

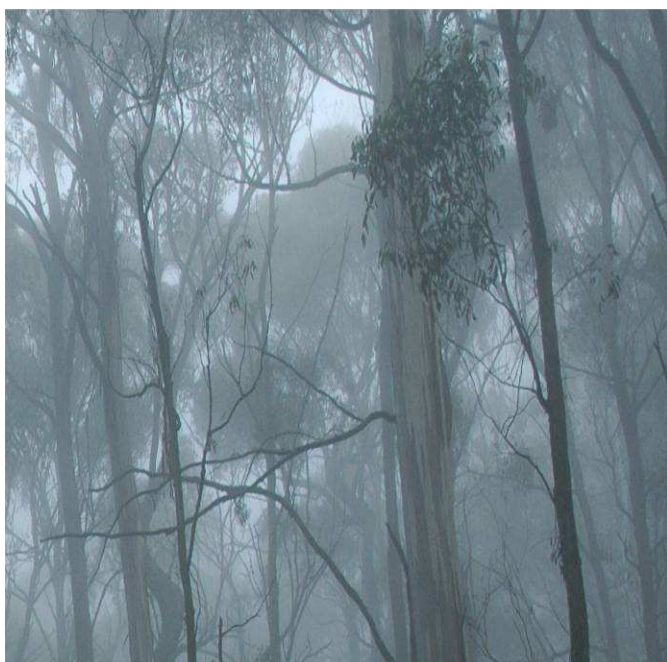


BUSHFIRE PROTECTION ASSESSMENT

Special Fire Protection Purpose Development
Campbelltown Hospital Stage 1 Redevelopment

Prepared for
Health Infrastructure NSW

25 January 2012





Bushfire Protection Assessment


**Special Fire Protection Purpose Development
Campbelltown Hospital Stage 1 Redevelopment**

PREPARED FOR	Health Infrastructure
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PROJECT NO	11SGBBUS-0047
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DATE	January 2012
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1 Property and Proposal

Name:	Health Infrastructure NSW c/- Capital Insight Pty Ltd		
Postal address:	77 Berry St, North Sydney, NSW, 2060		
Street or property Name:	Campbelltown Hospital		
Suburb, town or locality:	Therry Rd, Campbelltown	Postcode:	2560
Local Government Area:	Campbelltown City Council		
Type of area:	Urban		
Type of development:	Hospital Redevelopment		

DESCRIPTION OF PROPOSAL

Health Infrastructure NSW commissioned Eco Logical Australia Pty Ltd (ELA) to prepare a bushfire protection assessment (BPA) for the redevelopment of a portion of the Campbelltown Hospital site, (hereafter referred to as the subject land). The proposal includes the construction of a new 6 storey AHS building on the western extent of the site, along with refurbishment of existing buildings and associated site works.

The subject land and bush fire prone vegetation were inspected on 28 April 2011 by Rod Rose (Director) and this report was prepared by Julie Holden (Manager – NSW South Coast).

LOCATION AND DESCRIPTION OF SUBJECT LAND

The subject land is located on the western side of the intersection of Appin Road and Narellan Road on the grounds of the current Campbelltown Hospital.

The nearest bush fire prone vegetation is an artificial landscaped corridor on the edge of a water storage basin to the west of the existing hospital site. Site investigation shows that this vegetation is unlikely to be bushfire prone as it is <1 ha in area, however the report uses a low risk approach, treating it as bushfire prone. The Bush Fire Prone Land map is shown in Figure 2 and photographs of the vegetation as shown in Section 14.



Figure 1: Aerial photograph locating subject land



Figure 2: Campbelltown Council Bush Fire Prone Land Map



Figure 3: Development proposal (new buildings shown in brown)

