

Bush Fire Assessment Report

Dual Occupancy

34 Alfred Road Sutton

Document Tracking:

CLIENT: Royce Thompson

c/- Leonard Allen info@untappedplanning.com

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PREPARED BY: Steven Houghton
FPAA BPAD Certified Practitioner No. BPAD46241

Executive Summary:

Development type	Secondary dwelling	
Legislation:	<input checked="" type="checkbox"/> 4.14 of EP&A Act Residential Infill	<input type="checkbox"/> 100B of RF Act
Proposal achieves BAL 29 or less	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Complies with aims and objectives of PBP 2019	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Complies with AS 3959 - 2018	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
RFS referral required	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Grassland Deeming Provisions	Refer Section 1.3 – Simplified assessment	

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1 Introduction

1.1 Building and Site Characteristics

This report forms part of the submission requirements to support a Development Application summarised in **Table 1**.

Table 1: Proposal summary

Property Details	34 Alfred Road Sutton 2620 Lot/Section/Plan no: 6/-/DP259025 Council: YASS VALLEY COUNCIL		
Type of Proposal	<input checked="" type="checkbox"/> Dual Occupancy (Secondary dwelling)	<input checked="" type="checkbox"/> Rural (> 10,000m ²)	
	Assessed using streamlined Grassland Deeming Provisions, refer Section 1.3		
Development	EP&A: s4.14 – Infill development: Dual Occupancy located to the south of existing dwelling		
Bush fire prone land status	<input checked="" type="checkbox"/> Subject Lot mapped as bushfire prone land – Figure 1		
Information relied upon	<ul style="list-style-type: none"> • Site Plans (Aruva – Job 2026) • FireMaps, NearMaps and ePlanning software - cadastral and topographic information and for New South Wales 		

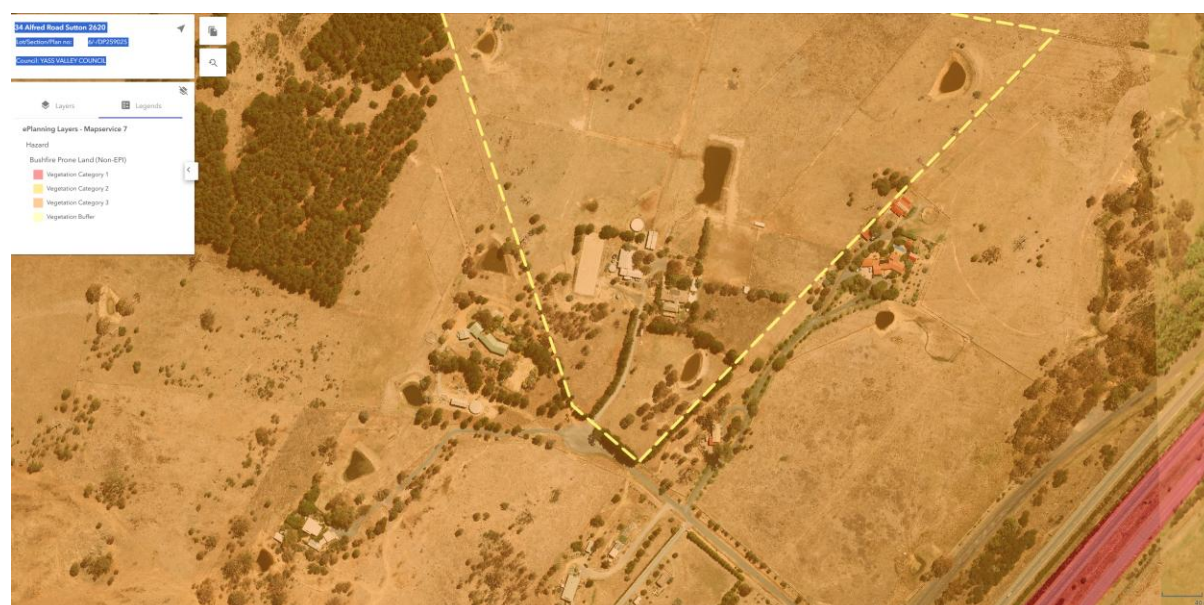


Figure 1: Bush fire prone land mapping showing subject lot captured.

