

# Planning For Bushfire Protection



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Reference: 1245  
31/03/2018

## Bushfire Risk Assessment

In relation to proposed development at:

No 57 Robertson Road, Scotland Island

*In accordance with the requirements of 79BA of the EP&A Act No 203 Part (1) [b] this  
Assessment has been prepared and Certified by: Ronald Coffey  
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FPAA Cert. No: BPD-PA 09328*

## Contents

### Introduction

- 1) Location
- 2) Development Proposal and Building Classifications
- 3) Description of the Subject Property
- 4) Classification of the Vegetation on and surrounding the Site
- 5) Assessment of Effective Slope
- 6) Access and Egress
- 7) Water Supplies
- 8) Environment considerations
- 9) Bushfire Threat Assessment
- 10) Assessment of the extent to which the development proposal Conforms or Deviates with Chapter 4 of Planning for Bushfire Protection
- 11) Recommendations
- 12) Summary
- 13) References
- 14) Fences and Gates

## Introduction

The purpose of this report is to determine the category of bushfire attack and subsequent construction standard for the proposed development of alterations and additions at No 57 Robertson Road, Scotland Island.

The site is identified as 'bush fire prone land' for the purposes of Section 146 of the *Environmental Planning and Assessment Act 1979* and the legislative requirements for building on bushfire prone lands are applicable.

The proposed development is an infill development as defined within Chapter 4.3.5 of Planning for Bushfire Protection 2006 and this report has been prepared in accordance with the requirements of section 79BA of the Environment Planning and Assessment Act. This assessment includes an analysis of the hazard, threat and subsequent risk to the development proposal and provides recommendations that satisfy the Objectives and Performance requirements of the Building Code of Australia, Planning for Bushfire Protection 2006 [PBP] and Australian Standard AS3959, 2009.

The site was inspected: 31/03/2018

## Summary of Assessment

- Building construction and design – AS3959, 2009 BAL 12.5
- Asset Protection zones - Conforms to the requirements of PBP
- Landscaping - Conforms to the requirements of PBP
- Access and egress arrangements – Conforms to the requirements of PBP
- Water supply and utilities - Conforms to the requirements of PBP
- Defendable space - Conforms to the requirements of PBP

### 1) Location

No 57 Robertson Road, Scotland Island

Lot 121, DP 12749

LGA – Northern Beaches Council



### 2) Development Proposal and Building Classifications

The proposal is for alterations and additions to an existing class 1A dwelling.

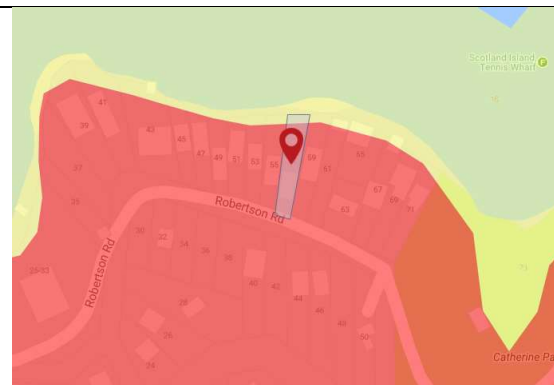
### 3) Description of the Subject

#### Property

The development site is a residential lot facing south onto Robertson Road and north onto the foreshore of Pittwater.

The following sections 4-8 describe in detail the vegetation, slope, access and egress, availability of water supplies and environmental considerations for the site.

The adjacent image is the bushfire prone land map for the area.



+ Vegetation Category 1 (pub. 2017-08-10)

+ Vegetation Buffer (pub. 2017-08-10)

+ Vegetation Category 2 (pub. 2017-08-10)

+ Vegetation Buffer (pub. 2017-08-10)

#### 4) Classification of the Vegetation on and surrounding the Site

The site is developed and maintained and there is no threat from bushfire attack on the site.



Properties south and west of the subject site are developed and maintained for more than 100m. of the subject site are developed and maintained and there is no threat of bushfire attack from these directions for more than 100m.

79m east of the subject site is an area of bushland that is considered a threat from bushfire attack to the site. With reference to PBP and the bushfire prone land map for the area the classification of vegetation for this hazard is forest.

