Planning for Bushfire Protection

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Reference: 1381-R
28/09/2021

Bushfire Risk Assessment Report

In relation to proposed development at:

No 15 Burrendong Place, Avalon Beach

In accordance with the requirements of 4.14 of the EP&A Act No 203 Part (1) [b] This Assessment has been prepared and Certified by: Ronald Coffey *BPAD – A Certified Practitioner* *FPAA Cert. No: BPD-PA 09328*	
Can this proposal comply with AS3959, 2018 + the additional construction requirements detailed in section 7.5 of PBP?	**YES**
What is the recommended level of compliance AS3959, 2018?	**BAL 12.5**
Does this development comply with the requirements of PBP?	**YES**
Does this development comply with the Aims and objectives of PBP?	**YES**
Is referral to the NSW RFS required?	**NO**
This assessment confirms that the proposal conforms to the specifications and requirements, that are relevant to the development, of the version (as prescribed by the regulations) of the document entitled Planning for Bushfire Protection prepared by the NSW Fire Service in co-operation with the NSW Department of Planning.	

Contents

Introduction

The purpose of this report is to determine the category of bushfire attack and subsequent construction standard for the proposed development of a new Class 1a Dwelling and associated landscaping at No 5 Burrendong Place, Avalon Beach.

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 7.1 of Planning for Bushfire Protection 2019 and this report has been prepared in accordance with the requirements of Section 4.14 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 2019 [PBP] and Australian Standard AS3959, 2018.

Summary of Assessment

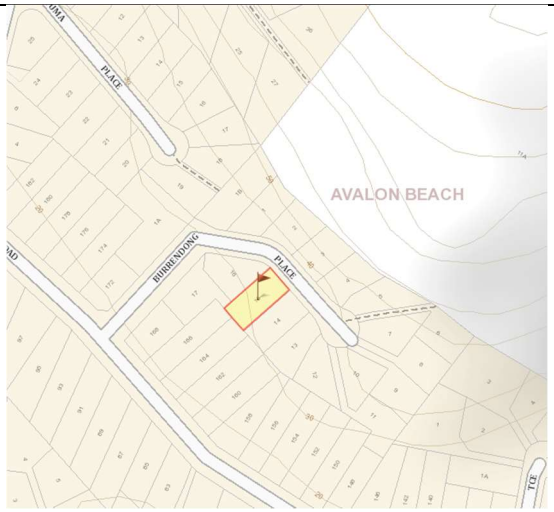
- Building construction and design – AS3959, 2018 BAL 12.5
- Asset Protection zones - Conforms to the requirements of PBP
- Landscaping - Conforms to the requirements of PBP
- Access and egress arrangements – Conforms to the requirements of PBP
- Water supply and utilities - Conforms to the requirements of PBP
- Defendable space - Conforms to the requirements of PBP
- Emergency Risk Management – Emergency planning has been discussed

1) Location

No 15 Burrendong Place, Avalon Beach.

