

17 March 2025

General Manager
Northern Beaches Council
PO Box 882
MONA VALE NSW 1660

Re: Flood Assessment - 100 Wakehurst Parkway, Elanora Heights

Dear Sir/Madam,

This letter is to advise that I have reviewed the architectural details (Appendix A), dated 21 February 2025 by RK Designs, for the proposed alterations and additions with respect to the Northern Beaches Council Flood Risk Precinct Maps (Appendix B). The site was found to have minor flood affectation at the front of the property from catchment flooding depicted within the Council's flood mapping located adjacent to Narrabeen Lagoon catchment.

Upon review, the proposed secondary dwelling will be constructed outside of the 1 in 100-year flood extents and overland flows. These works do not require special flood proofing measures due to the proposed works being located at the rear of the property. As such the addition is considered to be in compliance with Section B3.11 Flood Prone Land of the Pittwater 21 Development Control Plan.

Due to the frontage of the site experiencing inundation during a significant flood event, evacuation through Wakehurst Parkway to higher ground is not possible. Therefore, the emergency response is to 'shelter-in-place' within the proposed secondary dwelling, otherwise off-site as directed by Emergency Services.

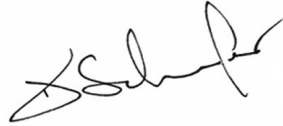
The proposed secondary dwelling floor level is at **R.L. 8.70 m A.H.D.**, which is above the FPL of **R.L. 3.55m A.H.D.**, and at the PMF level of **R.L. 5.03 m A.H.D.** (established in the Narrabeen Lagoon Flood Study 2013, BMT WBM). The floor space provided by the proposed **59.9m²** secondary dwelling is sufficient for the number of persons sheltering in place and is intrinsically accessible to all people on the site.

A major flood event is anticipated to involve low-velocity flood waters rising and falling over a duration of more than 2 hours. To provide shelter for a long duration storm, the secondary dwelling must contain as a minimum: sufficient clean water for all occupants; portable radio with spare batteries; torch with spare batteries; and a first aid kit.

As a result, the proposed works are considered satisfactory with respect to flooding of the site and it is considered that a site-specific Flood Risk Management Plan is not considered warranted in this instance.

Should you require any further information, please contact the undersigned.

Yours faithfully
TAYLOR CONSULTING



D.M.Schaefer - Director
B.E Civil (Hons) M.I.E. Aust. N.E.R.



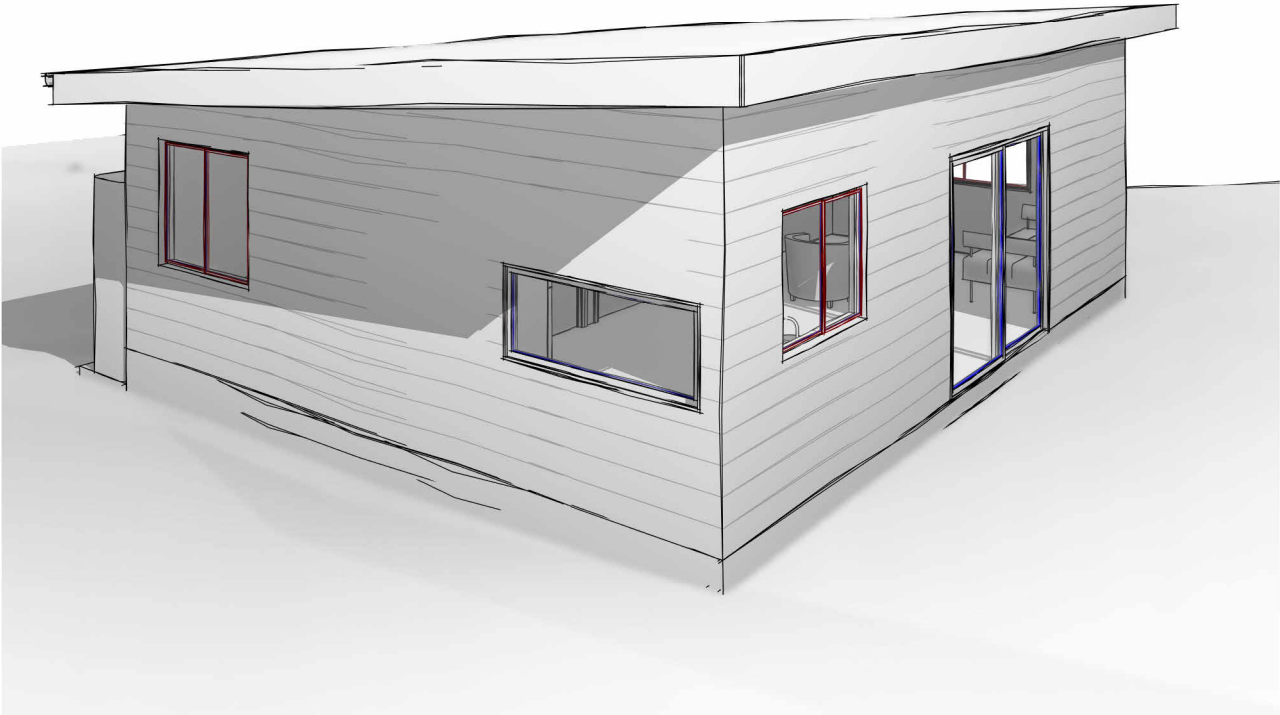
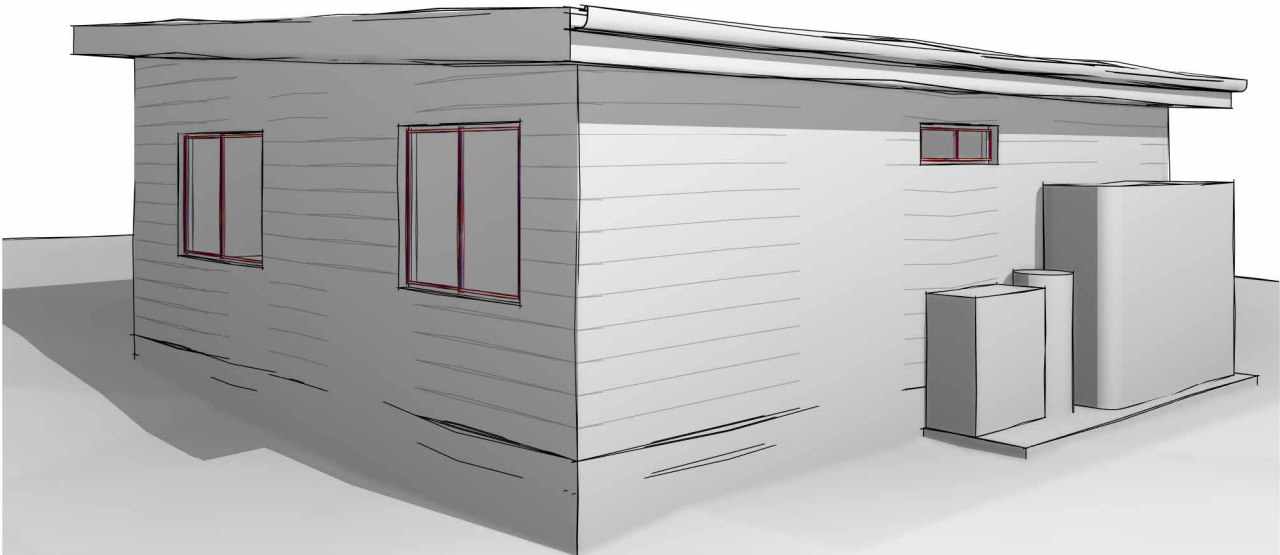
APPENDIX A

ADDRESS 100 WAKEHURST PARKWAY ELANORA HEIGHTS

RESIDENCE

SHEET LIST (A)

SHEET NUMBER	SHEET NAME	ISSUE
A 0	COVER PAGE	B
A 1	NOTES	B
A 2	SITE AND ROOF PLAN	B
A 3	GROUND FLOOR PLAN	B
A 4	ELEVATIONS AND SECTION	B
A 5	AREA CALCULATIONS	B
A 6	BASIX COMMITMENTS	B



GENERAL NOTES

. All dimensions are to be confirmed on site by the builder/subcontractor, any incongruencies must be reported to the Designer before commencement of any work.

