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Bushfire Protection Assessment: Proposed Kiosk - Oxford Falls Grammar School

Oxford Falls Grammar School

DOCUMENT TRACKING

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Template 2.8.1

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1. Property and proposal

Table 1: Subject site summary

Street address or property name:	1078 Oxford Falls Road		
Suburb, town or locality:	Oxford Falls	Postcode:	2100
Lot/DP no:	Lot 100 DP 1240806		
Local Government Area:	Northern Beaches Council		
Type of development:	Kiosk within Special Fire Protection Purpose (SFPP) development.		

1.1 Description of proposal

Oxford Falls Grammar School commissioned Eco Logical Australia Pty Ltd (ELA) to prepare a bushfire protection assessment (BPA) for a proposed kiosk at Oxford Falls Grammar School (hereafter referred to as the 'subject land').

The proposed development consists of the construction of a sports kiosk within the existing school grounds.

This assessment was prepared by ELA Bushfire Consultant Natalie South, with quality assurance by Rod Rose (FPAA BPAD-A Certified Practitioner No. BPAD1940-L3). Rod is recognised by the NSW Rural Fire Service as a qualified bushfire consultant in bushfire risk assessment (BPAD Level 3).

Given the nature of the development assessment has been desktop-based using information contained within the site plan provided by AJ+C (**Figure 1**) and online information from Google Earth and Nearmap.

1.2 Assessment process

Being a Special Fire Protection Purpose (SFPP) development, the development proposal was assessed in accord with Section 100B of the *Rural Fires Act 1997* and '*Planning for Bush Fire Protection 2006*' (RFS 2006), herein referred to as PBP (See **Appendix A** for a summary of the assessment process).

Assessment included a review of background documentation, design team consultation and GIS analysis.

Table 2 identifies the bushfire protection measures have been assessed using Acceptable Solutions only and no Performance Solutions were required.

Table 2: Summary of bushfire protection measures assessed

Bushfire Protection Measure	Acceptable Solution	Performance Solution	Report Section
Asset Protection Zones	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.1
Construction standard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.3
Access	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.4
Water supply	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.5.1
Gas and electrical supplies	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.5.2
Emergency and Evacuation Planning	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4

1.3 Bush fire prone land status

The subdivision includes land is classified as bush fire prone on the Northern Beaches Council Bush Fire Prone Land (BFPL) map¹.

