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20 December 2024

Leaf Architecture
Attention: Lucia Uribe Perez
Level 1, 12-16 Queen Street
CHIPPENDALE NSW 2008

**Re: Hope Point Christian School – 42A Beale St, Georges Hall
Civil Engineering – Desktop Flood Review**

Dear Madam,

1 Introduction

Further to your request we provide this letter in support of a development application for the demolition of an existing demountable school building and proposed development of a new school building (Block F) at Hope Point Christian school, 42A Beale St, Georges Hall.

This letter specifically discusses flood behaviour and risk in relation to the proposed school building.

A Stormwater System Report (SSR) - Ref: WP-SIAONL-2567/2024, Dated: 16 December 2024 - was obtained from Council and is included in **Enclosure 1**. The SSR confirms Councils requirements in relation to flooding, and confirms the flood levels of the site.

2 Proposed Development and Development Site

The proposed development is for the demolition of an existing demountable school building and proposed development of a new school building (Block F). the location of the works is shown in Figure 1 below and details of the proposed development as documented by Leaf Architecture are shown in **Figure 1** and **Enclosure 2**.

The proposed floor level of the majority of the building is RL 12.849m AHD, with the SE room set slightly higher at RL 13.22m AHD.

Prospect Creek is located approximately 230m north of the development and Georges River is 250m west of the property.

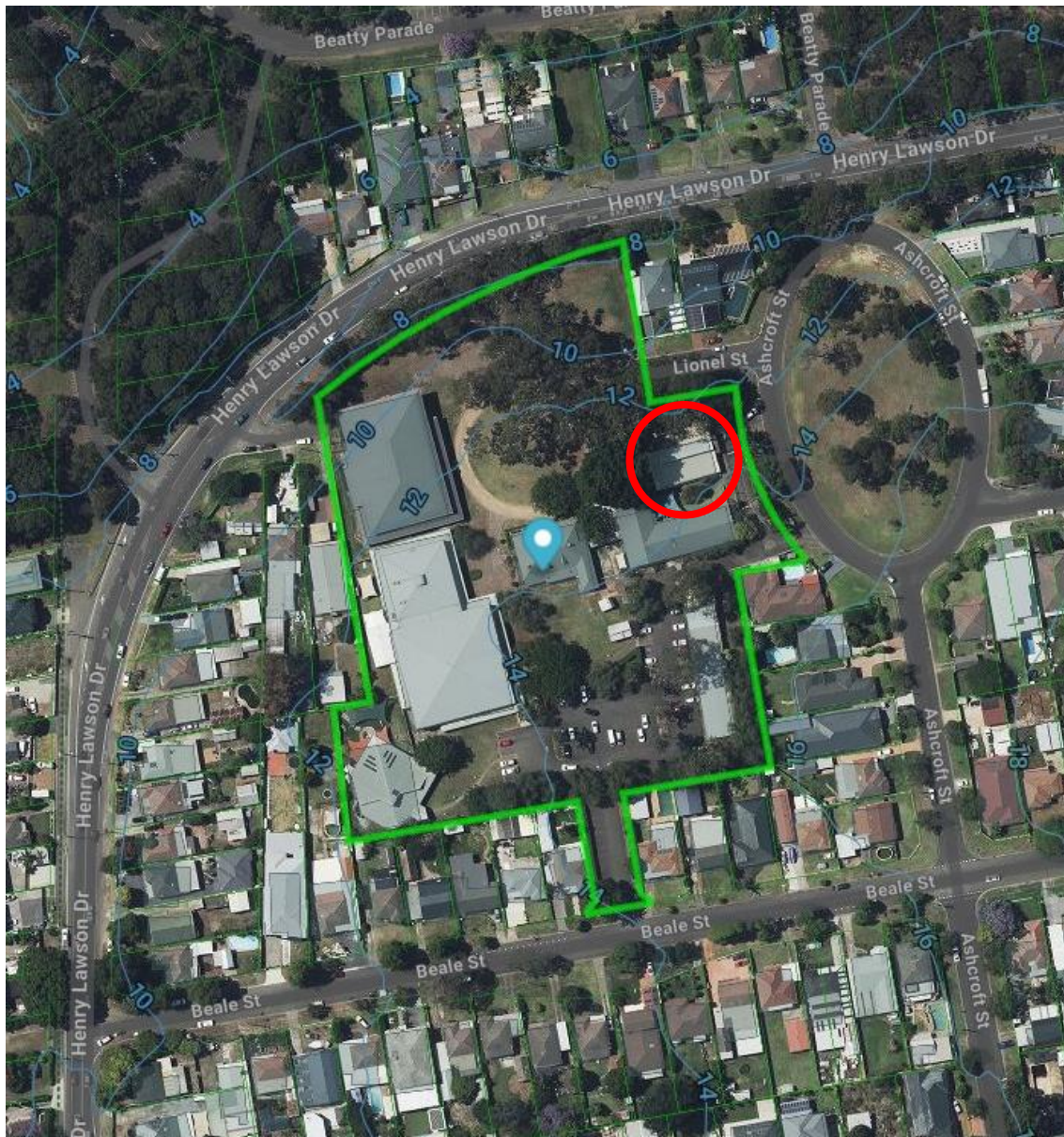


Figure 1. Site Location and Location of Works (shown in red circle)

A surface water runoff design has been completed by AYCE Consulting Engineers (Ref: 24024 Stormwater Management Report and associated drawings). Our assessment is noted to encompass overland flow and flood risk aspects of the development. Our assessment has been completed on the basis that the AYCE Consulting Engineers surface water management design appropriately manages local runoff and drainage requirements.

3 Flood Behaviour

A review of flood behaviour, as identified in Councils SSR, has been undertaken. **Figure 2** shows flooding levels for the site whilst **Figures 3** and **4** show the 1% AEP flood (100yr ARI) and PMF flood extents, as included in the SSR, with the area of works highlighted.

The site is shown to be clear of riverine flooding associated with Prospect Creek and The Georges River. The 1% AEP and PMF flood level associated with these waterbodies is inferred from the SSR as being in the order of RL5.5-6m AHD and 10.5m AHD respectively.

A medium risk flow path is shown on the far south of the school property, however this flow path is noted to be approximately 50m away from the area of works. A low-risk flow path is also shown in Ashcroft St, east of the works. This second flow path is noted to be contained within the road corridor and is most likely associated with localised gutter and road storm flows. The area of works is shown to be clear of these flow paths in both the 1% AEP and PMF storm events.

