

Appendix F

Bushfire Threat Assessment Report

SCC for Seniors Housing

49 Elouera Terrace, Bray Park 2484



Prepared by Planit Consulting P/L

Prepared for

Marjan Management Pty Ltd

June 2019

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PLANIT CONSULTING PTY LTD
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Table of Contents

Section 1 - Introduction.....	4
1.1 Brief.....	4
1.2 Approvals Sought	4
1.3 The Site and Surrounds	5
1.4 Bushfire Prone Areas/Land.....	6
1.5 Determination of Bushfire Attack Level	6
Section 2 – Bushfire Assessment	11
2.1 Assessment against Performance Criteria and Acceptable Solutions	11
2.1.1 Asset Protection Zones:.....	12
2.1.3 Access	12
2.1.4 Water and utility services	13
2.1.5 Landscaping.....	13
Section 3 - Conclusion	14

Section 1 - Introduction

1.1 Brief

Planit Consulting has been commissioned by Marjan Management to prepare a Bushfire Threat Assessment for a proposed seniors housing development. The site is located at Elouera Terrace, Bray Park 2484.



Figure 1 – Aerial Photograph – Source: Six Maps.

1.2 Approvals Sought

It is noted that a bushfire safety authority from NSW Rural Fire Service would typically be required as the proposal is development for a special fire protection purpose (being seniors housing). However, the seniors housing development is located wholly outside the mapped bushfire prone land. As defined within Planning for Bush Fire Protection 2006 (PBP2006), draft PBP2018 and Australian Standards (AS3959-2009), development is therefore not within 'bushfire prone land/area'. Regardless, the proposal constitutes a special fire protection purpose (seniors housing) and access to the site is gained through bushfire prone land, as such it is beneficial for the proposal to address appropriate bushfire considerations.

This report applies for the purpose of supporting a Site Compatibility Certificate (SCC) process and has been compiled to satisfy the Northern Regional Planning Panel and Tweed Shire Council that the items raised in Clause 4.14 of the *Environmental Planning and Assessment Act 1979* have been complied with.

1.3 The Site and Surrounds

The subject property is legally described as Lot 18 DP 627632 and Lot 22 DP 1170438 and is more commonly referred to as 49 Elouera Terrace, Bray Park. The site particulars are detailed in **Table 1**.

Table 1- Basic Information

Site Particulars		
Address	49 Elouera Terrace, Bray Park	
Locality	Bray Park	
LGA	Tweed Shire	
Bushfire Prone Mapping	Vegetation Category 1; Vegetation Category 2; and Vegetation Buffer	
Boundaries	West road front – roadway of Elouera Terrace; West and Southern boundary – maintained and mown rural paddocks and grazing lands fronting Tweed River; East and North – Rural allotments generally maintained, mown and cultivated paddocks; and North-west – Standard residential allotments generally comprising dwelling houses.	
Area	Site – 35.36ha	
Property Descriptions	Lot 18 DP 627632	Lot 22 DP 1170438
Current Land Use	Rural farm	
Zone	RU1 – Primary Production R2 – Low Density Residential W2 – Recreational Waterway	
Proposed Land Use	Seniors Housing	

1.4 Bushfire Prone Areas/Land

In accordance with Bushfire Prone Land mapping held by the Department of Planning and Environment, the site contains areas of Vegetation Category 1 (orange) & 2 (yellow) and Vegetation Buffer area (red); please refer to **Figure 2**.



Figure 2– Bushfire Prone Land – Source: NSW Planning Portal.

Planning for Bushfire Protection 2006 (PBP 2006) sets out minimum standards for development including asset protection zones, construction standards, provision of services and access when proposed on land that is mapped as being subject to bushfire risk. It is noted that the proposed seniors housing sits entirely outside bushfire prone land, though access to the site is gained from Elouera Terrace and O'Connor Drive which are identified as bushfire mapped/affected. As such considerations of bushfire risk mitigation and strategy are important in supporting the development of the site for seniors housing.

