



Bushfire Protection Assessment

Section 4.55 - Proposed alterations and additions – 22 Abernethy Street, Seaforth

Prepared for
Ed Harot

8 August 2018



DOCUMENT TRACKING

Item	Detail
Project Name	Bushfire Protection Assessment: Proposed alterations and additions – 22 Abernethy Street, Seaforth
Project Number	16SUT_5042
Project Manager	Steven Houghton Suite 2, Level 3, 668 Princes Highway, Sutherland NSW 2232 (02) 8536 8634
Prepared by	Steven Houghton
Reviewed by	Mick George
Approved by	Mick George
Status	Final
Version Number	2
Last saved on	8 August 2018

This report should be cited as 'Eco Logical Australia August 2018. *Bushfire Protection Assessment: Proposed alterations and additions – 22 Abernethy Street, Seaforth.* Prepared for 'Ed Harot'.

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1 Property and proposal

Street or property name:	22 Abernethy Street		
Suburb, town or locality:	Seaforth	Postcode:	2092
Lot and DP:	Lot 1 DP 91180		
Local Government Area:	Manly Council		
Type of area:	Urban		
Type of development:	Alterations and additions		

1.1 Description of proposal

Porebski Architects on behalf of Ed Harot commissioned Eco Logical Australia Pty Ltd (ELA) to prepare a bushfire protection assessment (BPA) for alterations and additions to a dwelling at 22 Abernethy Street, Seaforth (hereafter referred to as the subject land).

A BPA was prepared by ELA in August 2016 for the construction of internal works and extensions to the rear of the existing dwelling.

Works have since commenced and this amended report has been prepared to support a s 4.55 (formerly s.96) for additional minor works including a new metal roof over an existing deck. Additionally, the need for static water supply has been reviewed and the requirement has been recommended to be withdrawn (see **Section 4.1**).

1.2 Location and description of subject land

The subject land is located within the suburb of Seaforth in the Northern Beaches area of Sydney. It is surrounded by established residential development and is within the Manly Council Local Government Area.

Figure 1 shows the subject land and the location of the subject site in relation to the nearest bushfire hazard to the north within an area zoned RE1 (public recreation) which contains approximately 2 ha of bushland reserve.

A plan of the development with additional works indicated is shown in **Figure 2**.

Figure 3 shows the Manly Council Bush Fire Prone Land Map (BFPLM) with the subject land indicated.