1.2 Legislative requirements

The subject Lot/site is 'Bush fire prone land' as determined by local council bush fire prone land mapping under s.146 of the Environmental Planning and Assessment Act (EP&A) 1979.

The proposal is assessed in accord with Section 4.14 of the EP&A Act 1974, which details the legislative requirements for development consent for infill development on bushfire prone land. Infill development is assessed in accordance with Chapter 7 of 'Planning for Bush Fire Protection 2019' (PBP).

Grassland Deeming Provisions: In recognition of the characteristics of grassland fire behaviour, the NSW RFS has developed a simplified set of Deeming Provisions for residential infill development. This process provides another acceptable set of simple requirements for infill development located in a grassland hazard area. Refer **Section 2**.

The National Construction Code (NCC) contains Performance Requirements and Deemed-to-Satisfy (DTS) provisions relating to the construction of buildings in bushfire prone areas, including variations in NSW, for buildings in designated bushfire prone areas. The NCC calls upon the Australian *Standard 3959 - 2018: Construction of buildings in bushfire prone areas* and the *NASH Standard: National Association of Steel-framed Housing*.

1.3 Increased residential densities

The Development proposal is for a Dual Occupancy situated to the south of the existing dwelling

In accord with **Section 8.2.1 of PBP**, Secondary dwellings (including Dual Occupancy/Granny Flats) are to have an APZ based on a radiant heat threshold of 29kW/m², along with suitable provision for construction, access, water and landscaping. Consequently, the proposal is assessed as Residential infill development in accord with Chapter 7 of PBP.

Recommendations within this report include compliant Grassland Deeming APZ's and construction in accordance with **BAL-12.5** of AS3959-2018, in compliance with the conditions under PBP for increased residential densities.

1.4 Scope

The purpose of this report is to demonstrate compliance, or otherwise, with the broad aims and objectives of *Planning for Bushfire Protection 2019 (PBP)* and *AS 3959-2018 'Construction of buildings in bushfire-prone areas*.

Based on these requirements, this report seeks to:

1. Assess the proposal with reference to PBP-2019 and AS3959-2018;
2. Identify appropriate Bush fire Protection Measures designed to mitigate the bushfire risk and protect occupants
3. Assist the Consent Authority in the determination of the suitability of the proposed development.

The recommendations contained herein may assist in forming the basis of any specific bushfire conditions that Council and/ or the NSW Rural Fire Service may elect to place within the consent conditions issued for the subject Development Application (DA).

1.5 Other known constraints

No threatened species or other known significant environmental or heritage constraints are known or have been advised.

Council as the determining authority will assess more thoroughly any potential environmental and heritage issue.

