BUSINESS HAZARD ASSESSMENT REPORT

FOR
C WOOD

AT
PEARSONS ROAD
WOODBRIDGE
Summary
This Bushfire Assessment Report has been prepared to accompany an application for a new residence and shed to be constructed at Pearsons Road Woodbridge.

Site assessment included traversing the subject property and inspecting adjoining properties within 100 metres from the boundaries of the proposed development.

Providing the area immediately surrounding the existing and proposed buildings continues to be maintained as a defendable area, the proposed works have been assessed as requiring a BAL-12.5 rating. Construction is to be in accordance with AS3959-2018 Construction of buildings in a bushfire prone area, Sections 3 and 5.

Vegetation on the site consists predominately of unmaintained grass. No native vegetation will be impacted by the establishment of the Hazard Management Area.

Distances for the hazard management area can be met from within the property boundaries and the development will not be reliant on the clearing of vegetation on adjoining properties.

Philip H Cuthbertson
Accredited Bushfire Practitioner (BFP-123)
17 May 2020
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This report may only be used for the purpose for which it was commissioned. It was prepared by Philip Cuthbertson, who is accredited by the Tasmania Fire Service to prepare Bushfire Hazard Management Plans (BFP-123). Compliance with the requirements of this report and AS3959-2018 does not guarantee that the dwelling will survive a bushfire attack on every occasion due to the unpredictable nature and behaviour of fire.

This plan is based on conditions prevailing at the time of preparation.
1 PROPOSAL

1.1 Scope
The objective of this bushfire assessment and associated Bushfire Hazard Management Plan is to provide advice which will reduce the risk of ignition or burning of structures caused by embers, radiant heat or flame generated by a bushfire.

The property owner is responsible for implementation and ongoing maintenance of the recommendations provided in this report.

1.2 Site and surroundings
Property description:

PID 7161958
Title reference 17650/1
Area: 3.217 Hectares

Planning controls are administered by the Kingborough Council under the Kingborough Interim Planning Scheme 2015. The site is zoned Rural Living under the scheme and is constrained by a Bushfire Prone Areas overlay and Biodiversity Protection Area overlay as identified by the Interim Planning Scheme.

The site is located approximately 2 Kilometres from Woodbridge and 17 kilometres from Margate. Pearsons Road is a maintained unsealed road. The site is at an elevation of approximately 40 metres AHD and falls to the south-east. At the time of the site inspection vegetation on site consisted of unmaintained grass with a row of established pine trees and eucalypts exceeding 20m in height along the northern boundary. An orchard/vineyard is located on the adjoining property to the west of the proposed development. The trees located along the northern property boundary and appear to be located within the road reserve.
1.3 Proposal
It is proposed to construct a new single storey four-bedroom residence on site. The residence will have a habitable area of 199 square metres with an additional 71 square metre verandah to the perimeter. The residence will be timber framed with a concrete floor slab. Roof will be timber framed with metal sheeting.

An additional 63 square metre shed will be constructed for storage. The new shed will have a concrete floor and will be steel framed with metal wall and roof sheeting. The shed will be located greater than 6m from the proposed residence.

The Director of Building Control Determination 2.1 29 August 2017 that Class 10a structures (private garage, shed or the like) that is not closer than 6m to a habitable building, is not required to comply with the BCA/NCC Requirements for Building in a Bushfire Prone Area.

1.4 Bushfire Attack Level
The Bushfire Attack Level (BAL) is a measure of the potential impact for a Fire Danger Rating on a development. It takes into account the type of vegetation, proximity of the vegetation to the development and the slope of the surrounding land. The closer a development is to bushfire prone vegetation the greater the potential for a bushfire to impact on a building.
There are six BAL levels specified in Australian Standard 3959:

<table>
<thead>
<tr>
<th>Bushfire Attack Level (BAL)</th>
<th>Description of predicted bushfire attack levels and levels of exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAL – LOW</td>
<td>There is insufficient risk to warrant specific construction requirements</td>
</tr>
<tr>
<td>BAL-12.5</td>
<td>Ember attack</td>
</tr>
<tr>
<td>BAL-19</td>
<td>Increasing levels of ember attack and burning debris ignited by windborne embers together with an increased heat flux</td>
</tr>
<tr>
<td>BAL-29</td>
<td>Increasing levels of ember attack and burning debris ignited by windborne embers together with an increased heat flux</td>
</tr>
<tr>
<td>BAL-40</td>
<td>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</td>
</tr>
<tr>
<td>BAL-FZ</td>
<td>Direct exposure to flames from fire front in addition to heat flux and ember attack</td>
</tr>
</tbody>
</table>

Developments which are closer to bushfire-prone vegetation will be assessed as having a higher BAL and as a result, more rigorous building and construction standards will be required.
2 BUSHFIRE ASSESSMENT

2.1 Method/assumptions
This Bushfire Risk Assessment was conducted 16 May 2020 through an on-site inspection by traversing the subject property and inspecting adjacent properties.

