

BUSHFIRE HAZARD REPORT  
CONSTRUCTION OF A NEW CLASS 1A BUILDING  
183 KREGORS ROAD, GORDON  
FOR  
G.D. PEDERICK & M.A. PEDERICK



Prepared by L BRIGHTMAN

Certified by N M CREESE

16<sup>th</sup> November 2021

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ATTACHMENT 1 - SUMMARY OF CONSTRUCTION REQUIREMENTS FOR BAL

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Disclaimer:

AS 3959:2018 cannot guarantee that a habitable building will survive a bushfire attack, however the implementation of the measures contained within AS 3959:2018, this report and accompanying plan will improve the likelihood of survival of the structure. This report and accompanying plan are based on the conditions prevailing at the time of assessment. No responsibility can be accepted to actions by the landowner, governmental or other agencies or other persons that compromise the effectiveness of this plan. The contents of this plan are based on the requirements of the legislation prevailing at the time of report.

## 1. SUMMARY:

This Bushfire Hazard Report has been prepared to support the design, application for a building permit, and construction of a new Class 1a building at 183 Kregors Road, Gordon. The site is subject to a bushfire prone area overlay under the relevant planning scheme and has been deemed to have the potential to be bushfire prone due to its proximity to the areas of bushfire prone vegetation surrounding the site.

This report identifies the protective features and controls that must be incorporated into the design and construction works to ensure compliance with the standards. Fire management solutions are defined in *AS 3959:2018 Construction of Buildings in Bushfire-Prone Areas, Building Amendments (Bushfire-Prone Areas) Regulations 2014 (18<sup>th</sup> June 2014)*, *National Construction Code 2019 Building Code Australia (Volume 2, Amendment 1) (NCC)*, *Director's Determination, Requirements for Building in Bushfire-Prone Areas (transitional) (Version 2.2 6<sup>th</sup> February 2020) (Determination)*.

The proposed Class 1a building has been assessed as **BAL-29** under *Section 7* of *AS 3959:2018* and provided the appropriate construction standards are incorporated into the design, the new building works are capable of compliance with the provisions of *AS 3959:2018*. See Attachment 1 for construction summary.

Compliance with the following provisions of the *Directors Determination - Requirements for Building in Bushfire-Prone Areas* will be required:

- *Part 4.1 Construction Requirements*
- *Part 4.2 Property Access*
- *Part 4.3 Water Supply for Firefighting*
- *Part 4.4 Hazard Management Areas*

The effectiveness of the measures and recommendations detailed in this report and *AS 3959:2018* is dependent on their implementation and maintenance for the life of the development or until the site characteristics that this assessment has been measured from alter from those identified. No Liability can be accepted for actions by lot owner, Council or Government agencies which compromise the effectiveness of this report.

This report has been prepared by Liam Brightman and certified by Nick Creese, principal of Lark & Creese Surveyors. Liam is accredited by the Tasmania Fire Service to prepare Bushfire Hazard Management Plans. Nick is a registered surveyor in Tasmania and is accredited by the Tasmanian Fire Service to prepare Bushfire Hazard Management Plans.

Site survey carried out on the 11<sup>th</sup> October 2022.

**2. LOCATION:**

Property address: 183 Kregors Road, Gordon  
 Title owner: G.D. Pederick & M.A. Pederick  
 Title reference: C.T. 102769/4  
 PID N°: 7883969  
 Title area: 4.475 ha  
 Municipal area: Kingborough  
 Zoning: Rural Resource