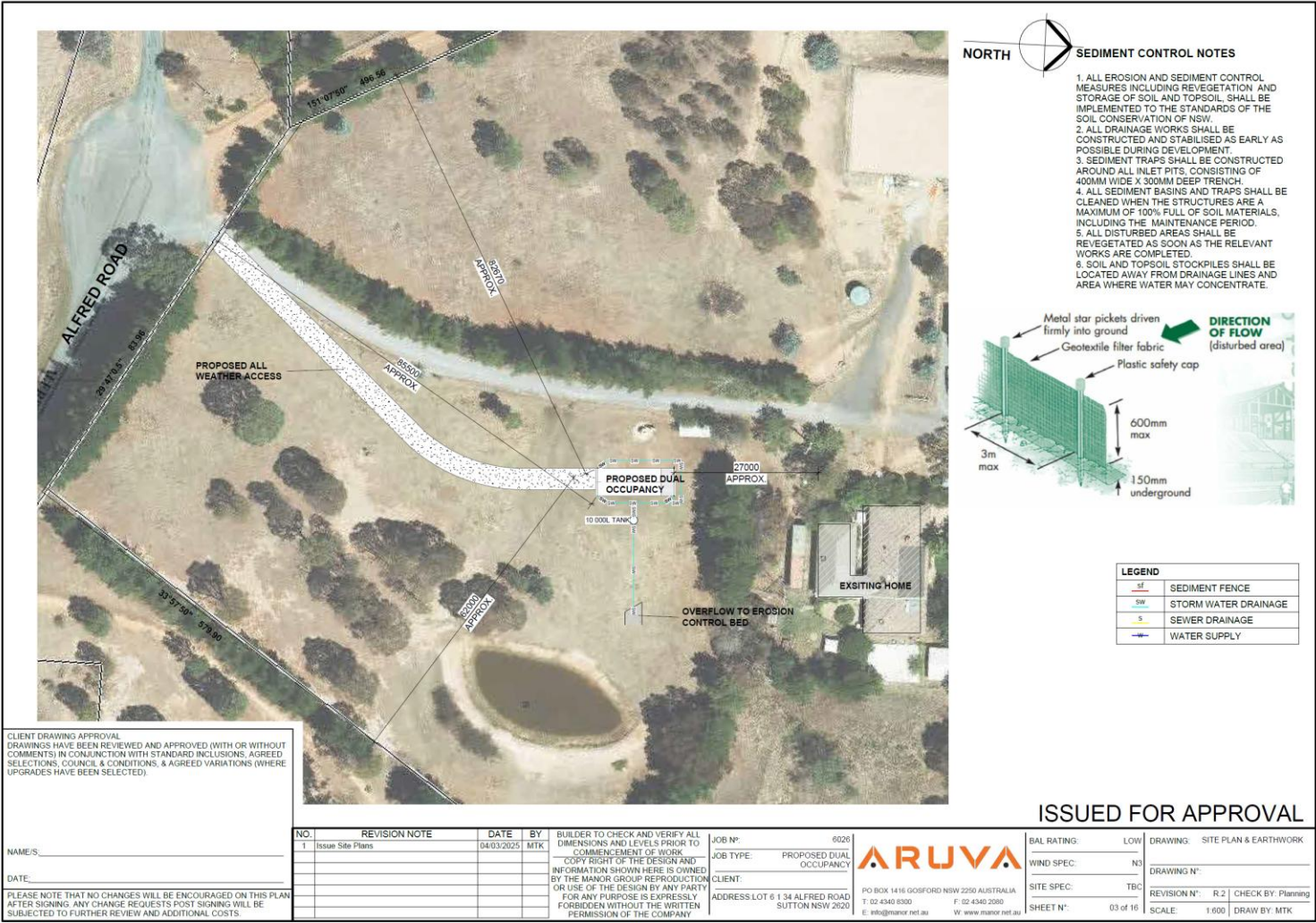


Figure 2: Site plan showing location of proposed Dual Occupancy and existing dwelling

2 Bush fire assessment

The only bush fire vegetation hazard within 140m of the proposed building footprint is categorised as 'Grassland' under PBP-2019.

In accord with Section 7.9 of PBP, the Grassland Deeming Provisions developed by the Rural Fire Service apply. Where an APZ of 20-49m can be provided for a Grassland hazard, a site assessment as detailed in Appendix 1 is not required, nor is referral to the NSW RFS. The simplified set of Deeming Provisions apply as shown in **Table 2**.

Table 2: Bush fire hazard assessment – Grassland Deeming Provisions

BUSH FIRE PROTECTION MEASURE	GRASSLAND DEEMING PROVISIONS	COMMENT
APZ	limited to a maximum of 15 degrees downslope;	<ul style="list-style-type: none"> Slopes under the hazard complies – as shown in Figure 2
	minimum APZ of 20m is provided between the building and the hazard;	<ul style="list-style-type: none"> 20 APZ to be established within Lot and managed in perpetuity. Refer Section 3.1
	the APZ is wholly within the boundaries of the development site;	<ul style="list-style-type: none"> Complies.
	the APZ is maintained as a mown area with grass heights less than 100mm.	<ul style="list-style-type: none"> 20 APZ to be managed as a mown area.
Access	comply with the property access provisions in Table 5.3b of PBP .	<ul style="list-style-type: none"> To comply. Refer Section 3.2
Water	comply with the water supply provisions in Table 7.4a of PBP	<ul style="list-style-type: none"> To comply. Refer Section 3.3
Construction	construction in accordance with BAL-12.5 of AS 3959 and section 7.5 of PBP.	<ul style="list-style-type: none"> To comply. Refer Section 3.4
Landscaping	comply with the relevant provisions in Appendix 4, noting that other vegetation bush fire hazards cannot be present if these provisions are to apply.	<ul style="list-style-type: none"> 20 APZ to be managed as a mown area. Refer Section 3.5



