



Bushfire Protection Assessment

Proposed Industrial Development: Block 11, Section 21 Hume ACT

Prepared for
Flexible Australia

21 August 2019



DOCUMENT TRACKING

Item	Detail
Project Name	Bushfire Protection Assessment - Proposed Industrial Development: Block 11, Section 21 Hume ACT
Project Number	18HNG_11840
Client Name	Flexible Australia
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Status	Final
Version Number	1
Last saved on	21 August 2019

This report should be cited as 'Eco Logical Australia August 2019. Bushfire Protection Assessment - Proposed Industrial Development: Block 11, Section 21 Hume ACT'.

ACKNOWLEDGEMENTS

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Contents

1	Property and proposal	1
1.1	Description of proposal	1
1.2	Location and description of subject land	1
2	Bushfire threat assessment	3
2.1	Assessment requirements	3
2.2	Asset Protection Zone (APZ)	3
2.3	Asset interface classification(AIC)	3
2.4	Vegetation types	3
2.5	APZ requirements	4
3	Construction standard	4
4	Water, gas and electrical supply	8
5	Access	8
6	Recommendations and conclusion	9
	References	10

List of figures

Figure 1: Proposed development.....	2
Figure 2: Roller shutter door installation from PBP.....	5
Figure 3: Bushfire Hazard Assessment.....	7

List of tables

Table 1: Subject site summary.....	1
Table 2: Asset Interface Classification matrix.....	3
Table 3: Widths for Inner and Outer Asset Protection Zones (APZs).....	4
Table 4: Bushfire hazard assessment and APZ requirements – AS3959-2009.....	6

1 Property and proposal

Table 1: Subject site summary

Street or property name:	36 Couranga Crescent		
Suburb, town or locality:	Hume	Postcode:	2620
Lot/DP no:	Block 11 Section 21		
Local Government Area:	ACT		
Type of area:	Industrial		
Type of development:	Industrial		

1.1 Description of proposal

Flexible Australia commissioned Eco Logical Australia Pty Ltd (ELA) to prepare a bushfire protection assessment (BPA) for a proposed industrial development at 36 Couranga Crescent, Hume (hereafter referred to as the 'subject land').

The proposal consists of the construction of a sustainable resource recovery facility that will recycle both liquid and solid waste from municipal maintenance and hydro excavation activities currently being disposed of to landfill. The proposed facility will receive waste materials from Flexibles and similar organisations operations and process these into commercial grade products.

In accordance with the provisions of Schedule 4, of the *Planning and Development Act 2007* (P&D Act), the Development is Impact Track Assessment as the proposed development is for "*the construction of a waste management facility that is – ... (c) for the storage, treatment, disposal, processing, recycling, recovery, use or reuse of regulated waste.*" Therefore, the proposed development is classified as Impact Track and an Environmental Impact Statement (EIS) is required as part of the Development Application (DA), this Bushfire Protection Assessment (BPA) will form part of the EIS.

This desktop assessment is based on information contained within the site plan (**Figure 1**) and online information from Google Earth, Nearmap and previous site inspections undertaken on the site July 2016.

Figure 1 shows a plan of the development.

1.2 Location and description of subject land

The subject land is located in the south-eastern suburbs of Canberra in the suburb of Hume and is situated approximately 200 meters east of the intersection of the Monaro Highway and Isabella Drive. Hume is a light-industrial suburb and there is no significant housing development near the site as shown in **Figure 3**. The subject land is located in the Australian Capital Territory, has a Fire Danger Index (FDI) of 100 and is identified as a Bush Fire Prone Area.

Figure 3 shows the subject land in relation to the nearest bushfire hazard.