Flooding Levels

Stormwater Catchment Flooding from Georges Hall Catchment Flood Study (BMT WBM, 2013)

Flood Event	Minimum Level (m AHD)	Maximum Level (m AHD)
5% AEP (20 year ARI)	N/A	N/A
1% AEP (100 year ARI)	N/A	N/A
PMF (Probable Maximum Flood)	10.50	14.40

Figure 2. Flood Levels vis SSR

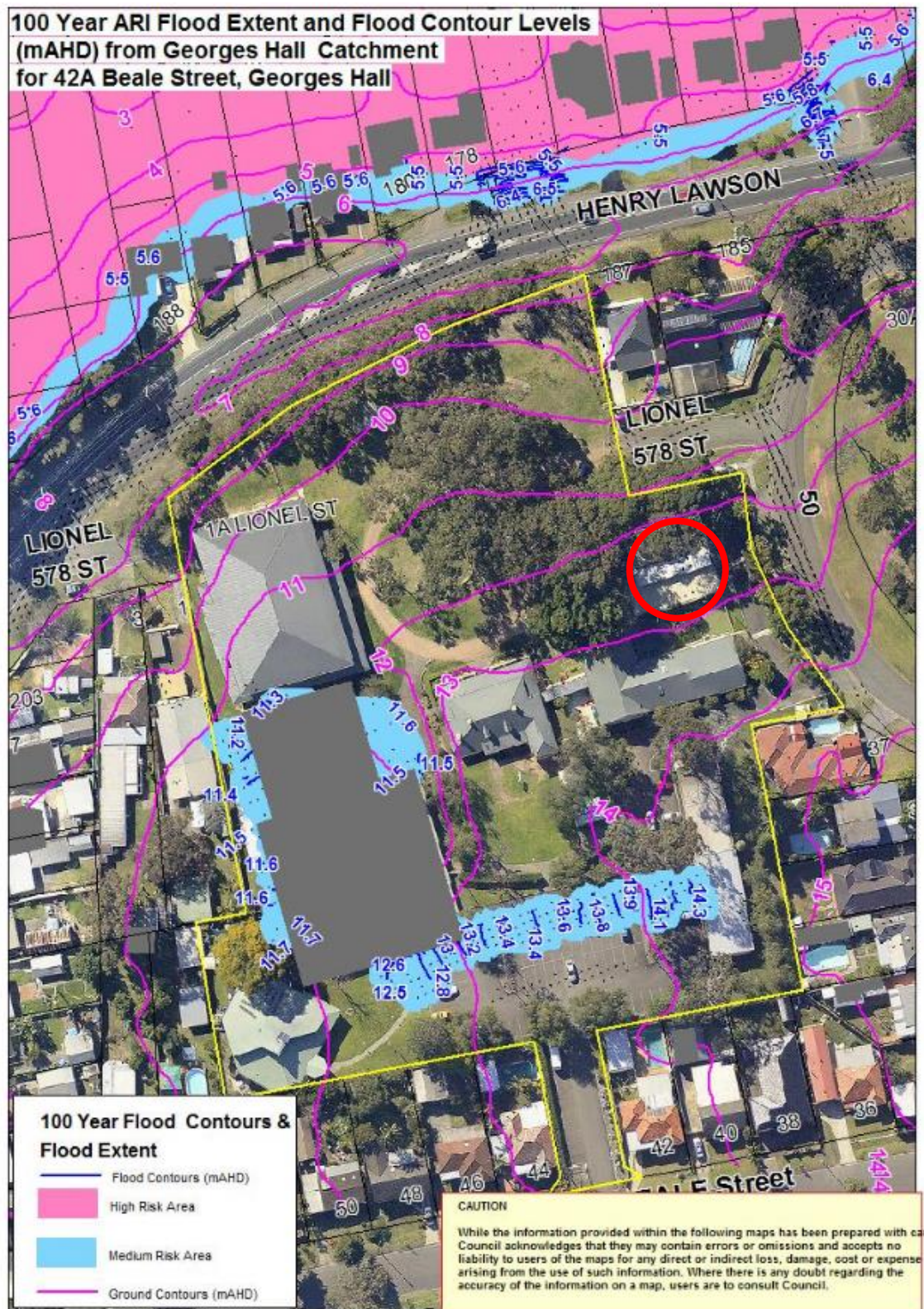


Figure 3. 1% AEP Flood (100yr ARI) Extent



Figure 4. PMF Flood (100yr ARI) Extent

4 Flood Planning Requirements

Chapter 2.2 *Flood Risk Management* of Canterbury Bankstown Council's DCP-2023 provides relevant policy requirements relating to development in and around identified flood affected development sites. The intent of the DCP is to ensure that new developments do not experience undue flood risk and that existing development is not adversely flood affected through increased damage or hazard as a result of new development.

The flood planning level (FPL) for school buildings are required to be at or above the 1% AEP (1 in 100-year ARI) flood level plus 0.5m freeboard. Noting the proposed floor level is RL 12.849m AHD, with the SE room set slightly higher at RL 13.22m AHD. Noting that Council's SSR (refer Figure 2) does not identify a 1% AEP level for the property and the inferred riverine 1% AEP flood level is less than RL 6.0m AHD flood planning requirements for the development are considered to have been achieved.

The works have been confirmed to be clear of riverine flooding and local overland flow paths in both the 1% AEP and PMF storm events, as such the development will not impact existing flooding conditions or surrounding properties, nor will the development be impacted by flooding. As such, impact criteria is considered to be met.

The works are free from flooding in both the 1% AEP and PMF events, hence flood safety concerns are low risk, and any flood safety considerations could be contemplated consistent with Council's flood risk management plan and SES requirements.

We further note that the Council SSR document confirms that a flood study is not required for the property.

5 Conclusion

A review of the proposed school building in relation to flood risk, as identified in Council's SSR, has been made. The review shows the proposed school building is clear of any identified local overland flow paths and is not impacted by Georges River flooding. Further it achieves Council's flood planning levels. Noting the development is free from identified overland paths and riverine flooding, the development is not impacted by, nor impacts, existing flooding conditions. We consider the development works meet Council's flood controls as included in their 2023 DCP.

We trust the included information meets your current needs. Please contact the undersigned if further information is required.