1.5 Determination of Bushfire Attack Level

The following section determines the Bushfire Attack Level (BAL) by applying the methodology set out in AS3959-2009. The procedure for determining the BAL includes:

1. Clause 2.2.2 – Determination of FDI
2. Clause 2.2.3 – Vegetation Classification
3. Clause 2.2.4 – Distance to Vegetation
4. Clause 2.2.5 – Effective Slope
5. Clause 2.2.6 – BAL rating
6. Clause 2.2.7 – Construction Requirements

1. Clause 2.2.2 – Determination of FDI

The standard FDI applied in the subject locale, is 80.

2. Clause 2.2.3 – Vegetation Classification

The mapped bushfire threat to the west is associated with a strand of rainforest and riparian vegetation which fronts Tweed River. Vegetation to the south comprises small clusters of native and introduced vegetation species which are not identified as a bushfire threat as they are less than 1ha in area and suitably dispersed. Vegetation to the north is sclerophyll forest. Please see the excerpt from Tweed Shire vegetation mapping (**Figure 3**). The littoral rainforest vegetation is classified as **Rainforest**, the tallowwood open forest is classified as **Forest**.



Figure 3 – Vegetation Communities – Source: Tweed Vegetation Management Strategy.

In identifying the correct Bushfire Attack Level (BAL) the below extract from Addendum Appendix 3 of PBP 2006 confirms the correlation between PBP2006 and AS3959-2009. The vegetation is identified as Rainforest and Forests to the west and north-west respectively under David Keith's 'Ocean Shores to Desert Dunes' (as used in PBP2006) and correlates to **Rainforest** and **Forest** under AS3959-2009.

Table 1: Extract from Addendum Appendix 3 of PBP2006. Source: PBP2006.

David Keith's <i>Ocean Shores to Desert Dunes</i>	AUSLIG (1990) Pictorial Analysis (AS3959-2009)
Forests (Wet & Dry Sclerophyll)	Forest
Pine Plantations	
Forested Wetlands	Woodland
Woodlands (Grassy, Semi-Arid)	
Tall Heath (Scrub)	Scrub
Freshwater Wetlands	
Short Heath (Open Scrub)	Shrubland
Arid Shrubland	Mallee/Mulga
Alpine Complex (Sedgelands)	Tussock Moorland
Rainforest	Rainforest
Grassland	Grassland

3. Clause 2.2.4 – Distance to Vegetation

The immediate bushfire threat vegetation is located approximately 100m west and 90m north-west of the proposed developable area and over 100m of any indicative seniors housing structures. This vegetation is buffered by grazing land which will continue to be maintained, roadways and dwellings. As such, a bushfire threat from the west and north-west would be highly unlikely and adequately buffered from the subject site.

Please refer to **Figure 4** Bushfire Threat Vegetation Map prepared by Planit Consulting.



Figure 4– Bushfire Threat Vegetation – Source: Planit Consulting modified from Nearmap.

4. Clause 2.2.5 – Effective Slope

The slope between the developable areas and surrounding vegetation communities is generally level across slope and upslope; see **Figures 5 & 6**.