. No Survey has been made on the boundaries, all bearings, distances and areas have been taken from the contour survey plan. A Survey must be carried out to confirm the exact boundary locations.

. No construction work shall commence until a site survey confirming the site boundaries has been completed. The contractor is to ensure that the boundary setbacks are confirmed and used, the boundary setbacks take precedence over all other dimensions. The Survey work must be performed by a registered Surveyor.

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. All construction, control joints and expansion joints in the wall, floors, other locations shall be in strict accordance with the Structural Engineering details. No joints or breaks other than specified, are allowed without written permission from the Engineer.

. Measurements for the fabrication of secondary components such as, windows, doors, internal frames, structural steel components and the like, are not to be taken from these documents. Measurements must be taken on site to suit the work as constructed.

. All structural components shall be in strict accordance to details and specifications as prepared by a structural engineer.

. All existing structures need to be examined for structural adequacy, and it is the Contractor's responsibility to ensure that a certificate of structural adequacy is available prior to the start of any work.

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EU	15/01/25	A	ISSUE FOR DA
EU	21/02/25	B	ISSUE FOR DA

project

PROPOSED CONSTRUCTION OF A GRANNY FLAT AT 100 WAKEHURST PARKWAY ELANORA HEIGHTS NSW 2101 LOT 1/-/DP1177671

client

RICK AND RACHEL CAVANAGH

 Bungalow Homes

drawing	COVER PAGE	project no	date	sheet no.	scale @ A3	issue	checked
		25-02	15/01/25	A 0		B	?



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GENERAL NOTES

ALL ASPECTS OF CONSTRUCTION ARE TO COMPLY WITH THE APPLICABLE PERFORMANCE REQUIREMENTS OF THE NCC 2022 AND THE HOUSING PROVISIONS

ALL DIMENSIONS ARE TO BE CONFIRMED ON SITE BY THE BUILDER/SUBCONTRACTOR, ANY INCONGRUENCE MUST BE REPORTED TO THE DESIGNER BEFORE COMMENCEMENT OF ANY WORK

NO SURVEY HAS BEEN MADE ON THE BOUNDARIES, ALL BEARINGS, DISTANCES AND AREAS HAVE BEEN TAKEN FROM THE CONTOUR SURVEY PLAN. A SURVEY MUST BE CARRIED OUT TO CONFIRM THE EXACT BOUNDARY LOCATIONS

NO CONSTRUCTION WORK SHALL COMMENCE UNTIL A SITE SURVEY CONFIRMING THE SITE BOUNDARIES HAS BEEN COMPLETED. THE CONTRACTOR IS TO ENSURE THAT THE BOUNDARY SETBACKS ARE CONFIRMED AND USED, THE BOUNDARY SETBACKS TAKE PRECEDENCE OVER ALL OTHER DIMENSIONS. THE SURVEY WORK MUST BE PERFORMED BY A REGISTERED SURVEYOR

IN THE EVENT OF ENCOUNTERING ANY DISCREPANCIES ON THESE DRAWINGS, SPECIFICATION OR SUBSEQUENT INSTRUCTIONS ISSUED, THE BUILDER/SUBCONTRACTOR SHALL CONTACT THE DESIGNER BEFORE PROCEEDING FURTHER WITH ANY WORK

ALL CONSTRUCTION, CONTROL JOINTS AND EXPANSION JOINTS IN THE WALL, FLOORS, OTHER LOCATIONS SHALL BE IN STRICT ACCORDANCE WITH THE STRUCTURAL ENGINEERING DETAILS. NO JOINTS OR BREAKS OTHER THAN SPECIFIED, ARE ALLOWED WITHOUT WRITTEN PERMISSION FROM THE ENGINEER

MEASUREMENTS FOR THE FABRICATION OF SECONDARY COMPONENTS SUCH AS, WINDOWS, DOORS, INTERNAL FRAMES, STRUCTURAL STEEL COMPONENTS AND THE LIKE, ARE NOT TO BE TAKEN FROM THESE DOCUMENTS. MEASUREMENTS MUST BE TAKEN ON SITE TO SUIT THE WORK AS CONSTRUCTED

ALL STRUCTURAL COMPONENTS SHALL BE IN STRICT ACCORDANCE TO DETAILS AND SPECIFICATIONS AS PREPARED BY A STRUCTURAL ENGINEER

ALL EXISTING STRUCTURES NEED TO BE EXAMINED FOR STRUCTURAL ADEQUACY, AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT A CERTIFICATE OF STRUCTURAL ADEQUACY IS AVAILABLE PRIOR TO THE START OF ANY WORK

HARD WIRED PHOTO-ELECTRIC SMOKE ALARMS TO BE INSTALLED IN ACCORDANCE WITH CLAUSE 9.5.4 OF THE HOUSING PROVISIONS 2022 & AS 3786

FINISHED FLOOR LEVELS MAY VARY (+/- 50MM) FROM THOSE INDICATED ON PLAN, DUE TO SITE CLEARING, DEMOLITION, CONTOUR INCONSISTENCIES ETC

GARAGES, RAMPS AND DRIVEWAY PROFILES ARE TO COMPLY WITH AUSTRALIAN STANDARDS AS 2890

ANY STRUCTURE SHOWN AS EXEMPT DEVELOPMENT IS TO BE WORKED OUT ON SITE, CONTRACTOR TO ENSURE THE CONSTRUCTION IS DONE IN ACCORDANCE TO THE EXEMPT DEVELOPMENT CONTROLS IN FULL PRIOR TO CONSTRUCTING

NO WORKS ARE TO BE CARRIED OUT OVER AN EASEMENT. NO WORKS ARE TO BE CARRIED OUT OVER COUNCIL PROPERTY WITHOUT PRIOR COUNCIL APPROVAL

TERMITE MANAGEMENT MUST BE CARRIED OUT IN ACCORDANCE WITH NCC 2022 PART 3.4 OF THE HOUSING PROVISIONS AND THE RELEVANT GUIDELINES SETOUT IN THE AUSTRALIAN STANDARDS AS3660.1 TERMITE MANAGEMENT

EXHAUST SYSTEMS INSTALLED IN THE KITCHEN, BATHROOMS, LAUNDRY OR SANITARY COMPARTMENTS MUST DISCHARGE DIRECTLY VIA A SHAFT OR DUCT TO OUTDOOR AIR AND COMPLY WITH THE MINIMUM FLOW RATES AS PER CLAUSE 10.8.2 OF THE HOUSING PROVISIONS 2022

BULKHEADS TO BE INSTALLED IN ACCORDANCE WITH RELEVANT NCC REQUIREMENTS. LOCATIONS OF BULKHEADS TO BE CONFIRMED ON SITE BY THE BUILDER ON SITE

WATERPROOF WALLS & FLOORS OF ALL WET AREAS AS PER THE NCC/BCA REQUIREMENTS

CONTRACTOR IS TO ENSURE THAT ANY SHARED WALLS ARE FIRE RATED IN ACCORDANCE WITH CLAUSE 9.3.1 OF THE HOUSING PROVISIONS 2022, HAVE NO PENETRATIONS AND A SOUND SEPARATION AS PER CLAUSE 10.7.1 OF THE HOUSING PROVISIONS 2022

PROVIDE FLASHING AT ALL ROOF & WALL JUNCTIONS AND ENSURE WATER TIGHT CONNECTIONS

IF AIR CONDITIONING IS TO BE PROVIDED, ALLOW FOR THE AIR CONDITIONING TO BE CONCEALED IN THE CEILING, THE ROOF AND IN DUCTS. AIR CONDITIONING IS TO BE AS PER THE AIR CONDITIONING CONSULTANTS DETAILS AND THE BASIX CERTIFICATE REQUIREMENTS