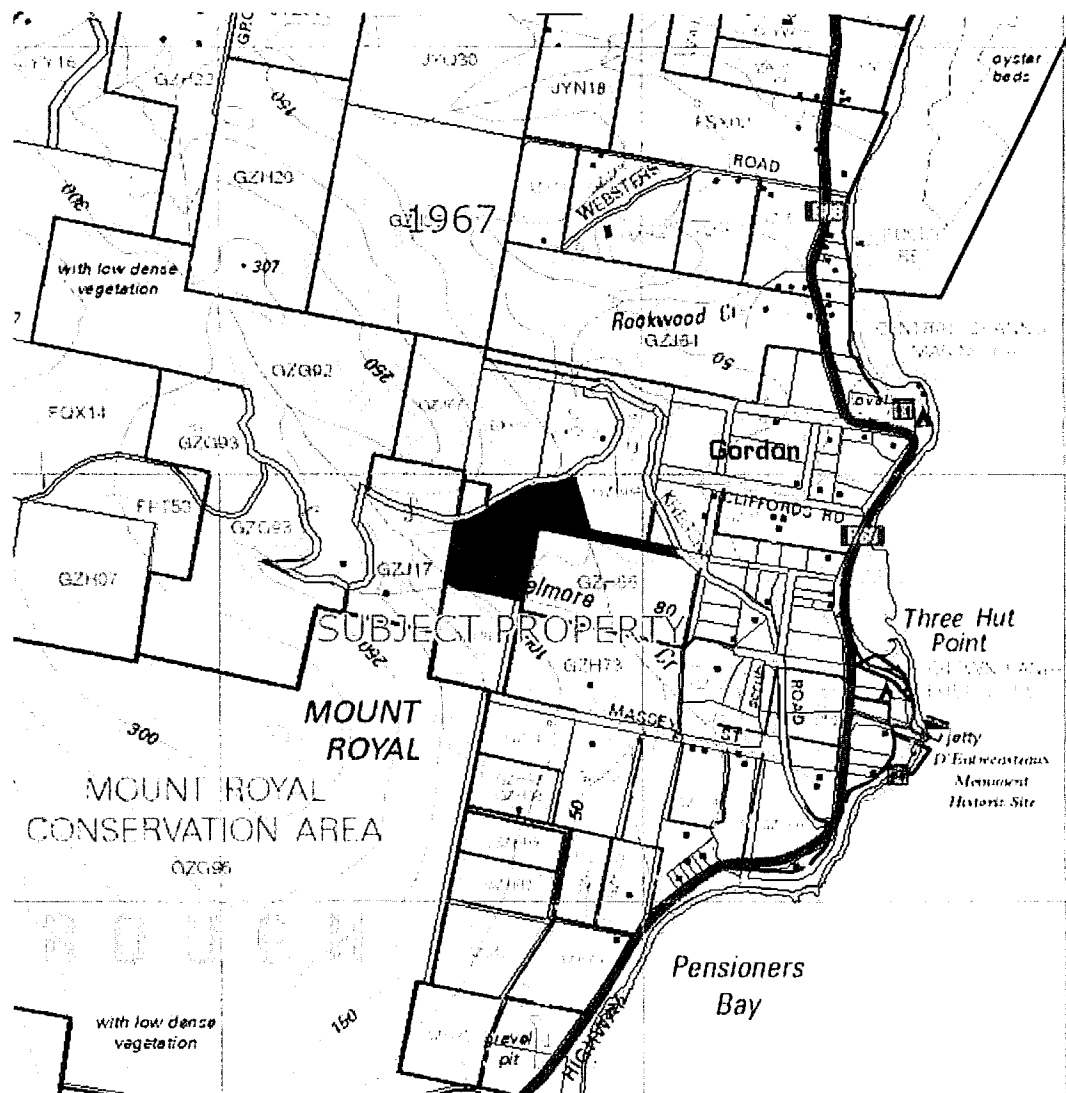


Image 1: Site location (Source *The LIST*)

### 3. SITE DESCRIPTION:

The site is located within an existing rural area on Kregors Road, approximately 1.6 km northwest of the intersection of Channel Highway and Kregors Road, Gordon. The site is located at an elevation of approximately 140 metres with grades falling to the southeast in the order of 20°.

At the time of assessment, the property contained a shed, water tank, a gravel access, and was vegetated mostly by native trees and shrubs with an area of grasses and bracken ferns surrounding the proposed building site.

Adjacent to the northern boundary was Kregors Road which consisted of nature strips vegetated by grasses and a gravel carriageway. Beyond Kregors Road were two rural allotments. One of which was vacant, vegetated predominately by native trees and shrubs with an area of pasture. The second allotment included a dwelling, sheds, garden, access, hardstand area, and was vegetated mostly by grasses with an area of native trees and shrubs along the northern boundary.

To the east of the site were two allotments that appeared to have been developed for residential purposes. These allotments included dwellings, sheds, gardens, accesses, hardstand areas, pastures, and were vegetated mostly by native trees and shrubs.

South and west of the site were rural allotments that appeared to be undeveloped and were vegetated by native trees and shrubs.

Reticulated water supply is unavailable to the site with domestic water supply requirements reliant on on-site static water storage.

Planning controls are administered by the Kingborough Council under the *Kingborough Interim Planning Scheme 2015*. The site is zoned Rural Resource.



Image 2: Looking north towards development site



Image 3: Looking south towards development site

**4. PROPOSED DEVELOPMENT:**

The construction of a new Class 1a building is proposed for the site. Construction materials and boundary offsets are to be determined following this report.