Yours faithfully,
Costin Roe Consulting Pty Ltd



MARK WILSON MIEAust CPEng NER
Director

- Encl. 1. Stormwater System Report (SSR) - Ref: WP-SIAONL-2567/2024
2. Leaf Architecture Drawings

ENCLOSURE 1

Stormwater System Report (SSR) - Ref: WP-SIAONL-2567/2024



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DX 11220 BANKSTOWN
council@cbc.city.nsw.gov.au

CITY OF CANTERBURY BANKSTOWN

To: Costin Roe Consulting
4/8 Windmill St, MILLERS POINT NSW 2000

STORMWATER SYSTEM REPORT

Property Address	42A Beale Street Georges Hall 2198
Lot/Section/Deposited Plan	Lot 101 DP 827530
Date Prepared:	16/12/2024
Ref:	WP-SIAONL-2567/2024
Prepared By:	Pushpa Goonetilleke
Development Type:	School

FLOOD STUDY REQUIRED

No

This Stormwater System Report (SSR) provides flood and stormwater information about the property.

The information in this report should be reviewed by those who are knowledgeable in flooding or have a technical requirement to understand more about Council's building development controls (such as surveyors, builders, certifiers, architects and engineers).

Stormwater Infrastructure

The site is affected by the following Council stormwater system components.

- A 375 mm diameter stormwater pipeline and associated 1.83m wide easement located along the part of eastern site boundary within the site.

Property Levels

Description	Minimum (m AHD)	Maximum (m AHD)
Approximate Ground Level	11.20	14.40

Flooding Levels

Stormwater Catchment Flooding from Georges Hall Catchment Flood Study (BMT WBM, 2013)

Flood Event	Minimum Level (m AHD)	Maximum Level (m AHD)
5% AEP (20 year ARI)	N/A	N/A
1% AEP (100 year ARI)	N/A	N/A
PMF (Probable Maximum Flood)	10.50	14.40

Terms and Definitions

Annual Exceedance Probability (AEP)	The probability of a flood event of a given size occurring in any one year, usually expressed as a percentage annual chance.
Average Recurrence Interval (ARI):	Similar to AEP. The long-term average number of years between the occurrence of a flood as big as (or larger than) the selected event.
metres above Australian Height Datum (m AHD)	The reference level for defining ground levels in Australia. The level of 0.0m AHD is approximately mean sea level.
Maximum and Minimum Ground Level –	Highest and lowest ground levels on the property based on available ground level information. A Registered Surveyor can confirm exact ground levels.
Probable Maximum Flood	An extreme flood deemed to be the largest flood that could conceivably occur at a specific location The PMF defines the extent of flood prone land (i.e. the floodplain).

Further Information

For further information on flood-related development controls which may be applicable to this property, refer to the following guidelines:

- Canterbury Bankstown Development Control Plan (2023, chapter 2.2 Flood risk Management)
- Canterbury Bankstown Development Engineering Standards (2023)
- Council Standard Drawings.

Disclaimer

The information contained in this document is not endorsed by the Council as without error, omission or mis-description. Council accordingly expressly disclaims all and any liability and responsibility in respect of loss, damage or injury to person or property arising from anything done or omitted to be done by any person in reliance, whether wholly or in part, upon any part of this information.

Any person having regard to the information contained in this document is encouraged to seek, at their discretion, all other sources of information on the subject matter as they consider appropriate, which may include local knowledge and/or professional advice.

ATTACHMENTS

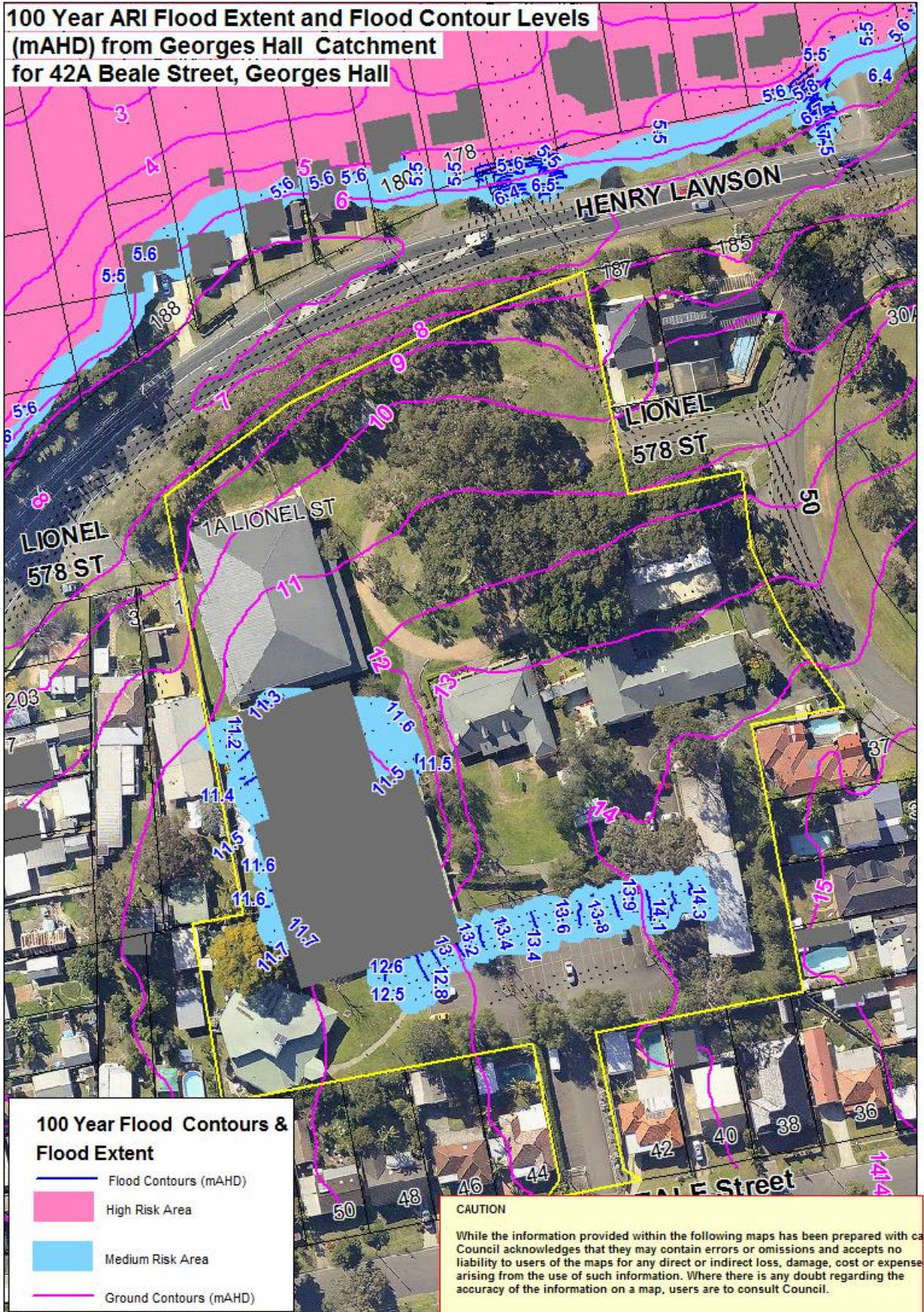
For 1% AEP (100 year ARI)

