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Our Reference: PDS06112019:8HOLLOWAY  
PL:CURLCURL

Mr Peter Walsh  
8 Holloway Place,  
Curl Curl, 2096

10/12/2019

**Re: Flood Risk Management Report for 8 Holloway Place, Curl Curl.**

Dear Peter,

**EXECUTIVE SUMMARY**

This report has reviewed the development proposal as shown in Figure 3.4,5 and 6 in relation to the simulated flooding processes in the catchment and specifically at the *site* based on a Flood Studies (Ref 1 and 3). The report details the Flood Risk Emergency Plan (FREP) for those flood processes. The following conclusions and recommendations are made based on the Development Matrix detailed in Appendix A. The findings are:

- The *site* is exposed to flooding where the peak is 5.2 and 5.9 m AHD for the 1%AEP and PMF flood events respectively. The *site* is north of Bennett Street and 1500m west of the entrance of Curl Curl Lagoon (Figure 1).
- The flood Planning Level (FPL) is 5.7m AHD which is approximately 1.4 metres above the ground level at the *site* (Figure 2 and 5).
- The existing Ground and proposed First Floor and office garage levels are 4.54 and 7.61m AHD respectively (Figure 6). An Assessment of the design is detailed in Appendix A, which shows that the development complies with NBC Flood Standard. The development has no impact on the 1%AEP flood heights, velocities and flood storage.
- The First Floor Level (FFL) is 7.61m AHD; above the PMF and is to be used as a Shelter-in-Place (SiP).
- The FREP in essence is based on the occupants of the Dwelling using the proposed First Floor Level as a Shelter-in-Place as flood free access is not available. The plan during a series of flood events and observations is detailed in Appendix B. This plan should be displayed in a prominent location in the Dwelling.

## 1.0 INTRODUCTION

The proposed development at 8 Holloway Place, Curl Curl (Lot 7 DP 242144 referred to as the *site*) is to construct Additions as shown in Figures 3, 4, 5 and 6. Northern Beaches Council (NBC) has determined that the *site* is a Medium Risk Precinct as shown in Appendix Map F. NBC DCP Section E11 applies to this development proposal.

This Flood Risk Management Report (FRMR) and Flood Risk Emergency Plan (FREP) is submitted for your and Council consideration as part of the overall Development Application (DA).

## 2.0 SITE INSPECTION

An inspection of the *site* and catchment was undertaken on 5<sup>th</sup> November 2019 by Mr Stephen Wyllie to develop an understanding of the catchment and drainage systems. Several important features were observed and conceptualised. These were:

1. The *site* is west of the Creek Entrance channel that discharge flows from the catchment to the Ocean and east of the Griffin Road Bridge as shown in Figure 1.
2. Holloway Place traverses across the floodplain and the *site* is south of the main Creek channel (Figure 1).
3. The *site* elevation varies from 4.4 to 4.5 m AHD as shown in Figure 2.
4. *Site* is at the middle end of a Catchment Area of approximately 440Ha. The boundaries as shown in Figure 1, extends from Beacon Hill, Harbord and Dee Why Headland Road.

## 3.0 EXISTING INFORMATION

The *site* was surveyed by DA Surveys Reference No 5074 dated 26<sup>th</sup> October 2019. (Figure 2). Contours and catchment boundaries as shown in Figure 1 were generated by Pittwater Data Services Pty Ltd from the NSW Government Land and Property Lidar 2014 data Sydney North 3446262 using a Global Mapping Graphical Information System (GIS).

Two comprehensive studies were commissioned by the then Warringah Shire Council (1 & 2) to develop an understanding of the flooding characteristics of Curl Curl Lagoon and the drainage systems. These studies are:

1. Dee Why and Curl Curl Lagoon Flood Studies, 2002 (Ref 1)
2. Floodplain Risk Management Plan, 2005 (Ref 2)

Study 1 used a calibrated numerical modelling to predict the design flood conditions based on rainfall Intensity Frequency Duration curves (IFD) developed by the Bureau of Meteorology (BoM) (Ref 5). Study 2 investigated various options to manage the flood risk under specific design conditions.

The predicted flood results relevant to this investigation are shown in Table 3.1. Flood levels at the *Site* were issued by NBC (Ref 3).

**Table 3.1 Summary of Flood Study Results for the *Site***

Study	1%AEP Flood Level m AHD	PMF Flood Level m AHD	*Flood Travel times( minutes)	Comments: Locations
1&2	3.5	5.2	80	Griffin Rd Bridge
1&2	3.8	5.2	20	Lagoon (Footbridge & weir)
1#	5.2	5.9	20	<i>Site</i>

**\*Time taken from major rainfall event to produce peak flood level at that location (Ref 1 & 2)**

**# Flood levels issued by NBC (Ref 3) based on Ref 1.**

The differences in travel times at the *site* and at the Footbridge as detailed in Table 3.1 demonstrates the attenuation impact of the Lagoon and the control of the channel downstream of the Griffin Road Bridge. These features also have an impact on the 2 metre difference between the 1%AEP and PMF (Ref1) which at the *Site* are 5.2 and 5.9 metres AHD respectively (Ref3).

From a Flood Risk Management planning perspective the flood peak travels time at the *site* are still reasonably short and need to be considered in the Flood Emergency Planning Process.

The entrance berm to the Lagoon intermittently open and closes which is typical of small coastal Lagoons with small tidal prisms on an active littoral beach (Ref 4). The entrance behavior is monitored by NBC continuous water level and rainfall recording system on Griffin Bridge (Figure 2). This data shows that the Lagoon is closed for significant periods of time and opens due to flooding and or mechanical opening by NBC.

The condition of the entrance was modelled for various berm heights (Ref 1). The results showed that the predicted flood levels for the 1%AEP event at the *site* were insensitive to these berm levels as the floodplain of the lagoon is significant and can attenuate flood levels for these berm variations.

In essence the peak flood levels at the *site* are impacted by catchment runoff. This also applies to elevated ocean levels including sea level prediction to the year 2100 of 0.9 metres (Ref 6). This combined ocean level is approximately 3.0mAHD which is lower than the



1%AEP flood of 5.2m AHD at the *site*. However the state of the ocean level will impact on the draining process of floodwaters from the *site*.

The resident surveys and published data (Ref 1) did identify historical floods in the vicinity of the *site* during the April 1988.

#### **4.0 FLOODING PROCESSES AT THE *Site***

The flooding processes of the 1%AEP as modelled by Ref 1 has simulated several flooding characteristics in the vicinity of the *site*. Note that these processes are from the catchment with limited influence from the ocean as the berm level (tailwater of the model) was set at 2.2m AHD. The processes are:

- The flood peak response time at the *site* is approximately 20 minutes for the 1%AEP event. This means that the rainfall associated with this event will generate peak flood levels over that time. Rainfall intensities of approximately 60 mm/hour (critical duration 120 minutes) will generate the 1%AEP flood levels (Ref 1 and 5). Rainfall intensities in excess of 40mm/hr may cause overland flows near *site*.
- As shown in Appendix C Map F the site is Medium Risk Precinct.
- The flooding and draining process will be over approximately 1 hour for the 1%AEP event with the latter draining rates dependent on the level of the berm and the state of the ocean levels: astronomical tide storm and wave setup.
- The simulated PMF peak level of 5.9 metres AHD is a rare event which may occur in excess of 10,000 years. This peak flood level overtops Bennett Street. The PMF flood level was adopted in the evacuation and risk assessment process.

