



GREENWOOD CONSULTING
ENGINEERS

ABN 82 526 345 262
2/25 Seabeach Avenue,
Mona Vale, NSW, 2013

Email : eliot@greenwoodengineers.com.au
Mobile : 0421 399 423

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Stephen Bullen
73 Rednal St,
Mona Vale, NSW
Greenwood Consulting Engineers Reference: 2018142

FLOOD RISK REPORT
AT
73 REDNAL ST, MONA VALE

Prepared By Greenwood Consulting Engineers



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1.0 - INTRODUCTION

Greenwood Consulting Engineers has determined that the site at 73 Rednal Street, Mona Vale is located in a High Flood Risk Precinct in accordance with Northern Beaches Council (Pittwater) Flood Prone Land DCP. The proposed plans prepared by *JJ Drafting, dated June 2018 (Job Ref No: 645/18)* detail a proposed secondary dwelling located at the South Eastern boundary of the site and beyond the extent of the 1% AEP flood extent.

This report has been prepared in accordance with Northern Beaches Council (Pittwater) Flood Prone Land DCP for a residential development subject to a High Flood Risk (see table 1.0.1 below). The Draft McCarrs creek, Mona Vale and Bayview Flood Study (2016), Pittwater Council's Flood Risk Management Reports – “*considerations when preparing a report*” sheet and the *NSW Government Floodplain Management Manual (2005)* have been used as a guideline in preparing this report.



The area hatched in red in table 1.0.1 (below) outline the controls that apply to this development.

	MATRIX 1: Flood Risk Precincts (FRP's)																				
	High Flood Risk							Medium Flood Risk							Low Flood Risk						
	Critical Uses	Vulnerable Uses	Subdivision	Residential	Business & Industrial	Recreational & Environmental	Concessional	Critical Uses	Vulnerable Uses	Subdivision	Residential	Business & Industrial	Recreational & Environmental	Concessional	Critical Uses	Vulnerable Uses	Subdivision	Residential	Business & Industrial	Recreational & Environmental	Concessional
A. Flood effects caused by Development	A1 A3 A4	A1 A3 A4	A1 A3 A4	A1 A3 A4	A1 A3 A4	A2 A3 A4	A2 A3 A4	A1 A3 A4	A1 A3 A4	A1 A3 A4	A1 A3 A4	A1 A3 A4	A2 A3 A4	A2 A3 A4	A2 A3 A4	A2 A3 A4	A2 A3 A4				
B. Drainage Infrastructure & Creek Works	B1 B2	B1 B2	B1 B2	B1 B2	B1 B2			B1 B2	B1 B2	B1 B2	B1 B2	B1 B2	B1 B2			B1 B2	B1 B2	B1 B2			
C. Building Components & Structural	C1 C2 C3	C1 C2 C3	C1 C2 C3	C1 C2 C3	C1 C2 C3	C1 C2 C3	C1 C2 C3	C1 C2 C3	C1 C2 C3	C1 C2 C3	C1 C2 C3	C1 C2 C3	C1 C2 C3	C1 C2 C3	C1 C2 C3	C1 C2 C3	C1 C2 C3				
D. Storage of Goods	D1 D2	D1 D2	D1 D2	D1 D2	D1 D2	D1 D2	D1 D2	D1 D2	D1 D2		D1 D2	D1 D2	D1 D2	D1 D2	D1 D2	D1 D2	D1 D2				
E. Flood Emergency Response	E1 E2 E3	E1 E2 E3	E1 E2 E3	E1 E2 E3	E1 E2 E3	E1 E2 E3	E1 E2 E3	E1 E2 E3	E1 E2 E3	E1 E2 E3	E1 E2 E3	E1 E2 E3	E1 E2 E3	E1 E2 E3	E1 E2 E3	E1 E2 E3	E1 E2 E3	E4			
F. Floor Levels	F2 F3 F7	F2 F3 F7	F5 F6 F9	F4 F6 F8 F10	F1 F2 F3 F6 F7 F10	F2 F3 F6 F7 F10	F2 F3 F6 F7 F10	F2 F3 F6 F7 F10	F2 F3 F6 F7 F10	F5 F6 F9	F1 F2 F3 F6 F7 F10	F1 F2 F3 F6 F7 F10	F2 F3 F6 F7 F10	F2 F3 F6 F7 F10	F2 F3 F6 F7 F10	F2 F3 F6 F7 F10	F5 F6 F9		F1 F2 F3 F6 F7 F10		
G. Car Parking	G1 G4 G6 G7 G9 G10	G1 G4 G6 G7 G9 G10	G1 G4 G6 G7 G9 G10	G1 G4 G6 G7 G9 G10	G1 G4 G6 G7 G9 G10	G1 G4 G6 G7 G9 G10	G1 G4 G6 G7 G9 G10	G1 G4 G6 G7 G9 G10	G1 G4 G6 G7 G9 G10	G1 G4 G6 G7 G9 G10	G1 G4 G6 G7 G9 G10	G1 G4 G6 G7 G9 G10	G1 G4 G6 G7 G9 G10	G1 G4 G6 G7 G9 G10	G2 G6 G7 G9 G10	G2 G6 G7 G9 G10					
H. Fencing	H1	H1	H1	H1	H1	H1	H1	H1	H1	H1	H1	H1	H1	H1	H1	H1	H1				
I. Pools	I1	I1	I1	I1	I1	I1	I1	I1	I1	I1	I1	I1	I1	I1	I1	I1	I1				