Figure 1: Bushfire hazard assessment

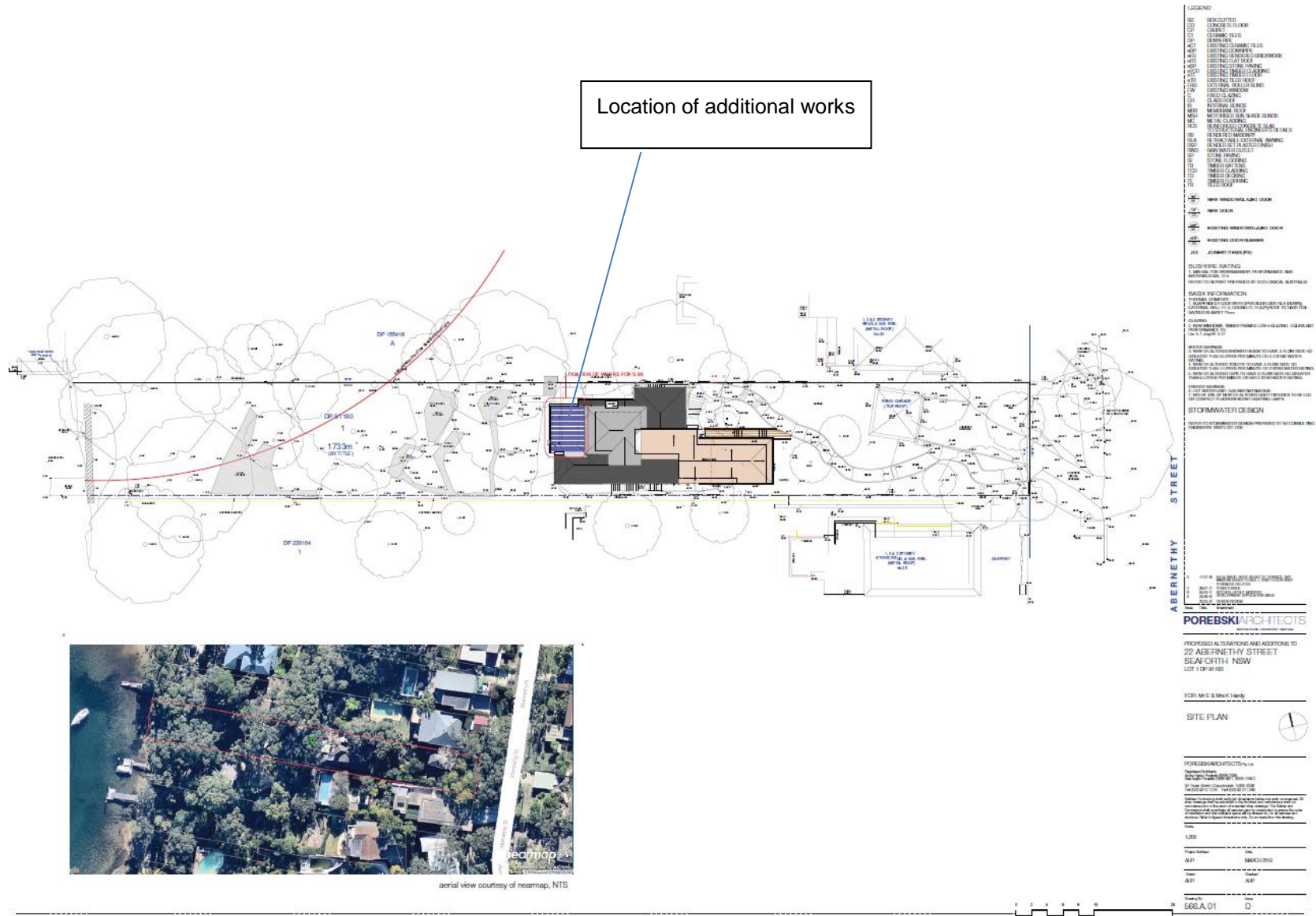


Figure 2: Development plan

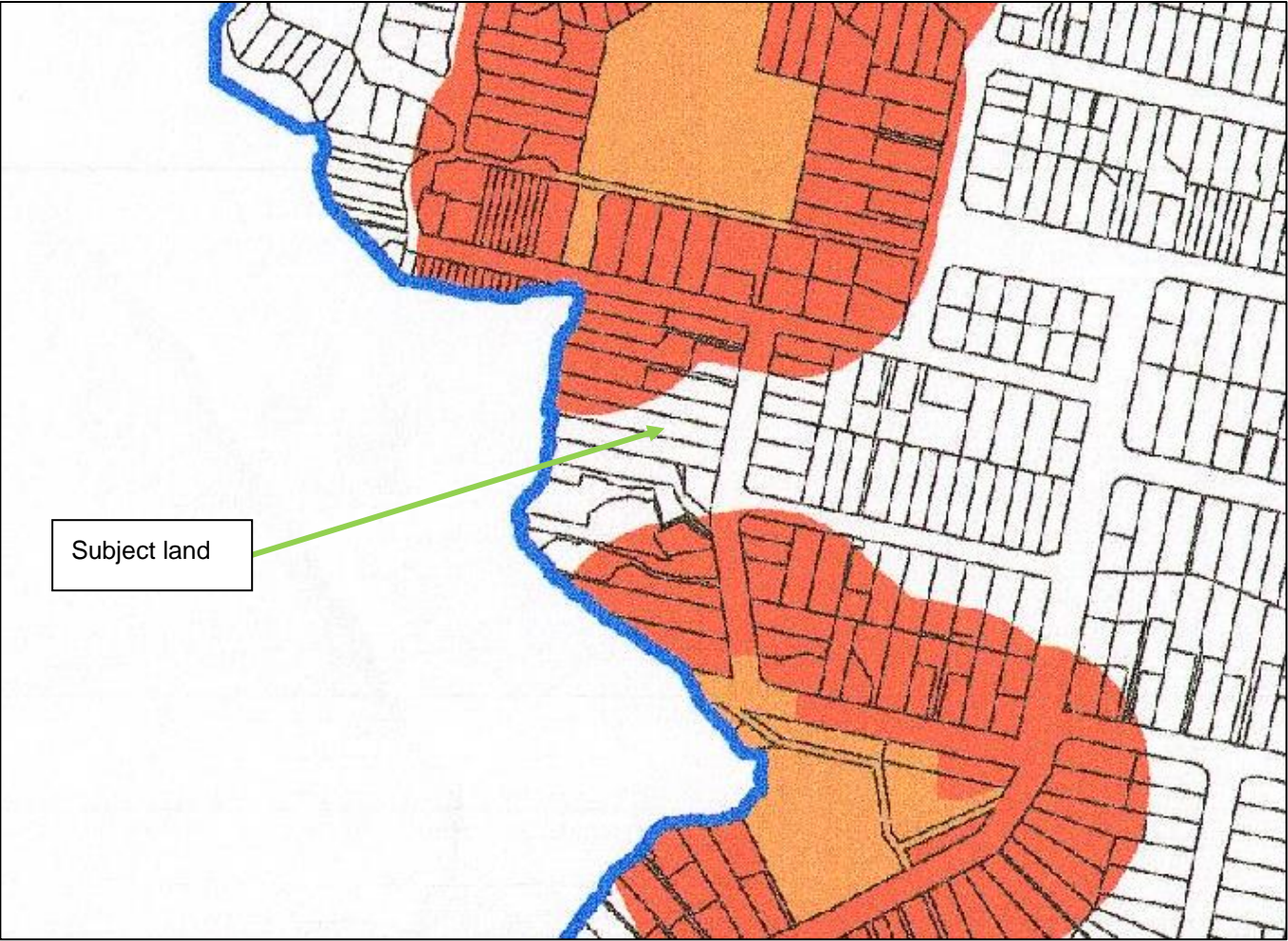


Figure 3: Manly Council Bush Fire Prone Land Map

2 Bushfire threat assessment

The subject land is identified as bush fire prone land by Manly Council. In accordance with Section 79BA of the *Environmental Planning and Assessment Act 1979*, this report demonstrates that the proposal together with the recommendations within this report conform to the relevant specifications and requirements under *Planning for Bush Fire Protection 2006* (herein referred to as PBP).

2.1 Vegetation types

In accord with PBP, the predominant vegetation class has been assessed within the subject land and calculated for a distance of at least 140 m out from the proposed development.

Immediately surrounding the subject land on all sides are existing dwellings with scattered vegetation that and maintained curtilage, with Middle Harbour waterway to the west. To the north within the Bushland Reserve a remnant patch of 'Coastal Sandstone Foreshore Forest' along with invasive weed and exotic species. The majority of the bushland reserve lies over 140 m from the subject land, however the vegetated lot on the southern boundary of the Reserve, which is mapped as a hazard (see **Figure 3**) is within 100 m of the proposed works. In its natural state, the vegetation would reflect a Sydney Coastal Dry Sclerophyll Forest within Keith (2004) which is categorised as 'Forest' in accordance with PBP.

2.2 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 subject land to where the vegetation was found. This was determined by a desktop assessment using 2 m contours. The land slopes gently across and upslope to the Forest vegetation to the north for more than 100 m in that direction and is within the PBP slope class of 'upslope/flat'.

3 Asset protection zones and construction

Table A2.4 of PBP has been used to indicate the required asset protection zone (APZ) dimensions for the development using the vegetation and slope data identified in **Section 2**. The APZ calculation is tabulated below.