**LAYOUT**

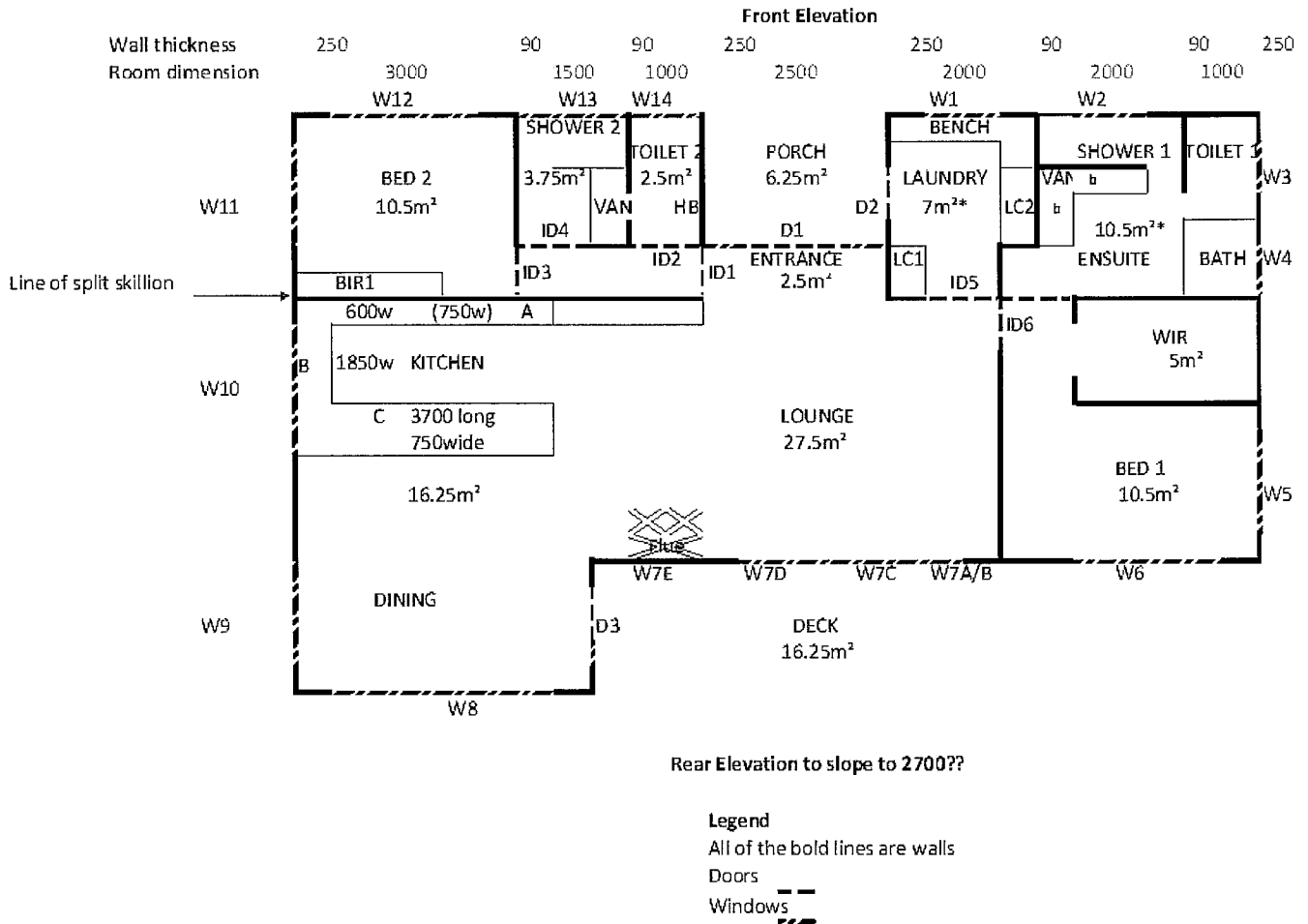


Image 4: Site plan

**5. BUSHFIRE ATTACK LEVEL:**

Fire Danger Index (FDI): The Fire Risk Rating for Tasmania is adopted as 50.  
Vegetation Classification:

Vegetation Assessment:

Following assessment of the characteristics of the site, the vegetation types, separation distances from development site and slope under the vegetation have been identified as shown in Table 1 below:

Direction:	Description:	Distance:	Slope:
Northeast:	Site: <ul style="list-style-type: none"> <li>grasses, gravel access</li> <li>native trees &amp; shrubs</li> </ul> Kregors Road: <ul style="list-style-type: none"> <li>grass and bracken ferns vegetated nature strips, gravel carriageway</li> </ul> Neighbouring allotment: <ul style="list-style-type: none"> <li>grasses</li> </ul>	0-19 19-27  27-45  45-100	Level
East:	Site: <ul style="list-style-type: none"> <li>grasses</li> <li>native trees &amp; shrub</li> </ul> Neighbouring allotment: <ul style="list-style-type: none"> <li>native trees &amp; shrubs</li> <li>grasses</li> </ul>	0-18 18-50  50-80 80-100	10° down  Level
Southeast:	Site: <ul style="list-style-type: none"> <li>grasses</li> <li>native trees &amp; shrubs</li> </ul>	0-55 55-100	15° down
Southwest:	Site: <ul style="list-style-type: none"> <li>grasses</li> <li>native trees &amp; shrubs</li> </ul>	0-28 28-100	10° down
West:	Site: <ul style="list-style-type: none"> <li>grasses</li> <li>bracken ferns</li> <li>native trees &amp; shrubs</li> </ul> Kregors Road: <ul style="list-style-type: none"> <li>grass and bracken ferns vegetated nature strips, gravel carriageway</li> </ul> Neighbouring allotment: <ul style="list-style-type: none"> <li>grasses</li> </ul>	0-16 16-30 30-60  60-95  95-100	11° up



Northwest:	Site:		
	• grasses	0-25	12° up
	Kregors Road:		
	• grass and bracken ferns vegetated nature strips, gravel carriageway	25-37	Level
	Neighbouring allotment:		
	• grasses	37-100	12° up

Table 1: Site Assessment

NOTE: The vegetation identified in Table 1 has been assessed in consideration of *Table 2.3 and figures 2.4(A)-(H) AS 3959:2018* as follows.

At the time of assessment, the site consisted of a shed with a water tank attached, a gravel access, power lines, and was vegetated by an area of grasses with scattered individual eucalypts surrounding the proposed development site, an area of bracken ferns to the west of the site, and an extensive area of eucalypts. The grasses appeared to be short due to grazing by animals and possibly environmental conditions. It has been deemed appropriate to presume that the grasses may exceed 100 mm in height in the future and has been classified as **G: Grassland** in accordance with *Figure 2.4(H) as Sown Pasture G-26*. The area of bracken ferns has been classified as **C: Shrubland** in accordance with *Figure 2.4(D) as Low Shrubland C-12*. The eucalypts included trees 10-15 metres in height with an understory of smaller trees, shrubs, and bracken ferns leading to an assessed foliage coverage of >30% and has been classified as **A: Forest** in accordance with *Figure 2.4(B) as Open Forest A-03*.

Adjacent to the northern boundary is Kregors Road which consisted of nature strips vegetated by grasses and bracken ferns and a gravel carriageway. The vegetation within the nature strips has been classified as **C: Shrubland** in accordance with *Figure 2.4(D) as Low Shrubland C-12*. The gravel carriageway has been classified as **Non-vegetated Area (NVA)** in accordance with *Part 2.2.3.2 (e), AS 3959:2018*. Beyond Kregors Road were two rural allotments that appeared to be utilized for farming purposes. The area of these properties that was within the assessment area consisted of grasses with scattered reeds, and regrowing gorse bushes. The grasses appeared to be short due to grazing by animals and possibly environmental conditions. It has been deemed appropriate to presume that the grasses may exceed 100 mm in height in the future and has been classified as **G: Grassland** in accordance with *Figure 2.4(H) as Sown Pasture G-26*.