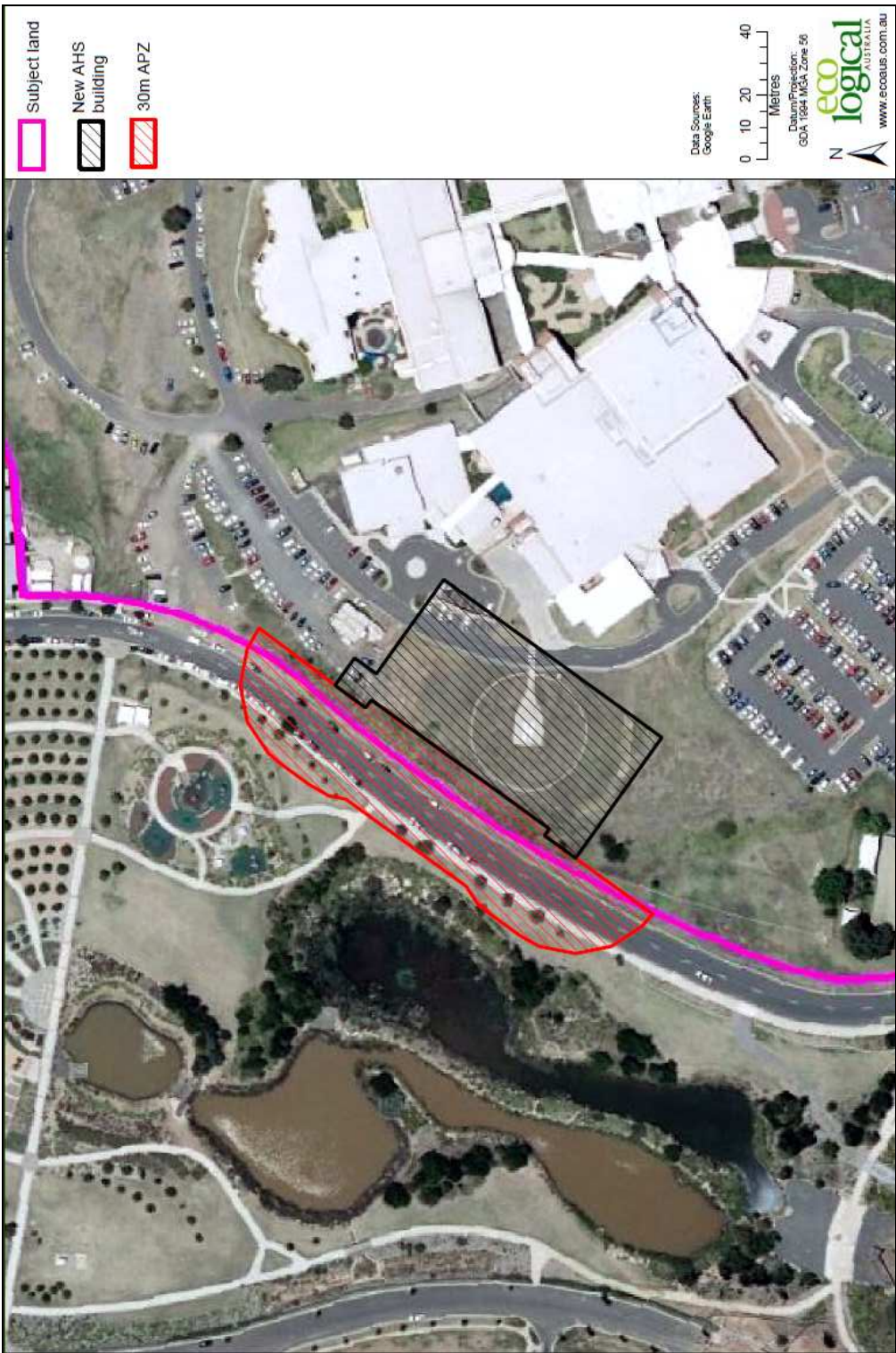


Figure 4: Proposal showing APZ

2 Bushfire Threat Assessment

2.1 ASSESSMENT REQUIREMENTS

The subject land is identified as bush fire prone land by Campbelltown City Council and the proposed development is defined as a 'Special Fire Protection Purpose' (SFPP) development under Section 91 of the *Environmental Planning and Assessment Act 1979*, Section 100B of the *Rural Fires Act 1997* and Planning for Bushfire Protection (PBP). SFPP developments within Bush Fire Prone Land require a Bushfire Safety Authority (BSA) from the NSW Rural Fire Service (RFS) under Section 100B of the *Rural Fires Act 1997* prior to Development Consent. The proposed development is also classified an infill development under PBP as evident in Figures 1 and 2.

This Bushfire Protection Assessment has been prepared using current legislative requirements and associated guidelines for assessment of bushfire protection:

- *Section 100B* of the Rural Fires Act 1997; and
- NSW Rural Fire Service (2006) *Planning for Bushfire Protection, A guide for Councils, Planners, Fire Authorities and Developers*" (herein called *PBP*).