The APZ is currently in place and no additional vegetation removal is required.

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

Direction from envelope	Slope ¹	Vegetation ²	PBP required APZ ³	Available APZ	AS3959 Construction Level	Comments
North	Upslope and Flat land	Forest	20 m	100 m	BAL-12.5	APZ provided within intervening managed land
All other directions	Managed land					

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 A2.4 of PBP

3.1 APZ maintenance plan

The following fuel management specifications are required for any landscaping undertaken within the subject land:

- No tree or tree canopy is to occur within 2 m of the dwelling roofline.
- The presence of a few shrubs or trees 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
 - 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.

3.2 Construction standard

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

In response to the predicted bushfire attack, the proposed additions are exposed to BAL- 12.5 as defined in AS 3959.

It is important that the version of AS3959 applicable at the time of construction is consulted. Additionally, the NSW variation to AS 3959 as outlined in PBP 2010 Appendix 3 Addendum is to be applied.

4 Utilities and access

4.1 Water supply

Hydrants are located at regular intervals along Abernethy Street. The nearest hydrant is located over 70m from the rear of the dwelling.

A static water supply for firefighting purposes is not recommended for this development based on the following:

- The proposed works are considered urban 'infill' development under PBP and are highly constrained by the existing development situated on a steep slope;
- The bushfire threat is considered very low; with the existing dwelling situated on a waterfront with over 100m to the nearest bushfire vegetation.
- Any static water supply located near the existing dwelling would not be accessible to firefighting appliances;

Fire Rescue NSW would be the combat agency in any fire at the subject land, with attending appliances arriving from permanently manned stations in the vicinity. A house fire at the subject site would involve firefighters running lengths of hose from the street level to the structure.