#### **5.0 REVIEW OF PROPOSED ADDITIONS**

The proposed additions and alterations as detailed in Figure 3,4 and 5 consist of the following:

- It is proposed that the existing Dwelling Ground Floor Level (GFL) have modifications that include refurbishing the bathroom, remove office wall and install staircase for proposed First Floor Level. The GFL( 4.54 m AHD) is below the FPL (5.7m AHD).
- The proposed First Floor Level (FFL) as shown in Figure 5 and 6 is at 7.61 m AHD which is above the PMF of 5.9 m AHD. This proposal has adequate facilities to be used as a Shelter-in-Place during a major flood event up to PMF level.
- The existing Garage will be upgraded to include an office area and associated staircase at a floor level of 7.61m AHD.



There is no nett change to the footprint and configuration of the existing Dwelling and garage below the FFL. There is no net loss of flood storage.

## 6.0 FLOOD RISK ANALYSIS AND PLAN

The access to any flood free haven away from the *site* is not considered as a viable option: considering the rate of rise of the flood levels, general frequency of warnings from BoM and the low levels of surrounding access Roads. As such, the Dwelling should be used as a “Shelter- in-Place” (SiP) and be used as the *only action* for flood planning. Access is not available along Bennett Street.

During the lead up to this event there are a number of flood prediction services available which should be used to ensure sufficient planning and action. The sequence of information available are:

1. This report provides information on the flooding processes of the *site*. The residents of the *site* should be aware of this information and the Action Plan should be posted in a visible location: BoM warning process, inundation process of the *site* and an action plan. The Action plan is in Appendix B.
2. Severe flood warnings for the Northern Beaches predicted by the Bureau of Meteorology (BoM), should prepare for a potential flooding at the *site*. This information is broadcasted on ABC radio and TV and is available on BoM website. Typically, rainfall intensities in an excess of 40mm/hr over a period of 1 hr will generate flooding Extreme ocean conditions may delay the flood draining process.
3. A flood levels exceeding 4 metres AHD will inundate Holloway Place, and should be a trigger to prepare. When rain is predicted to continue a major event may occur, particularly if flood warnings continue to be issued by BoM concurrent with a predicted high tide.
4. As discussed in Section 4, the 1%AEP flood will rise to its peak value in 80 minutes. During that time the final preparations should be concluded to secure items on the *site* and ensure the safety of all persons at the FFL Dwelling. Chemicals and any loose equipment stored on the FFL of Garage office. The vehicles should secured and be within a bollard system.

The basic requirements of a SiP which are met based on Figures 5 and 6  
76are:

1. The Dwelling has access to a FFL at or above the PMF flood peak level of 5.9 m AHD. The FFL is 7.61m AHD.
2. Floor space has to be 2 square metres /person. The design is compliant with these guidelines.
3. Access to the first floor is via a staircase.
4. The vehicles are to be secured and contained within the bollard system.
5. There is a bathroom at the FFL and sufficient storage for items that need to be raised above flood levels.
6. Hazardous materials that can be dislodged by floodwaters and should not be stored below PMF flood level. Storage is available at the FFL and Garage Office.

In conclusion, considering the flooding processes at the *site* the design of the Dwelling as detailed in Figures 3,4,5 and 6, it is my opinion the design and this flood evacuation plan will satisfy NBC DCP Section E11 requirements as detailed in Appendix A and B.

Yours Faithfully,



Stephen Wyllie Bsc (Eng) FMA Member

Director

10/12/2019

Pittwater Data Services Pty Ltd

## **7.0 REFERENCES**

1. Dee Why Lagoon and Curl Curl Lagoon Flood Studies, Lyall & Associates Consulting Engineers. 2002.
2. Dee Why Lagoon and Curl Curl Lagoon Floodplain Risk Management Study and Appendices, Lyall & Associates Consulting Engineers. 2005.
3. Northern Beaches Council Data sourced from Ref 2 issued on 7<sup>th</sup> December 2019
4. Behavior of Coastal Lagoons, Gordon A.D 5<sup>th</sup> Aus Conference on Coastal and Ocean Engineering, 1980
5. Bureau of Meteorology Intensity Frequency Duration Curves.
6. IPCC Climate Change 2014 Synthesis Report 2014.



## Appendix A: Development Matrix for Medium Risk Residential Development

Flood Impacts	Design Standard	Description	Comment
A: Flood Effects caused by Development	A1 A3	Complies with Flood Standard Loss of flood storage compensated	Yes Not Applicable
B: Drainage Infrastructure and Creek Works	B1 B2	Flood mitigation works Section 88B Notice	Not Applicable Not Applicable
C: Building Components and Structural	C1 C2 C3	Constructed of flood compatible materials Structural stability under flood loads Services flood proofed or above FPL	Yes Not Applicable Yes
D: Storage of Goods	D1 D2	Hazardous stored above FPL Goods/ materials stored above PMF	Yes Section 6 Yes Section 6
E: Flood Emergency Response	E1 E2	Complies with NBC Planning Shelter In Place requirement and above PMF	Yes Section 6 Yes Section 6
F: Floor Levels	F1 F2 F3 F4 F6 F8 F9	Floor levels above FPL Sub floor not impede flow Pursuant of S88B Existing floor level retained below FPL First level Additions above PMF	Yes FFL and Office Figure 5 Not Applicable To be applied Yes Figure 6 Yes Figure 5 and 6
G: Car Parking	G1 G2 G3  G5 G6 G7 G8	Open carpark not in floodway Floor level above ground level Enclosed carparks protected from inundation Vehicle barriers for d > 300mm Enclosed garages at 1%AEP Comply with flood standard Raised driveways no impact	Yes Yes Not Applicable  Yes See Figure 5 Not Applicable Yes Not Applicable
H: Fencing	H1	Designed not to impede flow	Not Applicable
I: Pools	I1	Coping flush pumps and electrical	Not Applicable

# FLOODING WARNING

## AWARENESS

- Heavy rain and Ocean storms predicted by the Bureau of Metrology (BoM) : flood warning /flash flooding for the Northern Beaches.
- Monitor media reports for flood warnings in the Sydney Metropolitan Area.
- Observe local rainfall and flood levels in Holloway Place (Figure 1). Check Predicted Fort Denison Tides.
- Northern end of Holloway Place overtopped triggers Action Plan.