2.2 Existing structures
At the time of the site investigation there were no structures located on the property.

2.3 Property Access
At the time of the site investigation there was an informed access servicing the site.

2.4 Water supply
Reticulated water supply suitable for fire-fighting purposes is not available to the site.

2.5 Assessed bushfire attack
The bushfire threat to the units consists of:

**North:** Upslope 5-10°, unmaintained grass to the property boundary. A strip of mature eucalypts and pine trees exceeding 30m in height is located to the road reserve boundary. The trees are less than 20m in width and are located in excess of 20m from the proposed development and have not been included as part of the bushfire assessment. It is understood that the property owner will be seeking approval to remove a number of the trees prior to commencing building works. Beyond the road reserve is an established residential development.

Potential bushfire threat to the development.

**East:** Level, unmaintained grass potentially exceeding 1m in height.

Potential bushfire threat to the development.

**South:** Downslope 5-10°, unmaintained grass potentially exceeding 1m in height.

Potential bushfire threat to the development.

**West:** Level, unmaintained grass to the property boundary. An established orchard/vineyard is located on the adjacent property.

No potential bushfire threat to the development.
Providing a defendable space is maintained surrounding the proposed residence, the following BAL ratings apply:

<table>
<thead>
<tr>
<th>Direction</th>
<th>North</th>
<th>East</th>
<th>South</th>
<th>West</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prominent vegetation</td>
<td>Unmaintained grass</td>
<td>Strip vegetation</td>
<td>Unmaintained grass</td>
<td>Unmaintained grass</td>
</tr>
<tr>
<td>Slope of land under classified vegetation</td>
<td>Upslope 5-10˚</td>
<td>Upslope 5-10˚</td>
<td>Level</td>
<td>Downslope 5-10˚</td>
</tr>
<tr>
<td>Existing separation distance from development</td>
<td>30m</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum required separation distance from development</td>
<td>14m</td>
<td>Exempt vegetation</td>
<td>14m</td>
<td>16mm</td>
</tr>
<tr>
<td>BAL Rating</td>
<td>12.5</td>
<td>12.5</td>
<td>12.5</td>
<td></td>
</tr>
</tbody>
</table>

Based on the vegetation identified and the separation distances to be provided between the vegetation and the development, the BAL rating for the works has been assessed as **BAL-12.5** due to and increased risk of ember attack.
3 BUSHFIRE PROTECTION MEASURES

3.1 Attached and nearby structures
Structures such as a garage, carport, studio and decks or verandas which are attached to the residence, or shares a common roof structure, are required to comply with construction requirements as may be applicable to the new structure. Distances for the proposed Hazard Management Area shall be measured from the extremities of the proposed residence and/or sheds.

3.2 Landscaping
The Director of Building Control has determined that a new buildings or extension to a Class 1, building in a Bushfire-Prone Area must be provided with a defendable space (Hazard Management Area), as identified in Appendix C Bushfire Hazard Management Plan, surrounding the building which separates the building from the hazard. The Hazard Management Area is defined by separation distances between the development and the bushfire prone vegetation (i.e. un-maintained grass paddocks and woodland areas). Landscaping is permissible provided measures to reduce bushfire hazard are incorporated which include maintained lawns, paths and landscaped areas. Preference should be given to low growing plants and ground covers with mulch or gravel, pebbles (not wood chips or cut grass) etc. Within this area the following conditions are required:

- No mass plantings of trees/shrubs greater than 2 metres in height. Isolated clusters are permitted providing tree canopy <30%;
- Grasses to be maintained at < 100mm in height
- On-going maintenance to remove flammable fuels such as leaf litter, twigs debris etc.

No large trees are to be located in close proximity to the driveway or buildings which are likely to overhang the building or driveway or obstruct the entry of emergency vehicles or become a threat to structures. Vegetation such as shrubs should not be planted adjacent to walls or decks or directly under glazed elements.
3.3 **Access Drive**
The existing property access to the site is to be upgraded as part of the development. The proposed driveway will be less than 30 metres in length and should be designed to allow a laden fire appliance to access the buildings and water supply available for firefighting purposes. The Director of Building Control (Directors Determination Table 4.2) has determined that driveways for new Class 1, 2, 3 or 10a buildings closer than 6m to a habitable building in a Bushfire-Prone Area shall satisfy the following design and construction requirements:

- all-weather construction;
- load capacity of at least 20 tonnes, including bridges and culverts;
- minimum carriage width of 4.0 metres;
- minimum vertical clearance of 4 metres;
- minimum horizontal clearance of 0.5 metres from the edge of the carriageway;
- cross falls of less than 3 degrees (1:20 or 5%);
- dips less than 7 degrees (1:20 or 5%);
- curves with a minimum inner radius of 10 metres;
- maximum gradient of 15 degrees (1:3.5 or 28%) for sealed roads and 10 degrees (1:5.5 or 18%) for unsealed roads; and
- terminate with a turning area provided for turning fire appliances.