The neighbouring allotment, to the east, included a dwelling, sheds, access, hardstand area, garden, grassed area, and an area of eucalypts. The grasses appeared to be short due to periodic slashing, grazing by animals, and possibly environmental conditions, as a result it has been presumed that the grasses may exceed 100 mm in height in the future and has been classified as **G: Grassland** in accordance with *Figure 2.4(H) as Sown Pasture G-26*. The eucalypts included trees 10-15 metres in height

with an understory of smaller trees, shrubs, and bracken ferns leading to an assessed foliage coverage of >30% and has been classified as **A: Forest** in accordance with *Figure 2.4(B)* as *Open Forest A-03*. The developed portion of this allotment is outside of the assessable area and has not been considered by this report.

The area of the allotment to the south that was within the assessable area was vegetated by eucalypts, 10-15 metres in height, with an understory of smaller trees, shrubs, and bracken ferns, leading to an assessed foliage coverage of >30% which has been classified as **A: Forest** in accordance with *Figure 2.4(B)* as *Open Forest A-03*.

Vegetation Classification:

In consideration of vegetation classifications under *Table 2.3* and *Figure 2.4*, *AS 3959:2018* and as detailed above, the predominant vegetation, separation distances from development site and slope under the classified vegetation is assessed as shown in *Table 2* below:

Direction:	Vegetation Type:	Distance (m):	Effective slope:	Exclusions:
Northeast:	G: Grassland	0-19	Level	No
	A: Forest	19-27		No
	C: Shrubland	27-30		No
	NVA	30-37		2.2.3.2 (e)
	C: Shrubland	37-100		No
East:	G: Grassland	0-18	10° down	No
	A: Forest	18-100		No
Southeast:	G: Grassland	0-55	15° down	No
	A: Forest	55-100		No
Southwest:	G: Grassland	0-28	10° down	No
	A: Forest	28-100		No
West:	G: Grassland	0-16	11° up	No
	C: Shrubland	16-30		No
	A: Forest	30-60		No
	C: Shrubland	60-74		No
	NVA	74-83		2.2.3.2 (e)
	C: Shrubland	83-100		No
Northwest:	G: Grassland	0-25	12° up	No
	C: Shrubland	25-30	Level	No
	NVA	30-36		2.2.3.2 (e)
	C: Shrubland	36-38	12° up	No
	G: Grassland	38-100		No

Table 2: Assessed vegetation

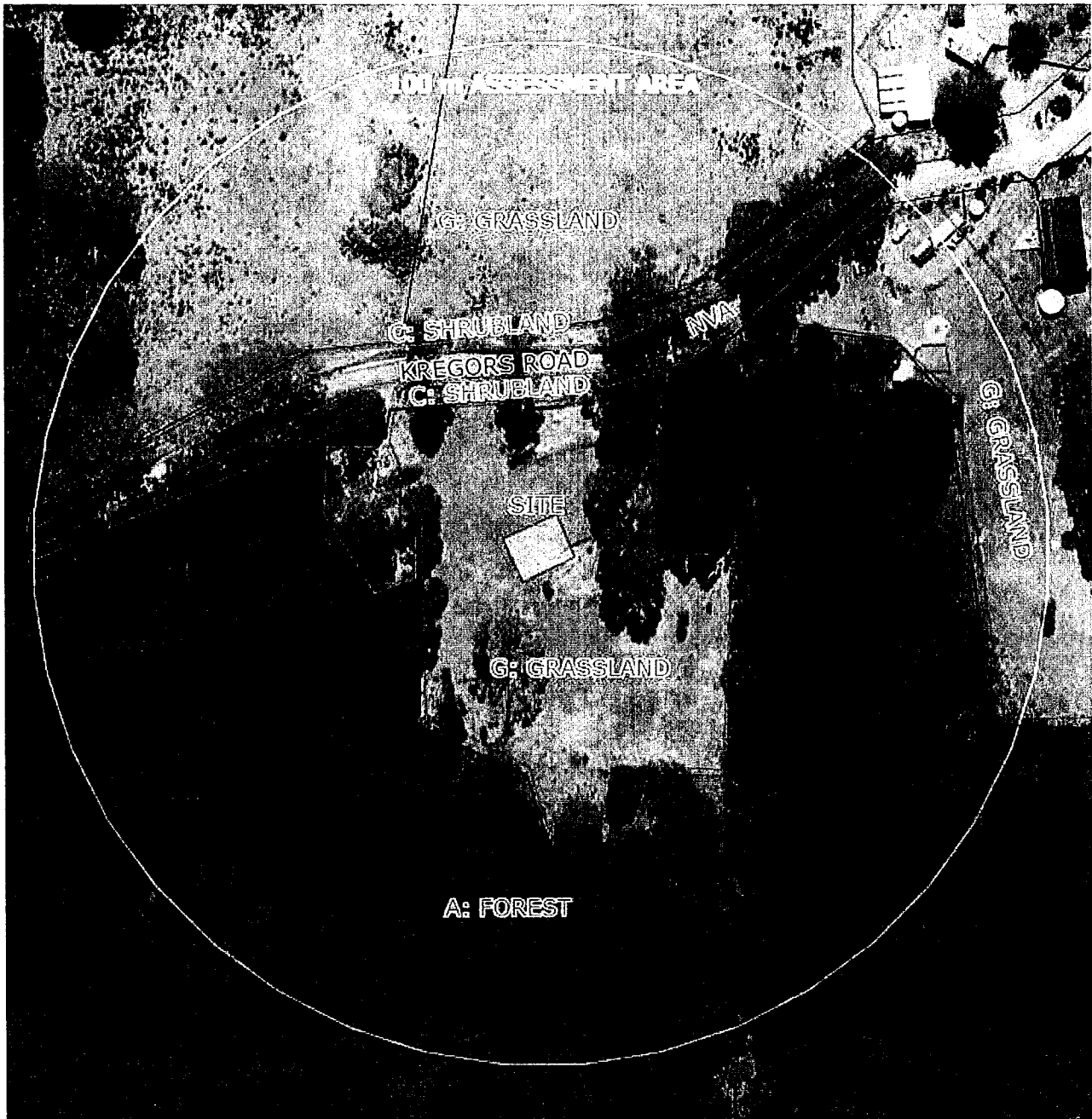


Image 5: Aerial image of assessed vegetation (Source *The LIST*)