Table 1.0.1 – Flood Risk Precincts – excerpt from Northern Beaches
(Pittwater) Council DCP.

1.1 - Flood Information Request Summary

Background Information	
Northern Beaches (Pittwater Council)	Floodplain Information Request
Issue Date	19th June 2017
Flood Study Reference	Draft McCarrs creek, Mona Vale and Bayview Flood Study (2016)
1% AEP Flood Information	
Flood Level	5.25m AHD
Velocity	<0.5 m/s



Peak Depth on Site	1.20m
PMF Flood Information	
Flood Level	5.85m AHD
Velocity	0.5 m/s
Peak Depth on Site	1.75m

2.0 - FLOOD RISK REPORT

Flood Planning Summary	
Flood Emergency Response Strategy (Onsite Response)	Shelter In Place (refer sections 2.8, 2.9 for recommendation)
Flood Planning Level (FPL)	0.5m above 1% AEP Flood Depth
Proposed Lower Ground Floor Level	5.82m AHD
Degree of Inundation	5% (Approx.)
Hydraulic Category	Flood Storage
Flood Storage	No Reduction (refer section 2.1)



Flood Levels	No anticipated increase
Recommended Construction Material	<i>Refer section 2.3</i>
Ground Floor Requirements	No additional requirement <i>(refer section 2.4)</i>
Stormwater Management	<i>Refer section 2.5</i>
Waterproofing	N/A
Flood Warning	No Signage
Hazardous Materials Storage	Above 5.25m

2.1 - Flood storage

- The drawings provided by *JJ Drafting* propose a secondary dwelling. The dwelling is located beyond and above the FPL flood extent, therefore flood storage will not be affected in the 1% AEP flood event.

2.2 – Structural Requirements

- The Boundary fence must be designed to withstand flood forces up to the 1% AEP Flood event, and provide gaps to allow for floodwaters to flow through the fence unimpeded.

2.3 - Recommended Construction Materials

- Standard Building Materials (concrete, steel, timber and/or brickwork above the flood levels.)



2.4 - Ground floor requirements

- The proposed lower ground floor is at RL 5.82m AHD and complies with the required FPL (0.5m above the 1% AEP flood level).



2.5 - Stormwater Management

- To be designed and installed in accordance with AS3500.3 and Northern Beaches Council (Pittwater) DCP requirements and any conditions outlined in the relevant DA Consent.

2.6 - Waterproofing methods

- Not applicable. All buildings are above the 1% AEP Flood Extent and Level.

2.7 - Hazardous Material Storage

- The owner and occupant are to acknowledge that all hazardous materials are to be stored at or above 5.25m AHD.

2.8 – On Site Refuge

- The existing and proposed building provides an onsite refuge located above 5.85m AHD (PMF).
- The refuge must be intrinsically accessible (internal stairwell), plainly evident and self-directing and must not rely on mechanical systems for access.
- The refuge must provide:
 - ◆ Sufficient clean water
 - ◆ First aid kit
 - ◆ Portable radio with spare batteries
 - ◆ Torch with spare batteries



2.9 - Evacuation strategy and onsite response plan

In a Flood Event, occupants are to proceed to the flood refuge on foot within the first 5 minutes of the rainfall event (heavy rainfall or inundation of the South-Western boundary of the property indicate a potential flood event). Occupants can also refer to local flood warnings provided by the Manly Hydraulics Laboratory and the Northern Beaches Council for warnings and updates during flood events.



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I am an appropriately qualified and competent person in this area and as such can certify that the design and performance of the alterations & additions to the address above will comply with the above Australian Standards. I possess indemnity insurance to the satisfaction of the building owner or my principal.

Designer: Eliot Greenwood

Business no: 0421399423

Qualifications: MIE Aust.

Institute of Engineers Australia No: 3726157

Address: 2/25 Seabeach Avenue, Mona Vale, NSW, 2103

We believe above meets your current need. Please don't hesitate to contact me if you have any queries.

Yours sincerely,

Eliot Greenwood

Director

Greenwood Consulting Engineers