Bushfire Hazard Assessment Report

Proposed: Rezoning Application / Residential Development

At: 2 Macpherson Street Warriewood

Reference Number: 150359

Prepared For: Karimbla Constructions Services

13th October 2016



Prepared By: Building Code & Bushfire Hazard Solutions Pty Limited

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List of Abbreviations:

APZ	Asset Protection Zone
AS3959	Australian Standard 3959 – 2009 as amended.
BAL	Bushfire Attack Level
BCA	Building Code of Australia
BPMs	Bushfire Protection Measures
BPLM	Bushfire Prone Land Map
Council	Pittwater Council
DA	Development Application
EP&A Act	Environmental Planning and Assessment Act - 1979
ESD	Ecologically Sustainable Development
FRNSW	Fire & Rescue NSW
IPA	Inner Protection Area
NCC	National Construction Code
NP	National Park
NSP	Neighbourhood Safer Place
OPA	Outer Protection Area
PBP	Planning for Bush Fire Protection – 2006
ROW	Right of Way
RF Act	Rural Fires Act - 1997
RFS	NSW Rural Fire Service
SEPP	State Environmental Planning Policy
SFPP	Special Fire Protection Purpose
SWS	Static Water Supply

1.0 Introduction

The planning proposal relates to a rezoning application to facilitate the development of one (1) allotment for the possible construction twenty two (22) residential properties and one (1) residual allotment. The subject property is known as 2 Macpherson Street, Warriewood (known as the subject site herein). The subject site was previously a nursery.

The subject site has street frontage to Macpherson Street to the south and abuts similar sized allotments to the remaining aspects. The vegetation identified as being the hazard is along Narrabeen Creek to the north, east and south and within a vegetated allotment further to the northwest.

Pittwater Council's Bushfire Prone Land Map identifies the subject property as being partially within the 30 metre buffer zone from designated Category 2 Vegetation and therefore the application of Planning for Bush Fire Protection – 2006 (PBP) must apply in this instance.

2.0 Purpose of Report

The purpose of this Bushfire Hazard Assessment Report is to provide the applicant, The Rural Fire Service and Council with an independent bushfire hazard determination together with appropriate recommendations for both new building construction and bushfire mitigation measures considered necessary having regard to construction within a designated 'bushfire prone' area.

The recommendations contained within this report may assist in forming the basis of any specific construction conditions and/or bushfire mitigation measures that Council and/or the NSW Rural Fire Service may elect to place within any consent conditions issued for the subject development.

3.0 Scope of this Report

The scope of this report is limited to providing a bushfire hazard assessment and recommendations for the subject property. Where reference has been made to the surrounding lands, this report does not purport to directly assess those lands; rather it may discuss bushfire impact and/or progression through those lands and possible bushfire impact to the subject property.

4.0 Referenced Documents and Persons

Comments provided are based on the requirements of the NSW Environmental Planning and Assessment Act 1979 (EP&A Act), the Rural Fires Act 1997, the Rural Fires Regulation 2013, the RFS document known as 'Planning for Bush Fire Protection – 2006' for the purposes of bushfire hazard determination and Australian Standard AS3959 – 2009 titled 'Construction of buildings in bushfire-prone areas' as amended for building/structural provisions.

A company representative has made a site inspection of the subject site and the surrounding area. The plan prepared by Bonacci (Job no 2021791, dated 30/09/16) has been relied upon for this assessment.

5.0 Compliance Tables & Notes

The following table sets out the projects compliance with Planning for Bush Fire Protection - 2006.

	North	East	South	West
Vegetation Structure	Forested Wetlands	Forested Wetlands	Forested Wetlands	Maintained curtilages
Slope	0 degrees across	0 degrees across	0 degrees across	N/A
Required APZ Appendix 2 PBP 2006	20 metres	20 metres	20 metres	N/A
Proposed Asset Protection Zone	>25 metres	>25 metres	>25 metres	N/A
Significant Environmental Features	Neighbouring allotments	Neighbouring allotments	Macpherson Street / Neighbouring allotments	Disused nursery
Threatened Species	APZ Existing	APZ Existing	APZ Existing	APZ Existing
Aboriginal Relics	APZ Existing	APZ Existing	APZ Existing	APZ Existing
Bushfire Attack Level AS3959 - 2009	BAL 29	BAL 29	BAL 29	N/A

Asset Protection Zones Compliance

The subject site will have maintained lawns and gardens around each proposed future dwelling. The separation from the hazard interface includes maintained land within the subject site and land *"equivalent to an Asset Protection Zone"* within Macpherson Street.

