

AS 3959 Bushfire Attack Level Assessment

**645 Rockingham Road,
Lake Coogee WA 6166**

DATE: 16 October 2024

REV: 2



BCSWA Pty Ltd

ABN 99 650 304 644

PH: 6102 6401

PO Box 1293

East Victoria Park WA 6981

admin@bcswa.com.au

www.bcswa.com.au

DOCUMENT CONTROL

Description:		AS 3959 Bushfire Attack Level Assessment	
Revision	Date	Certified By	
1	11 July 2024 AS 3959 Bushfire Attack Level Assessment	Name:	Matthew Sobelik Senior Building Surveyor BPAD Level 1 - 36534
		Signature:	
2	16 October 2024 AS 3959 Bushfire Attack Level Assessment	Name:	Matthew Sobelik Senior Building Surveyor BPAD Level 1 - 36534
		Signature:	

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JOB DETAILS

Client:	Otherside Property
Address:	645 Rockingham Road, Lake Coogee
Local Government Area:	City of Cockburn
Description of Building Works:	Proposed Subdivision

ASSESSMENT DETAILS

Assessment Date:	10 July 2024
Determined BAL Rating:	Low
BAL Exposure Level:	There is insufficient risk to warrant specific construction requirements
Applicable Construction:	AS 3959-2018 Section 4, requirements listed in Appendix 3 of this document



SITE ASSESSMENT & SITE PLAN

The assessment of this site / development was undertaken on 10/07/24 by Building Certification Services WA for the purpose of determining the Bushfire Attack Level on the Proposed Subdivision in accordance with AS 3959-2018 Simplified Procedure (Method 1).