## ACTION **BoM WARNINGS ISSUED**

- Account for all residents and visitors. Inform all residents and visitors of the potential flood situation and this Plan.
- Any items transportable by flood waters move to First Floor Level (FFL).
- Secure the vehicles in carport. Move essential items to FFL or Office
- Observe inundation on the *site* and state of tide.
- Continue to monitor BoM reports and tide.
- If rainfall is intense and warnings continue evacuate and remain at FFL.

## POST FLOOD

- Account for all residents and visitors.
- Inspect vehicles and *site* generally for safety particularly electrical problems.
- Monitor BoM reports to ensure no further flood warnings and check on tide predictions.



northern  
beaches  
council

## **FLOOD INFORMATION REQUEST - BASIC**

**Property:** 8 Holloway Place, Curl Curl

**Issue Date:** 06/12/2019

**Flood Study Reference:** Dee Why and Curl Curl Lagoons Floodplain Risk Management Study 2005, Lyall & Associates

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### **Flood Information for lot:**

**Flood Life Hazard Category** – See Map A – N/A

**1% AEP** – See Flood Map B

**1% AEP Maximum Water Level<sup>3</sup>:** 5.2 m AHD

**1% AEP Maximum Peak Depth from natural ground level<sup>3</sup>:** 1.75 m

**1% AEP Maximum Velocity:** N/A m/s

**1% AEP Hydraulic Categorisation:** N/A See Flood Map E

**Flood Planning Area** – See Flood Map C

**Flood Planning Level (FPL) <sup>1, 2, 3 & 4</sup>:** 5.7 m AHD

**Probable Maximum Flood (PMF)** – See Flood Map D

**PMF Maximum Water Level<sup>2</sup>:** 5.9 m AHD

**PMF Maximum Depth from natural ground level:** 2.45 m

**PMF Maximum Velocity:** N/A m/s

**Flood Risk Precinct** – See Map F



<sup>1</sup>The flood information does not take into account any local overland flow issues nor private stormwater drainage systems.

<sup>2</sup>Overland flow/mainstream water levels may vary across a sloping site, resulting in variable minimum floor/flood planning levels across the site.

<sup>3</sup>Intensification of development in the former Pittwater LGA requires the consideration of climate change impacts which may result in higher minimum floor levels than those indicated on this flood advice.

<sup>4</sup>Vulnerable/critical developments require higher minimum floor levels using the higher of the PMF or Flood Planning Level

#### **General Notes:**

- All levels are based on Australian Height Datum (AHD) unless otherwise noted.
- This is currently the best available information on flooding; it may be subject to change in the future.
- Council recommends that you obtain a detailed survey of the above property and surrounds to AHD by a registered surveyor to determine any features that may influence the predicted extent or frequency of flooding. It is recommended you compare the flood level to the ground and floor levels to determine the level of risk the property may experience should flooding occur.
- Development approval is dependent on a range of issues, including compliance with all relevant provisions of Northern Beaches Council's Local Environmental Plans and Development Control Plans.
- Please note that the information contained within this letter is general advice only as a detail survey of the property as well as other information is not available. Council recommends that you engage a suitably experienced consultant to provide site specific flooding advice prior to making any decisions relating to the purchase or development of this property.
- The Flood Studies on which Council's flood information is based are available on Council's website.

# FLOOD MAP A: FLOOD LIFE HAZARD CATEGORY

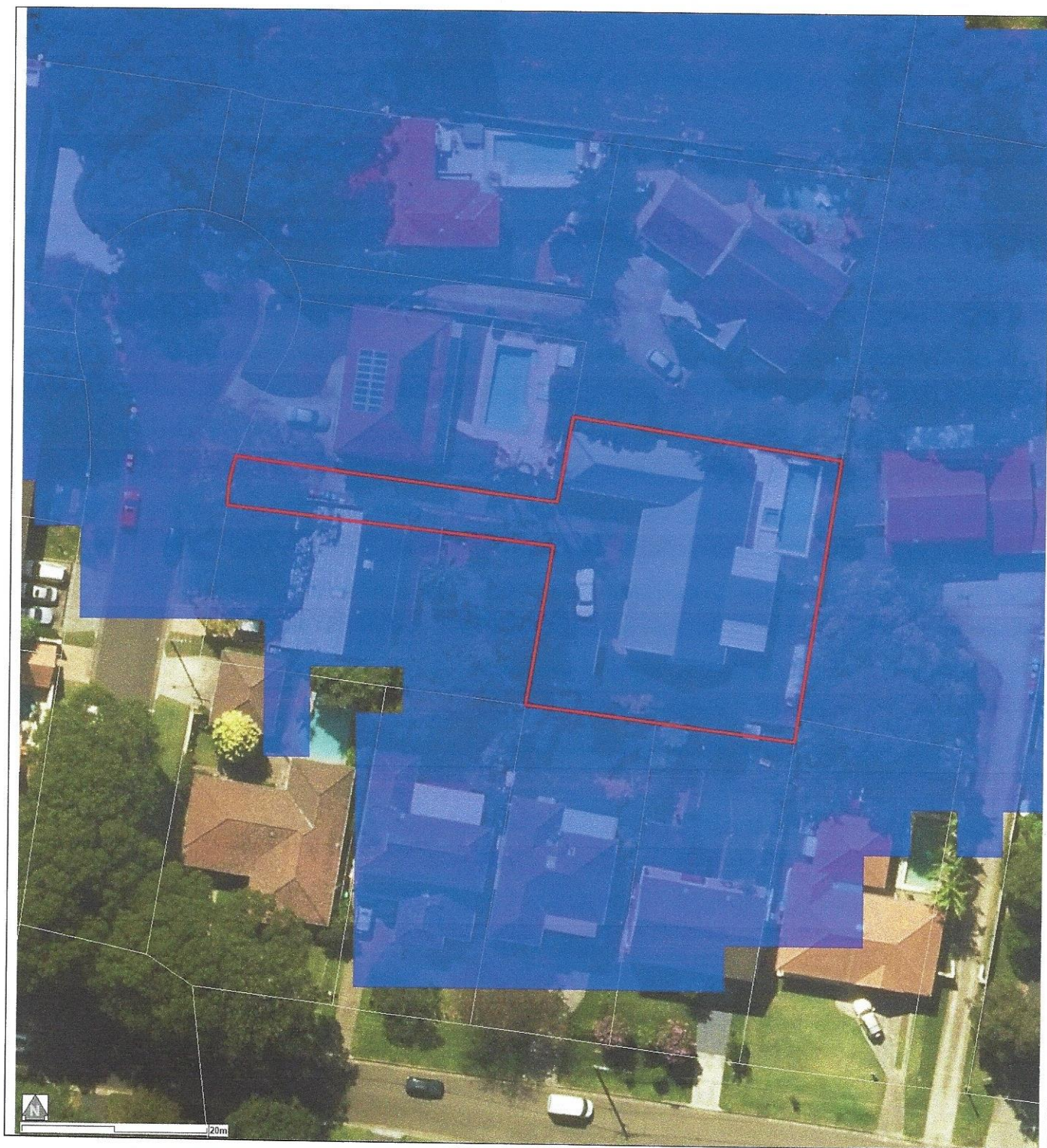
**\*\*No data available for this property.**

## Notes:

- Refer to 'Flood Emergency Response Planning for Development in Pittwater Policy' for additional information on the Flood Life Hazard Categories and Pittwater 21 DCP Control B3.12.
- Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Dee Why and Curl Curl Lagoons Floodplain Risk Management Study 2005, Lyall & Associates) and aerial photography (Source: NearMap 2014) are indicative only.