WINDOWS AND DOORS
THE CONTRACTOR MUST ALLOW FOR ALL LABOUR AND MATERIALS NECESSARY FOR THE SUPPLY AND INSTALLATION OF ALL WINDOWS AND DOORS INDICATED THROUGHOUT THE PROPOSED BUILDING. HE MUST ALSO ALLOW FOR THE PREPARATION OF A DETAILED WINDOW AND DOOR SCHEDULE THAT PROVIDES DETAIL INFORMATION AS TO THE TYPE, NUMBER AND CONFIGURATION OF EACH AND EVERY DOOR AND WINDOW FOR THE APPROVAL OF THE OWNERS BEFORE ORDERING AND OF THE DOORS AND WINDOWS. THIS DETAIL SCHEDULE IS NOT PART OF THE CONSTRUCTION CERTIFICATE DOCUMENTATION AND MUST BE ALLOWED FOR BY THE CONTRACTOR IN THE TENDER PRICE. ALL WINDOW AND DOOR DIMENSIONS ARE TO BE VERIFIED ON SITE PRIOR TO ORDERING THESE ITEMS

ALL WINDOWS ARE TO COMPLY WITH CLAUSE 11.3.7 OF THE HOUSING PROVISIONS 2022 PROTECTION OF OPENABLE WINDOWS

WINDOW AND DOOR HEIGHTS ON ELEVATIONS ARE APPROXIMATE ONLY AND MAY VARY ON SITE

FLOOR WASTES TO BALCONIES
THE CONTRACTOR IS TO ALLOW FOR FLOOR WASTES TO BE PROVIDED TO EACH AND EVERY BALCONY (IRRESPECTIVE OF WHETHER THEY ARE INDICATED IN THE CONSULTANTS DRAWINGS OR NOT. THESE FLOOR WASTES ARE TO BE CONNECTED TO STORMWATER GRATES PVC AND THEN TO DOWNPIPES LOCATED DIRECTLY IN ONE INTERNAL CORNER OF EACH AND EVERY BALCONY. CONFIRM THE LOCATIONS OF THESE DOWNPIPES WITH THE OWNERS. THE CONTRACTOR MUST ALLOW FOR ALL ASSOCIATED WORKS (SUCH A CONNECTION TO BE STORMWATER LINES AND THE LIKE) THAT IS REQUIRED IN ORDER FOR ALL SUCH FLOOR WASTES TO ADEQUATELY DRAIN EACH AND EVERY BALCONY

BASEMENT NOTES
CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SERVICES ARE COORDINATED WITH THE STRUCTURAL ELEMENTS IN ORDER TO ACHIEVE A MINIMUM CLEARANCE OF 2200MM THROUGHOUT THE BASEMENT CAR PARK AREA, ON THE DRIVEWAY AND IN ALL THE CAR SPACES

ALL OFF-STREET PARKING FACILITIES INCLUDING DRIVEWAY WIDTHS, RAMP GRADES, AISLE WIDTHS, TURNING PATHS, SIGHT DISTANCES AND PARKING BAY SIZES MUST CONFORM TO CURRENT AUSTRALIAN STANDARDS AS 2890.1 AND AS 2890.2-2002

COORDINATE DRIVEWAY AND SLAB DIMENSIONS SO THAT THERE IS A MINIMUM HEAD CLEARANCE BELOW BEAMS AND MECHANICAL DUCTS OF 2200MM

PROVIDE 100MM MINIMUM AGRICULTURAL PIPE WITH A FILTER STOCKING AROUND PERIMETER OF THE BUILDING AND CONNECT TO STORMWATER LINES AS PER THE STORMWATER ENG DETAILS AND SYDNEY WATER REQUIREMENTS

LIFT NOTES
CONTRACTOR MUST ENSURE THAT THE ACCESS LIFT COMPLIES WITH THE REQUIREMENTS OF AS1735.12. THE LIFT SHAFT IS TO BE CONSTRUCTED IN STRICT ACCORDANCE WITH THE MANUFACTURERS AND STRUCTURAL ENG DETAIL. THE CONTRACTOR MUST LIAISE WITH THE LIFT MANUFACTURERS AND ALLOW FOR THE ITEMS TO BE PROVIDED BY OTHER CONTRACTORS AS REQUIRED IN THE“WORK BY OTHERS” THE LIFT SHAFT AND PIT ARE TO BE WATERPROOFED AS PER THE ARCHITECTURAL SPECIFICATION AND MANUFACTURERS REQUIREMENTS

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client

RICK AND RACHEL CAVANAGH



true north

drawing NOTES

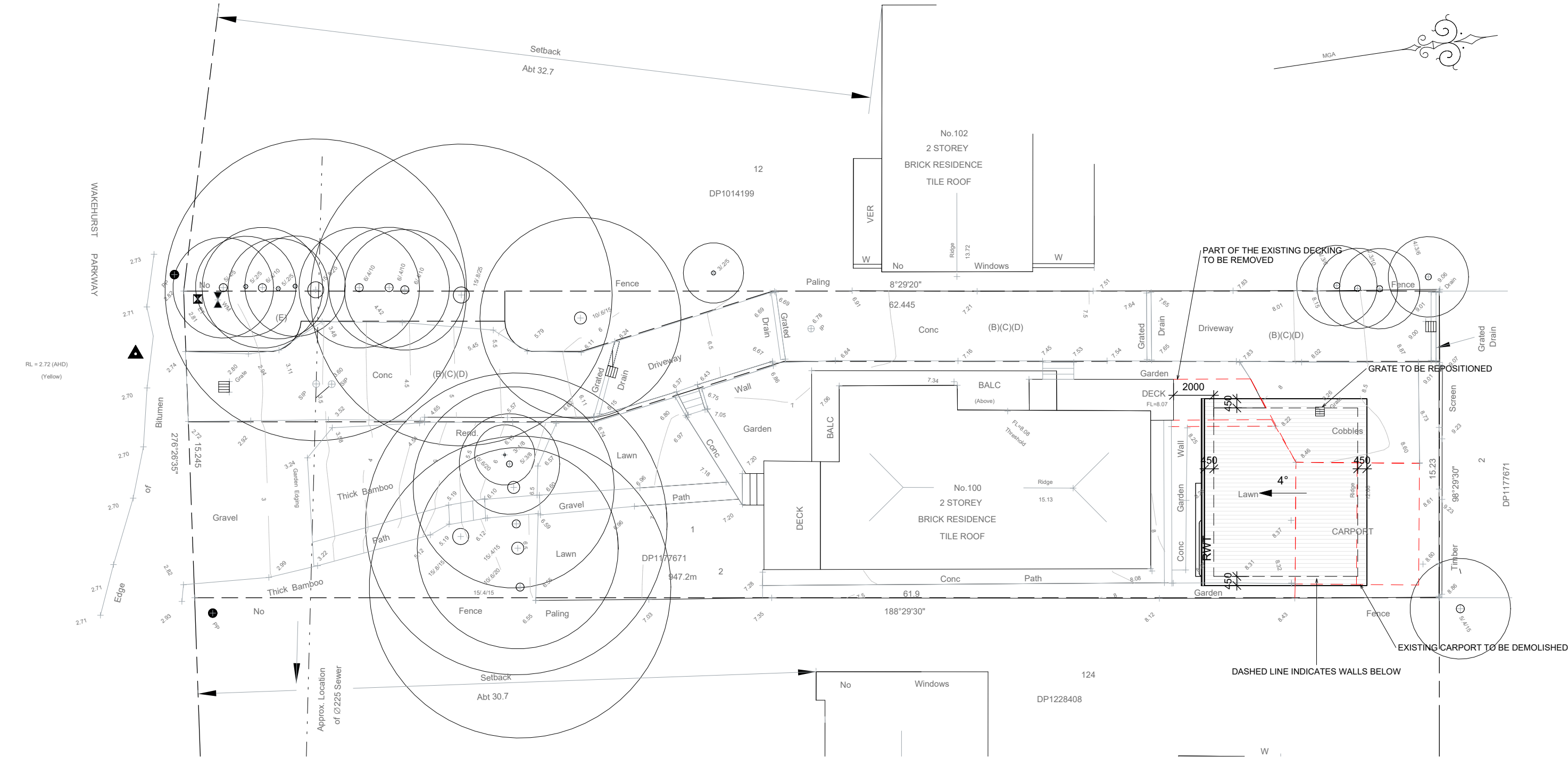
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PRELIMINARY
DO NOT USE FOR CONSTRUCTION