Image 6: Predominate vegetation to the **northeast** of site – **A: Forest**



Image 7: Predominate vegetation to the **east & southeast** of site – **A: Forest**  
(Vegetation classified as G: Grassland to left of image)



Image 8: Predominate vegetation to the southwest of site – A: Forest



Image 9: Predominate vegetation to the west of site – A: Forest

**Bushfire Attack Level Assessment:**

Based on the predominate vegetation detailed above, and the separation distances provided between the predominate vegetation and the development site, the BAL for each direction of the proposed dwelling has been determined from *Table 2.6, AS 3959:2018* as follows:

Direction	Northeast	Southeast	Southwest	Northwest
BAL	FZ	FZ	FZ	FZ

With the establishment of an appropriate Hazard Management Area, the increased risk associated with the exposure of the structure to the bushfire threat can be reduced. The resulting bushfire attack level for each elevation can then be assessed as:

Direction	Northeast	Southeast	Southwest	Northwest
BAL	29	29	29	29

DIRECTION	Northeast	East	Southeast	Southwest	West	Northwest
BAL	29	29	29	29	29	29
Vegetation	G: A: C: NVA C:	G: A:	G: A:	G: A:	G: C: A: C: NVA C:	G: C: NVA C:
Effective slope	Level	10° down	15° down	10° down	11° up	12° up
HMA specified <i>Table 2.6</i>	16-<23 m	30-<41 m	37-<51 m	30-<41 m	16-<23 m	9-<13 m
HMA required	16 m	30 m	37 m	30 m	16 m	*16 m
HMA available	More than 16 m to predominate vegetation.	More than 30 m.	More than 37 m to predominate vegetation.	More than 30 m.	More than 16 m to predominate vegetation.	16 m to boundary.

Table 3: Details the hazard management areas (HMA) required to comply with that BAL, and the area available for compliance.

**NOTE:** \*Due to the exposure of the north-western elevation of the proposed dwelling to the vegetation classified as A: Forest to the east and west of the site, the distance of the HMA required for A: Forest on a level slope has been considered to be appropriate.

## 6. COMPLIANCE:

### Building Regulations 2014:

Compliance with *Part 1A – Bushfire-prone Areas* the *Building Regulations 2014* is achieved through the implementation of *Director's Determination - Requirements for Building in Bushfire-Prone Areas (transitional)* as follows:

### **Part 2 Application:**

*The Determination applies to a building located in a bushfire-prone area of the following Class:*

- (a) Class 1;*
- (b) Class 2;*
- (c) Class 3;*
- (d) Class 8;*
- (e) Class 9; and*
- (f) Class 10a that is closer than 6 metres to a habitable building.*

The proposed building is a Class 1a building and as such the requirements of *the Determination* apply.

**Part 3 Performance Requirements:**

- (1) A building to which this Determination applies must, to the degree necessary, be:
- a. Designed and constructed to reduce the ignition from bushfire, appropriate to the:
    - i. Potential for ignition caused by burning embers, radiant heat or flame generated by bushfire; and
    - ii. Intensity of the bushfire attack on the building;
  - b. Provided with vehicular access to the site to assist firefighting and emergency personnel to defend the building or evacuate occupants;
  - c. Provided with access at all times to a sufficient supply of water for firefighting purposes on the site; and
  - d. Provided with appropriate separation of the building from the bushfire hazard.
- (2) The performance requirement specified in Sub clause (1)(a) is applicable to the following:
- a. a Class 1, 2 or 3 building; or
  - b. a Class 10a building or deck associated with a Class 1, 2 or 3 building.

The proposed building is a Class 1a building and has been assessed under *Part 4 Deemed to Satisfy Requirements*.



**Part 4 Deemed to Satisfy Requirements:**

**Part 4.1. Construction Requirements**

- (1) Building work (including additions or alterations to an existing building) in a bushfire-prone area must be designed and constructed in accordance with an Acceptable Construction Manual determined by the BCA, being either: -
  - a. AS 3959:2018; or
  - b. NASH Standard – Steel Framed Construction in Bushfire Areas
 as appropriate for a BAL determined for the site.
- (2) Sub clause (1)(a) is applicable to the following:
  - a. a Class 1, 2 or 3 building; or
  - b. a Class 10a building or deck associated with a Class 1, 2 or 3 building.
- (3) Sub clause (1)(b) is applicable to the following:
  - a. a Class 1 building; or
  - b. a class 10a building or deck associated with a Class 1 building.
- (4) Despite subsection (1) above, variations from requirements specified in 1(a) and 1(b) are as specified in Table 4.1 below.
- (5) Despite subsections (1) and (4) above, performance requirements for buildings subject to BAL 40 or BAL Flame Zone (BAL-FZ) are not satisfied by compliance with subsections (1) or (4) above.

<b>Table 4.1 Construction Requirements and Construction Variations</b>		
<b>Element</b>		<b>Requirements</b>
<b>A.</b>	Straw Bale Construction	May be used in exposures up to and including BAL 19.
<b>B.</b>	Shielding provisions under Section 3.5 of AS 3959:2018	To reduce construction requirements, due to shielding, building plans must include suitable detailed elevations or plans that demonstrate that the requirements of Section 3.5 of the Standard can be met.  Comment: Application of Section 3.5 of the Standard cannot result in an assessment of BAL-LOW.
<b>C.</b>	Construction standard for vulnerable use	Building work for a building classified as a Vulnerable use must be constructed to a BAL that is determined in a BHMP certified by an accredited person.

