

Bushfire Assessment

Additions and alterations

133 Owen Stanley Avenue, Allambie Heights

Katrina O'Kelly

23 August 2019 (Ref: 19094)

report by david peterson

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1 Introduction

Street or property name:	133 Owen Stanley Avenue		
Suburb, town or locality:	Allambie Heights	Postcode:	2100
Lot/DP no:	Lot 10 DP 246984		
Local Government Area:	Northern Beaches Council		
Type of development:	Additions and alterations to existing dwelling		

1.1 Background

Katrina O'Kelly commissioned Peterson Bushfire to prepare a Bushfire Assessment Report for a proposed development at the above address, which is identified as 'bushfire prone land'.

This assessment has been prepared by a consultant accredited by the Fire Protection Association of Australia's BPAD scheme (Accreditation No. BPD-L3-18882). It demonstrates that the proposal complies with the NSW Rural Fire Service document *Planning for Bushfire Protection 2006*.

1.2 Location of subject land

The subject land is located on the northern side of Allambie Road overlooking Allenby Park reserve as shown in Figure 1. The subject land is surrounded by residential properties with the bushfire prone vegetation being in the Council reserve to the north beyond adjoining properties.

1.3 Development proposal

The development consists of alterations and additions to the existing dwelling, involving a small addition and deck in the rear yard and other minor alterations to the external facade of the dwelling.

1.4 Assessment requirements

The subject land is identified as being bushfire prone land on the Northern Beaches Bushfire Prone Land Map as shown on Figure 2. Therefore, the proposed development is to be assessed by Council under the requirements of Section 4.14 of the *Environmental Planning and Assessment Act 1979* which includes the consideration of the NSW Rural Fire Service (RFS) document *Planning for Bushfire Protection 2006* (NSWRFS 2006), referred to as 'PBP' throughout this report.





Figure 1: Location of subject land





Figure 2: Bushfire prone land mapping



2 Bushfire hazard assessment

This section describes the bushfire hazard. An understanding of the hazard is necessary in order to determine the application of bushfire protection measures required by PBP, such as Asset Protection Zones (APZ) and Bushfire Attack Levels (BAL).

In accordance with PBP, the bushfire hazard is a combination of slope and vegetation which gives rise to the bushfire threat in the context of the development. A description of predominant vegetation and effective slope is provided below.

Inspection of the subject land and bushfire hazard occurred on 1st August 2019. Photographs are included in Appendix A.

2.1 Vegetation types

The bushfire prone vegetation is located within Allenby Park reserve to the north of the subject land as shown by Figure 3. The community is Sydney Coastal Dry Sclerophyll Forest which is classified as 'forest' for the purpose of determining Asset Protection Zones (APZ) and Bushfire Attack Levels (BAL). The subject land and adjoining properties are landscaped with ornamental species and rainforest plants, however, they are considered 'managed lands' for the purpose of PBP vegetation classification.

2.2 Effective slope

The effective slope most significantly influencing fire behaviour approaching the proposed development within the 100 m assessment area is within the PBP slope class of 'downslope 5-10 degrees' as indicated on Figure 3. The gradient of the rear of the residential properties where there is adequate management is within the PBP slope class range of 'downslope >15-18 degrees'. Beyond the residential land and within the reserve where the unmanaged hazard is situated, the gradient becomes less steep and within the 'downslope 5-10 degrees' slope class.





Figure 3: Slope assessment



³ Bushfire protection measures

PBP requires the assessment of a suite of bushfire protection measures that in total provide an adequate level of protection for residential development. The measures required to be assessed are listed in Table 1 below and are discussed in detail in the remainder of this section.

Bushfire protection measures	Considerations			
Asset Protection Zones (APZ)	Location and dimension of APZ building setbacks from vegetation including prescriptions of vegetation management within the APZ.			
Building construction standards	Determination of the Bushfire Attack Level (BAL) to apply to corresponding construction specifications listed in AS 3959.			
Access	Assessment to include access and egress, perimeter access and design standards of roads.			
Water supply and other utilities	List requirements for reticulated water supply and hydrant provisions, and any static water supplies for fire-fighting.			

Table 1: PBP bushfire protection measures

3.1 Asset Protection Zone (APZ)

Using the hazard parameters of vegetation and slope discussed in Section 2, the required Asset Protection Zone (APZ) from the bushfire hazard can be determined using Table A2.4 of PBP. Table 2 below lists the APZ results and the available APZ is indicated on Figure 4.

PBP lists a minimum APZ distance of 35 m for new residential development. The proposed addition to the rear of the dwelling (closest building element to the hazard) will have a 36 m separation to the hazard within the reserve which complies with PBP. The separation consists of the subject land and rear yards of adjoining residential property. Additional APZ establishment is not required for the proposal.

Table 2: Determination of APZ and BAL

Direction ¹	Vegetation ²	Slope ³	PBP APZ⁴	Available APZ⁵	AS3959 Bushfire Attack Level (BAL) ⁶
North-east	Forest	Downslope 5-10°	35 m	36 m	BAL-40
Remaining	Managed	Not required	N/A	>100 m	BAL-LOW

¹ Direction of assessment from development.