1 SITE AND ROOF PLAN

1 : 200



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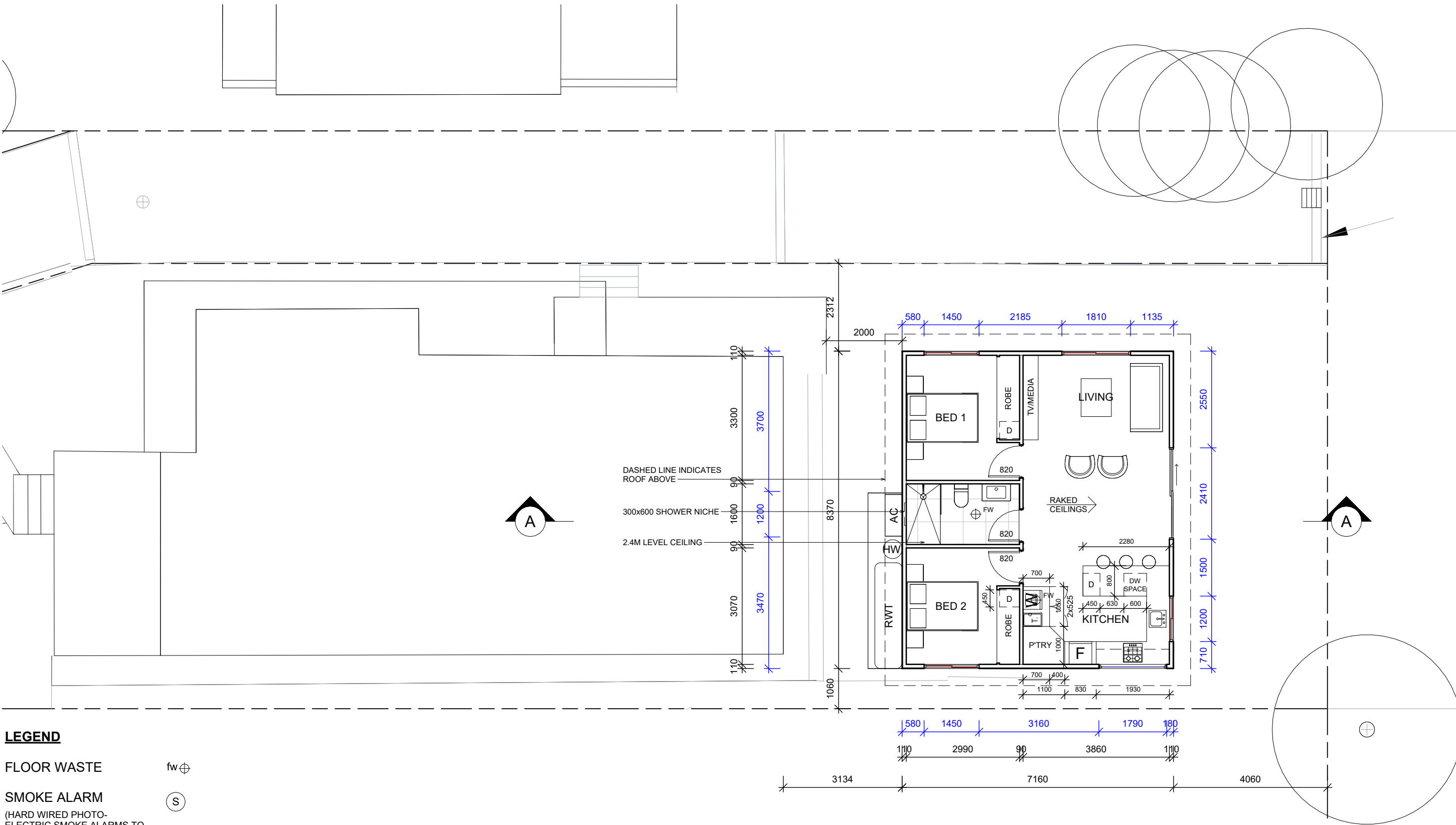
drawing

SITE AND ROOF PLAN

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LEGEND

FLOOR WASTE



SMOKE ALARM



(HARD WIRED PHOTO-ELECTRIC SMOKE ALARMS TO BE INSTALLED AS PER CLAUSE 9.5.4 OF THE HOUSING PROVISIONS 2022 & AS 3786)

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

1

GROUND FLOOR PLAN

1 : 100



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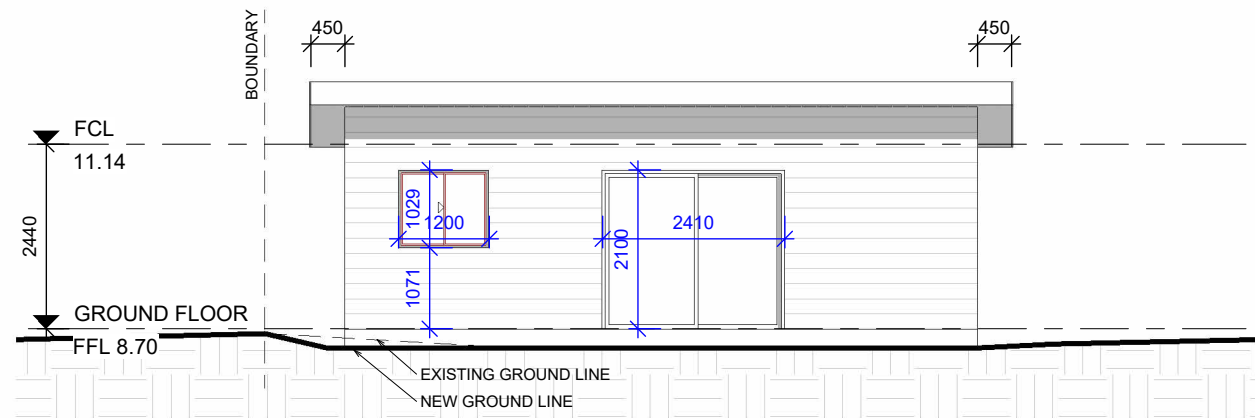
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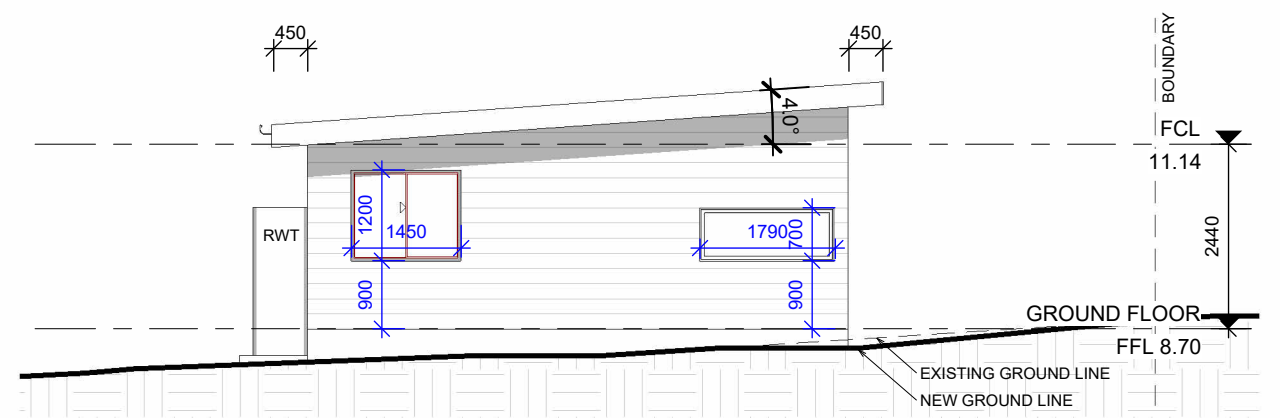
true north	drawing	project no	date	sheet no.	scale @ A3	issue	checked
	GROUND FLOOR PLAN	25-02	15/01/25	A 3	1 : 100	B	?