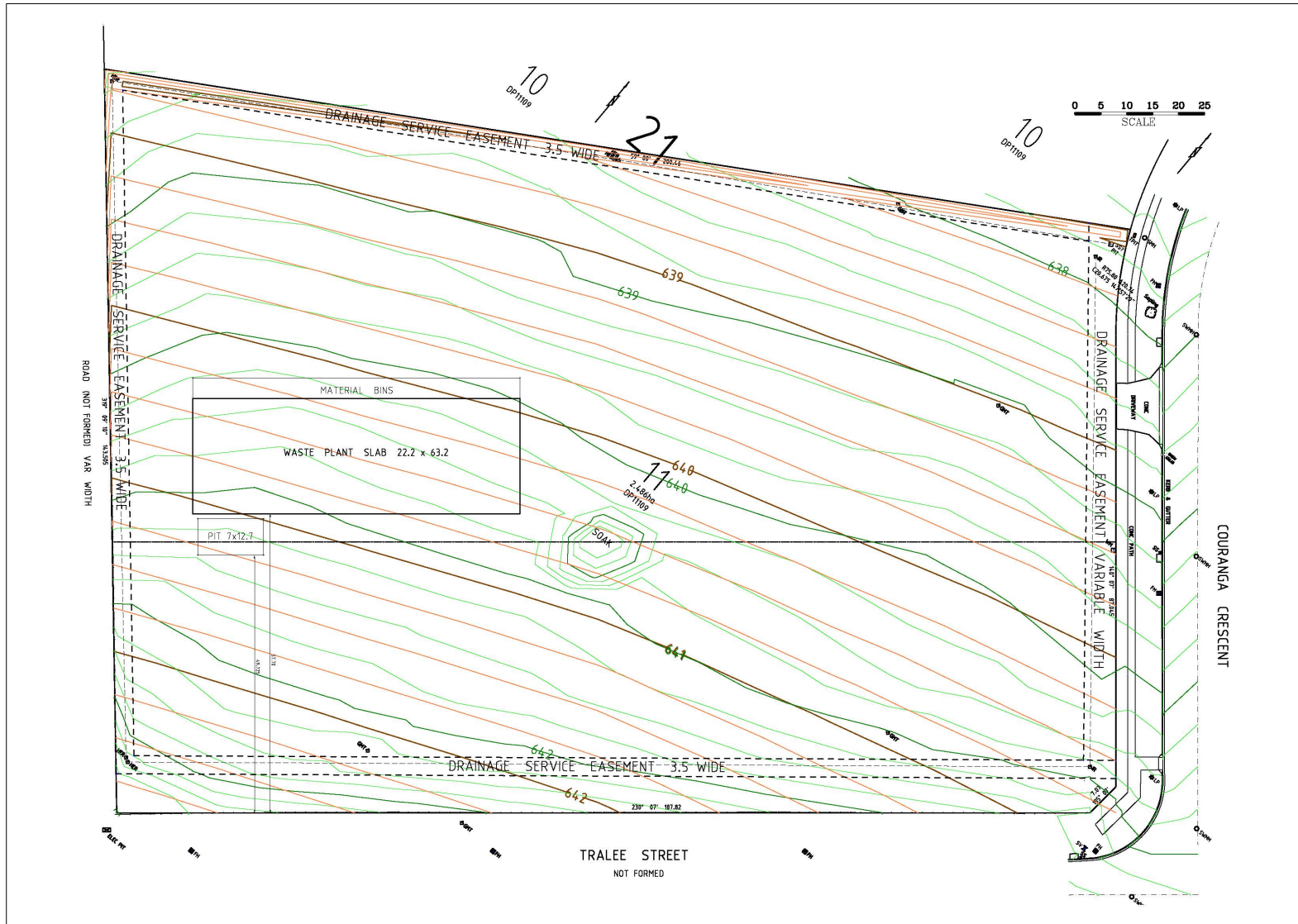


Figure 1: Proposed development

2 Bushfire threat assessment

2.1 Assessment requirements

The subject land is identified as Bush Fire Prone Land by the ACT ESA. This assessment is prepared in accordance with the provisions of the ACT *Industrial Zones Development Code 2015, Planning for Bushfire Risk Mitigation General Code 2008* (PBRM) and *ACT Strategic Bushfire Management Standards 2014* (BMS 2014), herein referred to as BMS.

2.2 Asset Protection Zone (APZ)

Asset Protection Zone (APZ) are determined in accordance with BMS utilising the Asset Interface Classification (AIC) matrix, vegetation type and APZ determination matrix.

2.3 Asset interface classification(AIC)

Table 1 of BMS has been used to determine the AIC for the proposed development, results are shown in **Table 1** below.

Table 2: Asset Interface Classification matrix

Aspect of fire run	Length of fire run to asset interface (metres)		
	<100	100–350	>350
North		Primary	
Northwest		Primary	
West			Primary
Southwest			Primary
South			Secondary
Southeast	Lee		
East			
Northeast			

Source: ACT Bushfire Management Standards (2014)

2.4 Vegetation types

The subject site is bounded by Couranga Crescent to the north-east and Tralee Street to the south-west. There are industrial blocks to the north and east/north-east. The predominant bushfire hazard exists to the north, west, south and south-east beyond the subject land boundaries. The bushfire hazard to the south and south-east is identified as Southern Tableland Grassy Woodland vegetation and falls under the vegetation classification of 'grass and open woodland' under the BMS.