Legend

Slope profiles **Dimensions assessment** **140m survey** **100m survey** **Buildings** **Access** **APZ** **Lot Boundary** **Contours (2m)**
 — Slope — Setbacks — 140m Vegetation Assessment — 100m BAL/Slope Assessment — Proposed Dual Occupancy 11.8 x 5.1m — Access - 80m — 20m IPA —
Map printed from Firemaps on Fri Apr 04 11:39:44 AEST 2020

Figure 3: Bushfire Assessment Report

3 Bush fire protection measures

The following Bushfire Protection Measures are based on the development type and the assessed level of risk described in **Section 2**.

3.1 Asset Protection Zone (APZ)

The available APZ is provided in **Table 3** for each transect line and a comment on how it is provided.

APZ's are to be managed in perpetuity in accordance with the requirements of 'Asset protection zone standards' outlined in Appendix 4 of PBP – 2019. A summary of the Landscaping requirements is provided in **Section 3.5**.

APZ Recommendations:

- 20m area to be established and managed around the proposed Dual Occupancy and managed in perpetuity as an APZ
- The APZ to be maintained as a mown area with grass heights less than 100mm.

3.2 Access arrangements

In accord with the Grassland Deeming Provision under PBP, where an APZ of 20-49m can be provided the property access provisions of PBP apply as outlined in **Table 3** below.

Access Recommendations:

- The existing and proposed private access road to be upgraded where necessary and maintained, in accordance with the performance criteria within of Table 7.4a of PBP 2019, as outlined in **Table 3** below.

Table 3: PBP Compliance for property access roads

Performance Criteria	Acceptable Solutions	Complies
The intent may be achieved where:		
<ul style="list-style-type: none">• access to properties is provided in recognition of the risk to fire fighters and/or evacuating occupants	<ul style="list-style-type: none">• at least one alternative property access road is provided for individual dwelling (or groups of dwellings) that are located more than 200 metres from a public through road	Complies Standard driveway of less than 200m

Performance Criteria	Acceptable Solutions	Complies
<ul style="list-style-type: none"> the capacity of road surfaces and bridges is sufficient to carry fully loaded firefighting vehicles all weather access is provided 	<ul style="list-style-type: none"> bridges clearly indicate load rating and pavements and bridges are capable of carrying a load of 15 tonnes roads do not traverse a wetland or other land potentially subject to periodic inundation (other than a flood or storm surge) 	<p>Not applicable</p> <p>Not applicable</p>
<ul style="list-style-type: none"> road widths and design enable safe access for vehicles 	<ul style="list-style-type: none"> a minimum carriageway width of four metres for rural-residential areas, rural landholdings or urban areas with a distance of greater than 70 metres from the nearest hydrant point to the most external part of a proposed building (or footprint) in forest, woodland and heath situations, rural property access roads have passing bays every 200 metres that are 20 metres long by two metres wide, making a minimum trafficable width of six metres at the passing bay a minimum vertical clearance of four metres to any overhanging obstructions, including tree branches internal roads for rural properties provide a loop road around any dwelling or incorporate a turning circle with a minimum 12 metre outer radius curves have a minimum inner radius of six metres and are minimal in number to allow for rapid access and egress the minimum distance between inner and outer curves is six metres the crossfall is not more than 10 degrees maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads 	<p>Complies Standard driveway</p> <p>Not applicable Does not pass-through forest, woodland or heath formations.</p> <p>Complies No overhanging obstructions</p> <p>Complies Standard driveway</p> <p>Complies Standard driveway</p> <p>Complies Standard driveway</p> <p>Complies Standard driveway</p> <p>Complies Standard driveway</p>

