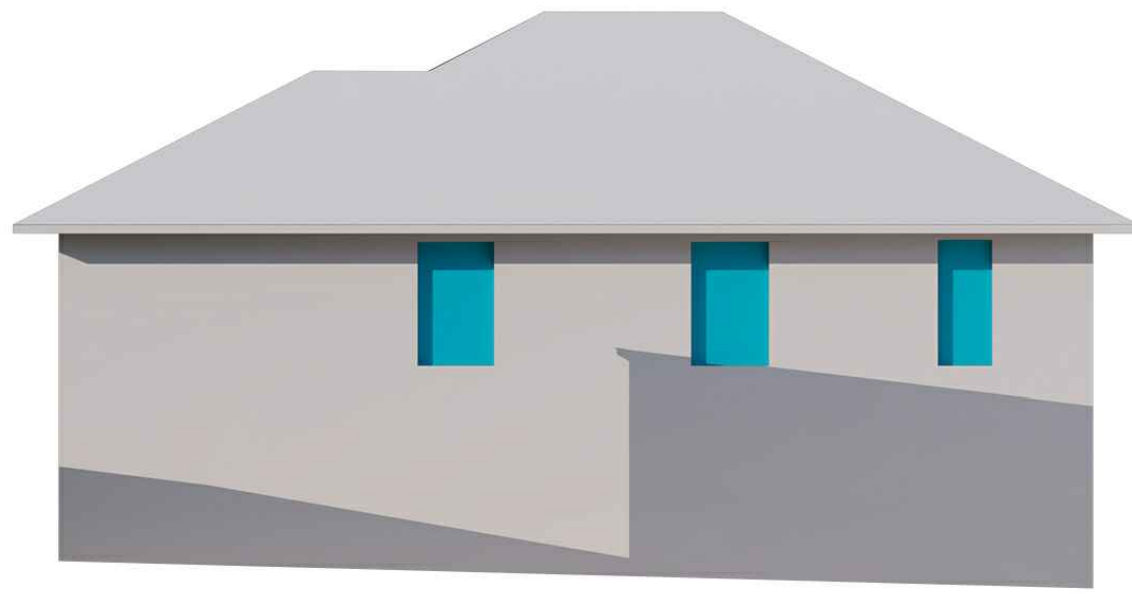
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CHECKED:	BR	REV:	A

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SCALE FOR PRINTING
PURPOSE ONLY

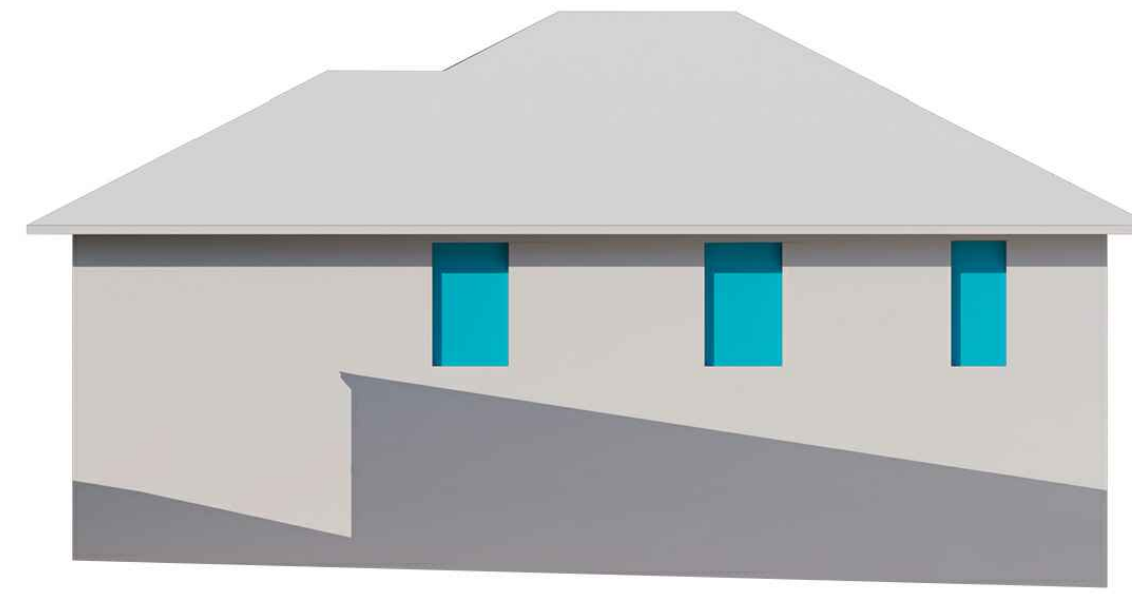
LEGEND:

- 1 BED UNIT
- 2 BED UNIT
- PRIVATE LANDSCAPE AREA
- COMMON LANDSCAPE AREA with table reference
- DEEP SOIL ZONE with AREA
- PAVERS ON COMPACTED FILL
- TILES
- EXISTING TREE
- TREE TO BE REMOVED
- TPZ TREE PROTECTION ZONE
- TREE NUMBER. REFER TO ARBORIST REPORT
- AREA OF ENCROACHMENT INTO TREE PROTECTION ZONE. REFER ARBORIST REPORT FOR % DATA

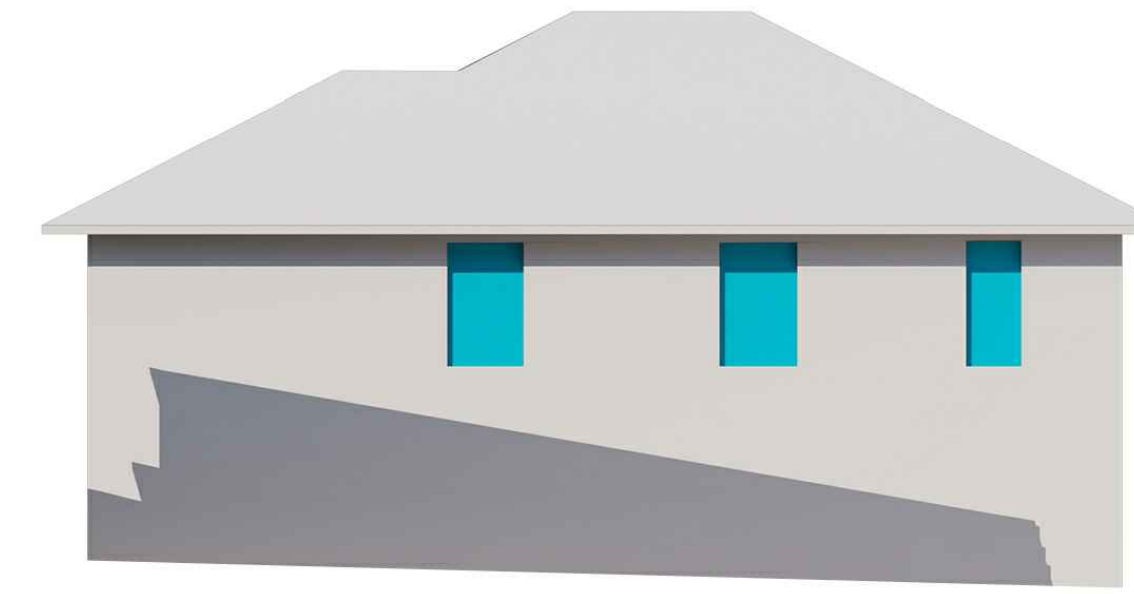
DEEP SOIL ZONE	
FRONT:	199 ²
REAR:	179 ²
TOTAL:	342m ²
PRIVATE LANDSCAPE AREA	
UNIT 1	8m ²
UNIT 3	9m ²
UNIT 5	9m ²
UNIT 7	41m ²
UNIT 9	66m ²
UNIT 11	13m ²
UNIT 13	55m ²
TOTAL	201m ²
COMMON LANDSCAPED AREA:	
a - 54m ²	i - 4m ²
b - 70m ²	j - 2m ²
c - 37m ²	k - 78m ²
d - 41m ²	l - 53m ²
e - 45m ²	m - 86m ²
f - 40m ²	n - 21m ²
g - 5m ²	o - 12m ²
h - 13m ²	
TOTAL:	561m ²