Lot 3, DP 231 634

LGA – Northern Beaches Council



2) Development Proposal and Building Classifications

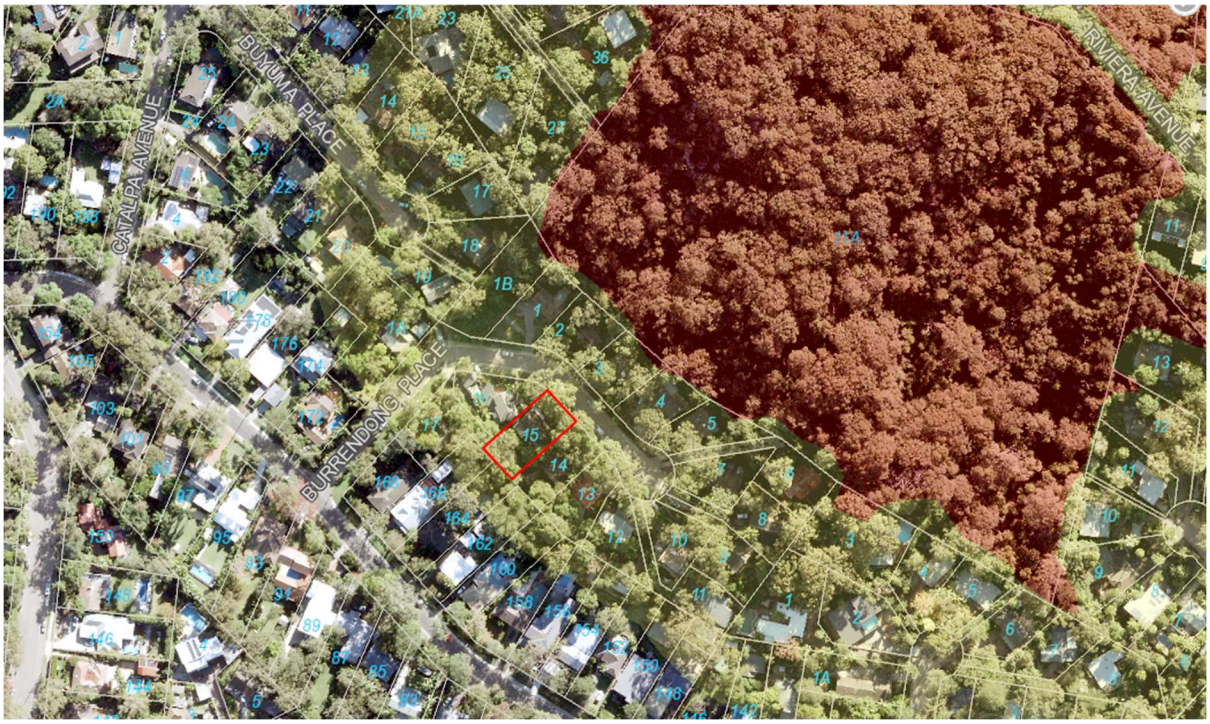
The proposal is for the development of a new Class 1a Dwelling and associated landscaping.

3) Description of the Subject Property

The development site is a residential lot facing north-east onto Burrendong Place. 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.

4) Classification of the Vegetation on and surrounding the Site

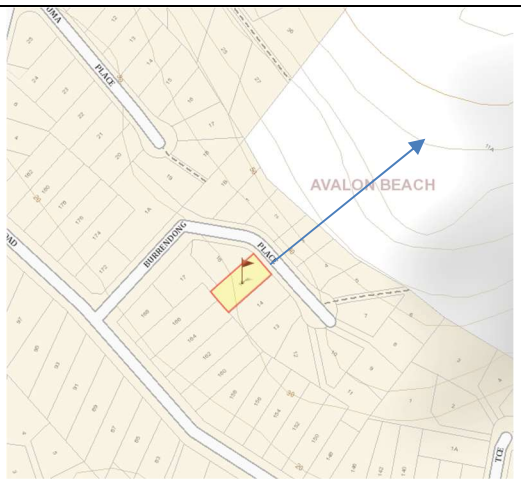
The site is developed and maintained and there is no threat from bushfire attack on the site.



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

55m 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.

5) Assessment of Effective Slope

Effective slope away from the development site: *North*: No hazard for >100m *South*: No hazard for >100m *East & NE*: Upslope *West*: No Hazard for >100m	

6) Access and Egress

The site has direct access to Burrendong Place, which is a public road, and access and egress for emergency vehicles and evacuation appears adequate.

7) Adequacy of water supply

The area has reticulated water supply and hydrants are spaced at regular distances along Burrendong Place.

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 PBP Table A1.12.5

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	55m	Forest	Upslope	<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 12.5 AS3959, 2018.					