¹ <https://www.planningportal.nsw.gov.au/spatialviewer/#/find-a-property/lot>

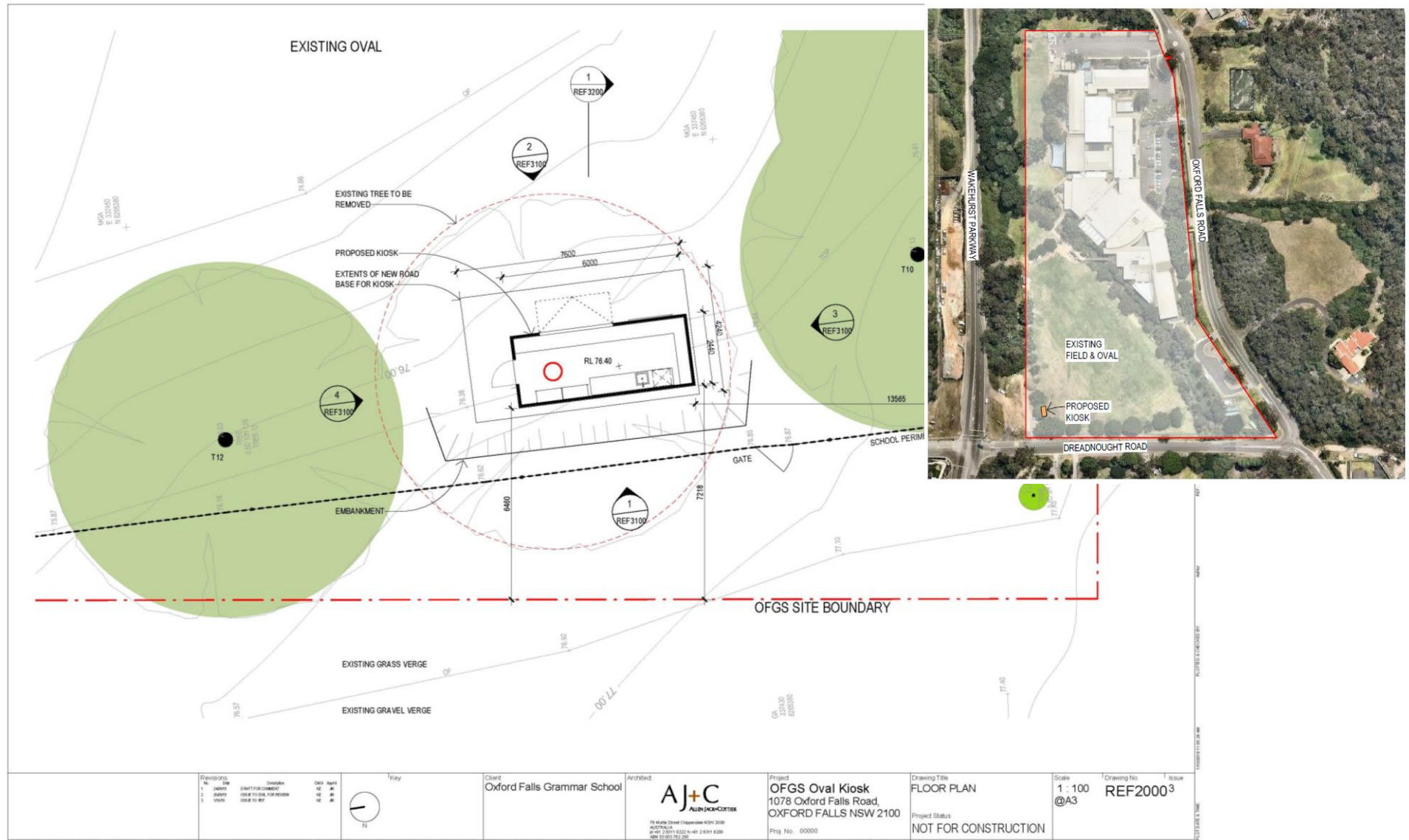


Figure 1: Proposed development

2. Bushfire threat assessment

Figure 2 shows the effective slope and predominant vegetation on transect lines representing the highest bushfire threat potentially posed to the development from various directions.

The effective slope has been determined from 2 m contours and the predominant vegetation has been determined from the Office of Environment and Heritage (OEH) vegetation maps (NSW Government 2016).

There are two (2) bushfire hazards within 140 m of the proposed kiosk. The nearest hazard is located to the north-west and is *Sydney Peppermint - Smooth-barked Apple - Red Bloodwood shrubby open forest on slopes of moist sandstone gullies, eastern Sydney Basin Bioregion*. This vegetation type falls under the 'Dry Sclerophyll Forests (Shrubby sub-formation)' vegetation formation, however this vegetation is approximately 30 m wide and is classified under PBP as 'low hazard vegetation' as it is <1ha in areas and is separated from other nearby low hazard by at least 30 m. Low hazard vegetation uses APZ setbacks of the same size as 'rainforest' setbacks and the BAL construction levels are similarly based upon the rainforest hazard rating.

The vegetation further west of this hazard shown in **Figure 2** is situated within the grounds of a church and has an entirely managed understorey therefore is not considered a bushfire hazard.

The second hazard is located to south-west is *Mallee - Banksia - Tea-tree - Hakea heath-woodland of the coastal sandstone plateaus of the Sydney Basin* which falls under the 'Heathlands' vegetation formation and the 'Sydney Coastal Heaths' vegetation class within the PBP vegetation category of 'Tall Heath'.

Figure 2 and **Table 3** show the vegetation and slope information assessed. Where necessary additional information is provided within Table 3 on why and how the chosen slope and vegetation has been calculated.

The site is located within the Local Government Area (LGA) of Northern Beaches Council and is within a Fire Danger Index (FDI) area of 100 under PBP.



Figure 2: Bushfire hazard assessment and Asset Protection Zones (APZ)

3. Bushfire protection measures

3.1 Asset Protection Zones (APZ)

The proposed development is located within an existing Special Fire Protection Purpose (SFPP) development but is a 'non-habitable' building and as such does not require Asset Protection Zones (APZ) applicable to SFPP development.

The kiosk is located where the available APZ result in a BAL-12.5 under AS 3959-2009, and this was agreed as appropriate in discussion with the NSW RFS Batemans Bay 6th September 2019.

Table 3 shows the dimensions of the APZ in each of the transect line directions; and where relevant, information on how the APZ is to be provided is included. The size of the APZ setback is shown in **Figure 2**.

3.2 APZ maintenance plan

The existing APZ is to be managed to Inner Protection Area standards as follows:

- No tree or tree canopy is to occur within 2 m of the future building rooflines;
- The presence of a few shrubs or trees in the APZ is acceptable provided 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 future buildings 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.

Further details on APZ implementation and management can be found on the NSW RFS website including:

https://www.rfs.nsw.gov.au/_data/assets/pdf_file/0010/13321/Standards-for-Asset-Protection-Zones.pdf.

Table 3: Bushfire hazard assessment and APZ requirements

Direction from development boundary	Transect	Slope ¹	Vegetation ²	PBP required APZ (SFPP) ³	Proposed APZ for kiosk (i.e. non-SFPP building)	AS 3959-2009 Bushfire Attack Level (BAL) ⁴	Comment
North-west	1	Downslope >0 to 5 degrees	Low Hazard (remnant)	40 m	≥34 m	BAL-12.5	APZ provided by existing Oxford Falls Grammar School sports oval carpark.
South-west	2	All upslopes and flat land	Tall Heath	45 m	≥36 m	BAL-12.5	APZ provided by existing Oxford Falls Grammar School sports oval carpark and Dreadnought Road.