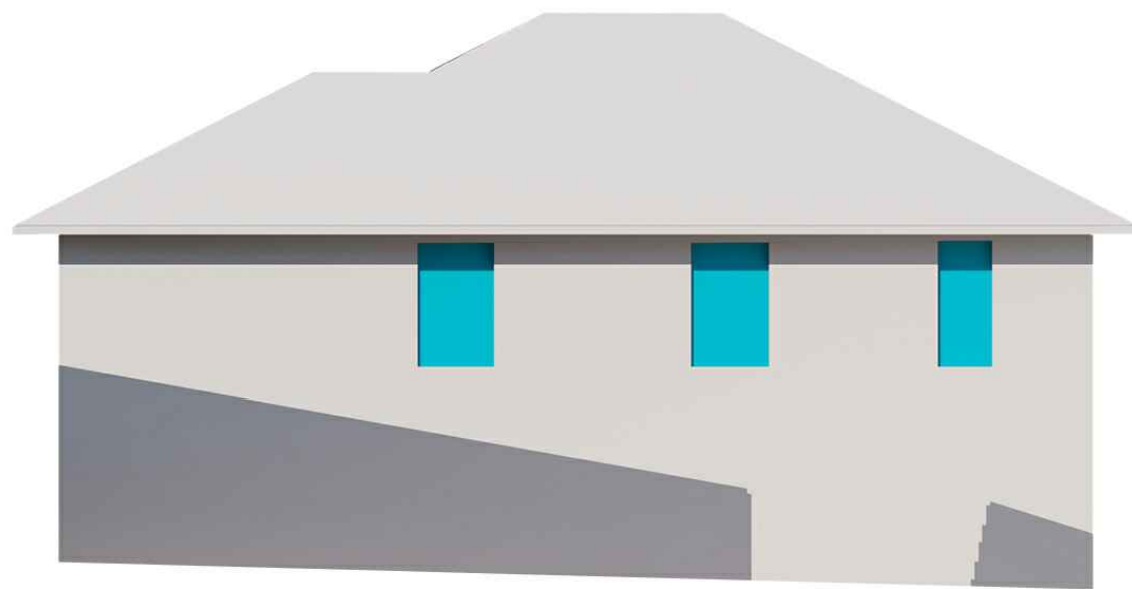
9AM 21ST JUNE



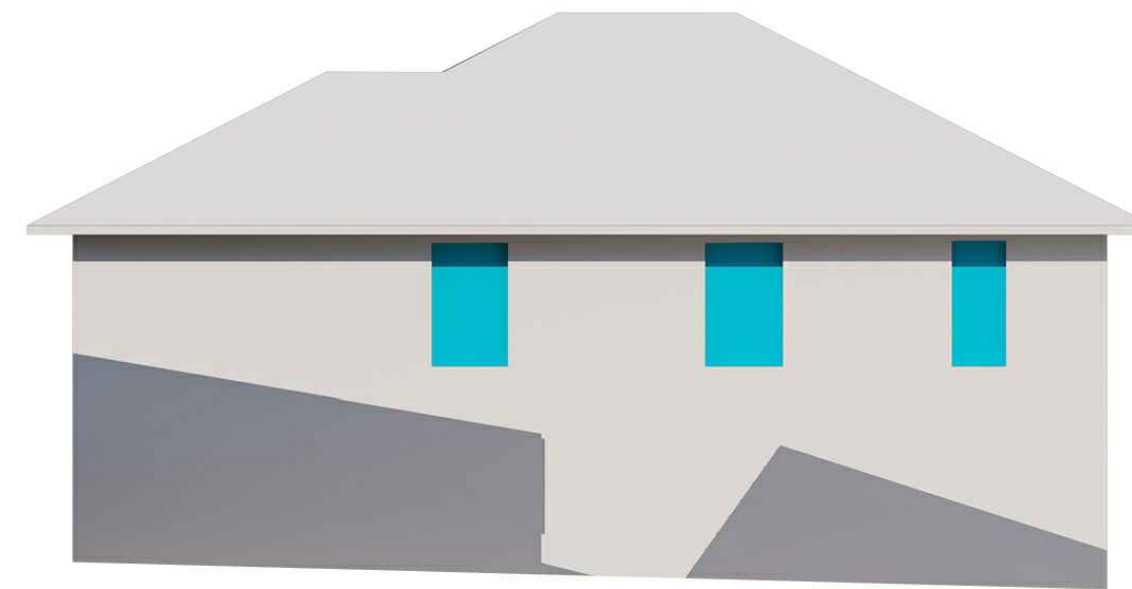
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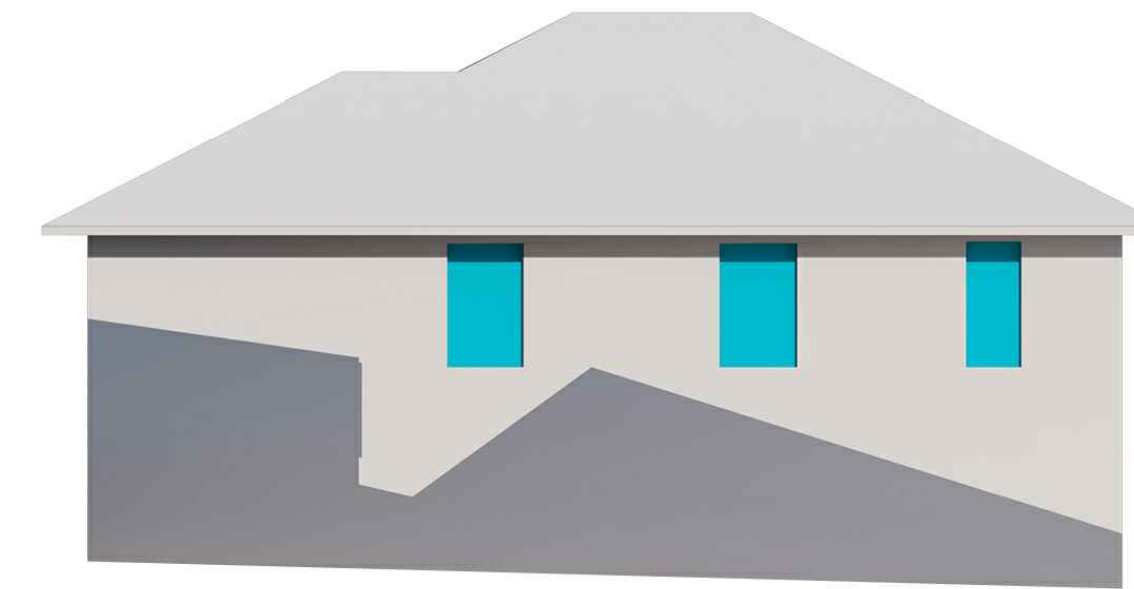
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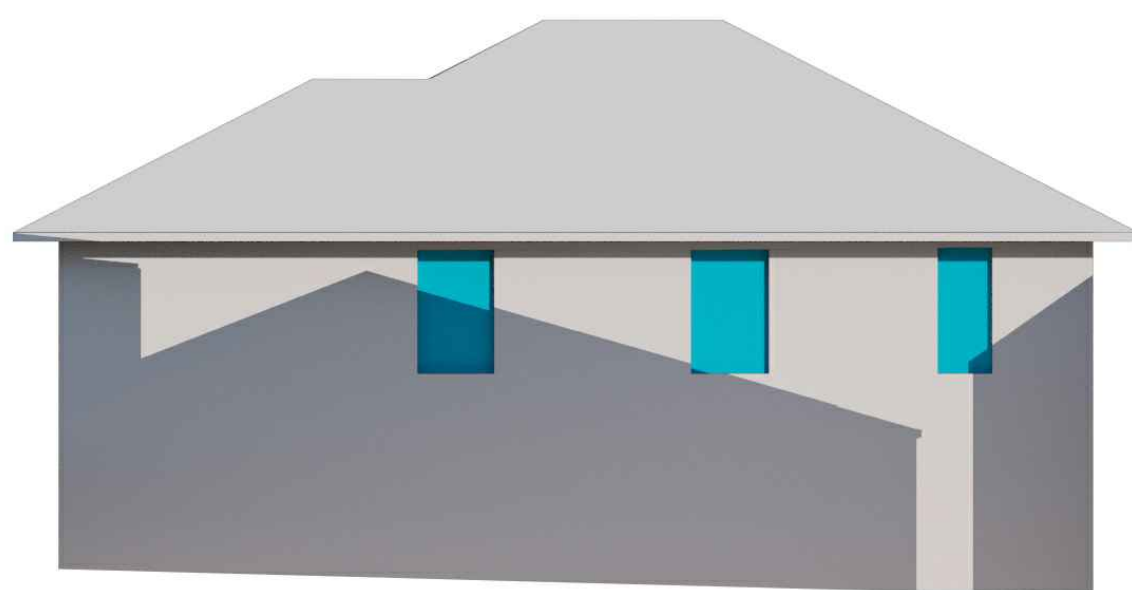
12NOON 21ST JUNE