10) Assessment of the extent to which the construction conforms or deviates from Chapter 7 of 'Planning for Bushfire Protection 2019'

Performance Criteria	Acceptable Solutions	Meets Performance Criteria
The intent may be achieved where:		
In relation to APZ's: - 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
In relation to siting and design: 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
In relation to construction standards: 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
In relation to access requirements: 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 requirements have been designed to provide safe and effective evacuation from the subject site and appear to be adequate for fire brigade personnel and fire-fighting equipment.	Yes
In relation to water and utility services: - 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.	The area has reticulated water supply and the nearest street hydrant is within the minimum required distance from the most distant point of the subject site in accordance with the requirements of PBP and AS2419.1 2005. This report shall recommend compliance with PBP 7.4a for services including electricity and gas.	Yes
In relation to landscaping: 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 site is landscaped and managed and no part of the site is shown on the bushfire prone land map as a hazard.	Yes
In relation to 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.	Yes

11) Assessment of the extent to which the construction conforms or deviates from the Aims and Objectives of 'Planning for Bushfire Protection 2019'

Aim	Meets Criteria	Comment
All development on BFPL must satisfy the aim and objectives of PBP. The aim of PBP is to provide for the protection of human life and minimise impacts on property from the threat of bushfire, while having due regard to development potential, site characteristics and protection of the environment.	Yes	The threat assessment has determined that the category of bushfire attack for the site is not within the flame zone. Landscaping, defendable space, access and egress, emergency risk management and construction standards are in accordance with the requirements of PBP and the aims of PBP have been achieved
Objectives	Meets Criteria	Comment
Afford buildings and their occupants protection from exposure to a bushfire	Yes	The maximum exposure to a bushfire for the area where the development is proposed is <12.5kw/m2.
Provide a defendable space to be located around buildings	Yes	Defendable space is provided on all sides of the proposed development.
Provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings.	Yes	The entire site is managed as an asset protection zone and appropriate separation has been provided by a combination of the onsite APZ and adjoining developed sites.
Ensure that appropriate operational access and egress for emergency service personnel and occupants is available	Yes	Internal road widths and design appear to be adequate for safe access for emergency services and for crews to work with equipment about the vehicles. The site has direct access to public roads, and access and egress for emergency vehicles and evacuation appears adequate.
Provide for ongoing management and maintenance of bushfire protection measures	Yes	The entire site where not built on is an APZ and there are no fuel loads to consider.
Ensure that utility services are adequate to meet the needs of firefighters	Yes	The area has reticulated water supply and the needs of firefighters, in terms of water supplies for firefighting, appears adequate.

12) Recommendations

The following recommendations are made for the bushfire protection measures for the proposed residential development of a new Class 1a Dwelling and associated landscaping at No 5 Burrendong Place, Avalon Beach. These recommendations are based upon the relevant provisions of the NSW Rural Fire Service guideline entitled *Planning for Bushfire Protection 2019.*

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, 2018 *'Construction of Buildings in Bushfire Prone Areas'* and the additional construction requirements contained within section 7.5, 7.51, 7.52, 7.53 and 7.54 [where applicable] of Planning for Bushfire Protection 2019.
2) Class 10b Structures: There is no bushfire protection requirement for Class 10a and 10b structures located more than 6m from a dwelling in bushfire areas. Where a Class 10a and 10b structure is located within 6m of a dwelling it must be constructed in accordance with the NCC.
3) Electricity and Gas Supplies: As far as practical, new electricity and gas supplies shall be installed in accordance with the requirements of 7.4a of PBP. Note: 7.4a of PBP requires that '*where practical, electrical transmission lines should be underground.'*
4) Asset Protection Zones: New landscaping should be designed in accordance with the inner protection area requirements as outlined within PBP and the NSW RFS document 'Standards for asset protection zones.'

   The following points are a guide to Inner Protection area requirements.

   The Inner Protection Area should comprise of the following:

   - Minimal fine fuel on the ground.
   - Vegetation that does not provide a continuous path to the building for the transfer of fire.
   - Shrubs and trees that do not form a continuous canopy and vegetation is planted in clumps rather than continuous rows.
   - Species that retain dead material or deposit excessive quantities of ground fuel are avoided.
   - Shrubs and trees are pruned so that they do not touch or overhang the building; and

- Vegetation is located far enough away from the building so that plants will not ignite the building by direct flame contact or radiant heat emission.