Construction Level Compliance

No new dwellings are proposed as part of this DA. Further assessment under State Environmental Planning Policy (Exempt and Complying Development) 2008 or s79BA of the *Environmental Planning and Assessment Act* 1997 will be required at the time of any future application for the construction of any new dwellings on these newly created allotments.

It should be noted that the proposed Asset Protection Zones have been increased from the minimum required under PBP 2006 so that no new dwelling will be required to exceed BAL 29 construction under AS3959 – 2009.

Access and Services

Guideline Ref.	Proposed Development / Planning for Bush Fire Protection 2006		
Property Access	The subject site has street frontage to Macpherson Street to the south. The proposed subdivision will have an 8 metre wide perimeter loop road to and from Macpherson Street.		
(Driveway)	The proposed road will comply with the requirements for 'Public Roads' as detailed in section 4.1.3(1) of Planning for Bush Fire Protection 2006.		
Water Supply	Hydrants are located throughout Macpherson Street for the replenishment of attending fire services. Furthermore a hydrant system will be extended throughout the subject property complying with sizing and pressures of AS2419.1 - 2005.		
Evacuation	Evacuation is possible by utilising existing road infrastructure. It is encouraged that the future occupants complete a Bush Fire Survival Plan addressing "Prepare, Act, Survive" as advocated by the NSW RFS http://www.rfs.nsw.gov.au/ under publications / bushfire safety. Furthermore an Emergency Management Plan (including a section on bushfire) will be recommended herein.		

6.0 Aerial view of the subject allotment



Subject site

Image 01: Aerial view of the subject area from the Land and Property Management Authority 2016

7.0 Bushfire Hazard Assessment

7.01 Preface

Properties considered to be affected by possible bushfire impact are determined from the local Bushfire Prone Land Map as prepared by Council and or the Rural Fire Service. All property development within affected areas is subject to the conditions detailed in the document 'Planning for Bush Fire Protection - 2006' (PBP). Set back distances for the purpose of creating Asset Protection Zones (APZ's) must be applied and any buildings must then conform to corresponding regulations detailed in Australian Standard 3959 – 2009 'Construction of buildings in bushfire prone areas'.

Planning for Bush Fire Protection – 2006, (PBP) formally adopted on the 1st March 2007 and amended 3rd May 2010 (Appendix 3) provides for the protection of property and life (including fire-fighters and emergency service personnel) from bushfire impact.

The thrust of the document is to ensure that developers of new properties or sub-divisions include the constraints associated with the construction of buildings in bushfire prone areas within their proposed development sites. PBP is applicable to proposed development inside a determined Category 1 or 2 areas and also inside a buffer zone radius of 100m from a Category 1 bushfire area or 30m from a Category 2 bushfire area.

The document also acknowledges 'infill' developments associated with re-development of existing properties and allows some higher levels of building safety where the increased 'set backs' (APZ's) may not be achievable.

The planning proposal relates to a rezoning application to facilitate the development of one (1) allotment for the possible construction twenty two (22) residential properties and one (1) residual allotment. To accord with PBP the development has been assessed as a new residential subdivision under section 100B of the Rural Fires Act 1997.



Image 02: Extract from Pittwater Council's Bushfire Prone Land Map

7.02 Location

The subject site is known as 2 Macpherson Street, Warriewood (Lot 25 Section C DP 5464) located within Pittwater Councils Local Government Area. The subject site was previously a nursery.

The subject site has street frontage to Macpherson Street to the south and abuts similar sized allotments to the remaining aspects. The vegetation identified as being the hazard is along Narrabeen Creek to the north, east and south and within a vegetated allotment to the northwest.



Photograph 01: View north from Macpherson Street toward the subject site



Image 03: Extract from street-directory.com.au

7.03 Vegetation

The subject property currently contains a nursery and the western neighbouring allotment was found to be overgrown/poorly managed former nursery. The eastern neighbouring properties were found to consist of grazed paddocks.

The vegetation that is posing a threat to the proposed dwellings will be that located along Narrabeen Creek to the north, south and east of the proposed dwellings and within a vegetated allotment to the northwest.