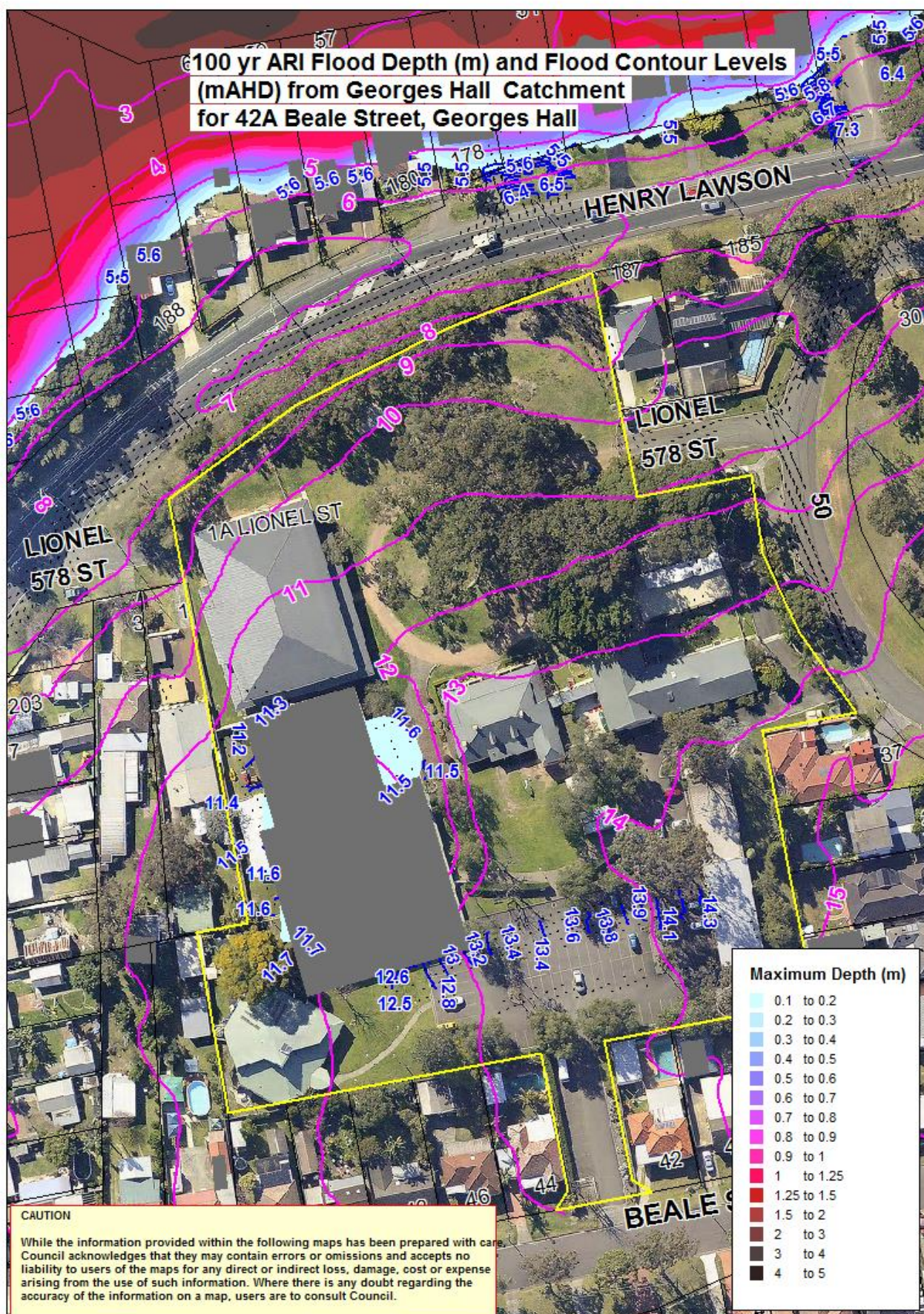
1. Flood Extent & Flood Contours Map
2. Flood Depth Map
3. Velocity Depth Product Map