APPLICATION:

- (1) The building has been assessed against the requirements of *AS 3959:2018*.
- (2) The proposal is for a new Class 1a building and is therefore subject to this subsection.
- (3) The proposed Class 1a building has not been assessed against the NASH Standards and as such this subsection is not applicable.
- (4) The proposed Class 1a building is not to be constructed with straw bales, does not the shielding provisions under *Part 3.5* or assessed as Vulnerable Use and as such this subsection is not applicable.
- (5) The proposed habitable building has not been assessed as BAL-40 or BAL-FZ and therefore this subsection is not applicable.

The proposed building is a Class 1a building and as such the requirements of Part 4.1 apply.

All building works shall comply with the specification for **BAL-29** of *Section 3* and *Section 7* of *AS 3959:2018*. This includes the general provisions contained within *AS3959:2018* and the following sub-sections:

- |     |  |
|-----|--|
| 7.1 | General provisions   |
| 7.2 | Sub-floor supports   |
| 7.3 | Floors   |
| 7.4 | Walls  |
| 7.5 | External glazed elements and assemblies and external doors                           |
| 7.6 | Roofs (including penetrations, eaves, fascias and gables, and gutters and downpipes) |
| 7.7 | Verandas, decks, steps and landings  |
| 7.8 | Water and gas supply pipes   |

**Part 4.2 Property Access:**

- (1) *A new building constructed in a bushfire-prone area must be provided with property access to the building and the firefighting water point, accessible by a carriageway, designed and constructed as specified in subsection (4) below.*
- (2) *For addition or alteration to an existing building in a bushfire-prone area referred to in regulation 11E(2)(b)(ii)(C) of the Building Regulations 2014, property access must be provided to the building area and the firefighting water point accessible by a carriageway designed and constructed as specified in subsection (4) below.*
- (3) *For an addition or alteration to an existing building in a bushfire-prone area which is 20 metres squared gross floor area or less which does result in the building being closer to bushfire-prone vegetation and there is no property access available, property access must be provided to the building area and the firefighting water point accessible by a carriageway designed and constructed as specified in subsection (4) below.*
- (4) *Vehicular access from a public road to a building must:*
  - a. *Meet the property access requirements described in Table 4.2;*
  - b. *Include access from a public road to within 90 metres of the furthest part of the building measured as a hose lay; and*
  - c. *Include access to the hardstand area for the firefighting water point.*

**APPLICATION:**

- (1) An access is required to be constructed to provide access to the building site and the firefighting water point.
- (2) This bushfire hazard report refers to the construction of a new Class 1a building and as such this subsection is not applicable.
- (3) This bushfire hazard report refers to the construction of a new Class 1a building and as such this subsection is not applicable.
- (4) The constructed access is to be located to provide access to the site, turning area and the firefighting water point within 90 m of the furthest point of the building to be protected in compliance with *Table 4.2*.

The proposed access to the site has been assessed as being 30 metres in length and is required for access to a firefighting water point and as such the requirements of *Element B, Table 4.2, Director's Determination - Requirements for Building in Bushfire-Prone Areas (transitional)* below apply.

<b>Table 4.2 Standards for Property Access</b>	
<p><b>B</b> Property access length is 30 metres or greater; or access for fire appliance to a water connection point.</p>	<p>The following design and construction requirements apply to property access:</p> <ul style="list-style-type: none"> <li>(a) All-weather construction;</li> <li>(b) Load capacity of at least 20 tonnes, including for bridges and culverts;</li> <li>(c) Minimum carriageway width of 4 metres;</li> <li>(d) Minimum vertical clearance of 4 metres;</li> <li>(e) Minimum horizontal clearance of 0.5 metres from the edge of the carriageway;</li> <li>(f) Cross falls of less than 3° (1:20 or 5%);</li> <li>(g) Dips less than 7° (1:8 or 12.5%)</li> <li>(h) Curves with a minimum inner radius of 10 metres;</li> <li>(i) Maximum gradient of 15° (1:3.5 or 28%), for sealed roads, and 10° (1:5.5 or 18%) for unsealed roads; and</li> <li>(j) Terminating with a turning area for fire appliances provided by one of the following:               <ul style="list-style-type: none"> <li>(i) A turning circle with a minimum inner radius of 10 metres;</li> <li>(ii) A property access encircling the building; or</li> <li>(iii) A hammerhead "T" or "Y" turning head 4 metres wide and 8 metres long.</li> </ul> </li> </ul>

**Part 4.3 Water Supply for firefighting:**

- (1) A new building constructed in a bushfire-prone area must be provided with a water supply dedicated for firefighting purposes as specified in subsections (4) and (5) below.
- (2) For an addition or alteration to an existing building in a bushfire-prone area referred to in regulation 11E(2)(b)(ii)(B) of the Building Regulations 2014, a water supply for firefighting must be provided as specified in subsections (4) and (5) below.
- (3) For an addition or alteration to an existing building in a bushfire-prone area which is 20 metres squared gross floor area or less which does result in the building being closer to bushfire-prone vegetation and there is no water supply for firefighting available, a water supply for firefighting must be provided as specified in subsection (4) and (5) below.
- (4) Water supplies for firefighting must meet the requirements described in Tables 4.3A or 4.3B.
- (5) The water supply must be:
  - a. Provided from a fire hydrant or static water supply;
  - b. Located within the specified distance from the building to be protected; and
  - c. Provided with a hardstand and suitable connections

**APPLICATION:**

- (1) A minimum 10,000 litre static water supply for firefighting purposes is to be provided.
- (2) This bushfire hazard assessment refers to the construction of a new Class 1a building as such this subsection is not applicable.
- (3) This bushfire hazard assessment refers to the construction of a new Class 1a building as such this subsection is not applicable.
- (4) A minimum of 10,000 litre static water supply, with associated fitting and hardstand area are to be installed to comply with *Table 4.3B*.
- (5) The provision of a minimum static water supply of 10,000 litres will be required to comply with this subsection and *Table 4.3B*.