5) 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.
6) Water Supplies: Reticulated water supply is located on the adjoining road at regular intervals and is easily accessible. No additional water supplies have been recommended

13) Summary

This report consists of a bushfire risk assessment for the proposed residential development of a new Class 1a Dwelling and associated landscaping at No 5 Burrendong Place, Avalon Beach.

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 2019.*

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 12 of this report, it is my considered opinion that the development satisfies the Objectives and Performance requirements of the *NCC, Planning for Bushfire Protection 2019 and Australian Standard AS3959, 2018.*

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

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with Planning for Bushfire Protection and AS 3959, 2018. 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.

Ron Coffey – Bushfire Safety Engineer
Grad I Fire E [Institute of Fire Engineers - 1973]
Grad Cert Fire Safety Eng. [UWS - 2003]
Grad Dip Building in Bushfire Prone Areas [UWS – 2005]
Ass Prof Cert in Expert Evidence in the Land & Environment Court [UTS – 2005]
Member - Institute of Fire Engineers
Corporate Member - Fire Protection Association Australia

BPAD Bushfire Planning & Design Accredited Practitioner Level 3

Planning for Bushfire Protection
Fire Protection Association of Australia
BPAD-A Certified Practitioner/Corporate Bronze Certified Business
Certification No BPD-PA09328
0408 220 443

14) 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 2nd Edition
John Wiley & Sons Ltd

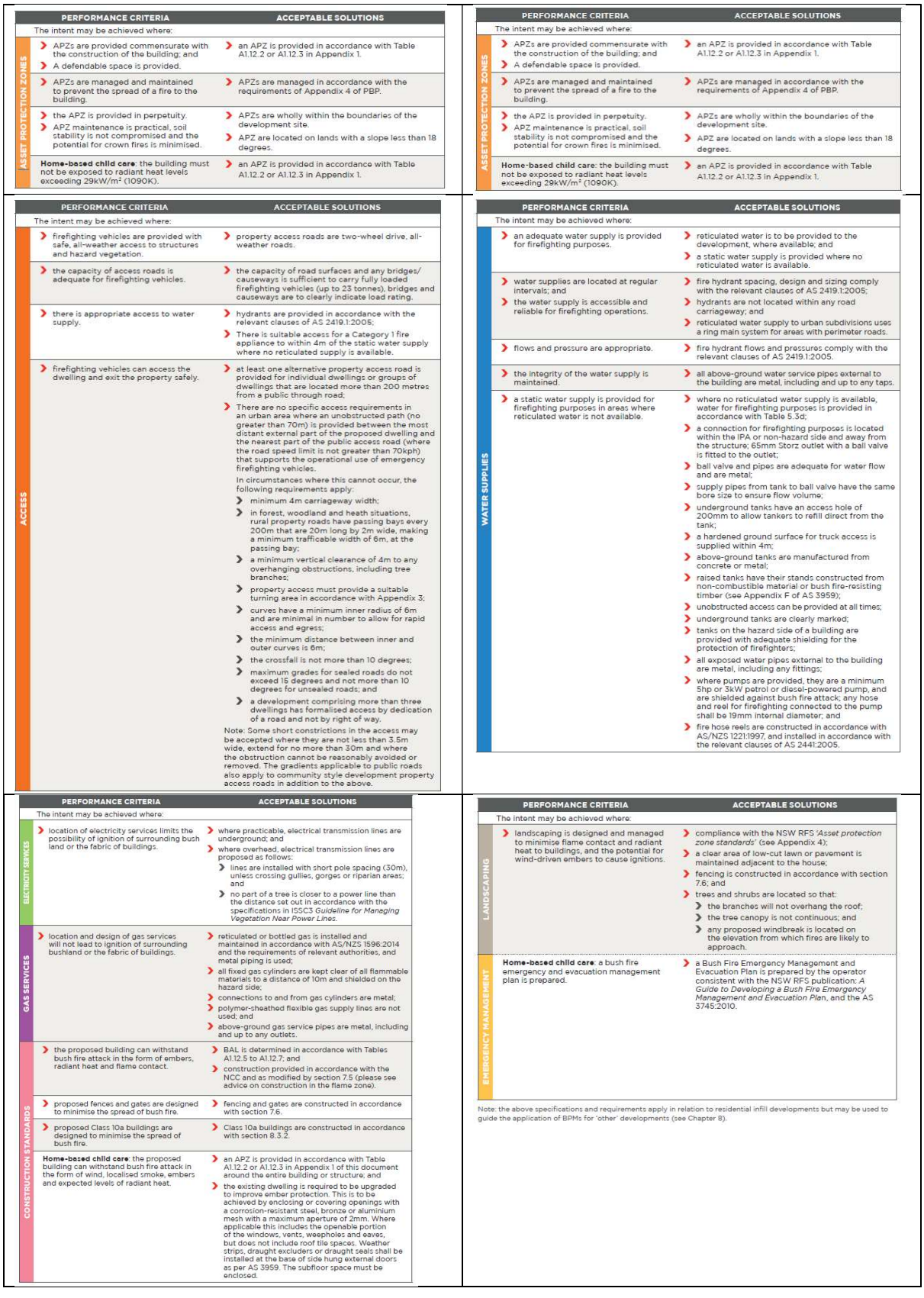
NSW Government Environmental Planning and Assessment Act [1979]
Part 79BA – Consultation and development Consent – Certain Bushfire Prone Land
NSW Government Printer