For PMF

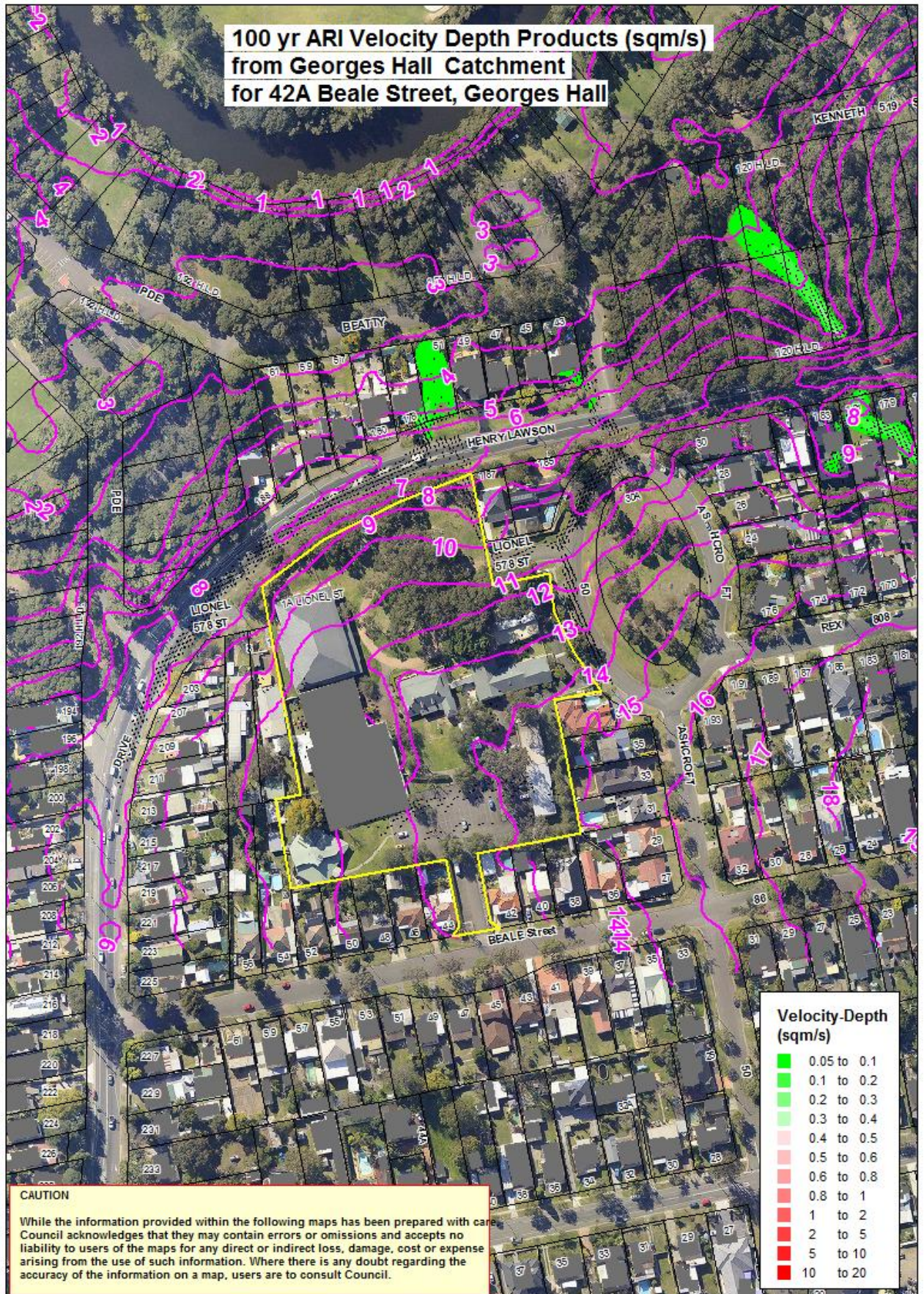
4. Flood Contours & Flood extent Map
 5. GIS Map (from Council's Data)
 6. Aerial Map (from Council 's Data)
- Note: Attached Georges River Flood Extent Map if affected by Georges River flooding

**100 Year ARI Flood Extent and Flood Contour Levels
(mAHD) from Georges Hall Catchment
for 42A Beale Street, Georges Hall**