The vegetation posing a hazard along Narrabeen Creek to the east is currently very narrow however allowances have been made for this to widen to a 25 metre wide riparian corridor and therefore was assumed to be 25 metres in width either side of Narrabeen Creek and along a water course; therefore it has been assessed as Forested Wetlands.

The vegetation to the north and south along Narrabeen Creek was found to connect with vegetation further to the north and south which consists of trees 10 - 30 metres in height with a 50 - 70% foliage cover and an understorey of weeds, low trees and shrubs.

As these aspects widen allowing for 25 metre riparian zone this area can no longer be considered "riparian" vegetation under the terms of PBP 2006 as they are > 20 metres from Top Of Bank and proved a > 50 metre fire run. For the purpose of assessment under Planning for Bush Fire Protection the vegetation has been assessed in its current structural form. The vegetation was found to consist of trees approximately 20 metres in heights with a high concentration of paperbacks, casuarinas and understorey of reeds sedges and broad leafed plants / weeds and is located on the floodplain associated with Narrabeen Creek. The vegetation has been determined to be Forested Wetlands for the purposes of determining APZ under Appendix 2 of PBP 2006 which when considered under Addendum Appendix 3 PBP 2006 correlates to a forest structure for determining construction requirement.

To the west of the subject site there is a poorly maintained allotment which is a derelict nursery. This site isn't considered a bushfire hazard and has not been included as a threat in other RFS determinations in this area. I also note that in all likelihood that property will also be developed in the future. Considering that the subject site will be maintained as an APZ, a separation of >20 metres is provided from this site, and noting that all construction will exceed BAL 12.5 it is my opinion that adequate protection is provided from this aspect should insipient or spot fires occur in this allotment to the west.

7.04 Slope and Topography

The slope that would most significantly affect bushfire behaviour must be assessed for at least 100 metres from the proposed building footprints.

The hazard is on a floodplain to all aspects. The most significant bushfire impact from all aspects is expected to be a bushfire travelling on level ground toward the subject property. The slope that would **most significantly** influence bushfire impact was determined onsite using an inclinometer and verified from topographic imagery to be:

> 0 degrees level land within the hazard to the north, south and east



Level land

Photograph 02: View of the hazard south of MacPherson Street



Image 04: Extract from Land and Property Management Authority Spatial Information Exchange

7.05 Asset Protection Zones

The proposed dwellings are in a new development area. The required Asset Protection Zones were determined from Table A2.4 of PBP to be 20 metres to the north, south and east. The proposed dwellings were found to be located >25 metres from the hazard interface to the north, south and east. They are also >20 metres form the poorly managed property to the west.

The Asset Protection Zone includes maintained land within the subject property and land "equivalent to an Asset Protection Zone" within Macpherson Street.

All grounds within the subject site not built upon from Macpherson Street for a minimum distance of 25 metres to the north and east from any dwelling (which excludes land retained as riparian corridor) will be maintained as an Asset Protection Zone as detailed in the NSW Rural Fire Service's document 'Standards for Asset Protection Zones'. This will allow for gardens (including native trees and shrubs) in the APZ managed as clumps or islands, covering of no more than 20% of the area. No APZ will be located in a core riparian zone.



Image 05: Site plan showing location of Riparian and Asset Protection Zones.

7.06 Fire Fighting Water Supply

The proposed dwellings will be connected to the reticulated town's water main that will be extended into the site from Macpherson Street for domestic needs. Existing in ground hydrants are available along Macpherson Street and a hydrant system will be extended throughout the subject property complying with sizing and pressures of AS2419.1 – 2005 for the replenishment of attending fire services.

The most distant external point of the building footprint will be less than 70 metres from a road supporting a hydrant network and therefore a Static Water Supply is <u>not</u> required.

The existing and proposed water supply is considered adequate for the replenishment of attending fire services.

7.07 Property Access – Fire Services & Evacuation

The subject site has street frontage to Macpherson Street to the south. Persons seeking to egress the proposed residential dwellings will be able to do so via the proposed access drives and proposed and existing road infrastructure.

The common access road was designed to satisfy the Public Road requirements including an 8 metre wide perimeter road. The proposed road complies with the requirements for 'Public Roads' as detailed in section 4.1.3 (1) of Planning for Bush Fire Protection 2006 and no further recommendations are necessary.

Access for fire services and opportunities for occupant evacuation are considered adequate for this property.