As there is no reticulated water supply available to the site a static water supply of minimum capacity 10,000 litres is to be installed on the site and is to be always accessible by fire service vehicles in compliance with *Table 4.3B, Director's Determination - Requirements for Building in Bushfire-Prone Areas (transitional)* below.

**Table 4.3B Static Water Supply for Fire fighting**

A	Distance between building area to be protected and water supply	<p>The following requirements apply:</p> <ul style="list-style-type: none"> <li>(a) The building area to be protected must be located within 90 metres of the firefighting water point of a static water supply; and</li> <li>(b) The distance must be measured as a hose lay, between the firefighting water point and the furthest part of the building area.</li> </ul>
B	Static Water Supplies	<p>A static water supply:</p> <ul style="list-style-type: none"> <li>(a) May have a remotely located offtake connected to the static water supply;</li> <li>(b) May be a supply for combined use (firefighting and other uses) but the specified minimum quantity of firefighting water must be available at all times;</li> <li>(c) Must be a minimum of 10,000 litres per building area to be protected. This volume of water must not be used for any other purpose including firefighting sprinkler or spay systems;</li> <li>(d) Must be metal, concrete or lagged by non-combustible materials if above ground; and</li> <li>(e) If a tank can be located so it is shielded in all directions in compliance with Section 3.5 of AS 3959:2018, the tank may be constructed of any material provided that the lowest 400 mm of the tank exterior is protected by: <ul style="list-style-type: none"> <li>(i) Metal;</li> <li>(ii) Non-combustible material; or</li> <li>(iii) Fibre-cement a minimum of 6 mm thickness.</li> </ul> </li> </ul>
C	Fittings, pipework and accessories (including stands and tank supports)	<p>Fittings and pipework associated with a water connection point for a static water supply must:</p> <ul style="list-style-type: none"> <li>(a) Have a minimum nominal diameter of 50 mm;</li> <li>(b) Be fitted with a valve with a minimum nominal internal diameter of 50 mm;</li> <li>(c) Be metal or lagged by non-combustible materials if above ground;</li> <li>(d) Where buried, have a minimum depth of 300 mm (compliant with AS/NZ 3500.1-2003 Clause 5.23);</li> <li>(e) Provided a DIN or NEN standard forged Storz 65 mm coupling fitted with a suction washer for connection to firefighting equipment;</li> <li>(f) Ensure the coupling is accessible and available for connection at all times;</li> <li>(g) Ensure the coupling is fitted with a blank cap and securing chain (minimum of 220 mm length);</li> <li>(h) Ensure underground tanks have either an opening at the top of not less than 250 mm diameter or a coupling compliant with this Table; and</li> </ul>

		<p>(i) Where remote offtake is installed, ensure the offtake is in a position that is:</p> <ul style="list-style-type: none"> <li>(i) Visible;</li> <li>(ii) Accessible to allow connection by firefighting equipment;</li> <li>(iii) At a working height of 450 -600 mm above ground level; and</li> <li>(iv) Protected from possible damage, including damage by vehicles.</li> </ul>
D	Signage for static water connections	<p>The firefighting water point for a static water supply must be identified by a sign permanently fixed to the exterior of the assembly in a visible location. The sign must:</p> <ul style="list-style-type: none"> <li>(a) Comply with water tank signage requirements within Australian Standard AS 2304-2001 Water storage tanks for fire protection systems; or</li> <li>(b) Comply with the Tasmania Fire Service Water Supply Signage Guidelines published by the Tasmania Fire Service.</li> </ul>
E	Hardstand	<p>A hardstand area for fire appliances must be provided:</p> <ul style="list-style-type: none"> <li>(a) No more than three metres from the firefighting water point, measured as a hose lay (including the minimum water level in dams, swimming pools and the like);</li> <li>(b) No closer than six metres from the building area to be protected;</li> <li>(c) With a minimum width of three metres constructed to the same standard as the carriageway; and</li> <li>(d) Connected to the property access by a carriageway equivalent to the standard of the property access.</li> </ul>

**Part 4.4 Hazard Management Areas:**

- (1) A new building constructed in a bushfire-prone area must be provided with a HMA of sufficient dimensions and which provides an area around the building which separated the building from the bushfire hazard and complies with subsection (4), (5) and (6) below.
- (2) For an addition or alteration to an existing building in a bushfire-prone referred to in regulation 11E(b)(ii)(A) of the Building Regulations 2014, the building must be provided with a HMA of sufficient dimensions and which provided an area around the building which separated the building from the bushfire hazard and complies with subsections (4), (5) and (6) below.
- (3) For an addition or alteration to an existing building in a bushfire-prone area which is 20 metres squared gross floor area or less which does result in the building being closer to bushfire-prone vegetation it must be provided with a HMA of sufficient dimensions and which provides an area around the building which separated the building from the bushfire hazard and complies with subsection (4), (5) and (6) below.
- (4) The HMA must comply with Table 4.4; and
- (5) The HMA for a particular BAL must have the minimum dimensions required for the separation distances specified for that BAL in Table 2.6 of AS 3959:2018; and
- (6) The HMA must be established such that fuels are reduced sufficiently, and other hazards are removed such that the fuels and other hazards do not significantly contribute to the bushfire attack.