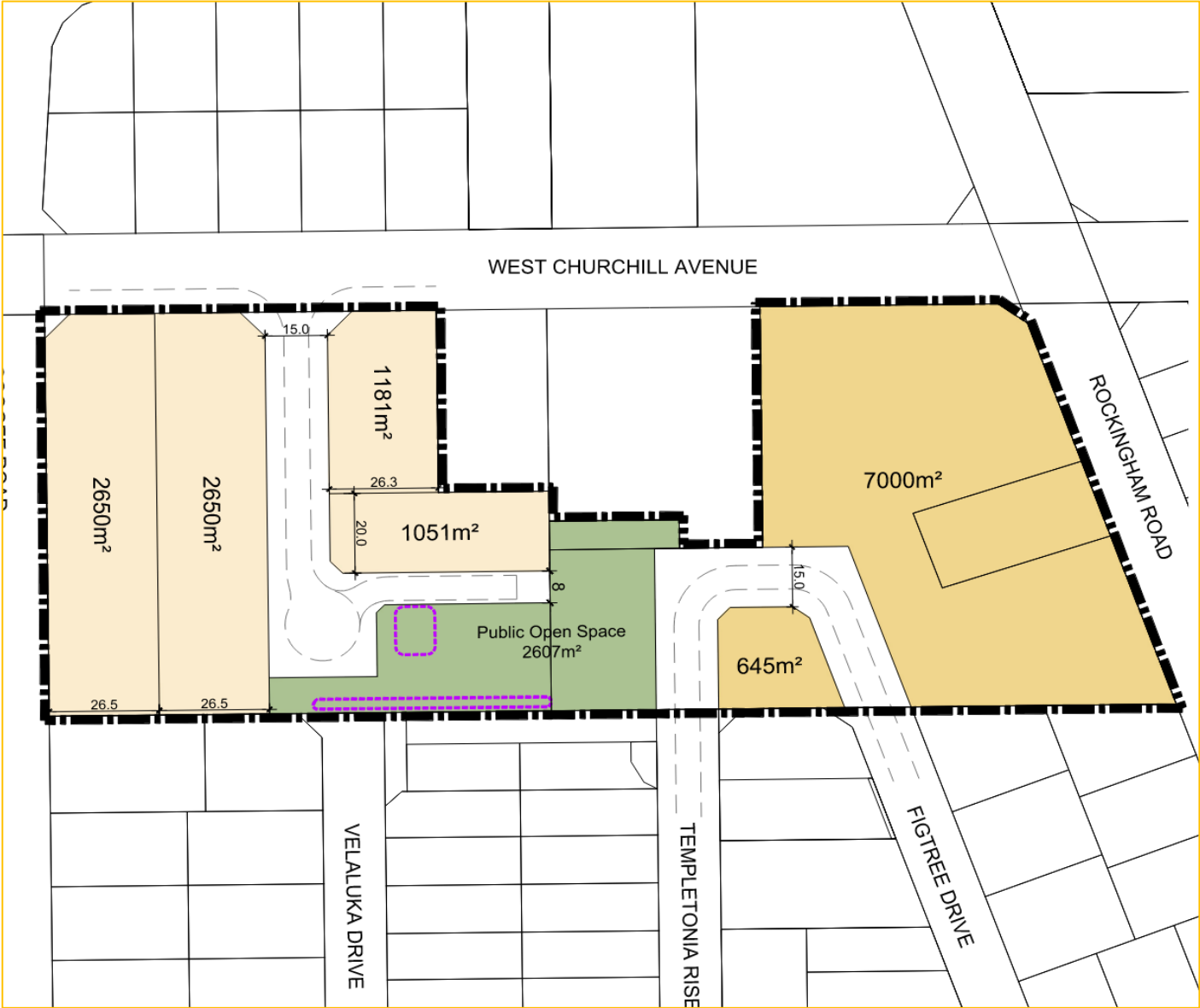
Designated Bushfire Prone Area

The following map identifies the area designated by the Department of Fire and Emergency Services (DFES) as being subject, or likely to be subject, to bushfire attack.