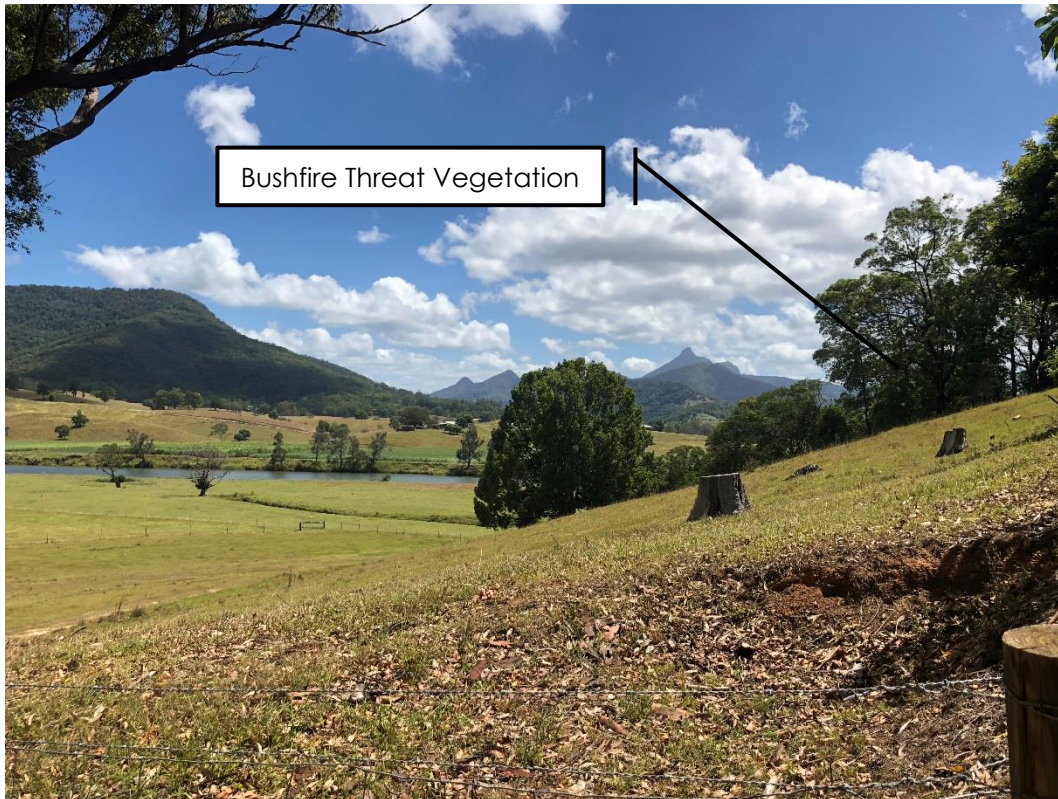


Figure 5 – Photo location Elouera Terrace, facing bushfire threat vegetation to the west.



Figure 6 – Site plan with indicative slope to vegetation.

5. Clause 2.2.6 – BAL rating

In accordance with Table 2.4.3 (FD 80) the proposal has been assessed as requiring consideration of the following Bushfire Attack Level (BAL).

Table 2: Modified from Table 2.4.3 of AS3959 – 2009			
All Upslopes and flat land (0 degrees)			
Veg Location	Vegetation Classification	Distance	BAL Rating
North	Forest	105m (>100m)	No requirement
East	No threat vegetation	N/A	No requirement
South	No threat vegetation	N/A	No requirement
West	Rainforest	100m (>50m)	No requirement

6. Clause 2.2.7 – Construction Considerations

No additional construction limitations are envisioned due to negligible bushfire threat for the site.

Section 2 – Bushfire Assessment

The following provides an assessment of the proposed development in accord with the matters under Clause 4.14 of the *Environmental Planning and Assessment Act 1997*. By definition within BCA and PBP2006, the proposed developable area is not a 'bushfire prone area' (as not mapped or prone to bushfire risk) and therefore not subject to specific bushfire requirements. Regardless, the proposal considers the controls of Planning for Bushfire Protection 2006 and AS 3959-2009 as assessed below.

A1.1 of Appendix 1 within PBP2006 identifies matters to be satisfied prior to the issue of development consent. A review of the relative matters has been provided below for Council's consideration.

2.1 Assessment against Performance Criteria and Acceptable Solutions

The below table sets the relative acceptable solutions the consent authority is required to assess prior to consenting to development within bushfire prone land.