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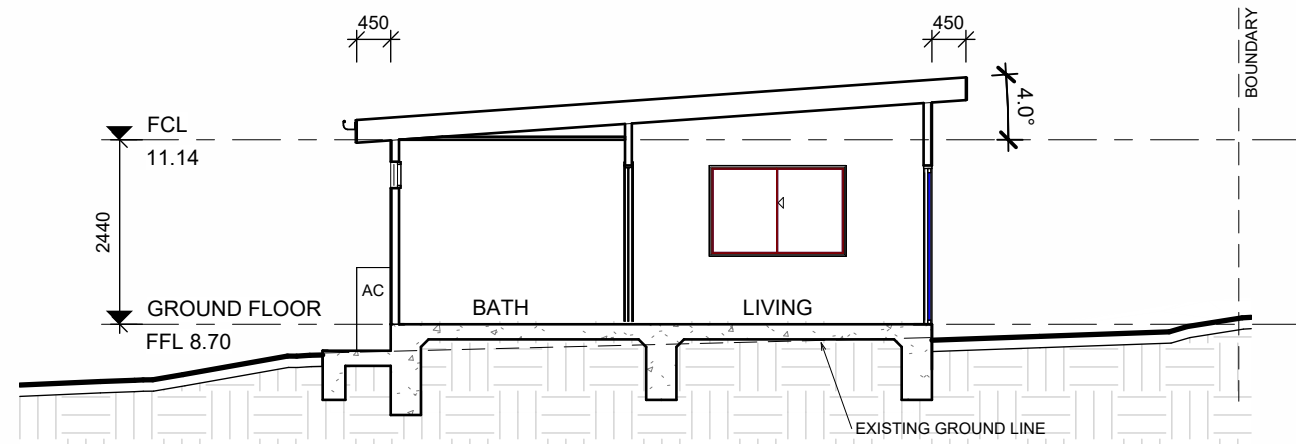
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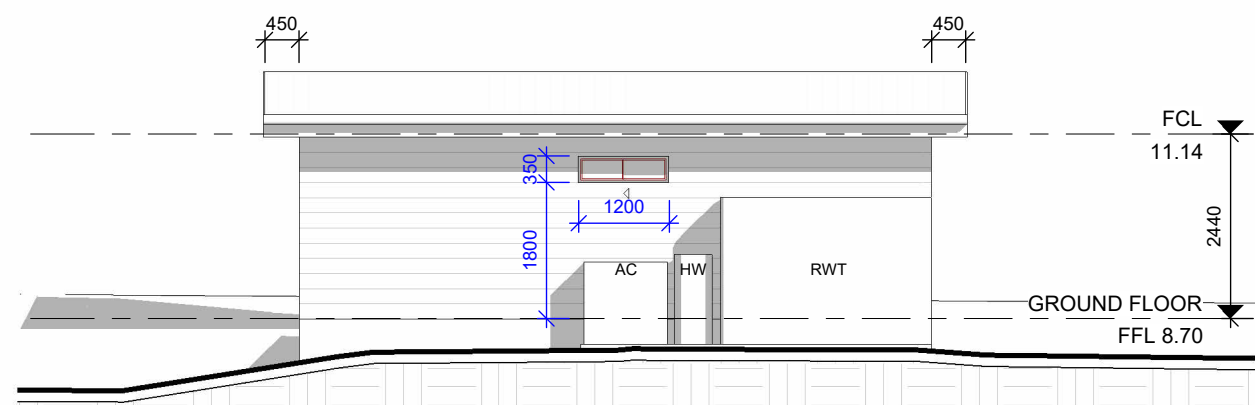
1 NORTH ELEVATION
1 : 100