The property access will be less than 200 metres and no passing bays are required.

3.4 **Water supply**
Reticulated water supply suitable for fire-fighting purposes is not available for the residence and a dedicated water supply for bushfire protection must be installed.

The Director of Building Control has determined that new Class 1, 2, 3 or 10a buildings closer than 6m to a habitable building in a Bushfire-Prone Area must satisfy the following design and construction requirements for the building to be protected (Table 4.3 B):

- located within 90 metres of the fire-fighting water point of the static water supply measured as a hose lay;
- has minimum 10,000 litre capacity per building area to be protected. This volume of water must not be used for any other purpose including fire-fighting sprinkler or spray systems;
- must metal or concrete or lagged by non-combustible materials if above ground.

Fittings, pipework and accessories for the water supply must:
- fittings must have a minimum internal diameter of 50mm
- be fitted with a valve with a minimum internal diameter of 50mm
- be metal or lagged by non-combustible materials if above ground;
- where buried, have a minimum depth of 300mm;
- provided with a DIN or NEN standard forged Storz 65mm coupling fitted with a suction washer for connection to fire-fighting equipment;
- ensure the coupling is accessible and available at all times;

The water connection point must be identified by a sign permanently fixed to the exterior and in a visible location as indicated in Diagram 1. The sign must:
- comply with the AS2304-2011 Water storage tanks for fire protection systems or comply with the Tasmania Fire Service Water Supply Signage Guidelines published by the Tasmania Fire Service.

A hardstand area for fire appliances for the water supply must be provided:
- no more than 3 metres from the fire-fighting water point, measured as a hose lay (including the minimum water level in dams, swimming pools and the like);
- no closer than 6 metres from the building area to be protected;
- have a minimum width of 3 metres constructed to the same standard as the carriageway; and
- connected to the property access by a carriageway equivalent to the standard of the property access.
Diagram 1

Static Water Indicator Sign
3.5 Building works BAL-12.5
To achieve a BAL 12.5 rating construction shall be in accordance with:

- the Standard for Steel Framed Construction in Bushfire Areas published by the National Association of Steel Framed Housing Inc; or
- AS3959-2018 Construction of buildings in bushfire-prone areas.

The proposed residence shall be designed and constructed in accordance with AS3959 Sections 3 and 5. These requirements include the following notes which are informative only. Where a discrepancy occurs between these requirements and the requirements of AS3959, the conditions nominated in AS3959 will have precedence.

Sections 3 and 5 of AS3959 includes the following requirements:

Walls: The exposed components of an external wall that is less than 400mm above the ground, or less than 400mm above a deck shall be non-combustible, a bushfire resisting timber, an approved timber or a combination of these items. Joints in external surface material of walls shall be covered, sealed, overlapped or butt jointed to prevent gaps greater than 3mm.

The standard does not provide construction requirements for the exposed component of an external wall that are more than 400mm or more above the ground or deck.

Windows: windows shall be protected externally by screens made of corrosion resistant steel, bronze or aluminium. Gaps to the perimeter of the screen assembly and the building shall not exceed 3mm. Glazing less than 400mm above finished ground level or less than 400mm above a deck, or roof, shall be Grade A safety glass and openable portions protected externally with compliant screens.

External Doors: Sliding doors shall be completely protected externally with bushfire compliant screens or shall be Grade A Safety Glass complying with AS1288 with surrounding frame constructed from bushfire resistant timber, metal, or metal reinforced PVC. Side hung doors shall be tight fitting in the frame.
**Garage Doors:** The lower portion of a vehicle access door that is within 400mm of the ground when closed shall be non-combustible. All vehicle access doors shall be protected with suitable weather strips, draught excluders, seals or brushes. Door assemblies fitted with guide tracks do not need edge gap protection.

**Roof:** Roof sheeting is to be non-combustible. Roof/wall junctions to be sealed to prevent the openings greater than 3mm. Roof ventilation openings shall be fitted with ember guards made of non-combustible material or a mesh or perforated sheet with a maximum aperture of 2mm made of corrosion resistant steel, bronze or aluminium.

**Eave linings, fascias and gables:** Eave penetrations shall be protected the same as for roof penetrations. Eave ventilation openings greater than 3mm shall be protected with ember guards made of non-combustible material or a mesh or perforated sheet with a maximum aperture of 2mm made of corrosion-resistant steel, bronze or aluminium.

**Gutters and downpipes:** There are no specific requirements for gutters and downpipes except that box gutters and associated flashings shall be non-combustible. It is recommended that non-combustible leaf guards are installed to all gutters and valleys.