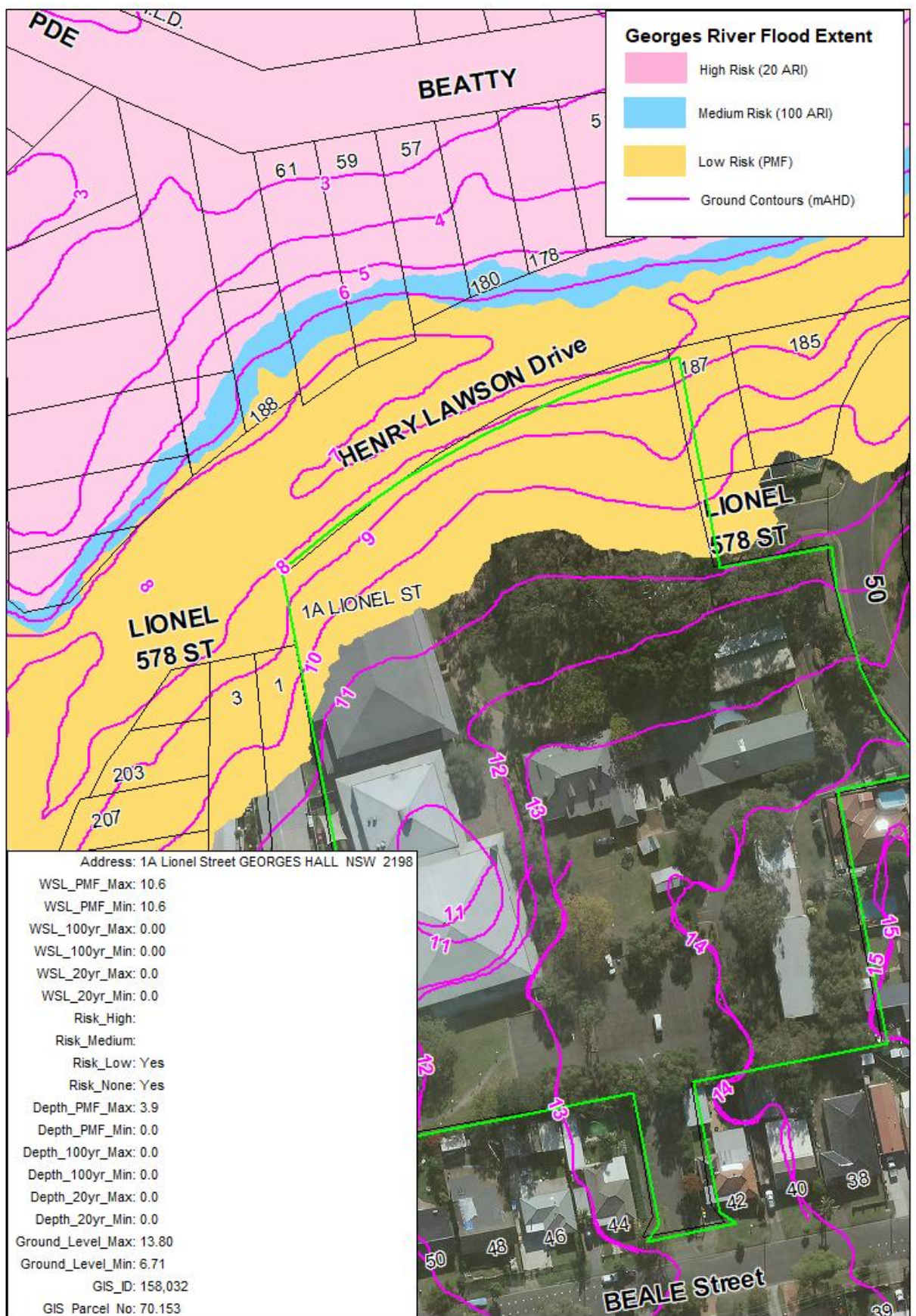


**100 yr ARI Velocity Depth Products (sqm/s)
from Georges Hall Catchment
for 42A Beale Street, Georges Hall**

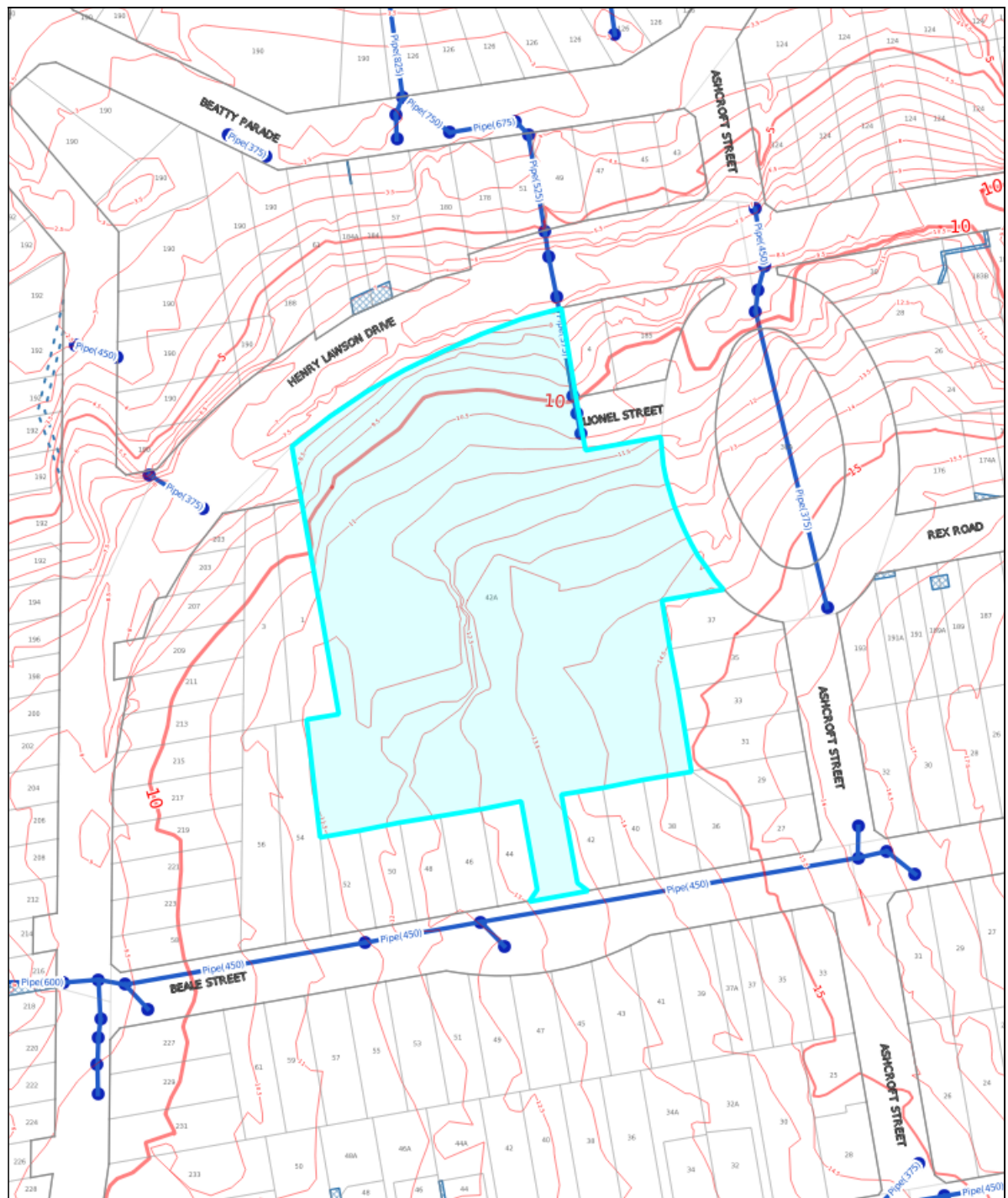


**PMF Extent and Contour Levels (mAHD)
from Georges Hall Catchment
for 42A Beale Street, Georges Hall**





GIS Map for 42A Beale Street, Georges Hall



DATE: Dec 16, 2024, 2:06 PM

1:2,257
Metres 50 100

PREPARED BY: Pushpa G

Whilst all care has been taken in the preparation of this base map, Council accepts no responsibility for the accuracy of any information shown. Users should rely on their own enquiries in order to validate information shown on this map. This information is for graphical presentation only.



1:2,257

Metres 50 100

Whilst all care has been taken in the preparation of this base map, Council accepts no responsibility for the accuracy of any information shown. Users should rely on their own enquiries in order to validate information shown on this map. This information is for graphical presentation only.



LEGEND

-  Canterbury Bankstown LGA
-  Surrounding LGA's

Jetty

-  Jetty

Parcel Frontage

-  Parcel Frontage

Parcel Boundary

-  Parcel Boundary

Parcel Easements (Line)

-  Parcel Easements (Line)

Parcel Easements (Polygon)

-  Parcel Easements (Polygon)

Contours (Major 10m)

-  Contours (Major 10m)

Contours (Intermediate 5m)

-  Contours (Intermediate 5m)

Contours (Minor <5m)

-  Contours (Minor <5m)

Drains

-  Drains

Pits

-  Pits

Sydney Water Stormwater Channels

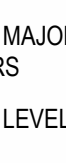
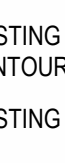
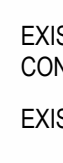
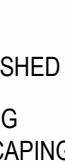
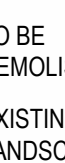
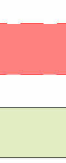
ENCLOSURE 2

Leaf Architecture Drawings

ISSUE	DATE	REVISION
1	30/08/2024	Revision 1
2	19/09/2024	Revision 2
3	15/10/2024	For Coordination - Draft
4	25/10/2024	For Coordination
5	8/11/2024	For Coordination
6	14/11/2024	For DA