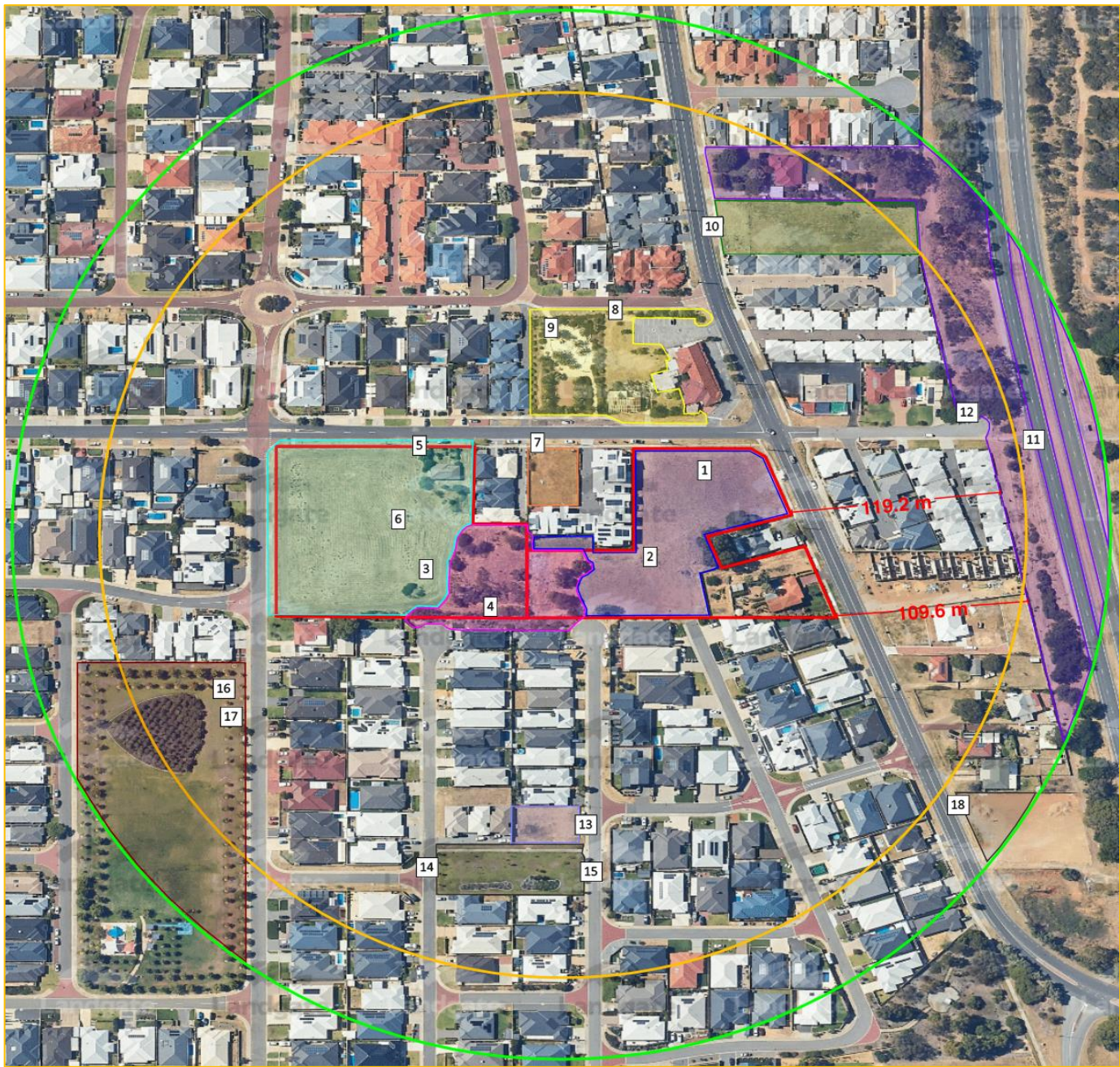


Proposed Site Plan

The site assessment has been undertaken in conjunction with the site plan provided by the client, as detailed below, and is limited to the surrounding environment within 150m of the proposed building at the time of the inspection.



The following map identifies the plots that impact on the bushfire attack level assessment of the subject lot.



LEGEND



North Point



100m Assessment Area



150m Assessment Area



Subject lot and works



Photo ID



Plot A - Exclusion 2.2.3.2(f)



Plot B - Exclusion 2.2.3.2(b)



Plot C - Exclusion 2.2.3.2(f)



Plot D - Exclusion 2.2.3.2(f)



Plot E - Exclusion 2.2.3.2(f)



Plot F - Exclusion 2.2.3.2(f)



Plot G - Exclusion 2.2.3.2(a)



Plot H - Exclusion 2.2.3.2(f)



Plot I - Exclusion 2.2.3.2(f)



Plot J - Exclusion 2.2.3.2(f)



Plot K - Exclusion 2.2.3.2(e)

VEGETATION CLASSIFICATION

All vegetation within 150m of the site / proposed development was classified in accordance with Clause 2.2.3 of AS 3959-2018. Each distinguishable vegetation plot with the potential to determine the Bushfire Attack Level is identified below.

Plot :	A	Classification or Exclusion Clause:	Exclusion 2.2.3.2(f)
Description / Justification for Classification:			
Low threat vegetation, lot currently in a low fuel state and subject to proposed subdivision			
Photo ID: 1		Photo ID: 2	

Plot :	B	Classification or Exclusion Clause:	Exclusion 2.2.3.2(b)
Description / Justification for Classification:			
Single areas of vegetation less than 1ha in area and not within 100m of other areas of vegetation being classified			
Photo ID: 3		Photo ID: 4	

Plot :	C	Classification or Exclusion Clause:	Exclusion 2.2.3.2(f)
Description / Justification for Classification:			
Low threat vegetation, lot currently in a low fuel state and subject to proposed subdivision			
Photo ID: 5		Photo ID: 6	