2.5 APZ requirements

Table 2 and 3 of BMS has been used to determine the Inner Protection Area (IPA) and Outer Protection Area (OPA) for the proposed development, results are shown in **Table 3** below.

Table 3: Widths for Inner and Outer Asset Protection Zones (APZs)

Vegetation Type	Asset Interface Classification (Table 2)	Inner APZ only (m)	Inner (I) and Outer (O) APZ (m)
Grass and open woodland	Primary	40	I – 30 m / O – 100 m
	Secondary	20	I – 20 m / O – 0 m
	Lee	10	I – 10 m / O – 0 m

Source: ACT Bushfire Management Standards (2014)

3 Construction standard

The ACT Industrial Zone Development Code (2012) specifies that where identified, buildings are to be designed and constructed in accordance with the specified Bushfire Attack Level (BAL) of AS 3959-2009. Block 11 does not have a specified BAL identified within the Industrial Zone Development Code (2012).

Table 4 and **Figure 3** provides an assessment of the Bushfire Attack Level (BAL) on the proposed development. The determination of the BAL has been made in accordance with Method 1 of AS 3959-2009 *Construction of buildings in bushfire prone-areas* (AS 3959). The BAL is based on known vegetation type, effective slope and managed separation distance between the development and the bushfire hazard.

The entire development is assessed as requiring BAL-12.5 construction as per AS 3959-2009, however the Building Code of Australia (BCA) does not require this type of building to comply with AS 3959-2009 so this should be used as a guide as often the nature of this construction type (i.e. industrial building using concrete tilt slab with metal roofing) meets the requirements of AS 3959-2009. Where not possible to directly meet this residential construction standard, the intent of the measure should be addressed. The industrial nature of the proposed building will achieve this in most instances.

It is recommended that where practical the ember protection requirements of the NSW Rural Fire Services (2006) Planning for Bushfire Protection (PBP) are incorporated into the construction as follows:

- a. The roof/wall junctions are to be sealed/screened with aluminium, steel or bronze mesh with a minimum aperture size of 2 mm;
- b. The base of side-hung external doors shall be fitted with draught excluders/weather strips;
- c. Gutters should be fitted with metal gutter guard to prevent the build-up of combustible material;
- d. The rollers doors shall be tight fitting to door frames/jamb with gaps no greater than 5 mm when closed; and
- e. Where a roller shutter door is installed, it shall be provided with an ember protection device at the top of the shutter that captures any embers where a gap of 2.0 mm on the external surface exists as shown in **Figure 2** below.