² Predominant vegetation classification over 140 m from development.

³ Effective slope assessed over 100 m from development site where the bushfire hazard occurs.

⁴ Minimum APZ required by PBP acceptable solution for residential development.

⁵ APZ proposed to be established and/or provided by existing management arrangements.

⁶ Bushfire Attack Level (BAL) corresponding to construction requirements under AS 3959-2009 'Construction of buildings in bushfire-prone areas'.





Figure 4: Bushfire hazard and separation assessment



3.2 Vegetation management

The vegetation within the subject land complies with the performance objectives of an Asset Protection Zone as prescribed by PBP. Additional vegetation or tree removal is not required for the proposal.

3.3 Bushfire Attack Level (BAL)

As shown in Table 2, the proposed development is rated as BAL-40 in accordance with an assessment performed following the methodology of PBP and *AS 3959-2009 Constructions of buildings in bushfire-prone areas* (AS 3959).

It is therefore recommended that the development be designed and constructed to comply with AS 3959 BAL-40 for the entire roof, northern side elevation and rear eastern elevation. The southern side elevation and western front elevation is to comply with BAL-29.

The NSW variation to AS 3959 is also to be applied to the BAL requirements. The variation can be found in the *Planning for Bushfire Protection Addendum Appendix 3 May 2010*: http://www.rfs.nsw.gov.au/__data/assets/pdf_file/0004/4396/Planning-for-Bush-Fire-Protection-2006-Addendum-Appendix-3.pdf.

3.4 Water supply and utilities

Water supply

The nearest hydrant is located 30 m south-west of the front boundary as shown on Figure 4. Therefore, the existing dwelling and proposed development is within the required distance of the hydrant as required by PBP and *AS 2419.1 Fire hydrant installations - System design, installation and commissioning.* An additional water supply for fire-fighting is not required.

Electrical supply

The overhead electrical transmission lines within the subject land are to have branch clearance distances that comply with *ISSC 3 Guideline for Managing Vegetation Near Power Lines* (Industry Safety Steering Committee 2005). Standard residential connections require a 0.5 m separation to the conductors.

Gas supply

Any gas services are to be installed and maintained in accordance with *AS/NZS* 1596-2014 The storage and handling of *LP* gas (Standards Australia, 2014).

3.5 Access

A standard residential driveway provides the access to the subject land and therefore complies with PBP. There are no specific standards for private property access whereby the dwelling is within the required distance of a hydrant. Fire tankers will not need to enter the driveway or the property. They would stand on the street when attending to a fire at the subject land. Additional access provisions for fire-fighting are not required.



4 Conclusion and recommendations

The proposal consists of additions and alterations to an existing dwelling on land identified as bushfire prone. The available separation distance between the proposed development and the identified forest hazard complies with PBP and results in a BAL-40 construction requirement. The existing vegetation, utility and access arrangements comply.

Recommendations made within this report are provided to achieve compliance. The following recommendations are made:

- The proposed works are to be designed and constructed to comply with AS 3959 BAL-40 for the entire roof, northern side elevation and rear eastern elevation. The southern side elevation and western front elevation is to comply with BAL-29. It is important to note that NSW has a minor variation to AS 3959 that is to be applied to design and construction in addition to the BAL specifications. The variation is listed in Section A3.7 of the 'Planning for Bushfire Protection Appendix 3 Addendum May 2010'.
- 2. The overhead electrical transmission lines within the subject land are to have branch clearance distances that comply with *ISSC 3 Guideline for Managing Vegetation Near Power Lines* (Industry Safety Steering Committee 2005). Standard residential connections require a 0.5 m separation to the conductors.
- 3. Any gas services installed are to be in accordance with *AS/NZS 1596-2014 The storage and handling of LP gas* (Standards Australia, 2014).

In the author's professional opinion, the proposed development will comply with *Planning for Bushfire Protection 2006* with the adoption of the above recommendation.

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References

Industry Safety Steering Committee. 2005. *ISSC 3 Guideline for Managing Vegetation Near Power Lines*. (updated from Energy Australia. 2002. *Network Standard NS 179 (Vegetation Safety Clearances))*.

NSW Rural Fire Service (RFS). 2006. *Planning for Bush Fire Protection: A Guide for Councils, Planners, Fire Authorities, Developers and Home Owners*. Australian Government Publishing Service, Canberra.

Standards Australia. 2005. *Fire hydrant installations - System design, installation and commissioning*, AS2419.1, Fourth edition 2005, Standards Australia International Ltd, Sydney.

Standards Australia. 2009 (Amendment 3). *Construction of buildings in bushfire-prone areas*, AS 3959, Third edition 2009, Standards Australia International Ltd, Sydney.

Standards Australia. 2014. *The storage and handling of LP Gas*, AS/NZS 1596:2014, Standards Australia International Ltd, Sydney.



Appendix A - Photographs



Photograph 1: Front of existing dwelling showing compliant landscaping



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Photograph 2: Rear of existing dwelling subject to small addition





Photograph 3: Maintained lower section of the rear yard





Photograph 4: Maintained neighbouring properties to the east





Photograph 5: Maintained landscaping within neighbouring properties to the north