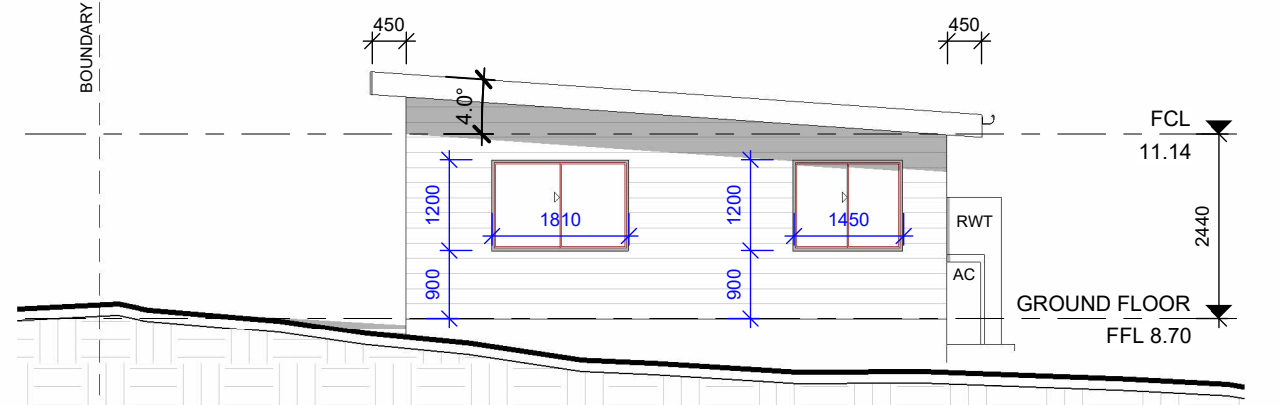
2 EAST ELEVATION
1 : 100



5 SECTION A-A
1 : 100



3 SOUTH ELEVATION
1 : 100



4 WEST ELEVATION
1 : 100

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true north

drawing

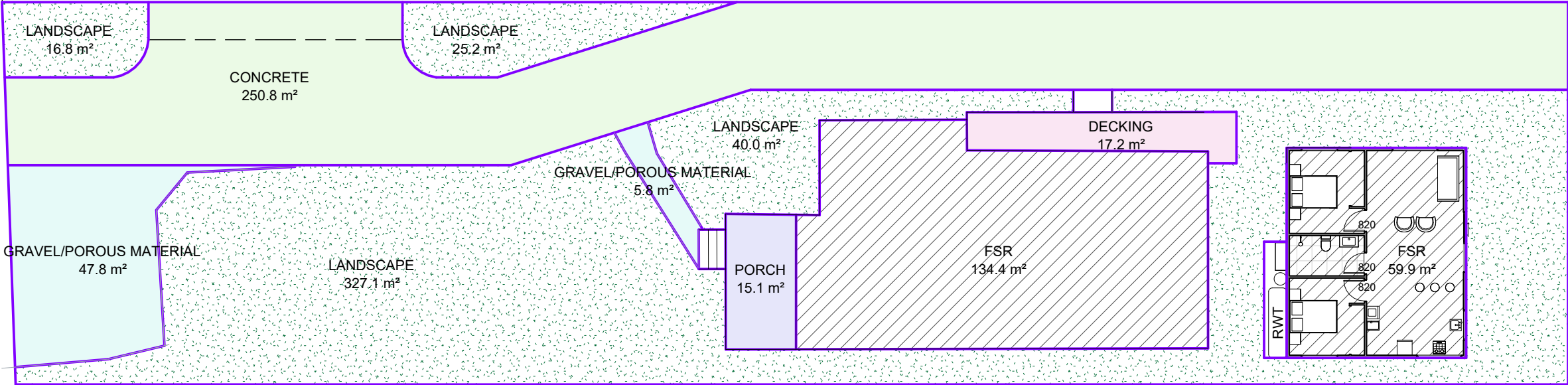
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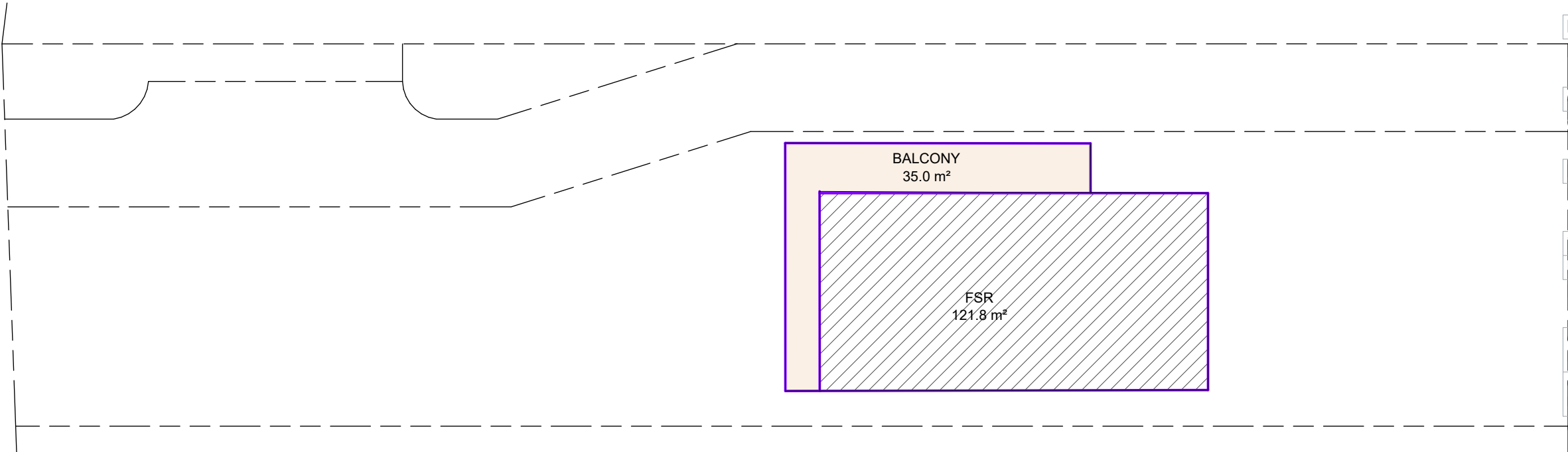
AREA CALCULATION
SITE AREA = 947.2 sqm
EXISTING FLOOR AREA = 256.2 sqm

PROPOSED GRANNY FLAT AREA = 59.9 sqm

MINIMUM LANDSCAPED AREA
60% OF LOT AREA

MINIMUM LANDSCAPE AREA REQUIRED = 568.32 sqm
PROPOSED LANDSCAPE = 409.1 sqm (NOT COMPLIES)

1 GROUND FLOOR
1 : 200



2 FIRST FLOOR
1 : 200

AREA CALCULATIONS SCHEDULE			
NAME	LEVEL	COUNT	TOTAL
BALCONY	FIRST FLOOR	1	35.0 m²
BALCONY: 1			35.0 m²
CONCRETE	GROUND FLOOR	1	250.8 m²
CONCRETE: 1			250.8 m²
DECKING	GROUND FLOOR	1	17.2 m²
DECKING: 1			17.2 m²
FSR	GROUND FLOOR	2	194.3 m²
FSR	FIRST FLOOR	1	121.8 m²
FSR: 3			316.1 m²
GRAVEL/PORO US MATERIAL	Not Placed	1	0.0 m²
GRAVEL/PORO US MATERIAL	GROUND FLOOR	2	53.6 m²
GRAVEL/POROUS MATERIAL: 3			53.6 m²
LANDSCAPE	GROUND FLOOR	4	409.1 m²
LANDSCAPE: 4			409.1 m²
PORCH	GROUND FLOOR	1	15.1 m²
PORCH: 1			15.1 m²

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**RK
DESIGNS**

APPENDIX B

COMPREHENSIVE FLOOD INFORMATION REPORT

Property: 100 Wakehurst Parkway ELANORA HEIGHTS NSW 2101

Lot DP: Lot 1 DP 1177671

Issue Date: 24/02/2025

Flood Study Reference: Narrabeen Lagoon Flood Study 2013, BMT WBM

Flood Information^{1:}

Map A - Flood Risk Precincts

Maximum Flood Planning Level (FPL) ^{2, 3, 4:} 3.55 m AHD

Map B - 1% AEP Flood & Key Points

1% AEP Maximum Water Level ^{2, 3:} 3.05 m AHD

1% AEP Maximum Depth from natural ground level^{3:} 0.36 m

1% AEP Maximum Velocity: 0.49 m/s

Map C - 1% AEP Hydraulic Categorisation

1% AEP Hydraulic Categorisation: Flood Fringe

Map D - Probable Maximum Flood

PMF Maximum Water Level (PMF) ^{4:} 5.03 m AHD

PMF Maximum Depth from natural ground level: 2.35 m

PMF Maximum Velocity: 0.73 m/s

Map E - Flooding with Climate Change

1% AEP Maximum Water Level with Climate change ^{3:} 3.92 m AHD

1% AEP Maximum Depth with Climate Change^{3:} 1.23 m

Map F - Flood Life Hazard Category in PMF

H5 – H3

Map G - Indicative Ground Surface Spot Heights

- (1) The provided flood information does not account for any local overland flow issues nor private stormwater drainage systems.
- (2) Overland flow/mainstream water levels may vary across a sloping site, resulting in variable minimum floor/ flood planning levels across the site. The maximum Flood Planning Level may be in a different location to the maximum 1% AEP flood level.
- (3) Intensification of development in the former Pittwater LGA requires the consideration of climate change impacts which may result in higher minimum floor levels.
- (4) Vulnerable/critical developments require higher minimum floor levels using the higher of the PMF or FPL