8.0 Site & Bushfire Hazard Determination

8.01 Planning for Bush Fire Protection - 2006

Planning for Bush Fire Protection – 2006 (PBP) is applicable to those lands determined as being within a 'bushfire prone area' in accordance with a local Bushfire Prone Land Map as provided by the Rural Fire Service and Council.

The most appropriate method of determining site bushfire hazard under the terms of PBP is to consider the site in a singular form.

Bushfire prone areas are defined as those areas;

- within or within 100m of high or medium bushfire hazards; or
- within or within 30m of low bushfire hazards.

In this instance the subject property has been identified as being bushfire prone land therefore it is appropriate to apply PBP as follows:

Northern, Southern and Eastern Aspects:

- a) Vegetation Structure Forest
- b) Vegetation Width 100 metres
- c) Slope 0 degrees across
- d) A >25 metre APZ is available

8.02 Australian Standard AS 3959 – 2009 'Construction of buildings in bushfire –prone areas'

Australian Standard 3959 – 2009 'Construction of buildings in bushfire-prone areas' provides for six (6) levels of building construction these being BAL - Low, BAL - 12.5, BAL - 19, BAL - 29, BAL - 40 and BAL - FZ. The Australian Standard 3959 specifies construction standards for buildings within various Bushfire Attack Levels as determined by the Planning for Bush Fire Protection – 2006 document. The NSW Rural Fire Service will not accept deemed to satisfy provisions for BAL Flame Zone and therefore have a NSW variation to the listed standard provisions of BAL FZ under AS3959 - 2009.

8.03 Correlation between bushfire impact and AS3959

Bushfire Attack Level	Maximum radiant heat impact (kW/m ²)	Level of construction under AS3959-2009
Low		No special construction requirements
12.5	≤12.5	BAL - 12.5
19	12.6 to 19.0	BAL - 19
29	19.1 to 29.0	BAL - 29
40	29.1 to 40.0	BAL - 40
Flame Zone >40.0		BAL FZ No deemed to satisfy provisions

8.04 Site Specific Bushfire Hazard Determination

All property development must be assessed on an individual basis as broad-brush approaches of documents such as PBP may not be applicable in every instance. The proposed development located at 2 Macpherson Street, Warriewood was assessed against the requirements of Planning for Bush Fire Protection 2006 noting the following:

- a) Proposed water supplies for fire fighting purposes will be adequate.
- b) The subject site has street frontage to an existing public road.
- c) Access to the hazard is available via the proposed perimeter road or Macpherson Street.
- d) The proposed development is within the existing pattern of development.
- e) Recommendations to maintain the Asset Protection Zones within the subject property will be included.

8.05 Viable Construction Method

The objectives of Planning for Bush Fire Protection -2006 are for the protection of life including fire fighters. Provided these objectives can be met the construction of buildings is feasible and both the Rural Fire Service and Council should be in a position to consider such applications.

No new dwellings are proposed as part of this development. Further assessment under State Environmental Planning Policy (Exempt and Complying Development) 2008 or s79BA of the *Environmental Planning and Assessment Act* 1997 will be required at the time of any future application for the construction of any new dwellings within the subject site.

It should be noted that the proposed Asset Protection Zones have been increased from the minimum required under PBP 2006 so that no new dwelling will be required to exceed BAL 29 construction under AS3959 – 2009.

8.06 Risk Rating

In assessing the bushfire threat to the site and its structures it is important to have a holistic approach and assess the risk of a bushfire occurring and impacting the subject property. It is also important to include the risk the site poses to neighbouring properties.

Table 03 is an overview of risk matrix to the subject buildings. This model takes a holistic approach and assesses the risk of a bushfire occurring and impacting the site. This risk level can be reduced by either an increase in preparedness by the owners/occupants of the building (e.g. good house keeping, maintained lawns & bushfire awareness) and/or hazard reduction activities by local fire agencies. Alternatively this risk level can increase if the preparedness level decreases and/or hazard reduction activities are neglected for the area.

The matrix overleaf is for risk only, it does not reflect the Bushfire Attack Level determined within PBP 2006. Note: All new work will comply with the requirements of Planning for Bushfire Protection 2006.