Performance Criteria	Acceptable Solutions	Complies
	<ul style="list-style-type: none"> access to a development comprising more than three dwellings have formalised access by dedication of a road and not by right of way 	Not applicable

3.3 Water supply

In accord with the Grassland Deeming Provision under PBP where an APZ Where an APZ of 20-49m can be provided the water supply provisions in Table 7.4a of PBP applies

It is understood the existing dwelling has a 100,000L tank on site as shown in **Figure 2**.

Either a new tank in the vicinity of the proposed dual occupancy is required, or 20,000L of the existing tank is to be reserved for firefighting, along with appropriate fittings and hardstand areas to comply with the below recommendations.

The below conditions are provided to ensure compliance with all required outlets, fittings and water supply volume are compliant.

Water Supply Recommendations:

- Large rural/lifestyle lots (>10,000m²) are required to provide a 20,000-litre static water supply tank with unobstructed access.
- A hardened ground surface for truck access is supplied within 4m;
- 65mm Storz outlet with a metal ball valve is fitted to the outlet, located within the IPA or non-hazard side, and away from the structure;
- Exposed water pipes are adequate for water flow and are metal including any fittings;
- The supply pipes from tank to ball valve have the same bore size to ensure flow volume;
- Underground tanks are clearly marked and have an access hole of 200mm to allow refill direct from the tank;
- Above-ground tanks are manufactured from concrete or metal;
- Raised tanks have their stands constructed from non-combustible materials;
- Tanks on the hazard side of a building are provided with adequate shielding for the protection of firefighters;
- Where pumps are provided, they are a minimum 5hp or 3kW petrol or diesel-powered pump, and are shielded against bush fire attack;
- Any hose and reel for firefighting be connected to the pump and be 19mm internal diameter, and firehose reels are constructed in accordance with AS/NZS 1221:1997, and installed in accordance with the relevant clauses of AS 2441:2005;

3.4 Construction standards

In accord with the Grassland Deeming Provision under PBP where an APZ Where an APZ of 20-49m can be provided, **BAL 12.5** applies.

AS3959 – 2018

- Future construction shall comply with Section 3 (Construction General), Section 5 (**BAL– 12.5**) of *Australian Standard AS 3959-2018 ‘Construction of buildings in bushfire-prone areas* as (AS 3959 – 20018);
- It is recommended that the additional construction measures outlined in Section 7 of *Planning for Bush Fire Protection 2019 (PBP)* be implemented as applicable including:

Adjacent Structures - Sheds, Carports, Garages etc.

Where these are proposed it should be constructed in accordance with the BAL construction requirements of the main occupancy or should be separated by a minimum of 6m. There is no bush fire protection requirements for Class 10a buildings located more than 6m from a dwelling in bush fire prone areas.

Fences and Gates

All fences in bush fire prone areas should be made of either hardwood or non-combustible material. In circumstances where the fence is within 6m of a building or in areas of BAL-29 or greater, they should be made of non-combustible material only.

3.5 Landscaping

Landscaping within the APZ is designed and managed in accordance with the requirements of 'Asset protection zone standards' outlined in Appendix 4 of PBP – 2019 as outlined below:

Landscaping Recommendations:

- 20 APZ (or to boundary) to be managed as a mown area around the dwelling
- 1m wide area suitable for pedestrian traffic provided around the curtilage of the building;
- Planting is limited in the immediate vicinity of the building;
- Planting does not provide a continuous canopy to the building (i.e. Plants are isolated)
- Landscape species are chosen to ensure tree canopy cover is less than 15% at maturity;
- Trees do not touch or overhang buildings;
- Avoid species with rough fibrous bark, or which retain/shed bark in long strips;
- Use smooth bark trees species which generally do not spread fire up into the crown;
- Avoid planting of deciduous species that increase fuel at surface/ ground level (i.e. leaf litter); Avoid climbing species to walls and pergolas;
- Locate combustible materials such as mulch, flammable fuel stores away from the building;
- Locate combustible structures such as garden sheds, pergolas and materials such as timber garden furniture away from the building;
- Low flammability vegetation species are used.
- Fencing within 6m of a building or in areas of BAL-29 or greater are made of non-combustible material only.