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 table A2.6 of PBP (2006).

⁴ Assessment according to AS 3959-2009 Table 2.4.2.

3.3 Construction standard

The building construction standard is based on the determination of the Bushfire Attack Level (BAL) in accordance with Method 1 of AS 3959-2009 'Construction of buildings in bushfire-prone areas'. The BAL is based on known vegetation type, effective slope and managed separation distance between the development and the bushfire hazard.

As shown in **Table 3** the bushfire attack level is **BAL-12.5** for the proposed kiosk.

It is important that in implementing the requirements of BAL 12.5 construction that the current version of AS 3959-2009 is consulted. Additionally, the ember proofing measures as outlined in PBP (within the 2010 Appendix 3 Addendum) are to be implemented as required in the proposed kiosk.

3.4 Access

The proposed development is 'infill' and no new roads are proposed as part of the proposal. The proposed kiosk will be accessed via an existing unformed carpark off Wakehurst Parkway and Dreadnought Road and upgrades or additional access for bushfire protection are not required for the kiosk.

3.5 Services – Water, electricity and gas

3.5.1 Water

The proposed development will not be connected to mains water however as shown in **Figure 2** the nearest hydrant is located approximately 38 m to the south-west along Dreadnought Road.

3.5.2 Electricity services

The proposed development will not be connected to any electricity services and no life or property protection associated with the kiosk is reliant on power.

3.5.3 Gas services

The proposed development will not be connected to any gas services (reticulated or bottle gas).

4. Emergency and Evacuation Planning

To the extent that the kiosk effects the existing emergency/evacuation plan for the School it is to be updated consistent with the NSW Rural Fire Service 'Guide to developing a Bush Fire Emergency Management and Evacuation Plan' (RFS 2014).

A template for an Emergency Management and Evacuation Plan is available on the NSW Rural Fire Service website http://www.rfs.nsw.gov.au/_data/assets/pdf_file/0003/29271/Bush-Fire-Emergency-Management-and-Evacuation-Plan.pdf.

5. Assessment of environmental issues

At the time of assessment, there were no known significant environmental features, threatened species or Aboriginal relics identified under the *Biodiversity Conservation Act 2016* or the *National Parks Act 1974* that will affect or be affected by the bushfire protection proposals in this report.

The determining authority for this development will assess more thoroughly any potential environmental and heritage issues.

6. Conclusion

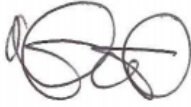
The proposed kiosk complies with the Acceptable Solutions within 'Planning for Bush Fire Protection 2006', (see **Table 2**).

Table 4: Summary of bushfire protection measures assessed

Bushfire Protection Measures	Complies	Requirements	Acceptable Solution	Performance Solution	Report Section
Asset Protection Zones	<input checked="" type="checkbox"/>	APZ dimensions are detailed in Table 3 and Figure 2 .	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3.1
APZ Maintenance plan	<input checked="" type="checkbox"/>	Identified APZ to be maintained in perpetuity to the detailed specifications in Section 3.2 .	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.2
Construction standard	<input checked="" type="checkbox"/>	A maximum of BAL-12.5 is achievable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.3
Access	<input checked="" type="checkbox"/>	The proposed kiosk will be accessed via an existing unformed carpark off Wakehurst Parkway and Dreadnought Road. Additional access provisions for bushfire protection are not required.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.4
Water supply	<input checked="" type="checkbox"/>	The proposed development will not be connected to mains water.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.5.1
Electricity service	<input checked="" type="checkbox"/>	The proposed development will not be connected to any electricity services and no life or property protection associated with the kiosk is reliant on power.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.5.2
Gas service	<input checked="" type="checkbox"/>	The proposed development will not be connected to any gas services (reticulated or bottle gas).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.5.3
Evacuation and Emergency Response Plan	<input checked="" type="checkbox"/>	Update to existing Evacuation and Emergency Response Plan.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4

7. Recommendations

It is recommended that the development be issued a Bush Fire Safety Authority.



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8. References

NSW Government. 2016. Office of Environment and Heritage (OEH) Vegetation Type Maps.

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. 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, Eighth edition 2014, SAI Global, Sydney.

Standards Australia (SA). 2017. *Fire hydrant installations - System design, installation and commissioning*, AS 2419.1, Fifth edition 2017, SAI Global, Sydney.

Appendix A – Assessment process

Vegetation types

In accord with PBP the predominant vegetation class has been assessed for a distance of at least 140 m from the subject land in all directions.

Effective slope

In accord with PBP, the slope that would most significantly influence fire behaviour was determined over a distance of 100 m from the boundary of the proposed development where the vegetation was found.

Asset Protection Zone determination

Table A2.6 of PBP has been used to determine the width of required Asset Protection Zone (APZ) for the proposed development using the vegetation and slope data identified in **Section 2**.

Special Fire Protection Purpose

In accord with PBP, the proposed SFPP has been assessed in accordance with section 4.2.7 for Special Fire Protection Purpose (SFPP) developments.