	Performance Criteria	Acceptable Solution	Response
1	<i>In relation to Asset Protection Zones:</i> - a defensible space is provided onsite. - an asset protection zone is provided	APZ determined in accordance with Appendix 2.	See 2.1.1 of this report.
2	<i>In relation to siting and design:</i> - buildings are sited and designed to minimise the risk of bushfire attack	- Buildings are designed and sited in accordance with the siting and design principles in this section (see also figure 4.7).	The proposal has not detailed structure siting and design. However, the indicative location results in negligible bushfire threat and design will be appropriately considered through DA stage/s.
3	<i>In relation to construction standards:</i> - it is demonstrated that the proposed building can withstand bush fire attack in the form of wind, smoke, embers, radiant heat and flame contact.	-Construction determined in accordance with the siting and design principles in this section (see also figure 4.7).	The proposal results in negligible bushfire risk and will incorporate design and construction considerations through DA stage/s as applicable.
4	<i>In relation to access requirements:</i> - safe, operational access is provided (and maintained) for emergency services personnel in suppressing a bush fire while residents are seeking to relocate, in advance of a bushfire, (satisfying the intent and performance criteria for access roads in sections 4.1.3 and 4.2.7.	- Compliance with section 4.1.3 for property access roads. - Compliance with section 4.2.7 for access standards for internal roads.	See 2.1.2 of this report.

5	In relation to water and utility services: - adequate water and electricity services are provided for firefighting operations - gas and electricity services are located so as not to contribute to the risk of fire to a building.	- Compliance with section 4.1.3 for water, electricity and gas.	See 2.1.3 of this report.
6	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	- Compliance with appendix 5.	See 2.1.4 of this report.

2.1.1 Asset Protection Zones:

Upon site inspection and review of the proposal plans, it was confirmed that setbacks and buffers between the proposed developable area and mapped bushfire threat vegetation exists. These form developed residential structures and roads to the north, and maintained rural grazing and grassland to the west.

The existing conditions of the site are to be retained without the need for formalised Asset Protection Zones (APZ) as discussed below.

- North – No APZ is required. The existing residential developed land, formed roadway, pedestrian pathways and maintained/landscaped public domain provides a buffer distance of approximately 100m which exceeds prescribed 60m APZ to the north and results in negligible risk of bushfire.
- East – No APZ is required. Grass areas and grazing areas do not contain (nor are they mapped as) bushfire threat vegetation.
- West – No APZ is required. Grass areas and grazing areas will remain as existing to the west of the proposed developable footprint. The proposal may result in structures positioned 125m from any bushfire threat which is deemed sufficient to ensure no risk to life or property. The 125m separation area will continue to operate as grazing land and remain cleared. As the proposal is positioned on land free of any bushfire prone vegetation and hazard, the provision of a formal APZ in this instance is not proposed.
- South – No APZ is required. Grass areas and grazing areas do not contain (nor are they mapped as) bushfire threat vegetation.

2.1.3 Access

The proposal utilises access from Elouera Terrace and O'Connor Drive. In this regard, access and egress of the site could be prone to minor bushfire impact in the unlikely event of a bushfire through the residential area due north (**Figure 7**), though this is highly unlikely to result in isolation of the site, with these public roadways appropriately and routinely maintained.

Elouera Terrace and O'Connor Drive are two way sealed public roadways allowing safe and operational access in the event of a bushfire. Further, reticulated water and

hydrant connection points are located at several locations along Elouera Terrace and O'Connor Drive which would allow fire suppression to facilitate vehicle movements through to Kyogle Road to evacuate the area. O'Connor Drive also provides maintained separation between the upslope vegetation and roadway to ensure access is maintained.