Plot :	D	Classification or Exclusion Clause:	Exclusion 2.2.3.2(f)
Description / Justification for Classification:			
Low threat vegetation, including grassland managed in a minimal fuel condition. Lot subject to City of Cockburn's fire control order, grasses to trimmed to a maximum height of 50mm			
Photo ID: 7			

Plot :	E	Classification or Exclusion Clause:	Exclusion 2.2.3.2(f)
Description / Justification for Classification:			
Low threat vegetation, including grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks			
Photo ID: 8		Photo ID: 9	

Plot :	F	Classification or Exclusion Clause:	Exclusion 2.2.3.2(f)
Description / Justification for Classification:			
Low threat vegetation, including grassland managed in a minimal fuel condition. Lot subject to City of Cockburn's fire control order, grasses to trimmed to a maximum height of 50mm			
Photo ID: 10			

Plot :	G	Classification or Exclusion Clause:	Exclusion 2.2.3.2(a)
Description / Justification for Classification:			
Vegetation of any type that is more than 100m from the site			
Photo ID: 11		Photo ID: 12	

Plot :	H	Classification or Exclusion Clause:	Exclusion 2.2.3.2(f)
Description / Justification for Classification:			
Low threat vegetation, including grassland managed in a minimal fuel condition. Lot subject to City of Cockburn's fire control order, grasses to trimmed to a maximum height of 50mm			
			
Photo ID: 13			

Plot :	I	Classification or Exclusion Clause:	Exclusion 2.2.3.2(f)
Description / Justification for Classification:			
Low threat vegetation, including grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks			
			
Photo ID: 14		Photo ID: 15	

Plot :	J	Classification or Exclusion Clause:	Exclusion 2.2.3.2(f)
Description / Justification for Classification:			
Shrubs greater than 2m high, less than 30% foliage cover, understorey containing smaller dense shrubs			
Photo ID: 16		Photo ID: 17	

Plot :	K	Classification or Exclusion Clause:	Exclusion 2.2.3.2(e)
Description / Justification for Classification:			
Shrubs greater than 2m high, less than 30% foliage cover, understorey containing smaller dense shrubs			
Photo ID: 18			

RELEVANT FIRE DANGER INDEX

The fire danger index for this site has been determined in accordance with Table 2.1 or otherwise determined in accordance with a jurisdictional variation applicable to the site.

Fire Danger Index							
FDI 100 - Table 2.4	☐	FDI 80 - Table 2.5	☒	FDI 50 - Table 2.6	☐	FDI 40 - Table 2.7	☐

Potential Bushfire Impacts

The potential bushfire impact to the site / proposed development from each of the identified vegetation plots are identified below

Plot	Vegetation Classification	Effective Slope	Separation (m)	BAL
A	Exclusion 2.2.3.2(f)			Low
B	Exclusion 2.2.3.2(b)			Low
C	Exclusion 2.2.3.2(f)			Low
D	Exclusion 2.2.3.2(f)			Low
E	Exclusion 2.2.3.2(f)			Low
F	Exclusion 2.2.3.2(f)			Low
G	Exclusion 2.2.3.2(a)			Low
H	Exclusion 2.2.3.2(f)			Low
I	Exclusion 2.2.3.2(f)			Low

Table 1: BAL Analysis

Determined Bushfire Attack Level (BAL)

The determined bushfire attack level has been calculated using the above Table 1: BAL Analysis and represents the highest BAL rating for the site/development where there is no requirement for additional vegetation to be modified or cleared. The rating represents the site's current state.

Determined Bushfire Attack Level (BAL)	BAL Low
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APPENDIX 1 - VEGETATION CLASSIFICATION

Vegetation Classification

Vegetation shall be classified in accordance with Table 2.3 and Figures 2.4(A) to 2.4(G). Where there is more than one vegetation type, each type shall be classified separately with the worst case scenario (predominant vegetation is not necessarily the worst case scenario) applied.