## FLOOD MAP B: FLOODING - 1% AEP EXTENT

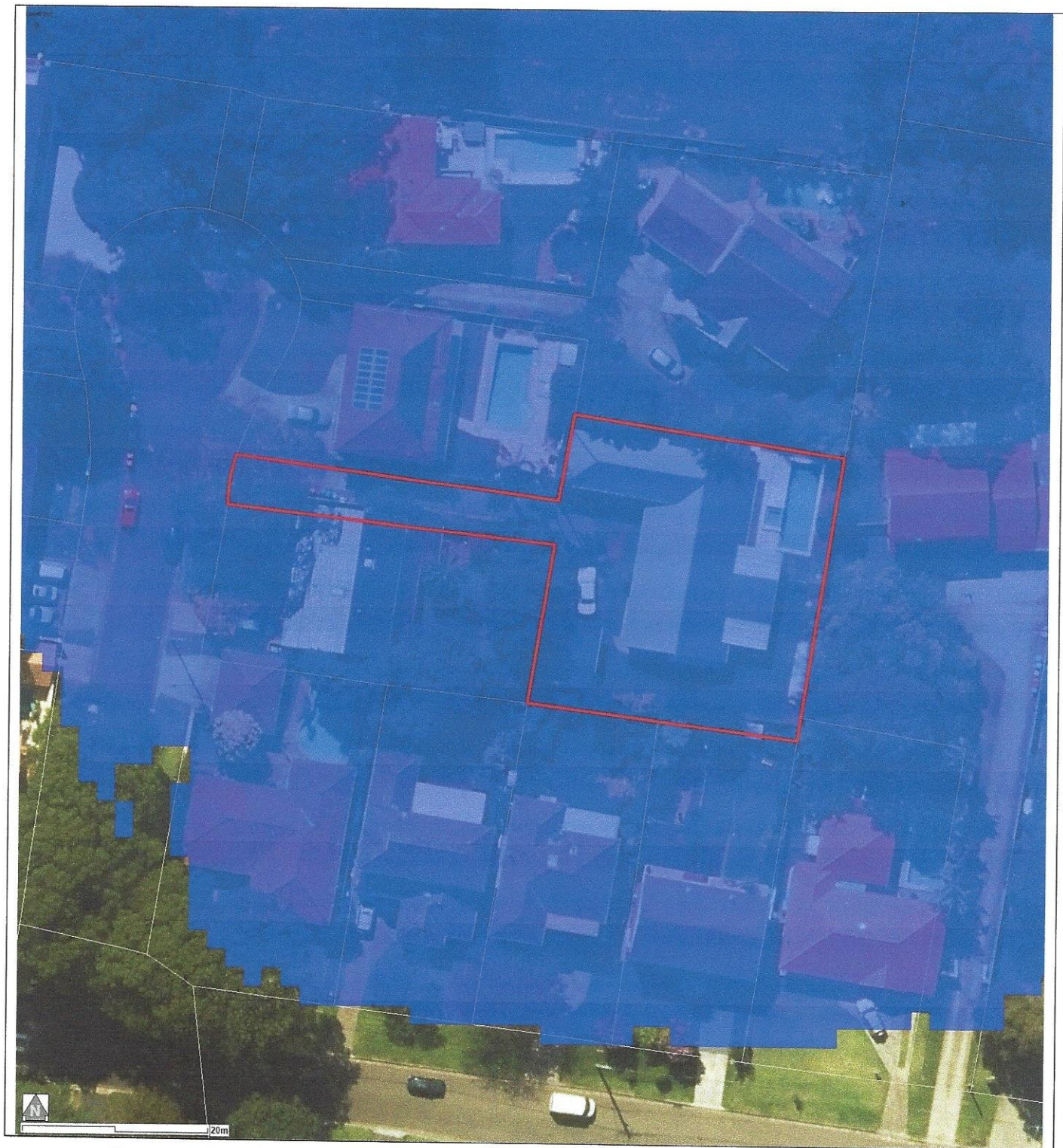


### Notes:

- Extent represents the 1% annual Exceedance Probability (AEP) flood event.
- Flood events exceeding the 1% AEP can occur on this site.
- Extent does not include climate change.
- Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Dee Why and Curl Curl Lagoons Floodplain Risk Management Study 2005, Lyall & Associates) and aerial photography (Source: NearMap 2014) are indicative only.