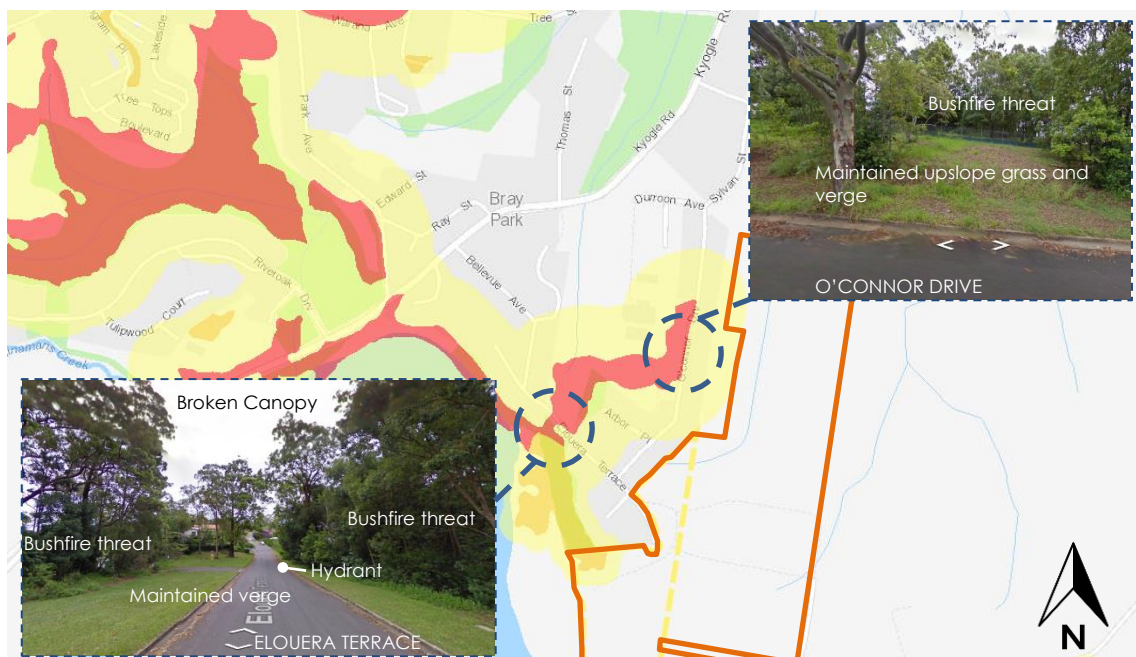


Figure 7 – Site Context, Access and Bushfire Prone Land Mapping

Bushfire mapped vegetation does not continue beyond O'Connor Drive, meaning a bushfire would not have fuel to continue burning 'through' this point. Rather, O'Connor Drive is considered the absolute extremity of the bushfire prone land. O'Connor Drive would be unlikely to remain segregated for an extended period of time, if at all. This would permit evacuation of the site prior to the bushfire reaching O'Connor Drive. Alternatively, the proposed seniors housing area remains free of bushfire risk vegetation and hazard, offering the opportunity for 'refuge in place' on the site in the unlikely event that Elouera Terrace and O'Connor Drive are 'cut off' simultaneously.

It is therefore submitted that the proposal presents a negligible risk to life or property and suitable access, egress and refuge is provided.

2.1.4 Water and utility services

The area is serviced with reticulated water with bushfire fighting capability as existing along Elouera Terrace and O'Connor Drive. The electricity supply options available to the site are via an overhead service from the east or underground service from Elouera Terrace. These are unlikely to be impacted by bushfire. No gas network is supplied to the site, any installation of gas service would be via on-site tanks and would be in accordance with Australian standards.

2.1.5 Landscaping

Landscaping around bushfire prone vegetation is existing and is currently and routinely maintained in its entirety. Landscaping over the site will generally comprise of street planting and will be routinely maintained. This is not proposed proximate to any bushfire risk areas

Section 3 - Conclusion

Having reviewed the NSW Rural Fire Service documents PBP2006, draft PBP2018 and Australian Standards AS-3959, it is submitted that the proposed development and bushfire protection measures outlined within this report are consistent with the relevant policy and statutory requirements and demonstrates an appropriate development of the land.

All of the requirements set out under section 79BA of the *Environmental Planning and Assessment Act 1997* have been satisfied and therefore development approval is respectfully requested.

The proposed development does not result in any additional bushfire considerations, and from a bushfire perspective is considered warranting of support.

Daniel Mulherin
PLANIT CONSULTING PTY LTD

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