It is recommended that a condition to apply that the closet fire hydrant flows and pressures are tested and comply with Table 2.2 of AS 2419.1 (2005). As the water will run downhill, any tested pressure will be greater than that tested at street level.

4.2 Gas and electrical supplies

The electricity supply to the subject land is located above ground and complies with PBP.

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

4.3 Access

4.3.1 Access and egress

The existing dwelling is accessed via a long residential driveway off Abernethy Street. A fire involving the dwelling would be attended to by fire appliances from the hardstand surface of Abernethy Street. Fire fighting vehicle access is restricted within proximity of the dwelling as a result of the topography. Onsite water supply has been recommended to provide water for fire fighters should they access the subject land on foot. This complies with PBP and no additional provisions for access are required.

5 Recommendations and conclusion

The proposal involves the construction of internal works and extensions within 100 m of a bushfire hazard that satisfies the aim and objectives of PBP and the specifications for infill residential development.

The following recommendations are made:

1. The following fuel management specifications are to be considered for any landscaping within the subject land:
 - a. No tree or tree canopy is to occur within 2 m of the dwelling roofline.
 - b. 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
 - are located far enough away from the building so that they will not ignite the building by direct flame contact or radiant heat emission.
 - c. Any landscaping or plantings should preferably be local endemic mesic species or other low flammability species.
2. Proposed works are to be constructed to BAL-12.5 in accordance with *AS 3959-2009 (Amdt 3) Construction of buildings in bushfire-prone areas*. It is important that the current version of AS 3959-2009 is consulted. Additionally, the construction requirements of Section A3.7 of PBP (within Appendix 3 Addendum) are to be implemented.
3. Fire hydrant flows and pressures are tested and comply with Table 2.2 of AS 2419.1 (2005).
4. Reticulated or bottled gas on the lot is to be installed and maintained in accordance with Australian Standard AS/NZS 1596 'The storage and handling of LP Gas' (Standards Australia 2008) and the requirements of relevant authorities (metal piping must be used).

In the author's professional opinion, the bushfire protection measures demonstrated in this report comply with *Planning for Bush Fire Protection 2006* for infill residential development.



Steven Houghton

Bushfire Consultant

FPAA BPAD-Certified Practitioner No. BPAD46241-L2



References

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Standards Australia. 2005. *Fire hydrant installations - System design, installation and commissioning*, AS 2419.1, Fourth edition 2005, SAI Global, Sydney

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eco
logical
AUSTRALIA



HEAD OFFICE

Suite 2, Level 3
668-672 Old Princes Highway
Sutherland NSW 2232
T 02 8536 8600
F 02 9542 5622

CANBERRA

Level 2
11 London Circuit
Canberra ACT 2601
T 02 6103 0145
F 02 6103 0148

COFFS HARBOUR

35 Orlando Street
Coffs Harbour Jetty NSW 2450
T 02 6651 5484
F 02 6651 6890

PERTH

Suite 1 & 2
49 Ord Street
West Perth WA 6005
T 08 9227 1070
F 08 9322 1358

DARWIN

16/56 Marina Boulevard
Cullen Bay NT 0820
T 08 8989 5601
F 08 8941 1220

SYDNEY

Level 6
299 Sussex Street
Sydney NSW 2000
T 02 8536 8650
F 02 9264 0717

NEWCASTLE

Suites 28 & 29, Level 7
19 Bolton Street
Newcastle NSW 2300
T 02 4910 0125
F 02 4910 0126

ARMIDALE

92 Taylor Street
Armidale NSW 2350
T 02 8081 2681
F 02 6772 1279

WOLLONGONG

Suite 204, Level 2
62 Moore Street
Austinmer NSW 2515
T 02 4201 2200
F 02 4268 4361

BRISBANE

Suite 1 Level 3
471 Adelaide Street
Brisbane QLD 4000
T 07 3503 7191
F 07 3854 0310

HUSKISSON

Unit 1 51 Owen Street
Huskisson NSW 2540
T 02 4201 2264
F 02 4443 6655

NAROOMA

5/20 Cauty Street
Narooma NSW 2546
T 02 4476 1151
F 02 4476 1161

MUDGEES

Unit 1, Level 1
79 Market Street
Mudgee NSW 2850
T 02 4302 1230
F 02 6372 9230

1300 646 131

www.ecoaus.com.au