## FLOOD MAP C: FLOOD PLANNING AREA EXTENT

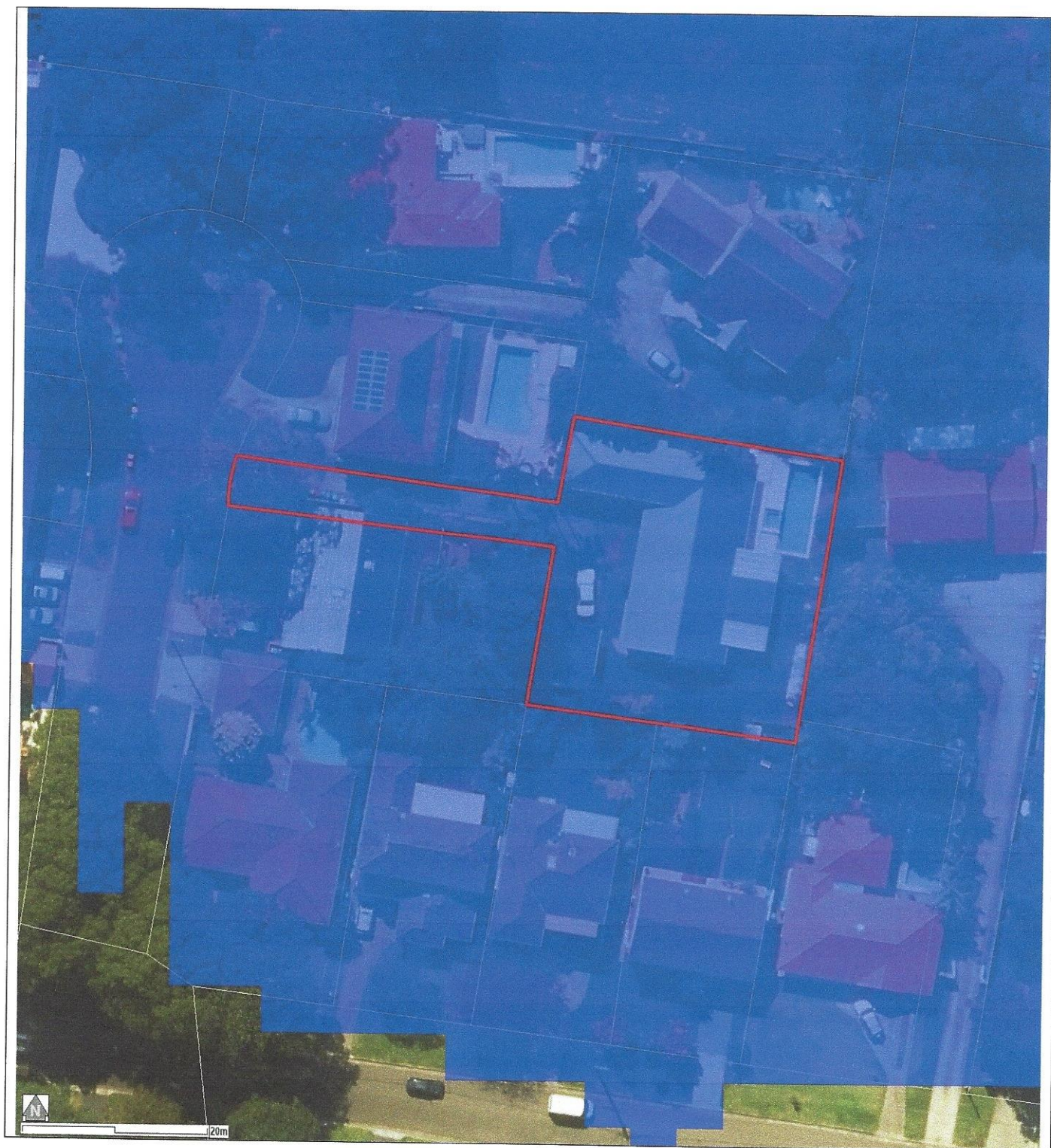


### Notes:

- Extent represents the 1% annual Exceedance Probability (AEP) flood event + freeboard.
- Extent does not include climate change.
- Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Dee Why and Curl Curl Lagoons Floodplain Risk Management Study 2005, Lyall & Associates) and aerial photography (Source: NearMap 2014) are indicative only.



## FLOOD MAP D: PROBABLE MAXIMUM FLOOD EXTENT

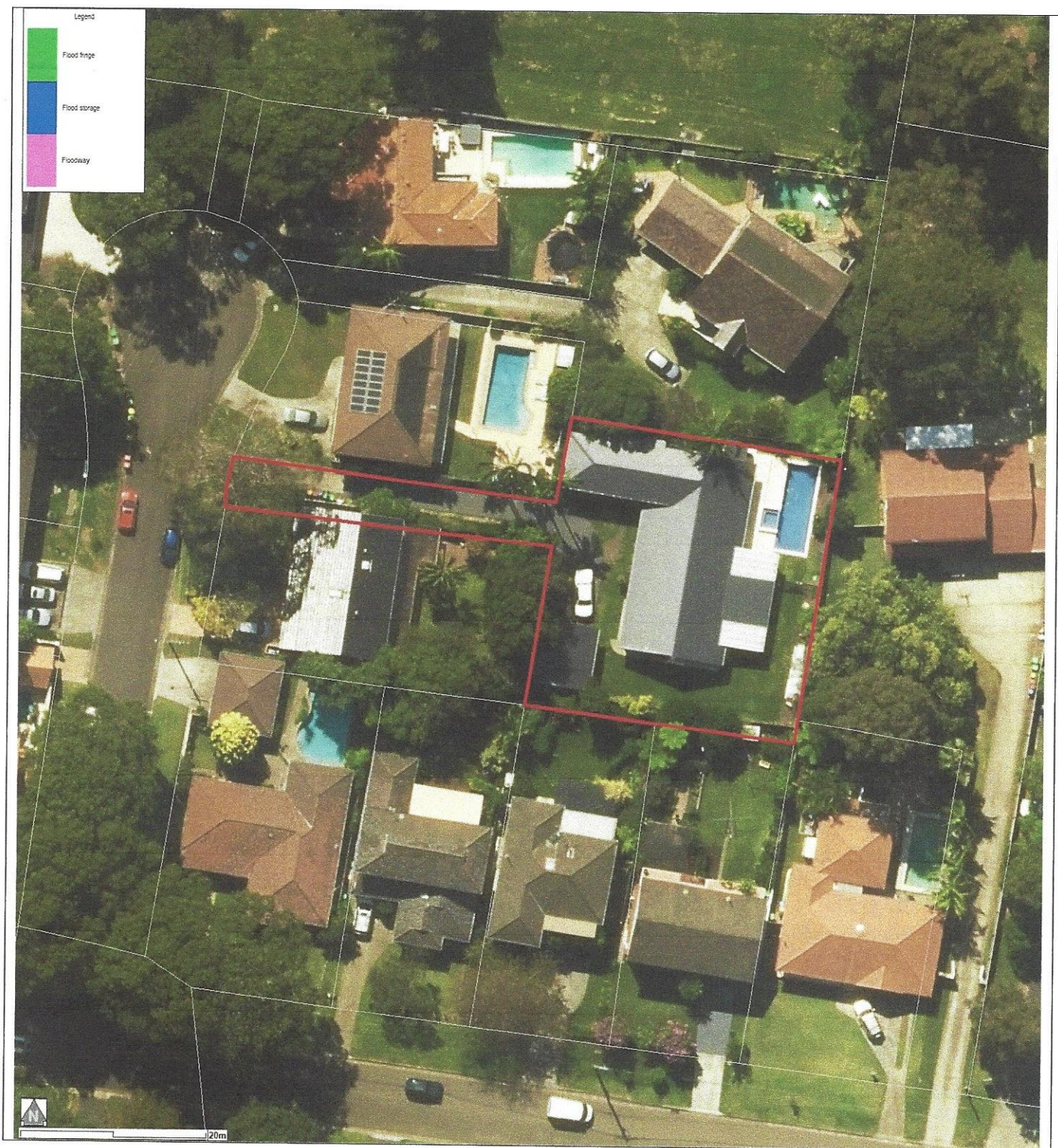


### Notes:

- Extent represents the Probable Maximum Flood (PMF) flood event.
- Extent does not include climate change.
- Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Dee Why and Curl Curl Lagoons Floodplain Risk Management Study 2005, Lyall & Associates) and aerial photography (Source: NearMap 2014) are indicative only.



