

## Bushfire Attack Level (BAL) Assessment Report for Stage 3C Apsley Estate, Mandogalup

### Site Details

**Address:** Stage 3C Apsley Estate: (Lots 850 and 851)

**Suburb:** Mandogalup, 6167 **State:** Western Australia

**Local Government Area:** City of Kwinana

**Description of building works:** Residential development, future buildings

### Report details

**Report/Job number:** 20PER-16783 **Report version:** v1

**Assessment date:** 5/05/2023 **Report date:** 9/05/2023

**Author:** Stephen Moore and Daniel Panickar **Review:** Daniel Panickar (BPAD Level 3 – 37802)



### SITE ASSESSMENT AND SITE PLAN

The assessment of the two subject lots for the purpose of determining the Bushfire Attack Level (BAL) in accordance with *Australian Standard AS 3959: 2018 Construction of Buildings in Bushfire Prone Areas* (SA 2018) Simplified Procedure (Method 1) has been undertaken multiple times since 2020 to inform staged development. The most recent assessment was undertaken on 5 May 2023. An overview of the site is presented in Figure 1.

### VEGETATION CLASSIFICATION

All vegetation within 150 m of the two subject lots was classified in accordance with Clause 2.2.3 of AS 3959: 2018. Each distinguishable vegetation class with the potential to determine the BAL is identified below and presented in Figure 1.

It is currently assumed that areas of landscaped vegetation within the site and assessment area will be managed and maintained by QUBE Property Group (the developer) until replaced by residential dwellings and associated infrastructure or handed over to the City of Kwinana in the future.

### RELEVANT FIRE DANGER INDEX

The Fire Danger Index (FDI) for this site has been determined in accordance with Table 2.1 of AS 3959: 2018. The FDI for WA is FDI 80.

### POTENTIAL BUSHFIRE IMPACTS

The potential bushfire impact to the site / proposed development from each of the identified vegetation plots are identified below, Table 1 and Figure 1.

**Table 1: BAL Analysis AS 3959: 2018**

Plot	Vegetation Classification	Effective Slope
1	Excluded AS 3959: 2018 2.2.3.2 (a)	N/A
2	Excluded AS 3959: 2018 2.2.3.2 (c)	N/A
3	Excluded AS 3959: 2018 2.2.3.2 (e) & (f)	N/A

### DETERMINED BUSHFIRE ATTACK LEVEL (BAL)

The determined Bushfire Attack Level (highest BAL) for the proposed works has been determined in accordance with Clause 2.2.6 of AS 3959: 2018 relevant data from the BAL assessment shown in Figure 1 and Table 3. Both proposed lots are subject to BAL-LOW.

**Table 2: BAL assessment summary**

BAL	Affected lots	Construction sections to be consulted in AS 3959: 2018
BAL-FZ	Nil	N/A
BAL-40	Nil	N/A
BAL-29	Nil	N/A
BAL-19	Nil	N/A
BAL-12.5	Nil	N/A
BAL-LOW	Determined Bushfire Attack Level for: Lots 850 and 851	4

This BAL rating is based on the information current at the date of this document and is valid for 12 months.

**Table 3: Vegetation classifications**

Plot	Classification or Exclusion Clause	Excluded AS 3959: 2018 clause 2.2.3.2 (a)
1		
<b>Photo Point 1</b>		
	This is an area of classifiable vegetation that is more than 100 m from the subject site.	
2		
<b>Photo Point 2</b>		
	This plot has been excluded under Clause 2.2.3.2 (c) of AS 3959: 2018. This photo depicts land within the Planning Control Area that contains pockets of vegetation <0.25 ha in size and ≥20 m from each other and the subject site.	
2		
<b>Photo Point 3</b>		
	This plot has been excluded under Clause 2.2.3.2 (c) of AS 3959: 2018. This photo depicts land within the Planning Control Area that contains pockets of vegetation <0.25 ha in size and ≥20 m from each other and the subject site.	

**Plot 3 Classification or Exclusion Clause Excluded AS 3959: 2018 clause 2.2.3.2 (e) & (f)**

**Photo Point 4**

This area has been excluded under clause 2.2.3.2 (e) & (f) of AS 3959: 2018 as it is comprised of managed landscaping and non-vegetated areas.



**Plot 3 Classification or Exclusion Clause Excluded AS 3959: 2018 clause 2.2.3.2 (e) & (f)**

**Photo Point 5**

This area has been excluded under clause 2.2.3.2 (e) & (f) of AS 3959: 2018 as it is comprised of managed landscaping and non-vegetated areas.