		CONSEQUENCE			
		Minor	Moderate	Major	Catastrophic
<u> </u>	Almost Certain	High	Very High	Extreme	Extreme
	Likely	Medium	High	Very High	Extreme
	Possible	Low	Medium	High	Very High
	Unlikely	Low	Low	Medium	High

Table 03: Risk Matrix

9.0 Recommendations

The following recommendations are provided as the minimum necessary for compliance with Planning for Bush Fire Protection – 2006 and Australian Standard 3959 'Construction of buildings in bushfire-prone areas' - 2009. Additional recommendations are provided to supplement these minimum requirements where considered necessary.

Asset Protection Zones

 That all grounds not built upon within the subject property from Macpherson Street for a minimum distance of 25 metres to the north and east from any dwelling (which excludes land retained as riparian corridor) is to be maintained as an Asset Protection Zone as detailed in the NSW Rural Fire Service's document 'Standards for Asset Protection Zones' and Appendix 2 of Planning for Bush Fire Protection 2006.

Access

- 2. That the new road complies with the plan prepared by Bonacci (Job no 2021791, dated 30/09/16).
- 3. That the proposed road shall comply with section 4.1.3 (1) 'Public Roads' of Planning for Bush Fire Protection 2006.

Landscaping

4. That any new landscaping is to comply with Appendix 5 'Landscaping and Property Maintenance' under Planning for Bush Fire Protection 2006.

Services

5. That electricity, water and gas are to comply with section 4.1.3 of Planning for Bush Fire Protection 2006. The following are the requirements for the relevant services.

Electricity:

- Where practicable, electrical transmission lines are underground.
- Where overhead electrical transmission lines are proposed:
 - lines are installed with short pole spacing (30 metres), unless crossing gullies, gorges or riparian areas; and
 - no part of a tree is closer to a power line than the distance set out in accordance with the specifications in 'Vegetation Safety Clearances' issued by Energy Australia (NS179, April 2002).

Water:

• That the new hydrant sizing, spacing and pressures must comply with AS2419.1 – 2005.

<u>Gas:</u>

- Reticulated or bottled gas is installed and maintained in accordance with AS 1596 and the requirements of relevant authorities.
- Metal piping is to be used.
- All fixed gas cylinders are kept clear of all flammable materials to a distance of 10 metres and shielded on the hazard side of the installation.
- If gas cylinders need to be kept close to the building, the release valves are directed away from the building and at least 2 metres away from any combustible material, so that they do not act as a catalyst to combustion. Connections to and from gas cylinders are metal.
- Polymer sheathed flexible gas supply lines to gas meters adjacent to buildings are not used.

10.0 Conclusion

Given that the property is deemed bushfire prone under Northern Beaches Council's Bushfire Prone Land Map any development would need to meet the requirements of Planning for Bush Fire Protection – 2006 and of the construction requirements of AS3959 – 2009. The determination of any bushfire hazard must be made on a site-specific basis that includes an assessment of the local bushland area and its possible impact to the subject property.

The proposal relates to a rezoning application to facilitate the development of one (1) allotment into twenty two (22) residential allotments and one (1) residual allotment. The subject site has street frontage to Macpherson Street to the south and abuts similar sized allotments to the remaining aspects. The vegetation identified as being the hazard is along Narrabeen Creek to the north, east and south and within a vegetated allotment to the northwest.

Any future dwelling will be located >25 metres from the hazard interface to the north, south and east. Allowances have been included for a 25 metre wide riparian corridor either side of Narrabeen Creek. The Asset Protection Zone includes maintained land within the subject property and land "equivalent to an Asset Protection Zone" within Macpherson Street.

No new dwellings are proposed as part of this DA. Further assessment under State Environmental Planning Policy (Exempt and Complying Development) 2008 or s79BA of the *Environmental Planning and Assessment Act* 1997 will be required at the time of any future application for the construction of any new dwellings on these newly created allotments.

It should be noted that the proposed Asset Protection Zones have been increased from the minimum required under PBP 2006 so that no new dwelling will be required to exceed BAL 29 construction under AS3959 – 2009.

Proposed access and water supply are considered adequate and satisfy the requirements of Planning for Bush Fire Protection 2006.

In accordance with the bushfire safety measures contained in this report, and consideration of the site specific bushfire risk assessment it is our opinion that when combined, they will provide a reasonable and satisfactory level of bushfire protection to the subject development and also satisfy both the Rural Fire Service's concerns and those of Council in this area.