North: Waterfront

#### 5) Assessment of Effective Slope

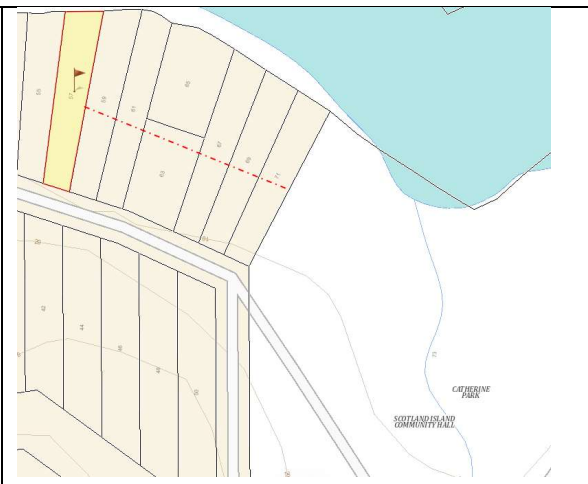
Effective slope away from the development site:

North: No hazard for >100m

South: No hazard for >100m

East: 5-10 degrees downslope

West: No Hazard for >100m



## 6) Access and Egress

The site has direct access Robertson Road and the foreshores of Pittwater. Scotland Island is accessed by regular commuter ferry and personal water craft from a private jetty and the access and egress for emergency evacuation and fire brigade response appears adequate.

## 7) Adequacy of water supply

Scotland Island does not have reticulated water supply. A council requirement is the provision of a tank or tanks with a minimum capacity of 45,000 litres. This supply is considered appropriate for bush fire protection. The provision of appropriate fittings on the water tank and minimum of 3kW (5hp) petrol or diesel-powered pump shall be recommended.

## 8) Environmental Considerations

The scope of this assessment has not been to provide an environmental assessment; however, the subject site is a small residential lot that has been developed for many years and it appears that the proposed development will have no adverse environmental effect.

## 9) Bushfire Risk Assessment

**Table 1;** Reference AS3959, 2009 Table 2.4.2

Determination of category of bushfire attack for the site and subsequent required building standards

Direction	Distance of APZ	Vegetation Classification	Assessment of Effective Slope	Anticipated Radiant heat	Bushfire Attack Level (BAL)
North	>140m	Developed sites	n/a	-	-
South	>140m	Developed sites	n/a	-	-
East	79m	Forest	5-10 Degrees downslope	<12.5kw/m2	BAL 12.5
West	>140m	Developed sites	n/a	-	-
Summary: Based upon the relevant provisions of PBP the anticipated radiant heat attack for the site is <12.5kw/m2 and the subsequent minimum construction standard is BAL 19 AS3959, 2009.					



## 10) Assessment of the extent to which the construction conforms or deviates from Chapter 4 of 'Planning for Bushfire Protection 2006'

Performance Criteria	Acceptable Solutions	Meets Performance Criteria
The intent may be achieved where:		
<u>In relation to APZ's:</u> - Defendable space is provided - An APZ is provided and maintained for the life of the building.	Defendable space is provided on all sides of the building Asset protection zones are provided partially on site and by adjoining development and public roads.	Yes
<u>In relation to siting and design:</u> Buildings are sited and designed to minimise the risk of bushfire attack.	The siting of the building has been previously determined in accordance with local council requirements and the proposed additions and alterations will not involve a re-siting of the building [no advantage could be gained by recommending a re-siting of the building].	Yes
<u>In relation to construction standards:</u> It is demonstrated that the proposed building can withstand bushfire attack in the form of wind, smoke, embers, radiant heat and flame contact.	Construction standards have been recommended in accordance with the requirements of PBP.	Yes
<u>In relation to access requirements:</u> Safe operational access is provided [and maintained] for emergency services personnel in suppressing a bushfire while residents are seeking to relocate, in advance of a bushfire.	The access and egress to the site appears to be appropriate for evacuation and firefighting [Refer Part 6 of this report].	Yes
<u>In relation to water and utility services:</u> - Adequate water and electricity services are provided for fire-fighting operations - gas and electricity services are located so as to not contribute to the risk to a building.	Scotland Island does not have a reticulated water supply; however, tank water and access to the foreshores of Pittwater are available. [Refer to Section 7 of this report] This report shall recommend compliance with PBP 4.1.3 for services including electricity and gas.	Yes
<u>In relation to landscaping:</u> It is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind driven embers to cause ignitions.	The development application shall include recommendations that the site is managed to minimise flame contact and radiant heat to the building.	Yes
<u>In relation to Emergency and Evacuation Planning:</u>	The need to formulate an emergency evacuation plan has been discussed and it is advised that the residents should complete a <i>Bush Fire Survival Plan</i> as formulated by the NSW Rural Fire Service. An emergency evacuation plan is not recommended as a condition of consent.	Yes

## 11) Recommendations

The following recommendations are made for the bushfire protection measures for the proposed residential development of alterations and additions at No 57 Robertson Road, Scotland Island and are based upon the relevant provisions of the NSW Rural Fire Service guideline entitled *Planning for Bushfire Protection 2006*.