2.2.3.2 Exclusions - Low threat vegetation and non-vegetated areas

The Bushfire Attack Level shall be classified BAL - LOW where the vegetation is one or a combination of any of the following:

- (a) Vegetation of any type that is more than 100m from the site
- (b) Single areas of vegetation less than 1ha in area and not within 100m of other areas of vegetation being classified
- (c) Multiple areas of vegetation less than 0.25ha in area and not within 20m of the site, or each other
- (d) Strips of vegetation less than 20m in width regardless of length and not within 20m of the site, or each other, or other areas of vegetation being classified
- (e) Non-vegetated areas, including waterways, roads, footpaths, buildings and rocky outcrops
- (f) Low threat vegetation, including grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks

Table 2.3 Classification of Vegetation

Vegetation Classification	Vegetation Type	Description
A Forest	Tall open forest	Trees over 30m high; 30-70% foliage cover. Found in areas of high reliable rainfall. Typically dominated by eucalyptus
	Tall woodland	
	Open forest	Trees 30m high; 30-70% foliage cover. Typically dominated by eucalyptus
	Low open forest	
B Woodland	Pine Plantation	Trees 30m in height at maturity, generally comprising Pinus species or other softwood species, planted as a single species
	Woodland	Trees 10-30m high; 10-30% foliage cover dominated by eucalyptus; understorey or low trees to tall shrubs
	Open Woodland	
	Low woodland	Low trees and shrubs 2-10m high; foliage cover less than 10%. Dominated by eucalyptus and Acacias. Often have a grassy understorey or low shrubs
C Shrubland	Low open woodland	
	Open shrubland	
	Closed heath	Found in wet areas and/or areas affected by poor soil fertility or shallow soils. Shrubs 1-2m high
D Scrub	Open heath	
	Low shrubland	Shrubs <2m high; greater than 30% foliage cover. Understorey may contain grasses
	Closed scrub	Found in wet areas and/or areas affected by poor soil fertility or shallow soils; >30% foliage cover. Shrubs >2m high
D Scrub	Open scrub	Shrubs greater than 2m high; 10-30% foliage cover with a mixed species composition

E Mallee/ Mulga	Tall shrubland	Vegetation dominated by shrubs with a multi-stemmed habit; usually greater than 2m in height; <30% foliage cover. Understorey of widespread to dense low shrubs or sparse grasses
F Rainforest	Tall closed forest Closed forest Low closed forest	Trees 10-40m in height; >90% foliage cover; understorey may contain a large number of species with a variety of heights
G Grassland	Low open shrubland Tussock grassland Hummock grassland Herbfield	All forms, including situations with shrubs and trees, if the overstorey foliage cover is less than 10%



APPENDIX 2 - BUSHFIRE ATTACK LEVEL

Bushfire Attack Level Assessment Explained

A Bushfire Attack Level (BAL) Assessment is a means of measuring the severity of a buildings potential exposure to ember attack, radiant heat and direct flame contact in a bushfire event, and thereby determining the construction measures required for the dwelling.

The methodology used for the determination of the BAL rating, and the subsequent building construction standards, are directly referenced from Australian Standard AS 3959-2018 Construction of buildings in bushfire prone areas.

The BAL rating is determined through identification and assessment of the following parameters:

- Fire Danger Index (FDI) rating; assumed to be FDI-80 for WA;
- All classified vegetation within 100m of the subject building;
- Separation distance between the building and the classified vegetation source/s; and
- Slope of the land under the classified vegetation.