The nature of SFPPs is such that the occupants may be more vulnerable to bushfire attack for a variety of reasons including a reduced capacity to evaluate risk and to respond to the bush fire threat, and the fact that the logistical arrangements for the numbers of occupants may be complicated. Consequently, SFPPs need to meet a more stringent set of bushfire protection requirements than residential development.

2.2 VEGETATION TYPES AND SLOPE

The vegetation and slope has been assessed in four directions from the development site. In accord with the PBP guidelines the predominant vegetation class has been calculated for a distance of at least 140 m out from each proposed building and the slope class "*most significantly affecting fire behaviour having regard for vegetation found [on it]*" for a distance of at least 100 m. The predominant vegetation and effective slope assessments are shown in Table 1 (p.11).

This adjoining vegetation is either mown grass or managed as amenity landscaping as shown in the photographs of the site in section 14 of this report.

The vegetation type and the PBP slope category affecting the proposed development are summarised in Table 1.

3 Asset Protection Zones (APZ)

PBP has been used to determine the width of Asset Protection Zones (APZ) for the building envelope of the AHS building proposed using the vegetation and slope data identified in Table 1 below. The proposed APZ are also shown in Table 1.

Table 1: Threat assessment, APZ and category of bushfire attack

Direction from envelope	Slope ¹	Vegetation ²	PBP required APZ ³	Proposed APZ	AS3959 Construction Standard ⁴	Comment
South-east	Upslope/flat	Managed lands (carpark)	n/a	n/a	BAL12.5	
North-East	Upslope/flat	Managed lands (hospital buildings)				
South-west	Upslope/flat	Managed lands (helipad)				
North-west	Upslope/flat	Rainforest (Remnant)	30 m	>30 m	BAL12.5	APZ in place and includes existing dual lane Parkside Crescent roadway.

¹ Slope most significantly influencing the fire behaviour of the site having regard to vegetation found. Slope classes are according to PBP.

² Predominant vegetation is identified, according to PBP and "Where a mix of vegetation types exist the type providing the greater hazard is said to be predominate".

³ Assessment according to PBP.

⁴ Assessment according to AS 3959-2009.

4 Asset Protection Zone Maintenance

The required APZ is in place and no further vegetation clearance or tree removal is required to support the proposed development. Fuel management within the APZ is to be as follows:

- No tree or tree canopy is to occur within 2 m of the building roofline;
- The presence of a few shrubs or trees in the APZ is acceptable provided that they:
 - are well spread out and do not form a continuous canopy;
 - are not species that retain dead material or deposit excessive quantities of ground fuel in a short period or in a danger period; and
 - are located far enough away from the building so that they will not ignite the building by direct flame contact or radiant heat emission.
- Any landscaping or plantings should preferably be local endemic mesic species or other low flammability species;
- A minimal ground fuel is to be maintained to include less than 4 tonnes per hectare of fine fuel (fine fuel means ANY dead or living vegetation of <6 mm in diameter e.g. twigs less than a pencil in thickness. 4 t/ha is equivalent to a 1 cm thick layer of leaf litter); and
- Any structures storing combustible materials such as firewood (e.g. sheds) must be sealed to prevent entry of burning debris.

An annual audit of the APZ and landscaping, and compliance of external components of the building is required by a BPAD qualified bushfire consultant; this should be conducted prior to August each year and any deficiencies corrected prior to September each year.

5 Construction Standards

The proposed development is required to be constructed to BAL-12.5 under Australian Standard AS 3959-2009 'Construction of buildings in bushfire-prone areas' (Standards Australia 2009).

Furthermore, the provisions of Section 3 'Construction General' of AS3959-2009 and the ember protection provisions outlined on Page 10 of the 2010 Appendix 3 Addendum to PBP are also required for the proposed building where applicable.

6 Water Supply

The subject land is serviced by reticulated water and proposed internal fire hydrant spacing, sizing and pressures are to comply with AS 2419.1-2005 Fire hydrant installations - System design, installation and commissioning (2005).

7 Gas and Electricity Supplies

In accordance with PBP, electricity should be underground wherever practicable. Where overhead electrical transmission lines are installed:

- lines are to be installed with short pole spacing, unless crossing gullies, and
- no part of a tree should be closer to a powerline than the distance specified in "Vegetation Safety Clearances" issued by Energy Australia (NS179 December 2010).