Notes

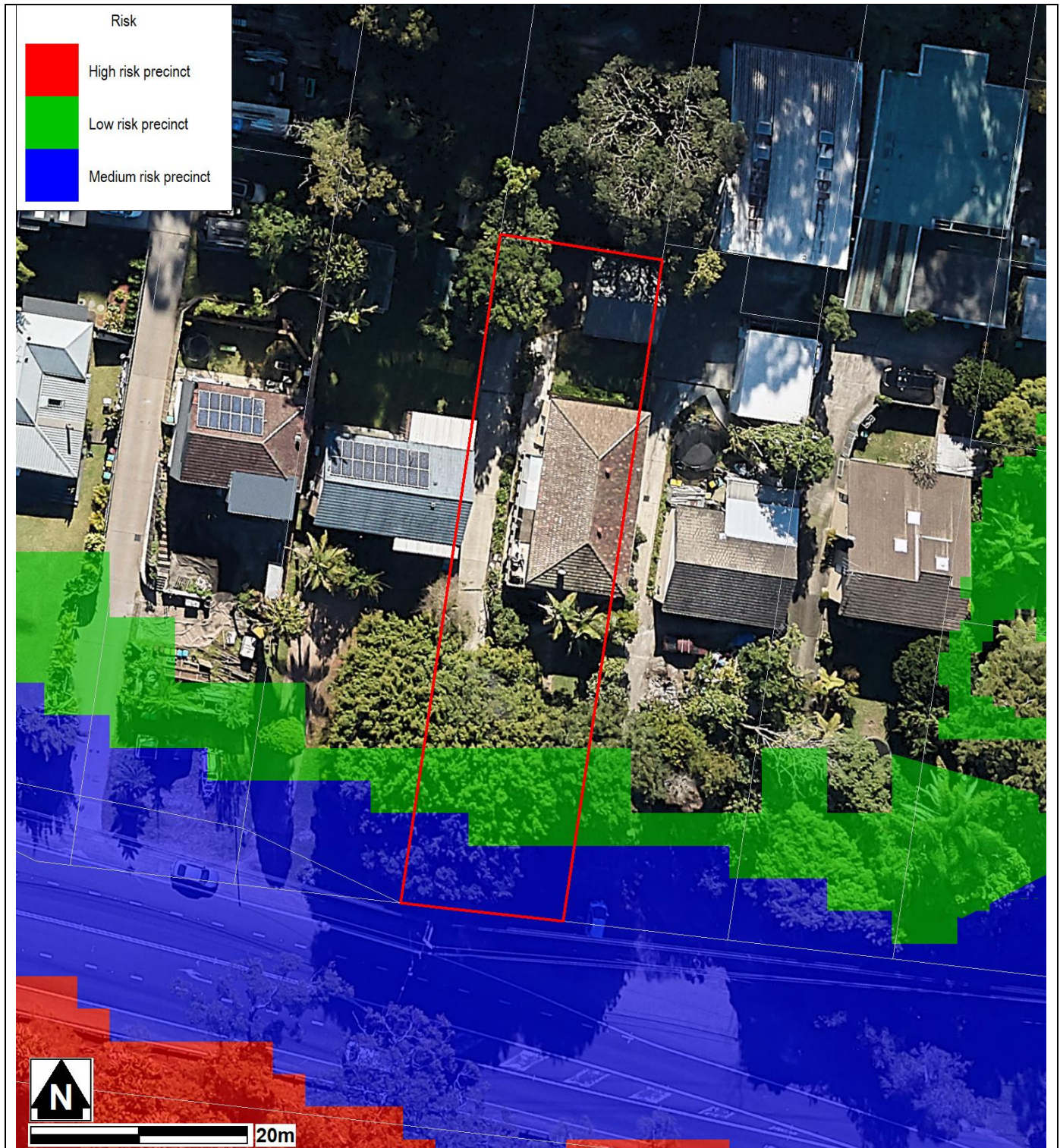
General

- 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 online [Flood Study Reports](#) webpage.
- If the FPL is higher than the PMF level, then the FPL should still be used as the FPL, as it includes freeboard which the PMF does not.
- If the property is affected by an Estuarine Planning Level (EPL) which is higher than the FPL, then the EPL should be used as the FPL.
- Areas affected by an EPL in the former Pittwater LGA are mapped on Council's online [Estuarine Hazard Map](#). Note that areas in the former Manly LGA affected by an EPL have been identified and will be soon added to this map.
- Council's drainage infrastructure is mapped on Council's [Stormwater Map](#). Note that locations are indicative only and may not be exactly as shown.

Property

- Please note that if a development on the property is proposed completely outside of the Flood Planning Area (Medium Flood Risk Precinct), a formal Flood Management Report would not need to be submitted to council with a Development Application for Residential Development. The attached Flood Information Report together with this email would be sufficient.

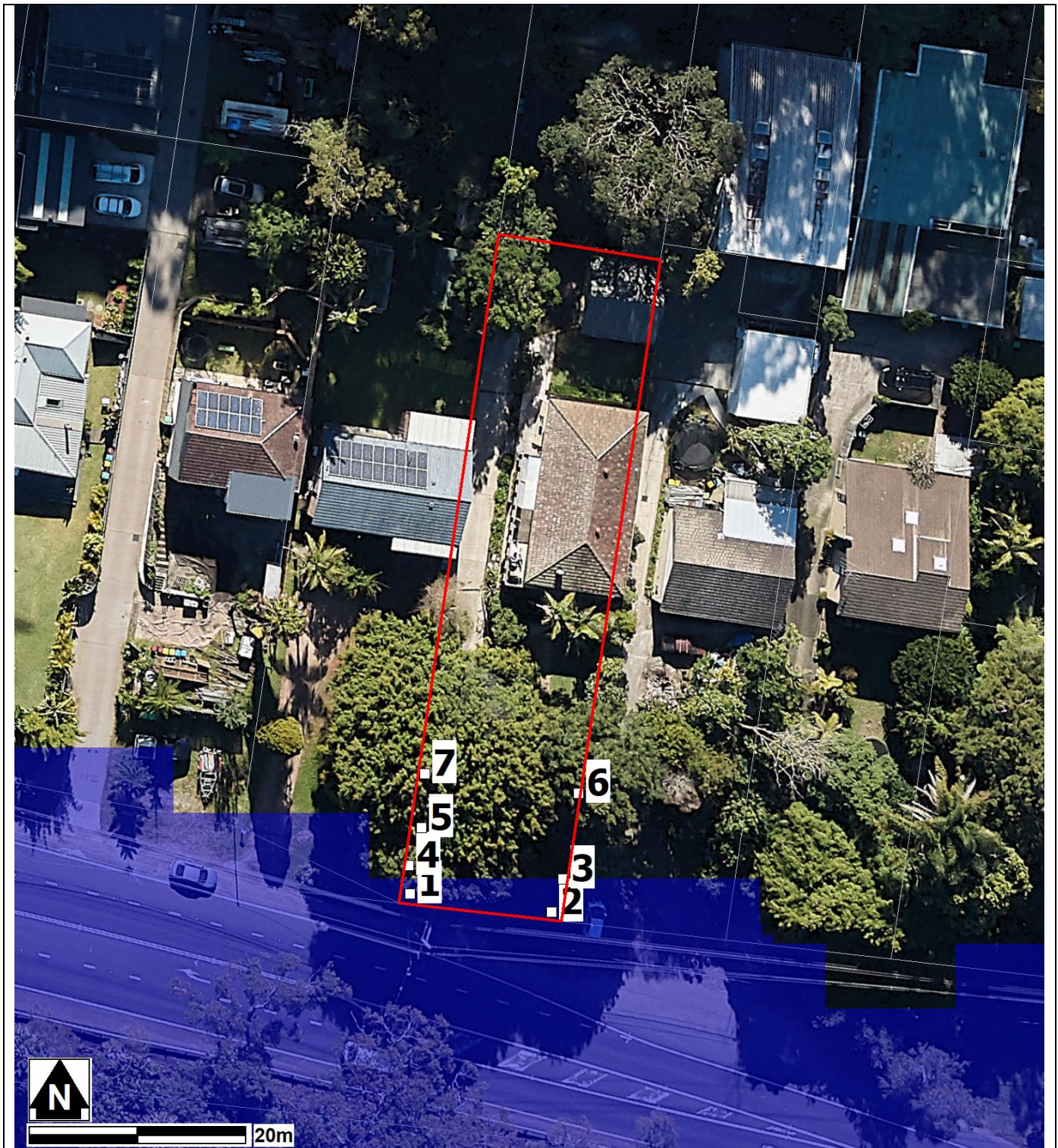
MAP A: FLOOD RISK PRECINCTS



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 or H6 Life Hazard Classification).
- The **Flood Planning Area** extent is equivalent to the Medium Flood Risk Precinct extent and includes the High Flood Risk Precinct within it. The mapped extent represents the 1% annual Exceedance Probability (AEP) flood event + freeboard.
- None of these mapped extents include climate change.
- Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Narrabeen Lagoon Flood Study 2013, BMT WBM) and aerial photography (Source: NearMap 2014) are indicative only.

MAP B: FLOODING - 1% AEP EXTENT & KEY POINTS



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: Narrabeen Lagoon Flood Study 2013, BMT WBM) and aerial photography (Source Near Map 2014) are indicative only.

Flood Levels

ID	5% AEP Max WL (m AHD)	5% AEP Max Depth (m)	1% AEP Max WL (m AHD)	1% AEP Max Depth (m)	1% AEP Max Velocity (m/s)	Flood Planning Level (m)	PMF Max WL (m AHD)	PMF Max Depth (m)	PMF Max Velocity (m/s)
1	2.71	0.02	3.05	0.25	0.04	3.55	5.03	2.24	0.28
2	N/A	N/A	3.05	0.32	0.19	3.55	5.03	2.28	0.52
3	N/A	N/A	3.05	0.11	0.12	3.55	5.03	2.02	0.35
4	N/A	N/A	3.05	N/A	N/A	3.55	5.03	2.02	0.23
5	N/A	N/A	N/A	N/A	N/A	N/A	5.03	1.67	0.14
6	N/A	N/A	N/A	N/A	N/A	N/A	5.03	0.69	0.05
7	N/A	N/A	N/A	N/A	N/A	N/A	5.03	0.42	0.07

Climate Change Flood Levels (30% Rainfall intensity and 0.9m Sea Level Rise)

ID	CC 1% AEP Max WL (m AHD)	CC1 % AEP Max Depth (m)
1	3.92	1.12
2	3.92	1.16
3	3.92	0.91
4	3.92	0.90
5	3.92	0.55
6	N/A	N/A
7	N/A	N/A

WL – Water Level

PMF – Probable Maximum Flood

N/A - No Peak Water Level/Depth/Velocity Available.