We are therefore in support of the rezoning application. Should you have any enquiries regarding this project please contact me at our office.

Prepared by Building Code & Bushfire Hazard Solutions

Duncan Armour Bushfire Consultant

Reviewed and endorsed by Building Code & Bushfire Hazard Solutions P/L

Stuart McMonnies G. D. Design in Bushfire Prone Areas. Certificate IV Fire Technology FPA Australia BPAD Level 3 Accredited Practitioner BPAD Accreditation No. BPAD9400



Disclaimer:

Quote from Planning for Bushfire Protection 2006, 'Any representation, statement opinion, or advice expressed or implied in this publication is made in good faith on the basis that the State of New South Wales, the NSW Rural Fire Service, its agents and employees are not liable (whether by reason of negligence, lack of care or otherwise) to any person for any damage or loss whatsoever which has occurred or may occur in relation to that person taking or not taking (as the case may be) action in respect of any representation, statement or advice referred to above..'

Similarly the interpretations and opinions provided by Building Code and Bushfire Hazard Solutions in regard to bushfire protection are also given in the same good faith.

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Bushfire Hazard Solutions Pty. Ltd. will if it considers it necessary, seek to advise third parties including authorities of such illegal modifications.

11.0 Annexure 01

List of Referenced Documents

- a) Environmental Planning and Assessment Act 1979
- b) Rural Fires Act 1997 as amended
- c) 'Planning for Bush Fire Protection'- 2006
- NSW Rural Fire Services & Planning NSW
- d) 'Construction of buildings in bushfire prone areas'
- AS 3959 2009 (as amended) – Standards Australia
- e) 'Pittwater Council's Bushfire Prone Land Map'
- f) Plan prepared by Bonacci (Job no 2021791, dated 30/09/16)
- g) Acknowledgements to:

NSW Department of Lands – SixMaps Street-directory.com.au

Attachments

Attachment 01: 79BA Compliance Certificate

BUSHFIRE RISK ASSESSMENT CERTIFICATE

THIS FORM IS TO BE COMPLETED BY A RECOGNISED CONSULTANT IN BUSHFIRE RISK ASSESSMENT IN ACCORDANCE WITH SECTION 79BA 1(b) OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979 NO 203

PROPERTY ADDRESS:	2 Macpherson Street, Warriewood		
DESCRIPTION OF PROPOSAL:	Rezoning Application / Residential Development		
PLAN REFERENCE: (relied upon in report preparation)	Site Plan by Bonacci Job No. 2021791, Dated: 30/09/2016		
BAL RATING:	BAL 29 (If the BAL rating is FZ the application is to be referred to NSW RFS for assessment.)		
DOES THE PROPOSAL RELY ON ALTERNATE SOLUTIONS:	YES (Circle the relevant response) (If YES the application is to be referred to NSW RFS for assessment.)		

I WAYNE TUCKER of Building Code and Bushfire Hazard Solutions (Print Name) (Trading or Company Name)

have carried out a bushfire risk assessment on the above mentioned proposal and property. A detailed Bushfire Assessment Report is attached which includes the submission requirements set out in *Appendix 4* of *Planning for Bushfire Protection 2006* together with recommendations as to how the relevant specifications and requirements are to be achieved.

REPORT REFERENCE:	150359
REPORT DATE:	13th October 2016
CERTIFICATION NO/ACCREDITED SCHEME:	BPAD09399

I hereby certify, in accordance with 79BA of the Environmental Planning and Assessment Act 1979 No 203:

- 1. That I am a person recognised by the *NSW Rural Fire Service* as a qualified consultant in bushfire risk assessment; and
- 2. That subject to the recommendations contained in the attached Bushfire Risk Assessment Report the proposed development conforms to the relevant specifications and requirements

I am aware that the Bushfire Assessment Report, prepared for the above mentioned site is to be submitted in support of a development application for this site and will be relied upon by Pittwater Council as the basis for ensuring that the bushfire risk management aspects of the proposed development have been addressed in accordance with *Planning for Bushfire Protection 2006*.

SIGNATURE:	\bigcirc	DATE: 13th October 2016

Note: this certificate must be completed and signed by a person recognised by the NSW Rural Fire Service as a qualified consultant in bush fire risk assessment in accordance with 79BA of the EP&A Act 1979 No 203.

This form has been prepared by Pittwater Council for attachment to the Bushfire Assessment Report.