Planning NSW
Planning for Bushfire Protection 2019
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 [2018]
Australian Standards 3959
Australian Building Code Board

Appendix 1: Performance criteria and acceptable solutions PBP Part 7.4a



ASSET PROTECTION ZONES	PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
	The intent may be achieved where:	
	› APZs are provided commensurate with the construction of the building; and › A defendable space is provided.	› an APZ is provided in accordance with Table A1.12.2 or A1.12.3 in Appendix 1.
	› APZs are managed and maintained to prevent the spread of a fire to the building.	› APZs are managed in accordance with the requirements of Appendix 4 of PBP.
	› the APZ is provided in perpetuity. › APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.	› APZs are wholly within the boundaries of the development site. › APZ are located on lands with a slope less than 18 degrees.
	Home-based child care: the building must not be exposed to radiant heat levels exceeding 29kW/m² (1090K).	› an APZ is provided in accordance with Table A1.12.2 or A1.12.3 in Appendix 1.

ASSET PROTECTION ZONES	PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
	The intent may be achieved where:	
	› APZs are provided commensurate with the construction of the building; and › A defendable space is provided.	› an APZ is provided in accordance with Table A1.12.2 or A1.12.3 in Appendix 1.
	› APZs are managed and maintained to prevent the spread of a fire to the building.	› APZs are managed in accordance with the requirements of Appendix 4 of PBP.
	› the APZ is provided in perpetuity. › APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.	› APZs are wholly within the boundaries of the development site. › APZ are located on lands with a slope less than 18 degrees.
	Home-based child care: the building must not be exposed to radiant heat levels exceeding 29kW/m² (1090K).	› an APZ is provided in accordance with Table A1.12.2 or A1.12.3 in Appendix 1.

ACCESS	PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
	The intent may be achieved where:	
	› firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation.	› property access roads are two-wheel drive, all-weather roads.
	› the capacity of access roads is adequate for firefighting vehicles.	› the capacity of road surfaces and any bridges/causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes), bridges and causeways are to clearly indicate load rating.
	› there is appropriate access to water supply.	› hydrants are provided in accordance with the relevant clauses of AS 2419.1:2005; › There is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available.
	› firefighting vehicles can access the dwelling and exit the property safely.	› at least one alternative property access road is provided for individual dwellings or groups of dwellings that are located more than 200 metres from a public through road; › There are no specific access requirements in an urban area where an unobstructed path (no greater than 70m) is provided between the most distant external part of the proposed dwelling and the nearest part of the public access road (where the road speed limit is not greater than 70kph) that supports the operational use of emergency firefighting vehicles. In circumstances where this cannot occur, the following requirements apply: › minimum 4m carriageway width; › in forest, woodland and heath situations, rural property roads have passing bays every 200m that are 20m long by 2m wide, making a minimum trafficable width of 6m, at the passing bay; › a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches; › property access must provide a suitable turning area in accordance with Appendix 3; › curves have a minimum inner radius of 6m and are minimal in number to allow for rapid access and egress; › the minimum distance between inner and outer curves is 6m; › the crossfall is not more than 10 degrees; › maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads; and › a development comprising more than three dwellings has formalised access by dedication of a road and not by right of way. Note: Some short constrictions in the access may be accepted where they are not less than 3.5m wide, extend for no more than 30m and where the obstruction cannot be reasonably avoided or removed. The gradients applicable to public roads also apply to community style development property access roads in addition to the above.