Notes:

- The flood planning levels above are calculated by adding a 0.5m freeboard to the 1% AEP water level. However, if the depth of flow is less than 0.3m and a Velocity X Depth product is less than 0.3m²/s, a freeboard of 0.3m may be able to be justified for development.

MAP C: 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: Narrabeen Lagoon Flood Study 2013, BMT WBM) and aerial photography (Source: NearMap 2014) are indicative only

MAP D: PMF EXTENT MAP



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: Narrabeen Lagoon Flood Study 2013, BMT WBM) and aerial photography (Source: NearMap 2014) are indicative only

MAP E: FLOODING – 1% AEP EXTENT PLUS CLIMATE CHANGE



Notes:

- Extent represents the 1% annual Exceedance Probability (AEP) flood event including 30% rainfall intensity and 0.9m Sea Level Rise climate change scenario
- Flood events exceeding the 1% AEP can occur on this site.
- Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Narrabeen Lagoon Flood Study 2013, BMT WBM) and aerial photography (Source: NearMap 2014) are indicative only

MAP F: FLOOD LIFE HAZARD CATEGORY IN PMF



Notes:

- Cadastre Lines (Source: NSW Government Land and Property Information), flood levels/extents (Source: Narrabeen Lagoon Flood Study 2013, BMT WBM) and aerial photography (Source Near Map 2014) are indicative only.

MAP G: INDICATIVE GROUND SURFACE SPOT HEIGHTS



Notes:

- The surface spot heights shown on this map were derived from Airborne Laser Survey and are indicative only.
- Accuracy is generally within $\pm 0.2\text{m}$ vertically and $\pm 0.15\text{m}$ horizontally, and Northern Beaches Council does not warrant that the data does not contain errors.
- If accuracy is required, then survey should be undertaken by a registered surveyor.

Preparation of a Flood Management Report

Introduction

These guidelines are intended to provide advice to applicants on how to determine what rules apply on flood prone land, and how to prepare a Flood Management Report. The purpose of a Flood Management Report is to demonstrate how a proposed development will comply with flood related planning requirements.

Planning Requirements for Flood Prone Land

Development must comply with the requirements for developing flood prone land set out in the relevant Local Environment Plan (LEP) and Development Control Plan (DCP). There are separate LEPs and DCPs for each of the former Local Government Areas (LGAs), although preparation of a LGA-wide LEP and DCP is currently under way.

The clauses specific to flooding in the LEPs and DCPs are as follows:

LEP Clauses	DCP Clauses
Manly LEP (2013) – 5.21 Flood Planning Manly LEP (2013) – 5.22 Special Flood Considerations	Manly DCP (2013) – 5.4.3 Flood Prone Land
Warringah LEP (2011) – 5.21 Flood Planning Warringah LEP (2011) – 5.22 Special Flood Considerations Warringah LEP (2000) – 47 Flood Affected Land *	Warringah DCP (2011) – E11 Flood Prone Land
Pittwater LEP (2014) – 5.21 Flood Planning Pittwater LEP (2014) – 5.22 Special Flood Considerations	Pittwater 21 DCP (2014) – B3.11 Flood Prone Land Pittwater 21 DCP (2014) – B3.12 Climate Change

* The Warringah LEP (2000) is relevant only for the “deferred lands” which affects only a very small number of properties, mostly in the Oxford Falls area.

Development on flood prone land must also comply with Council's Water Management for Development Policy, and if it is in the Warriewood Release Area, with the Warriewood Valley Water Management Specification and Clause C6.1 of the Pittwater 21 DCP (2014). Guidelines for Flood Emergency Response Planning are available for addressing emergency response requirements in the DCP. These documents can be found on Council's website on the [Flooding page](#).

Note that if the property is affected by estuarine flooding or other coastal issues, these need to be addressed separately under the relevant DCP clauses.

When is a Flood Management Report required?

A Flood Management Report must be submitted with any Development Application on flood prone land (with exceptions noted below), for Council to consider the potential flood impacts and applicable controls. For Residential or Commercial development, it is required for development on land identified within the Medium or High Flood Risk Precinct. For Vulnerable or Critical development, it is required if it is within any Flood Risk Precinct.

There are some circumstances where a formal Flood Management Report undertaken by a professional engineer may not be required. However the relevant parts of the DCP and LEP would still need to be addressed, so as to demonstrate compliance. Examples where this may apply include:

- If all proposed works are located outside the relevant Flood Risk Precinct extent
- First floor addition only, where the existing ground floor level is above the FPL
- Internal works only, where habitable floor areas below the FPL are not being increased

Note that development on flood prone land will still be assessed for compliance with the relevant DCP and LEP, and may still be subject to flood related development controls.

What is the purpose of a Flood Management Report?

The purpose of a Flood Management Report is to demonstrate how a proposed development will comply with flood planning requirements, particularly the development controls outlined in the relevant LEP and DCP clauses. The report must detail the design, measures and controls needed to achieve compliance, following the steps outlined below.

A Flood Management Report should reflect the size, type and location of the development, proportionate to the scope of the works proposed, and considering its relationship to surrounding development. The report should also assess the flood risk to life and property.

Preparation of a Flood Management Report

The technical requirements for a Flood Management Report include (where relevant):

1. Description of development

- Outline of the proposed development, with plans if necessary for clarity
- Use of the building, hours of operation, proposed traffic usage or movement
- Type of use, eg vulnerable, critical, residential, business, industrial, subdivision, etc

2. Flood analysis

- 1% AEP flood level
- Flood Planning Level (FPL)
- Probable Maximum Flood (PMF) level
- Flood Risk Precinct, ie High, Medium or Low
- Flood Life Hazard Category
- Mapping of relevant extents
- Flood characteristics for the site, eg depth, velocity, hazard and hydraulic category, and the relevance to the proposed development

If the property is affected by an Estuarine Planning Level (EPL) which is higher than the FPL, then the EPL should be used as the FPL. If the FPL is higher than the PMF level, then the FPL should still be used as the FPL, as it includes freeboard which the PMF does not.

3. Assessment of impacts

- Summary of compliance for each category of the DCP, as per the table below.

	Compliance		
	N/A	Yes	No
A) Flood effects caused by Development			
B) Building Components & Structural Soundness			
C) Floor Levels			
D) Car parking			
E) Emergency Response			
F) Fencing			
G) Storage of Goods			
H) Pools			

- Demonstration of how the development complies with any relevant flood planning requirements from the DCP, LEP, Water Management for Development Policy, and if it is in the Warriewood Valley Urban Land Release Area, with the Warriewood Valley Water Management Specification (2001)
- For any non-compliance, a justification for why the development should still be considered.
- Calculations of available flood storage if compensatory flood storage is proposed
- Plan of the proposed development site showing the predicted 1% AEP and PMF flood extents, as well as any high hazard or floodway affectation
- Development recommendations and construction methodologies
- Qualifications of author - Council requires that the Flood Management Report be prepared by a suitably qualified Engineer with experience in flood design / management who has, or is eligible for, membership to the Institution of Engineers Australia
- Any flood advice provided by Council
- Any other details which may be relevant

Further information and guidelines for development are available on Council's website at:

<https://www.northernbeaches.nsw.gov.au/planning-and-development/building-and-renovations/development-applications/guidelines-development-flood-prone-land>

Council's Flood Team may be contacted on 1300 434 434 or at floodplain@northernbeaches.nsw.gov.au .