3.6 Emergency Management

It is recommended that residents living in a Bush fire Prone Area are encouraged to prepare a Bush fire Survival Plan. The plan should include:

1. Triggers for leaving early in the event of a bush fire or deciding to stay if well prepared.
2. Checklists –
 - a. Equipment and Protective clothing checklist
 - b. Action checklist – before, during and after the fire.
3. Preparing your home to make it safer.
4. Awareness of current Bush fire Alert Levels and Fire Danger Ratings
5. Key information sites include the “Fires Near Me” smartphone app.

Emergency Management Recommendations:

- A simple Bush fire survival plan is prepared for occupants of the dwelling. This plan shall be prepared in accordance with the relevant steps detailed by the NSW Rural Fire Service *Bushfire Survival Plan*.

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and start your discussion



https://www.rfs.nsw.gov.au/_data/assets/pdf_file/0003/36597/BFSP-Complete.pdf

4 Conclusions and recommendations

The proposed development meets the requirements for the specific objectives of Infill by compliance with the Grassland Deeming Provisions within Chapter 7 of 'Planning for Bush Fire Protection 2019' as shown in **Table 3**.

Table 3: Conclusions and Recommendations

Performance Criteria	Compliance	Report Section	Recommendations
Asset Protection Zones	<input checked="" type="checkbox"/>	3.1	<ul style="list-style-type: none"> 20m area to be established and managed around the proposed Dual Occupancy and managed in perpetuity as an APZ The APZ is maintained as a mown area with grass heights less than 100mm.
Access	<input checked="" type="checkbox"/>	3.2	<ul style="list-style-type: none"> Access road to be upgraded where necessary and maintained, in accordance with the performance criteria within of Table 7.4a of PBP 2019, as outlined in Table 3
Water supply	<input checked="" type="checkbox"/>	3.3	<ul style="list-style-type: none"> 20,000-litre of water supply reserved for firefighting with unobstructed access and Storz outlet provided
Construction standards	<input checked="" type="checkbox"/>	3.4	<ul style="list-style-type: none"> New construction to comply with Section 3 (Construction General) and Section 5 (BAL-12.5) of <i>Australian Standard AS 3959-2018</i> Fences and gates: hardwood or non-combustible material
Landscaping	<input checked="" type="checkbox"/>	3.5	<ul style="list-style-type: none"> Designed and managed in accordance with 'Asset protection zone standards', Appendix 4 of PBP Refer Dot points Section 3.5

Provided the secondary dwelling, APZ areas, Landscaping, Access and Utilities on site are constructed, designed and maintained in accordance with the recommendations provided, the proposed development can satisfy the aims, objectives and performance requirements of PBP 2019 considered relevant to the development under Section 4.14 of the EP&A Act 1974

Steven Houghton
Statewide Bushfire Consulting
Graduate Diploma of Bushfire Protection
BPAD Accredited Practitioner Level 3 No. BPAD46241



5 References

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Changeable guidelines	This report is based on the author's interpretation of <i>Planning for Bush Fire Protection 2019 (PBP)</i> and <i>Australian Standard AS 3959-2018 'Construction of buildings in bushfire-prone areas'</i> as at the time of writing.
Conflict of interest	This report reflects the opinions and recommendations of the author only, and not those of the Rural Fire Service (RFS). Should Council or the RFS modify the recommendations or reject an assessment or proposal the author will not be held liable for any financial loss incurred as a result.
Remaining risk	Notwithstanding the recommendations made by the author, there can be no absolute guarantee that a bushfire will not occur or cause damage to property because of the extreme number of variables that bushfires present.
Measures not upheld in perpetuity	It is the responsibility of the client to maintain all bushfire protection measures proposed on an ongoing basis.