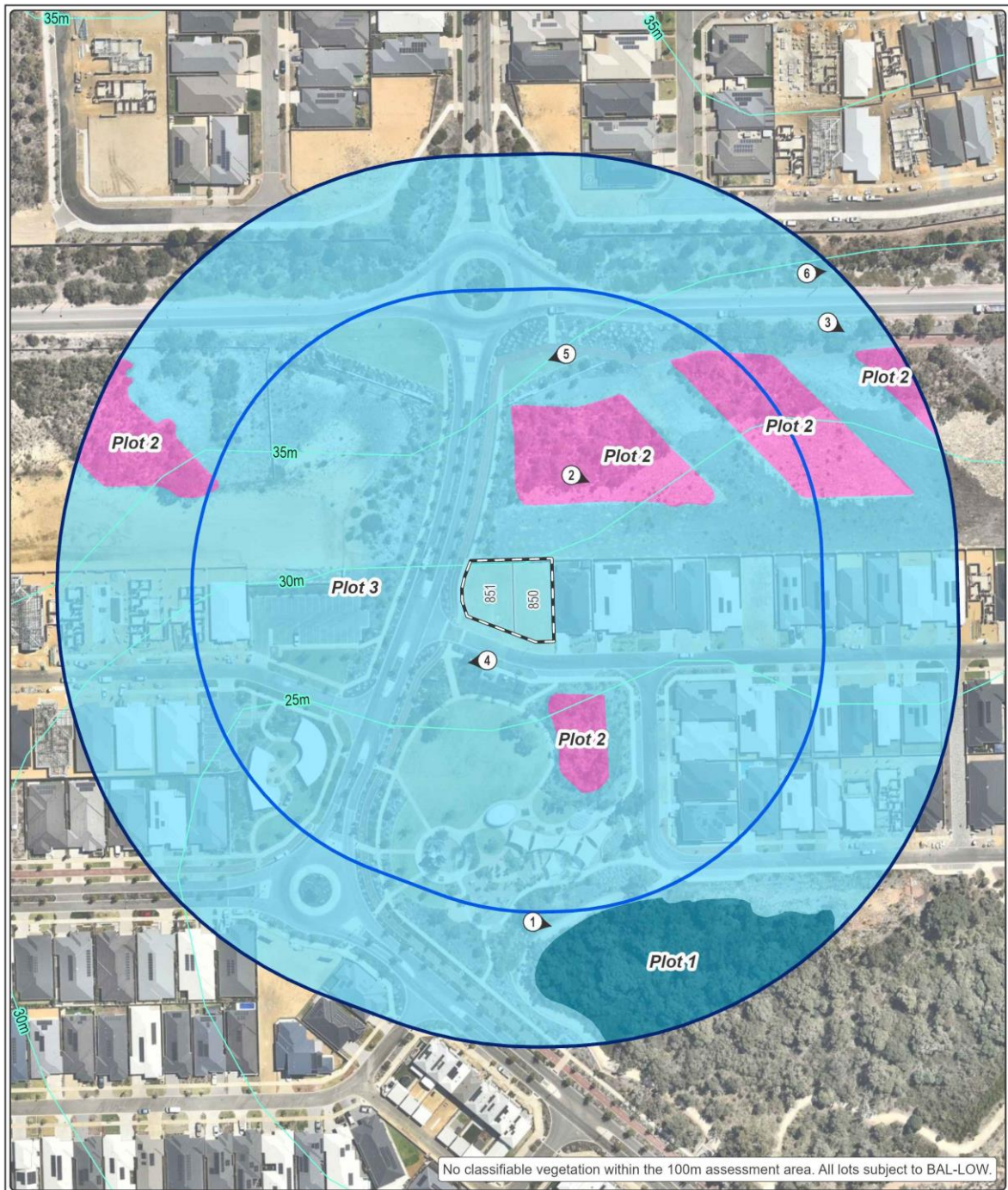
**Plot 3 Classification or Exclusion Clause Excluded AS 3959: 2018 clause 2.2.3.2 (e) & (f)**

**Photo Point 6**

This area has been excluded under clause 2.2.3.2 (e) & (f) of AS 3959: 2018 as it is comprised of managed landscaping and non-vegetated areas.

Irrigation is present within this area and it appears well managed as it is the entrance to a new residential estate.

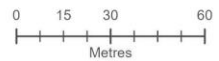




**Figure 1: Vegetation Classification**

- Subject site
- 100m site assessment
- 150m site assessment
- Lot boundary
- Photo location
- Contour (5m)

- Vegetation classification**
- Excluded as per clause 2.2.3.2 (a)
  - Excluded as per clause 2.2.3.2 (c)
  - Excluded as per clause 2.2.3.2 (e) and (f)



Datum/Projection:  
GDA 1994 MGA Zone 50  
20PER16783-SM Date: 9/05/2023



**eco**  
**logical**  
AUSTRALIA  
A TETRA TECH COMPANY

**Figure 1: Vegetation classification**

## Appendix A – Additional Information / Advisory Notes

Bushfire Attack Level (BAL) as set out in the Australian Standard 3959 Construction of Buildings in Bushfire-Prone Areas (AS 3959), as referenced in the Building Code of Australia.

Bushfire Attack Level (BAL)	Classified vegetation within 100 m of the site and radiant heat flux exposure thresholds	Description of predicted bush fire attack and levels of exposure	Construction Section as per AS 3959
BAL-LOW		There is insufficient risk to warrant specific construction requirements.	4
BAL-12.5	≤12.5 kW/m <sup>2</sup>	Ember attack	3 and 5
BAL-19	>12.5 kW/m <sup>2</sup> ≤19 kW/m <sup>2</sup>	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing radiant heat flux.	3 and 6
BAL-29	>19 kW/m <sup>2</sup> ≤29 kW/m <sup>2</sup>	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing radiant heat flux	3 and 7
BAL-40	>29 kW/m <sup>2</sup> ≤40 kW/m <sup>2</sup>	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing radiant heat flux with the increased likelihood of exposure to flames.	3 and 8
BAL-FZ	>40 kW/m <sup>2</sup>	Direct exposure to flames from fire front in addition to radiant heat flux and ember attack	3 and 9

Source: “AS 3959: 2018 Construction of buildings in bushfire-prone areas” published by Standards Australia, Sydney