AS 3959-2018 has six (6) levels of BAL, based on the radiant heat flux exposure to the building, and also identifies the relevant sections for building construction, as detailed below:

Bushfire Attack Level (BAL)	Heat flux exposure thresholds	Description of predicted bushfire attack and levels of exposure	Construction Section (within AS 3959)
BAL Low	See clause 2.2.3.2	There is insufficient risk to warrant specific construction requirements	4
BAL 12.5	$\leq 12.5\text{kW/m}^2$	Ember attack	3 & 5
BAL 19	$> 12.5\text{kW/m}^2 \leq 19\text{kW/m}^2$	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing heat flux	3 & 6
BAL 29	$> 19\text{kW/m}^2 \leq 29\text{kW/m}^2$	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing heat flux	3 & 7
BAL 40	$> 29\text{kW/m}^2 \leq 40\text{kW/m}^2$	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing heat flux with the increased likelihood of exposure to flames	3 & 8
BAL FZ	$> 40\text{kW/m}^2$	Direct exposure to flames from the front in addition to heat flux and ember attack	3 & 9

APPENDIX 3 - CONSTRUCTION REQUIREMENTS

SECTION 4 BAL - LOW

This standard does not provide construction requirements for buildings assessed in bushfire-prone areas in accordance with section 2 as being BAL-LOW

The bushfire attack level BAL-LOW is based on insufficient risk to warrant specific bushfire construction requirements. It is predicated on low threat vegetation and non-vegetated areas (see clause 2.2.3.2)

Bushfire Attack Level (BAL) Certificate

Determined in accordance with AS 3959-2018

This Certificate has been issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme. The certificate details the conclusions of the full Bushfire Attack Level Assessment Report (full report) prepared by the Accredited Practitioner.

Property Details and Description of Works

Address Details	Unit No	Street No	Lot No	Street Name/Plan Reference	
		645		Rockingham Road	
Local government area	Suburb			State	Postcode
	Lake Coogee			W.A.	
Main BCA class of the building	City of Cockburn				
Description of the building or works		Use(s) of the building			
	Proposed Subdivision				

Determination of Highest Bushfire Attack Level

AS3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance (m)	BAL
Method 1	Exclusion 2.2.3.2(f)			Low

BPAD Accredited Practitioner Details

Name
Matthew Sobelik
Company Details
BCSWA Pty Ltd
I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level stated above in accordance with the requirements of AS 3959-2018 (Incorporating Amendments 1, 2 and 3)

I hereby declare that I am a BPAD accredited bushfire practitioner.	
Accreditation No.	BPAD36534
Signature	
Date	16/10/2024

Authorised Practitioner Stamp

Reliance on the assessment and determination of the Bushfire Attack Level contained in this certificate should not extend beyond a period of 12 months from the date of issue of the certificate. If this certificate was issued more than 12 months ago, it is recommended that the validity of the determination be confirmed with the Accredited Practitioner and where required an updated certificate issued.

DISCLAIMER & LIMITATION

This assessment has been carried out in accordance with AS 3959-2018 for the purpose of calculating the potential Bushfire Attack Level (BAL).

A fire event is unpredictable and can be influenced by many factors such as, but not limited to, temperature, wind speed, wind direction, humidity, the slope of the land, vegetation fuel load, growth, planting or removal, level of implementation and maintenance of fire prevention measures and the construction of additional structures upon the property that are not included as part of this assessment. If you are concerned or notice that factors have changed a new Bushfire Attack Level should be undertaken.

As permitted by the law and to its greatest extent, BCSWA Pty Ltd and its associated employees excludes all liability whatsoever for: Damage, loss, injury, death or claim to any property and/or person caused by a fire regardless of how that fire was caused and Errors and/or omissions in this report with the client expressly acknowledging that such exclusion of liability is reasonable in all circumstances.

This assessment is not a Bushfire Management Plan and does not in any way certify that the proposed structure has been built in accordance with the assessed BAL rating. In providing this report as part of a development application or building licence the client and landowner acknowledges that they understand, approve and will comply with all requirements to maintain the separation distances detailed in this report. Furthermore, the client/landowner acknowledges and accepts all responsibility in maintaining the required building protection zone defined in AS 3959-2018.

This report is valid for 12 months only from the date of issue.