WATER SUPPLIES	PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
	The intent may be achieved where:	
	› an adequate water supply is provided for firefighting purposes.	› reticulated water is to be provided to the development, where available; and › a static water supply is provided where no reticulated water is available.
	› water supplies are located at regular intervals; and › the water supply is accessible and reliable for firefighting operations.	› fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2005; › hydrants are not located within any road carriageway; and › reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads.
	› flows and pressure are appropriate.	› fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005.
	› the integrity of the water supply is maintained.	› all above-ground water service pipes external to the building are metal, including and up to any taps.
	› a static water supply is provided for firefighting purposes in areas where reticulated water is not available.	› where no reticulated water supply is available, water for firefighting purposes is provided in accordance with Table 5.3d; › a connection for firefighting purposes is located within the IPA or non-hazard side and away from the structure; 65mm Storz outlet with a ball valve is fitted to the outlet; › ball valve and pipes are adequate for water flow and are metal; › supply pipes from tank to ball valve have the same bore size to ensure flow volume; › underground tanks have an access hole of 200mm to allow tankers to refill direct from the tank; › a hardened ground surface for truck access is supplied within 4m; › above-ground tanks are manufactured from concrete or metal; › raised tanks have their stands constructed from non-combustible material or bush fire-resisting timber (see Appendix F of AS 3959); › unobstructed access can be provided at all times; › underground tanks are clearly marked; › tanks on the hazard side of a building are provided with adequate shielding for the protection of firefighters; › all exposed water pipes external to the building are metal, including any fittings; › where pumps are provided, they are a minimum 5hp or 3kW petrol or diesel-powered pump, and are shielded against bush fire attack; any hose and reel for firefighting connected to the pump shall be 19mm internal diameter; and › fire hose reels are constructed in accordance with AS/NZS 1221:1997, and installed in accordance with the relevant clauses of AS 2441:2005.

	PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
	The intent may be achieved where:	
ELECTRICITY SERVICES	› location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings.	› where practicable, electrical transmission lines are underground; and › where overhead, electrical transmission lines are proposed as follows: › lines are installed with short pole spacing (30m), 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 ISSC3 *Guideline for Managing Vegetation Near Power Lines*.
GAS SERVICES	› location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.	› reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities, and metal piping is used; › all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side; › connections to and from gas cylinders are metal; › polymer-sheathed flexible gas supply lines are not used; and › above-ground gas service pipes are metal, including and up to any outlets.
CONSTRUCTION STANDARDS	› the proposed building can withstand bush fire attack in the form of embers, radiant heat and flame contact.	› BAL is determined in accordance with Tables A1.12.5 to A1.12.7; and › construction provided in accordance with the NCC and as modified by section 7.5 (please see advice on construction in the flame zone).
	› proposed fences and gates are designed to minimise the spread of bush fire.	› fencing and gates are constructed in accordance with section 7.6.
	› proposed Class 10a buildings are designed to minimise the spread of bush fire.	› Class 10a buildings are constructed in accordance with section 8.3.2.
	Home-based child care: the proposed building can withstand bush fire attack in the form of wind, localised smoke, embers and expected levels of radiant heat.	› an APZ is provided in accordance with Table A1.12.2 or A1.12.3 in Appendix 1 of this document around the entire building or structure; and › the existing dwelling is required to be upgraded to improve ember protection. This is to be achieved by enclosing or covering openings with a corrosion-resistant steel, bronze or aluminium mesh with a maximum aperture of 2mm. Where applicable this includes the openable portion of the windows, vents, weepholes and eaves, but does not include roof tile spaces. Weather strips, draught excluders or draught seals shall be installed at the base of side hung external doors as per AS 3959. The subfloor space must be enclosed.

	PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
	The intent may be achieved where:	
LANDSCAPING	› landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions.	› compliance with the NSW RFS *'Asset protection zone standards'* (see Appendix 4); › a clear area of low-cut lawn or pavement is maintained adjacent to the house; › fencing is constructed in accordance with section 7.6; and › trees and shrubs are located so that: › the branches will not overhang the roof; › the tree canopy is not continuous; and › any proposed windbreak is located on the elevation from which fires are likely to approach.
EMERGENCY MANAGEMENT	**Home-based child care**: a bush fire emergency and evacuation management plan is prepared.	› a Bush Fire Emergency Management and Evacuation Plan is prepared by the operator consistent with the NSW RFS publication: *A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan*, and the AS 3745:2010.

Note: the above specifications and requirements apply in relation to residential infill developments but may be used to guide the application of BPMs for "other" developments (see Chapter 8).

Appendix 2: 7.5.2 NSW State Variations under G5.2(a)(i) and 3.10.5.0(c)(i) of the NCC
Certain provisions of AS 3959 are varied in NSW based on the findings of the Victorian Bush Fires Royal Commission and bush fire industry research.
The following variations to AS 3959 apply in NSW for the purposes of NSW G5.2(a)(i) of Volume One and NSW 3.10.5.0(c)(i) of Volume Two of the NCC; clause 3.10 of AS 3959 is deleted and any sarking used for BAL-12.5, BAL-19, BAL-29 or BAL-40 shall:

- be non-combustible; or
- comply with AS/NZS 4200.1, be installed on the outside of the frame and have a flammability index of not more than 5 as determined by AS 1530.2; and
- clause 5.2 and 6.2 of AS 3959 is replaced by clause 7.2 of AS 3959, except that any wall enclosing the subfloor space need only comply with the wall requirements for the respective BAL; and
- clause 5.7 and 6.7 of AS 3959 is replaced by clause 7.7 of AS 3959, except that any wall enclosing the subfloor space need only comply with the wall requirements for the respective BAL; and
- fascias and bargeboards, in BAL-40, shall comply with:
- clause 8.4.1(b) of AS 3959; or
- clause 8.6.6 of AS 3959.

The interpretation of this variation is:

Enclosed subfloors: For subfloor supports there are no requirements for supporting posts, columns, stumps, stringers piers and poles for subfloor supports for BAL 12.5 and BAL 19 when the subfloor space is enclosed with a wall that complies with the determined BAL level for the site.

Unenclosed subfloors: For unenclosed subfloor supporting posts, columns, stumps, stringers piers and poles the requirements are upgraded from BAL 12.5 and BAL 19 to BAL 29 level.

Enclosed verandas: There are no requirements for supporting posts, columns, stumps, stringers piers and poles for verandas, decks, steps and landings when the subfloor space is enclosed with a wall that complies with the determined BAL level for the site.

Unenclosed verandas: The requirements for supporting posts, columns, stumps, stringers piers and poles for verandas, decks, steps, and landings are upgraded from BAL 19 and BAL 12.5 to BAL 29 level.

For unenclosed subfloors of the main building or verandas, decks, steps and landings for BAL 12.5, 19 and BAL29 supporting posts, columns, stumps, stringers piers and poles shall be:

1. A non-combustible material; or
2. A Bushfire resistant timber; or
3. A combination of 1 and 2

Acceptable timber species:
Black-butt, Turpentine, Silver Top Ash, Spotted Gum, Red Iron Bark, Kwila, Red River Gum

Sarking: To comply with the NSW State variation any sarking used for BAL 12.5 shall:

- Be Non-combustible; or
- Comply with AS/NZ 4200.1 be installed on the outside of the frame and have a flammability index of not more than 5 as determined by AS1530.2