CHECKED	DRAWN
DWS	KA
DWS	KA
DWSLUP	KA
DWSLUP	KA
DWSLUP	KA
DWSLUP	KA

LEGEND
NEIGHBOURING BUILDINGS
BUILDINGS ON SITE - NO WORKS
PROPOSED NEW BUILDING
EXISTING FENCE



TO BE DEMOLISHED

EXISTING LANDSCAPING

SITE ACCESS

EXISTING SITE BOUNDARY

EXISTING MAJOR CONTOURS

EXISTING LEVEL

PROPOSED LEVEL

ALL RL'S TO BE CONFIRMED ON SITE

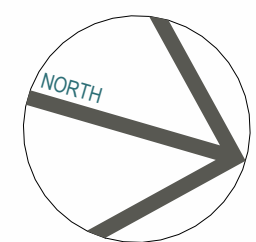
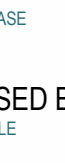
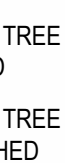
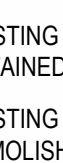
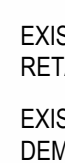
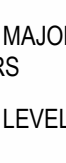
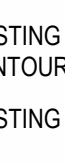
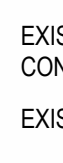
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EXISTING TREE DEMOLISHED

9 METRES HEIGHT LINE

HERITAGE CURTILAGE BOUNDARY FOR THE HOMESTEAD

NEIGHBOURING BOUNDARY



DA PROJECT PHASE

PROPOSED BLOCK F AT HOPEPOINT CHRISTIAN SCHOOL

PROJECT TITLE

42a BEALE STREET, GEORGES HALL NSW 2198

SITE ADDRESS

HOPEPOINT CHRISTIAN SCHOOL

CLIENT

PROPOSED SITE PLAN

DRAWING TITLE

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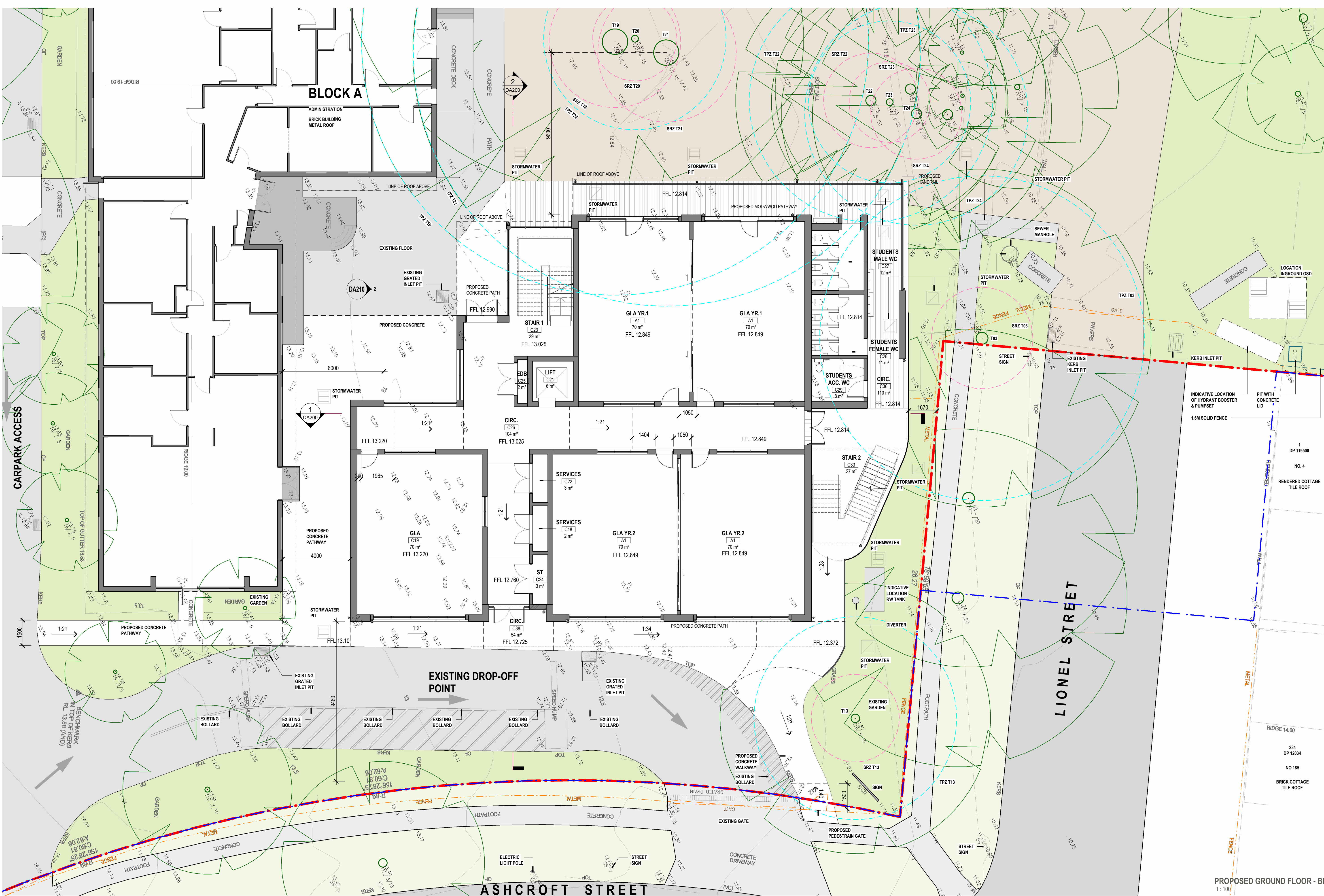


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DA012
DRAWING NUMBER
6
ISSUE

1 : 500
SCALES AT A1

24003
PROJECT NUMBER



PROPOSED GROUND FLOOR - BLOCK F
1:100

ISSUE	DATE	REVISION
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2	19/09/2024	Revision 2
3	15/10/2024	For Coordination - Draft
4	25/10/2024	For Coordination
5	29/10/2024	For Coordination
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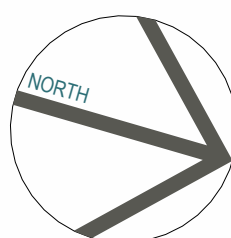
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DWSLUP	KA

LEGEND
NEIGHBOURING BUILDINGS
BUILDINGS ON SITE - NO WORKS
EXISTING WALL
EXISTING FENCE

TO BE DEMOLISHED
EXISTING LANDSCAPING
PROPOSED WALL
EXISTING SITE BOUNDARY

EXISTING MAJOR CONTOURS
EXISTING LEVEL
PROPOSED LEVEL ALL RL'S TO BE CONFIRMED ON SITE
NEIGHBOURING BOUNDARY
HERITAGE CURTILAGE BOUNDARY FOR THE HOMESTEAD