Any gas services are to be installed and maintained in accordance with AS/NZS 1596:2008 (Standards Australia 2008).

Performance Criteria	Acceptable Solutions	Complies
<ul style="list-style-type: none"> there is clear access to reticulated water supply 	<ul style="list-style-type: none"> public roads up to 6.5 metres wide provide parking within parking bays and located services outside of the parking bays to ensure accessibility to reticulated water for fire suppression 	Yes
	<ul style="list-style-type: none"> one way only public access roads are no less than 3.5 metres wide and provide parking within parking bays and located services outside of the parking bays to ensure accessibility to reticulated water for fire suppression 	Yes
<ul style="list-style-type: none"> parking does not obstruct the minimum paved width 	<ul style="list-style-type: none"> parking bays are a minimum of 2.6 metres wide from kerb to kerb edge to road pavement . No services or hydrants are located within the parking bays 	Yes
	<ul style="list-style-type: none"> public roads directly interfacing the bush fire hazard vegetation provide roll top kerbing to the hazard side of the road 	Yes

*1 PBP page 21

9 Environmental and Cultural Issues

At the time of assessment, there were no known significant environmental features, threatened species or Aboriginal relics identified under the *Threatened Species Conservation Act 1995* or the *National Parks Act 1974* that will affect or be affected by the bushfire protection proposals in this report.

10 Emergency and Evacuation Management Plan

The assessment does not provide an Emergency Response or an Evacuation Plan. These will be submitted for approval prior to the occupation of buildings and will be prepared consistent with the RFS document *A Guide to Developing a Bushfire Evacuation Plan* (2004). These Plans are to be prepared by a BPAD qualified bushfire consultancy.

11 Summary of protection provisions

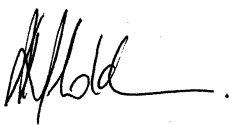
Table 3 summarises the bushfire protection proposed and its conformity with the PBP guidelines.

Table 3: Assessment of conformity with PBP guidelines

Bushfire protection provision	Proposal	Conformity with PBP guidelines
Asset Protection Zones	Table 1 identifies the size of proposed APZ.	Yes
Construction Standards	BAL 12.5 construction standard under AS 3959.	Yes
Access	This is considered appropriate to meet the performance criteria for an infill SFPP development.	Yes
Water supply	Reticulated water exists	Yes

12 Conclusion and Recommendations

In the author's professional opinion, the bushfire protection measures discussed and recommended in this assessment provide an adequate standard of bushfire protection for the proposed development, and at a standard that is consistent with 'Planning for Bushfire Protection 2006' requirements for Special Fire Protection Purpose development.



Julie Holden
Manager – NSW South Coast

13 References

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

Energy Australia. 2010. *Network Standard NS 179 (Vegetation Safety Clearances)*, Sydney.

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

Standards Australia. 2008. *The storage and handling of LP Gas*, AS/NZS 1596:2008, Fourth edition 2005, Standards Australia International Ltd, Sydney

Standards Australia. 2009. *Construction of buildings in bushfire-prone areas*, AS 3959-2009, Standards Australia International Ltd, Sydney

14 Photographs

Photo 1: Narrow band of trees adjoining the northern side of the waterbody



Photo 2: Narrow band of trees adjoining the eastern side of the waterbody

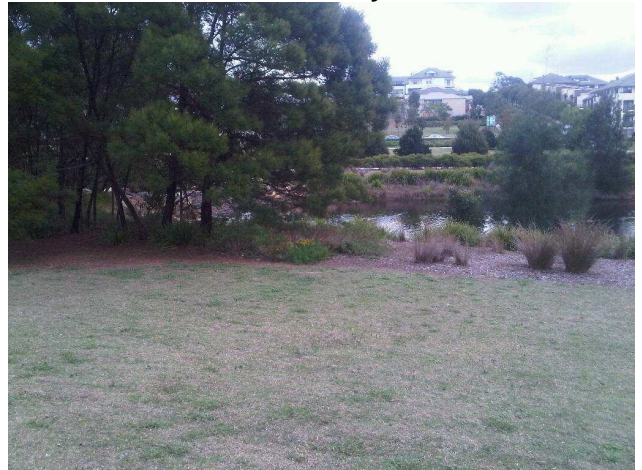


Photo 3: Grassed areas north-east of the proposed building (existing hospital buildings in background)



Photo 4: Existing APZ west of Parkside Crescent