1PM 21ST JUNE



2PM 21ST JUNE



3PM 21ST JUNE



24 ROSE CRESCENT - SOUTH (FACING STREET) AND EAST ELEVATION (FACING LAHC DEVELOPMENT)

**Annexure C Email correspondence issued by City of Parramatta
Council dated 23 February 2023.**

Council has reviewed the models again and recommends filtering the rain on grid data to distinguish between shallow flooding and more significant floodwater depths that have the potential to cause above floor flooding.

This consists of the following:

Apply a cut-off depth of 50mm to remove shallow depths this can be applied in TUFLOW via adopting this command: "Map Cutoff Depth == 0.05"

Additionally the results is recommended to be filtered with the following process.

Step 1. Remove areas where depth-velocity (dxV) product is less than 0.02 m²/s.

Step 2. Retain areas where depth is greater than 0.3 metres, even if the dxV product is low.

Step 3. Remove islands less than 100m².

No pre-filtering of results should be conducted before the filtering tool is applied, i.e. the base output data used in filtering should cover the entire study area.

If Council is to review the flood modelling files, please provide all files ready for assessment.

Please forward onto Richard from the meeting.

Regards

Martin Warda

Development Engineer

Technical Specialists | Development Services

Phone: 02 9806 5215

Email: mwarda@cityofparramatta.nsw.gov.au

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