- 1) Construction Standard: The proposed development shall be constructed to a minimum standard of Section 3 [construction general] and Section 5 [BAL 12.5] of AS3959, 2009 '*Construction of Buildings in Bushfire Prone Areas*' and Section A3.7 of the NSW Rural Fire Service Addendum to Appendix 3 of '*Planning for Bushfire Protection 2006*'.
- 2) Asset Protection Zones: The site is landscaped and managed, no part of the site is shown on the bushfire prone land map as a hazard and there is no continuity of canopy or understory between the subject site and the hazard to the east.
- 3) Emergency and Evacuation Planning: The need to formulate an emergency evacuation plan has been discussed and it is advised that the residents should complete a *Bush Fire Survival Plan* as formulated by the NSW Rural Fire Service.  
An emergency evacuation plan is not recommended as a condition of consent.
- 4) Water Supplies: In recognition that no reticulated water supply exists, the existing water tanks and the direct access to Pittwater shall be considered an appropriate supply of water for protection from bushfire attack. A 35mm Storz fitting and ball or gate valve shall be installed in at least one of the existing tanks and a minimum of 3kW (5hp) petrol or diesel-powered pump shall be provided.

## 12) Summary

This report consists of a bushfire risk assessment for the proposed residential development of alterations and additions at No 57 Robertson Road, Scotland Island.

The report concludes that the proposed development is on designated bushfire prone land and the legislative requirements for development in bushfire prone areas are applicable.

The proposed development will be constructed to the minimum standards required in accordance with the guidelines of *Planning for Bushfire Protection 2006*.

This report has considered all the elements of bushfire attack and provided the proposed development is constructed in accordance with the recommendations included in section 11 of this report, it is my considered opinion that the development satisfies the Objectives and



Performance requirements of the *Building Code of Australia, Planning for Bushfire Protection 2006 and Australian Standard AS3959, 2009.*

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*Notwithstanding the precautions adopted, it should always be remembered that bushfires burn under a wide range of conditions and an element of risk, no matter how small always remains, and although the standard is designed to improve the performance of such buildings, there can be no guarantee, because of the variable nature of bushfires, that any one building will withstand bushfire attack on every occasion.*

*This Report is a Bush Fire Hazard Assessment that provides the required information to assist Local Council and the Rural Fire Service in determining compliance in accordance with Planning for Bushfire Protection and AS 3959, 2009. The Local Council is the Final Consenting Authority and the construction of the building must comply with the recommendations included in the Council's conditions of consent.*

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Grad I Fire E [Institute of Fire Engineers - 1973]  
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Grad Dip Building in Bushfire Prone Areas [UWS – 2005]  
Ass Prof Cert in Expert Evidence in the Land & Environment Court [UTS – 2005]  
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### **13) References**

#### **Australian Building Codes Board**

Building Code of Australia  
Volumes 1&2  
Canprint

#### **Australian Building Codes Board [2001]**

Fire Safety Engineering Guidelines  
Edition 2001  
ABCB Canberra

#### **D. Drysdale D. [1998]**

Introduction to Fire Dynamics 2<sup>nd</sup> Edition  
John Wiley & Sons Ltd

#### **NSW Government Environmental Planning and Assessment Act [1979]**

Part 79BA – Consultation and development Consent – Certain Bushfire Prone Land  
NSW Government Printer

#### **Planning NSW [2006]**

Planning for Bushfire Protection 2006

A Guide for Councils, Planners, Fire Authorities, Developers and Home Owners

*This document provides the necessary planning considerations when developing areas for residential use in residential, rural residential, rural and urban areas when development sites are in close proximity to areas likely to be affected by bushfire events and replaces Planning for Bushfire Protection 2001.*

*This document is essential reading: Download a copy from the RFS website or purchase a copy through the NSW Government Online Shop or phone 9228 6333*

#### **Ramsay C & Rudolph L [2003]**

Landscape and Building Design for Bushfire Prone Areas  
CSIRO Publishing

#### **Standards Australia [2009]**

Australian Standards 3959  
Australian Building Code Board

## **14) Fences and Gates**

### **BAL 12.5 & BAL 19**

1. Where a timber fence does not connect to a dwelling and has a minimum of 1 metre separation from the dwelling then a fence may be constructed from hardwood, or non-combustible material.
2. Where a fence connects directly to or has less than 1 metre separation from a dwelling it should be constructed from non-combustible materials only.
3. In all cases where timber fences are proposed, care should be taken in the selection, location and maintenance of landscaping adjoining the fence. Unmanaged landscaping could promote fire activity due to ember, radiant heat and direct flame contact and then further impact timber fencing.

The above is based on the premise that construction for level 1 & 2 dwellings is sufficiently removed from the main fire front and won't be subjected to direct flame contact or extreme levels of radiant heat that may cause ignition of combustible materials. However, dwellings could still be exposed to significant levels of ember attack and relatively high levels of radiated heat that may cause fences to ignite.

### **BAL 29, BAL 40 &/or Flame Zone**

Dwellings assessed as requiring these construction levels shall have fencing constructed from non-combustible materials e.g. Sheet metal or masonry. This is due to the increased likelihood of direct flame contact causing ignition of combustible materials which may provide a fire path to the dwelling.