# FLOOD MAP E: 1% AEP FLOOD HYDRAULIC CATEGORY EXTENT MAP

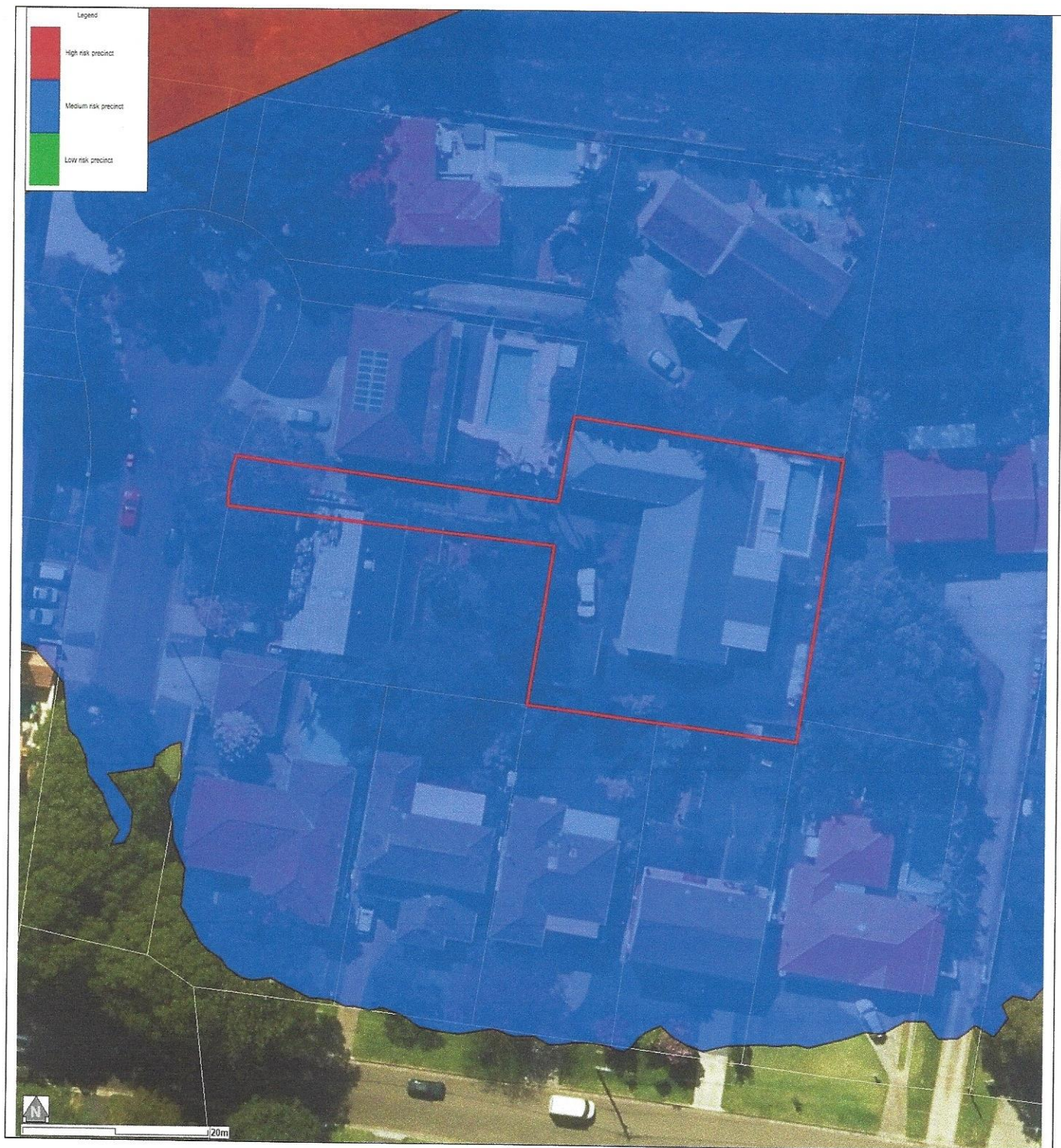


## Notes:

- Extent represents the 1% annual Exceedance Probability (AEP) flood event.
- Extent does not include climate change.
- Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Dee Why and Curl Curl Lagoons Floodplain Risk Management Study 2005, Lyall & Associates) and aerial photography (Source: NearMap 2014) are indicative only.



# FLOOD MAP F: FLOOD RISK PRECINCT MAP



## Notes:

- **Low Flood Risk precinct** means all flood prone land not identified within the High or Medium flood risk precincts.
- **Medium Flood Risk precinct** means all flood prone land that is (a) within the 1% AEP Flood Planning Area; and (b) is not within the high flood risk precinct.
- **High Flood Risk precinct** means all flood prone land (a) within the 1% AEP Flood Planning Area; and (b) is either subject to a high hydraulic hazard, within the floodway or subject to significant evacuation difficulties (H5 and or H6 Life Hazard Classification)





LEGEND  
—— CATCHMENT  
BOUNDARY.  
● SITE.

FIGURE 1





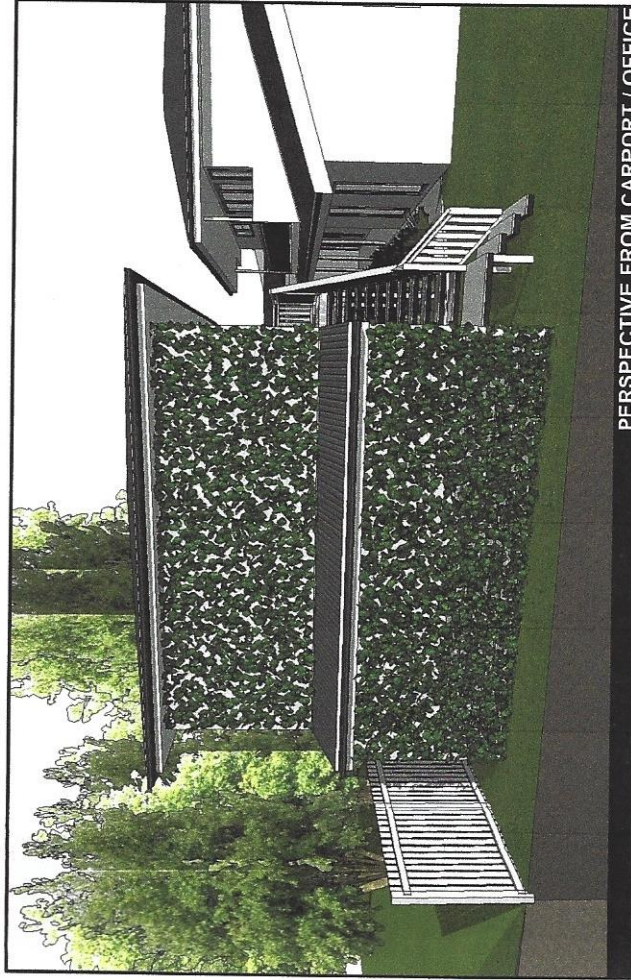




PERSPECTIVE FROM FRONT OF CARPORT / OFFICE



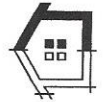
PERSPECTIVE FROM SIDE OF CARPORT / OFFICE



PERSPECTIVE FROM FRONT OF CARPORT / OFFICE



PERSPECTIVE FROM FRONT OF CARPORT / OFFICE



**ACTION PLANS**

m: 0-26 957 518  
e: operations@actionplans.com.au  
w: www.actionplans.com.au

REV.	DATE	COMMENTS	DRWN	NOTES
A	05/11/19	INITIAL DESIGN PLAN	LRP	
B	08/11/19	DESIGN AMENDMENT	LRP	
C	13/11/19	SECOND DESIGN AMENDMENT	LRP	

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The Builder/Contractor shall check and verify all levels and dimensions prior to commencement of any work, and the creation of shop drawings, or fabrication of components. All errors and omissions are to be verified by the Builder/Contractor and referred to the designer prior to the commencement of works.