EXISTING TREE RETAINED
EXISTING TREE DEMOLISHED
SRZ (STRUCTURAL ROOT ZONE)
TPZ (TREE PROTECTION ZONE)
TXX DENOTES TREE NUMBER



DA PROJECT PHASE

PROPOSED BLOCK F AT HOPEPOINT CHRISTIAN SCHOOL

PROJECT TITLE

42a BEALE STREET, GEORGES HALL NSW 2198

SITE ADDRESS

HOPEPOINT CHRISTIAN SCHOOL

CLIENT

PROPOSED PLAN - GROUND FLOOR

DRAWING TITLE

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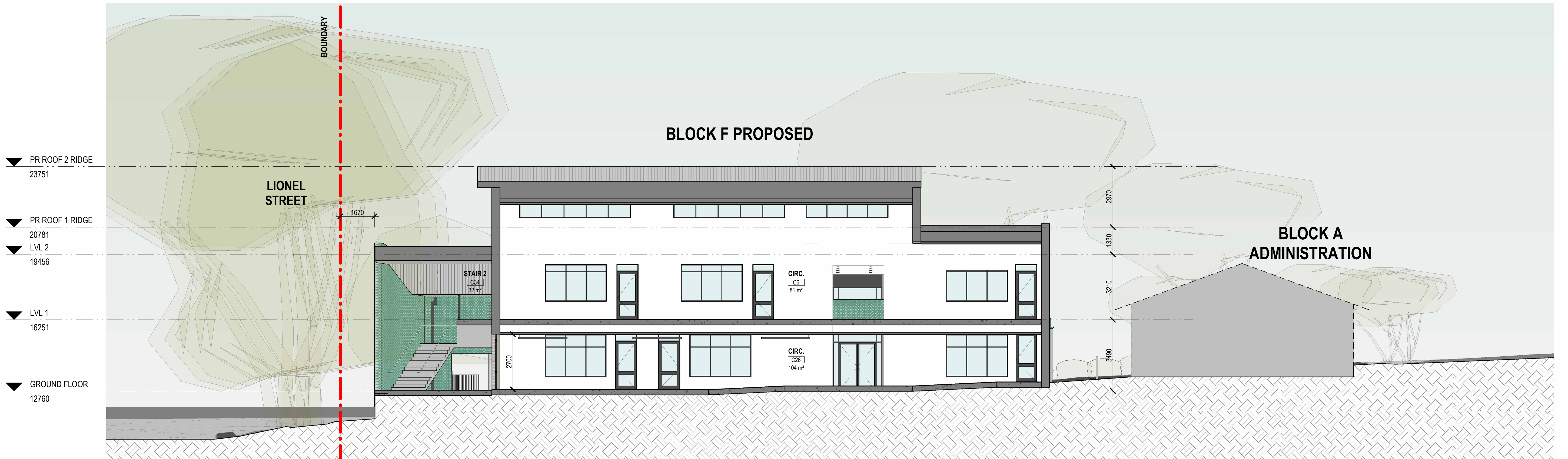
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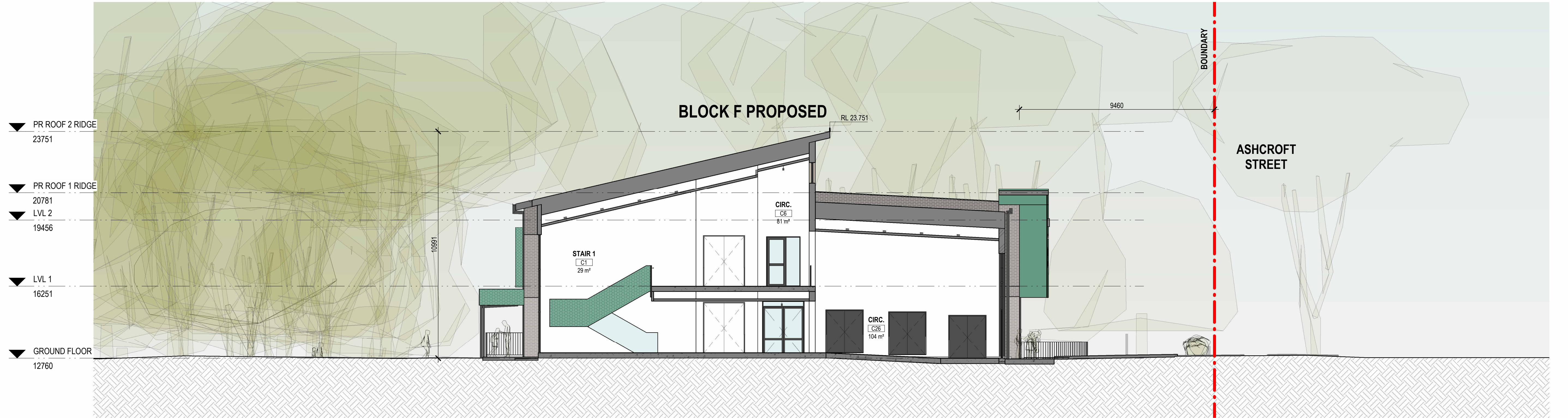
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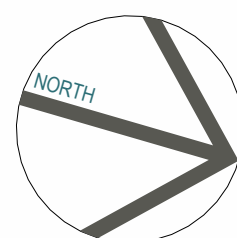


BLOCK F SECTION A
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BLOCK F SECTION B
1 : 100

ISSUE	DATE	REVISION	CHECKED	DRAWN	LEGEND
1	30/08/2024	Revision 1	DWS	KA	
2	19/09/2024	Revision 2	DWS	KA	
3	15/10/2024	For Coordination - Draft	DWSLUP	KA	
4	25/10/2024	For Coordination	DWSLUP	KA	
5	8/11/2024	For Coordination	DWSLUP	KA	
6	14/11/2024	For DA	DWSLUP	KA	



DA
PROJECT PHASE

PROPOSED BLOCK F AT HOPEPOINT CHRISTIAN SCHOOL

PROJECT TITLE

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SITE ADDRESS

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PROPOSED SECTIONS

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DA200
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ISSUE

1 : 100
SCALES AT A1

24003
PROJECT NUMBER