**Water supply pipes:** Above-ground water supply pipes shall be metal
4 CONCLUSIONS AND RECOMMENDATIONS

This Bushfire Assessment Report has been prepared to accompany an application for new residence to be constructed at Pearsons Road Woodbridge.

An on-site assessment of the property identified areas of unmaintained grass as bushfire prone vegetation within 100m of the proposed development. The proposed residence has been assessed as BAL-12.5 in accordance with AS3959.

A defendable area is to be established surrounding the proposed residence and kept in a low fuel load condition with grasses kept less than 100mm in height and with no mass planting of trees. The defendable space shall extend for a distance of:
- North 14m
- East 14m
- South 16m
- West 14m

The trees located along the northern boundary are to be removed as advised by the property owner. If the trees are not removed a re-assessment of the bushfire risk may need to be made.

The proposed shed will be located greater than 6m from the proposed residence and is not required to have a bushfire rating.

This report does not recommend or approval the removal of trees without the necessary approvals from the local authority.

Other bushfire protection measures may be provided, including wall/roof wetting sprinklers, private bushfire shelters, but are outside the scope of this report. The adoption of construction practices to provide a higher BAL rating is permissible.
5 REFERENCES

Kingborough Interim Planning Scheme 2015

Guidelines for Development in Bushfire Prone Areas of Tasmania, Tasmania Fire Service issued 2005

AS 3959-2018 Construction of buildings in bushfire prone areas

Bushfire Information Publications provided by Tasmania Fire Service www.fire.tas.gov.au

National Construction Code

Building Act 2016 Directors Determination – Requirements for Building in a Bushfire-Prone Areas (transitional) issued by the Director of Building Control 29 August 2017.

Planning Directive No 5.1 Bushfire-Prone Areas Code issued by the Minister for Planning and Local Government 1 September 2017
APPENDIX A: Site Locality and Vegetation
Locality Plan

Surrounding vegetation
APPENDIX B: Site Photos
View to North

View to East
APPENDIX C: Bushfire Hazard Management Plan
APPENDIX D: Form 55 Certificate of Others
CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

To: C Wood
Owner /Agent

Pearsons Road
Address

Woodbridge TAS 7025

Section 321

Qualified person details:
Qualified person: PH Cuthbertson
Phone No: 0438 782 653

Address: PO Box 240
Fax No: 
Huonville TAS 7109

Licence No: CC2251H
Email address: phcuthbertson@gmail.com

Qualifications and Insurance details:
Accredited Bushfire Assessor (Accreditation Scope 1,2,3A)
(decription from Column 3 of the Director of Building Control’s Determination)

Speciality area of expertise:
Bushfire Hazard Assessment
(decription from Column 4 of the Director of Building Control’s Determination)

Details of work:
Address: Pearsons Road
Lot No: 1

Woodbridge TAS 7162
Certificate of title No: 17650

The assessable item related to this certificate:
Assessment of the Bushfire Attack Level (BAL)
(description of the assessable item being certified)
Assessable item includes –
- a material;
- a design
- a form of construction
- a document
- testing of a component, building system or plumbing system
- an inspection, or assessment, performed

Certificate details:
Certificate type: Bushfire hazard
(description from Column 1 of Schedule 1 of the Director of Building Control’s Determination)

This certificate is in relation to the above assessable item, at any stage, as part of - (tick one)
building work, plumbing work or plumbing installation or demolition work: X
or
a building, temporary structure or plumbing installation:

In issuing this certificate the following matters are relevant –
Documents: Bushfire Hazard Assessment Report 1269 dated 17 May 2020
Relevant calculations:

Bushfire Hazard Assessment 1269 dated 17 May 2020

References:

AS3959-2018 Construction of buildings in bushfire prone areas
2005 Guidelines for Development in Bushfire prone areas
Tasmania Fire Service
National Construction Code Volume 2
Kingborough Interim Planning Scheme 2015

Substance of Certificate: (what it is that is being certified)

Assessment of the bushfire attack level for a new residence
at Pearsons Road Woodbridge as requiring a BAL-12.5 rating

Scope and/or Limitations

SCOPE:
The Bushfire Hazard Assessment Report was commissioned to identify potential Bushfire risk and associated Bushfire Attack Level (BAL) for the proposed development

LIMITATIONS:
1) The report is based on conditions present at the time of inspection and potential Bushfire risks identified at the time
2) The impact of vegetation growth or changes in vegetation have not been considered
3) The impact of future developments on or adjoining the site have not been considered
4) Compliance with the requirements of this report and AS3959-2018 does not guarantee that the building will survive a bushfire attack on every occasion due to the unpredictable nature and behaviour of fire

I certify the matters described in this certificate.

Qualified person: [Signature]

Signed: [Signature]            Certificate No: 1269         Date: 17 May 2020