#### LEGEND

**CLIENT**  
PETE & TAFF WALSH

**PROJECT ADDRESS**  
8 HOLLOWAY PLACE,  
CURL CURL NSW 2086

**DRAWING NO.**  
**DP13**

**DATE**  
Thursday, 21  
November 2019

**DRAWING NAME**  
PROPOSED PERSPECTIVES  
CARPORT/HOME OFFICE

**FIGURE 3**  
SCALE  
@A3





**ACTION PLANS**  
 m: 0428 967 518  
 e: operations@actionplans.com.au  
 w: www.actionplans.com.au

**Figures 4**  
 SCALE 1:100 @A3

**DRAWING NAME**  
 PROPOSED GROUND FLOOR PLAN

**DRAWING NO.**  
 DP03

**DATE**  
 Thursday, 21 November 2019

**CLIENT**  
 PETE & TAFF WALSH

**PROJECT ADDRESS**  
 8 HOLLOWAY PLACE  
 CURL CURL NSW 2096

**LEGEND**

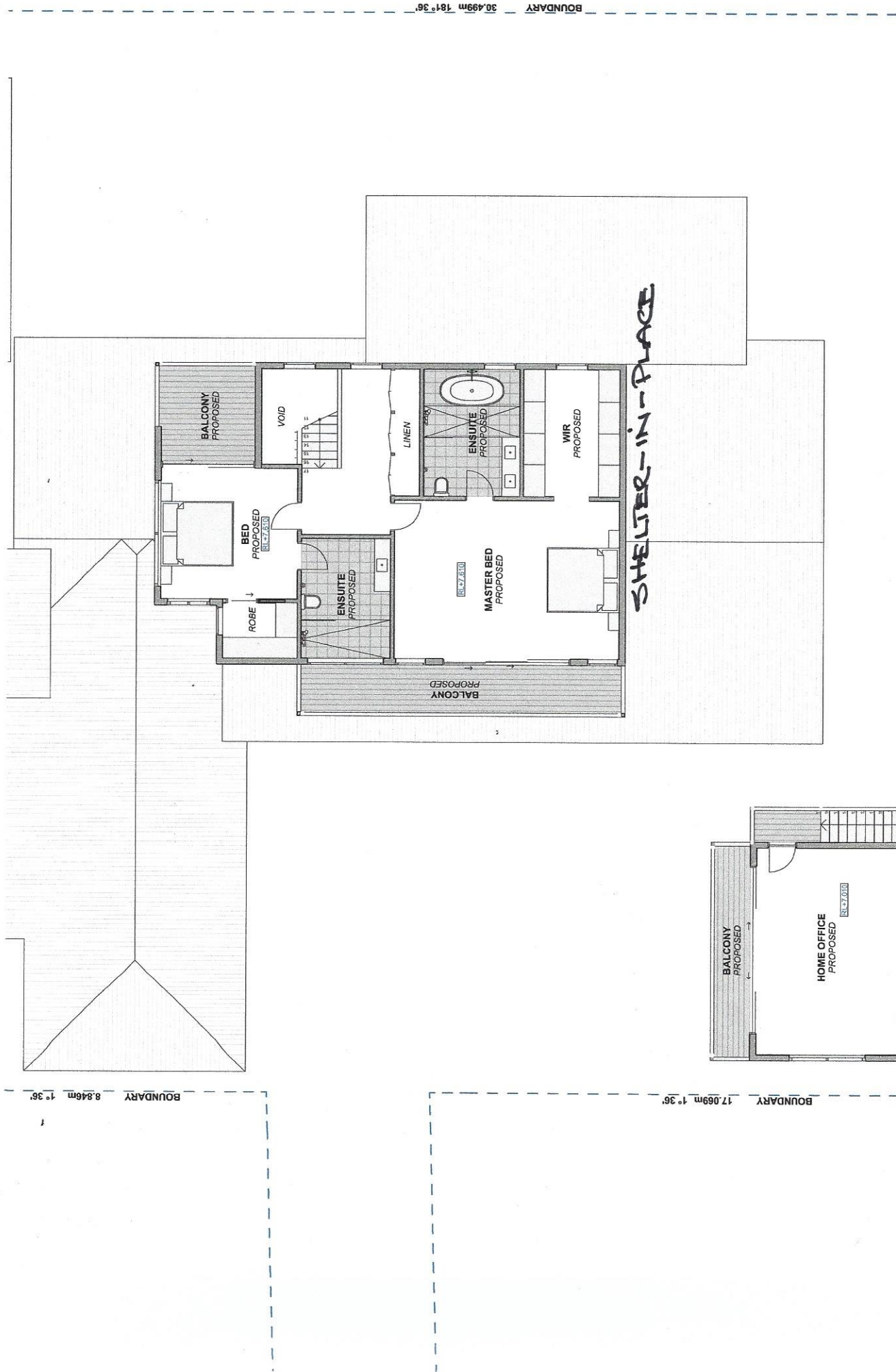
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 PROPOSED (dashed line)  
 DEMOLISHED (dotted line)


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REV.	DATE	COMMENTS	DRWN	NOTES
A	05/11/19	INITIAL DESIGN PLAN	LRP	
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C	13/11/19	SECOND DESIGN AMENDMENT	LRP	





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REV.	DATE	COMMENTS	DRWN	NOTES
A	05/11/18	INITIAL DESIGN PLAN	LRP	
B	08/11/18	DESIGN AMENDMENT	LRP	
C	13/11/18	SECOND DESIGN AMENDMENT	LRP	

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The Builder/Contractor shall check and verify all levels and dimensions on site prior to commencement of any work, and shall report any discrepancies to the designer prior to the commencement of works.