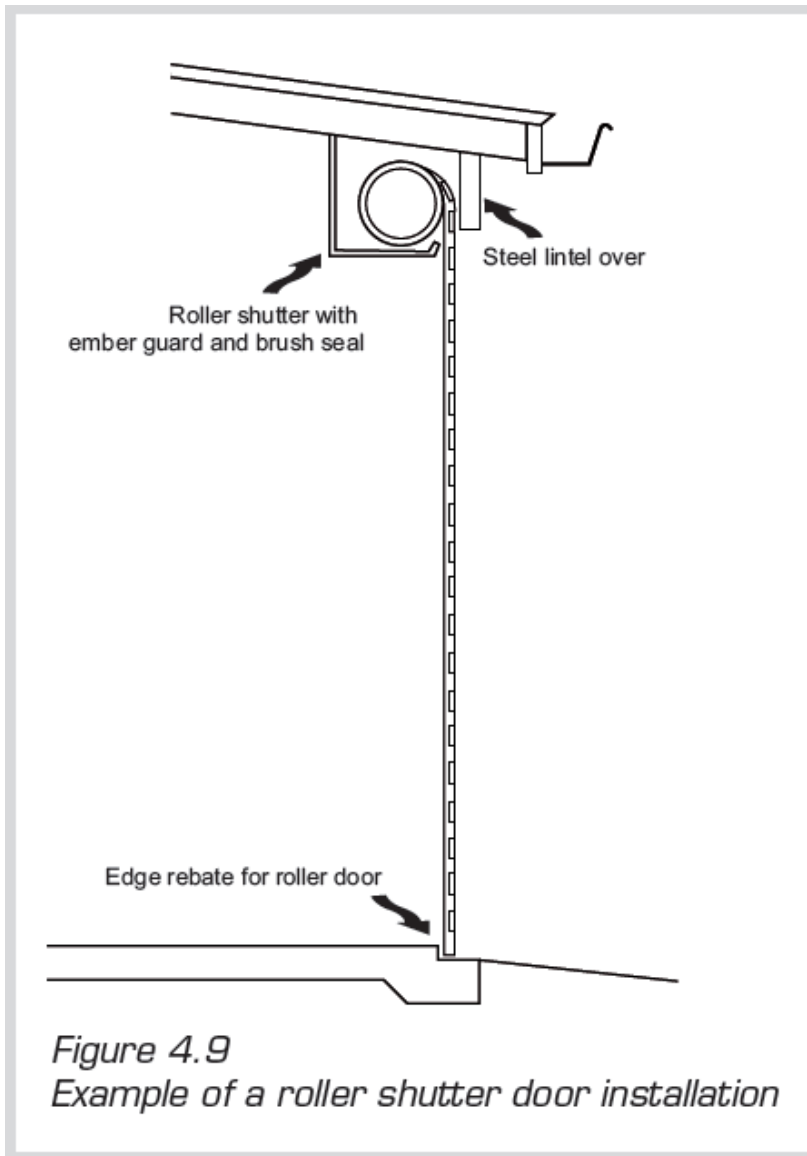


Figure 2: Roller shutter door installation from PBP

Table 4: Bushfire hazard assessment and APZ requirements – AS3959-2009

Transect	Slope ¹	Vegetation ²	Proposed APZ	AS 3959-2009 Bushfire Attack Level (BAL) ³	Comments
1	Downslope >0 to 5 degrees	Grassland	≥38 m	BAL-12.5	The APZ is achieved by 38 m building setback. It is expected that the grassland hazard will only be temporary until future development on the adjoining lots
2	All upslopes and flat land	Woodland	≥74 m	BAL-12.5	The APZ is achieved by the Tralee Street road reserve (33 m) and 41 m building setback.
3	All upslopes and flat land	Grassland	≥125 m	BAL-LOW	The APZ is achieved by the 30 m Inner APZ and 80 m Outer APZ managed as part of the ACT BOP. This is enhanced by building setback within the subject land.

¹ Slope most significantly influencing the fire behaviour of the site having regard to vegetation found. Slope classes are according to AS 3959.

² Predominant vegetation is identified, according to AS 3959 and “Where a there is more than one vegetation type, each type shall be classified separately with the worst case scenario applied”.

³ Assessment according to AS 3959-2009 Table 2.4.2.



Figure 3: Bushfire Hazard Assessment

4 Water, gas and electrical supply

Requirements for water supply and utility services are described in the ACT Bushfire Management Standards (BMS) (Table 12) and are:

- Water – supplies are easily accessible and located at regular intervals and meets the fire fighting requirements outlaid in the 'Water and Sewerage network (Design and Maintenance) Code of the Utilities Act 2000;
- Electricity – none, but recommended to be underground; and
- Gas – above ground pipes to meet AS 3959-2009 criterion, being external pipes to be metal.

5 Access

The proposed development will include an internal through road that will connect onto Couranga Crescent. Fire tankers or pumpers would attend to fires at the property from the street near the location of hydrants. Additional access provisions for bushfire protection are not required to support this proposal.

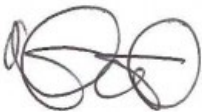
6 Recommendations and conclusion

The proposal consists of construction of a resource recovery facility located a minimum of 38 m from the nearest bushfire hazard. The proposal will be able to satisfy the aim and objectives of BMS.

The following recommendations apply:

1. The following ember protection measures are to be included within the design and construction of the buildings:
 - a. The roof/wall junctions are to be sealed/screened with aluminium, steel or bronze mesh with a minimum aperture size of 2 mm;
 - b. The base of side-hung external doors shall be fitted with draught excluders/weather strips;
 - c. Gutters should be fitted with metal gutter guard to prevent the build-up of combustible material;
 - d. The rollers doors shall be tight fitting to door frames/jambes with gaps no greater than 5 mm when closed; and
 - e. Where a roller shutter door is installed, it shall be provided with an ember protection device at the top of the shutter that captures any embers where a gap of 2.0 mm on the external surface exists.
2. Water, gas and utilities to be installed and maintained as per **Section 6** of this report.

In the author's professional opinion, the bushfire protection requirements listed in this assessment provide an adequate standard of bushfire protection for the proposed development, a standard that is consistent with 'ACT Strategic Bushfire Management Standards 2014' (BMS 2014).



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