**LEGEND**

EXISTING  
PROPOSED  
DEMOLISHED

**CLIENT**  
PETE & TAFF WALSH

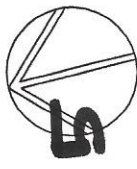
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8 HOLLOWAY PLACE,  
CURL CURL NSW 2096

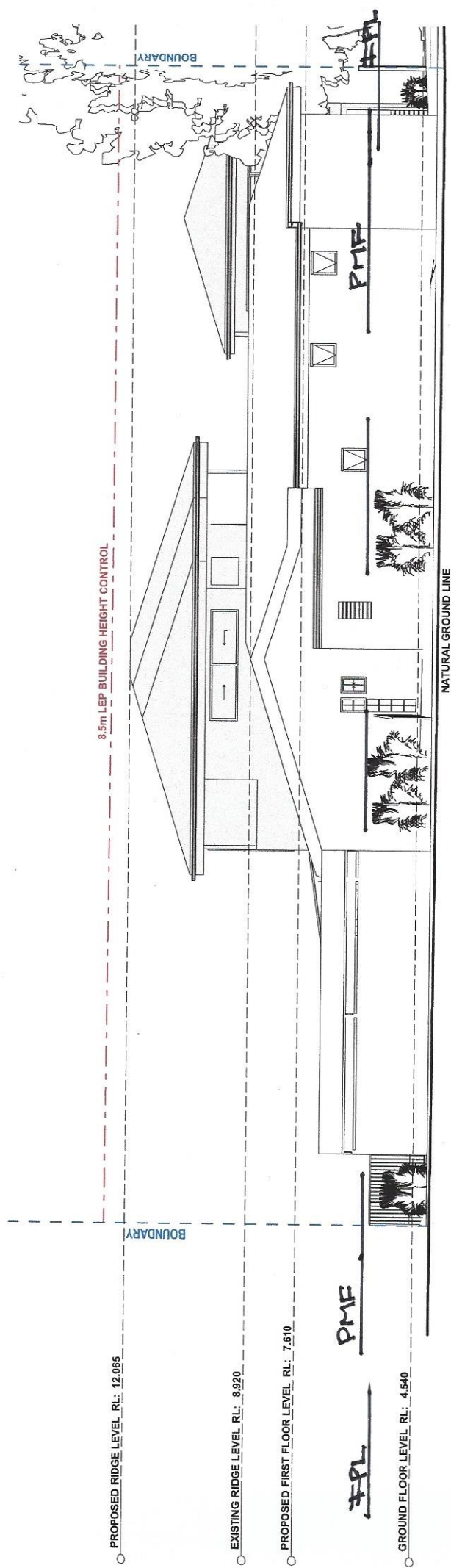
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DP04

**DATE**  
Thursday, 21  
November 2019

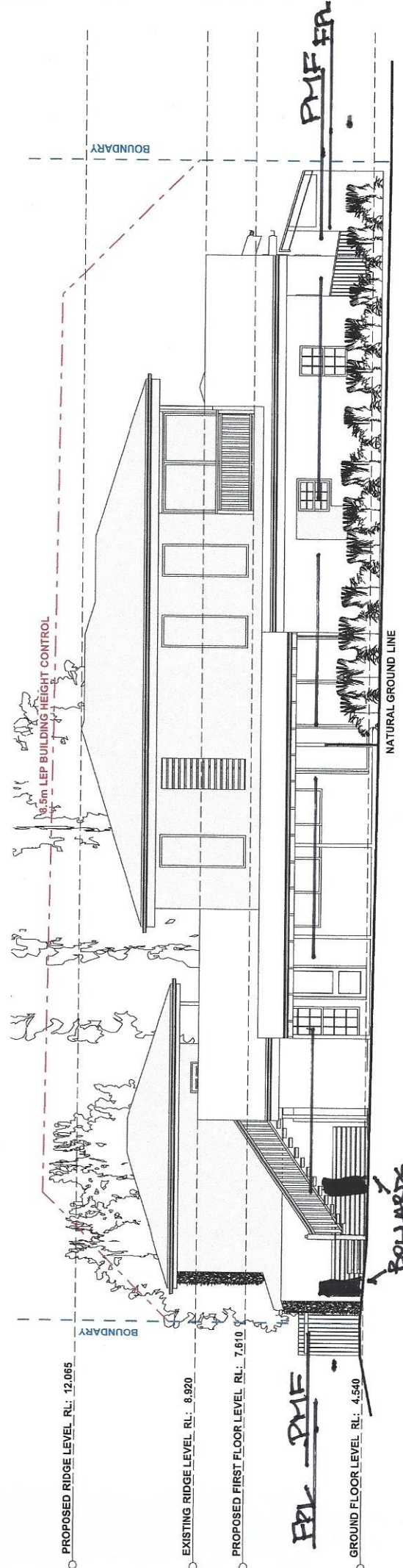
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PROPOSED FIRST FLOOR  
PLAN

**SCALE**  
1:100 @A3

**FIVE**



1 NORTH ELEVATION 1:100



2 EAST ELEVATION 1:100

**ACTION PLANS**

m: 0426 957 518  
e: operations@actionplans.com.au  
w: www.actionplans.com.au

**REV.** **DATE** **COMMENTS** **DRWN** **NOTES**

A	06/11/19	INITIAL DESIGN PLAN	LRP	<p>This drawing is the copyright of Action Plans and not be altered, reproduced or transmitted in any form or by any means in part or in whole with the written permission of Action Plans. Do not scale measure from drawings. Figure dimensions are to be used only.</p> <p>The Builder/Contractor shall check and verify all levels and dimensions prior to commencement of any work, and ensure that all dimensions are to be verified by the Builder/Contractor and referred to the designer prior to the commencement of works.</p>
B	08/11/19	DESIGN AMENDMENT	LRP	
C	13/11/19	SECOND DESIGN AMENDMENT	LRP	

**CLIENT**  
PETE & TAFF WALSH

**PROJECT ADDRESS**  
8 HOLLOWAY PLACE,  
CURL CURL NSW 2086

**DRAWING NO.**  
DP06

**DATE**  
Thursday, 21  
November 2019

**DRAWING NAME**  
NORTH / EAST ELEVATION

**SCALE**  
1:100 @A3

**LEGEND**

EXISTING  
PROPOSED  
DEMOLISHED



## Attachment A

### NORTHERN BEACHES COUNCIL STANDARD HYDRAULIC CERTIFICATION FORM

FORM A/A1 – To be submitted with Development Application

Development Application for

Address of site: 8 HOLLOWAY PLACE, CURL CURL

Declaration made by hydraulic engineer or professional consultant specialising in flooding/flood risk management as part of undertaking the Flood Management Report:

I, STEPHEN WYLLIE on behalf of PITTWATER DATA SERVICES PTY LTD  
(Insert Name) (Trading or Business/ Company Name)

on this the 10th DECEMBER 2019 certify that I am engineer or a  
(Date)

professional consultant specialising in flooding and I am authorised by the above organisation/ company to issue this document and to certify that the organisation/ company has a current professional indemnity policy of at least \$2 million.

#### Flood Management Report Details:

Report Title: FLOOD RISK MANAGEMENT REPORT FOR

Report Date: 10th DECEMBER 2019  
8 HOLLOWAY PLACE, CURL CURL

Author: STEPHEN WYLLIE

Author's Company/Organisation: PITTWATER DATA SERVICES PTY LTD

I: STEPHEN WYLLIE  
(Insert Name)

Please tick all that are applicable (more than one box can be ticked)

☒ have obtained and included flood information from Council (must be less than 12 months old) **(This is mandatory)**

☒ have followed Council's Guidelines for Preparing a Flood Management Report

☐ have requested a variation to one or more of the flood related development controls. Details are provided in the *Flood Management Report*.

Signature Stephen Wyllie BSC(ENG) FMA MEMBER  
Name STEPHEN WYLLIE