**APPLICATION:**

- (1) The HMA prescribed for the proposed Class 1a building has been assessed against the provisions of Table 4.4, the Determination and Table 2.6, AS 3959:2018 and has been assessed to significantly reduce the threat of bushfire risk to the site.
- (2) This bushfire hazard assessment refers to the construction of a new Class 1a building as such this subsection is not applicable.
- (3) This bushfire hazard assessment refers to the construction of a new Class 1a building as such this subsection is not applicable.
- (4) The HMA for the proposed Class 1a building has been designed to satisfy the requirements of Table 4.4.
- (5) The distances for the HMA, for the proposed Class 1a building, have been calculated using the distances specified within Table 2.6.
- (6) The HMA has been calculated to reduce the potential risk of bushfire from the proposed Class 1a building.



This assessment and accompanying Bushfire Hazard Management Plan details the extent of the Hazard Management Area (HMA) which are of sufficient dimensions to accord with *Element B, Table 4.4, Director's Determination - Requirements for Building in Bushfire-Prone Areas (transitional)* below. The dimensions of the HMA are to be in accordance with *Table 2.6, AS 3959:2018* and is to be maintained in a reduced fuel condition into perpetuity.

**Table 4.4 Requirements for Hazard Management Areas**

<b>B</b>	<i>Hazard management areas for new buildings on lots not provided with a BAL at the time of subdivision</i>	<i>A new building must:  (a) Be located on the lot so as to be provided with a HMA no smaller than the separation distances required for BAL 29; and  (b) Have an HMA established in accordance with a certified bushfire hazard management plan.</i>
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The hazard management area assessed for this site is to comply with the separation distances as determined for **BAL-29** in *Table 2.6, AS3959:2018*, and is to be always established and maintained in a reduced fuel condition to the minimum distance as specified in Table 4 below:

Maintenance Requirements of the Hazard Management Area						
Direction	Northeast	East	Southeast	Southwest	West	Northwest
HMA required	16 m	30 m	37 m	30 m	16 m	16 m
HMA establishment recommendations	<ul style="list-style-type: none"> <li>Establishing non-flammable areas around the dwelling such as paths, patios, driveway, lawns etc.</li> <li>Locating dams, orchards, vegetable garden, effluent disposal areas etc on the bushfire prone side of the building.</li> <li>Providing heat shields and ember trap on the bushfire prone side of the dwelling such as non-flammable fencing, hedges, separated garden shrubs and small trees,</li> <li>Store flammable materials such as wood piles, fuels and rubbish heaps are stored away from the dwelling.</li> <li>Replace highly flammable vegetation with low flammability species. See Tasmanian Fire Service web site (<a href="http://www.fire.tas.gov.au">www.fire.tas.gov.au</a>) publications - Fire resisting garden plants.</li> <li>Provided separation between significant trees such that groups are no greater than 20 metres in width, and more than 20 metres of the other groups of significant trees. Note that the retention of some trees can screen a dwelling from windborne embers.</li> <li>Trim lower branches of retained trees to a minimum of 2 metres above ground level.</li> <li>Strips of vegetation less than 20 metres in width and not within 20 metres of the site or other areas of bushfire-prone vegetation may be beneficial as an ember trap, wind breaks etc.</li> <li>Removal of ground fuels such as leaves, bark, fallen branches etc.</li> </ul>					
Ongoing Management practices	<ul style="list-style-type: none"> <li>Slash or mow grasses to less than 100 mm.</li> <li>Remove dead and fallen vegetation including branches, bark, and leaves regularly.</li> <li>Trim any regrowth branches of retained trees within HMA that are less than 2m above ground level.</li> </ul>					

Table 4: Maintenance requirements for Hazard Management Areas.

## 7. CONCLUSIONS & RECOMMENDATIONS:

This Bushfire Hazard Report and Bushfire Hazard Management Plan have been prepared to support the design, application for a building permit, and construction of a new Class 1a building. The report has reviewed the bushfire risks associated with the site and determined the fire management strategies that must be carried out to ensure the development on the site is at a reduced risk from bushfire attack. Provided the elements detailed in this report are implemented, the development on the site is capable of compliance with AS 3959:2018 and any potential bushfire risk to the site is reduced.

The new building works must comply with the requirements for **BAL-29** of AS 3959:2018 as specified in Table 3 and Part 6 of this report. The Council approval issued for the building works should contain conditions requiring that the protective elements defined in this report and AS 3959:2018 are implemented during the construction phase and maintained by the lot owner for the life of the structure.

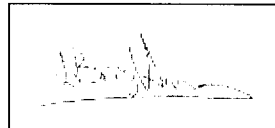
- Property access is to comply with *Part 4.2, the Determination*. The proposed driveway must comply with *Elements B, Table 4.2, the Determination*.
- The water supply for firefighting purposes is to comply with *Part 4.3, the Determination*. A static water supply must be provided in compliance with *Table 4.3B, the Determination*.
- The Hazard Management Area is to comply with *Part 4.4, the Determination* and must comply with *Element B, Table 4.4, the Determination*.

See section 6 of this report for further details.

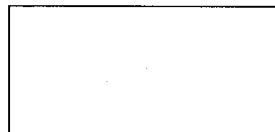
Although not mandatory, any increase in the construction standards above the assessed Bushfire Attack Level will afford improved protection from bushfire and this should be considered by the owner, designer and/or the builder prior to construction commencing. Hazard Management Areas must be established and maintained in a minimal fuel condition in accordance with this plan and the TFS guidelines. It is the owner's responsibility to ensure the long-term maintenance of the Hazard Management Areas in accordance with the requirements of this report.

This Report does not recommend or endorse the removal of any vegetation within or adjoining the site for the purposes of bushfire protection without the explicit approval of the local authority.

L Brightman  
Bushfire Hazard Practitioner BFP-164  
Scope 1, 2, 3a and 3b



N M Creese  
Bushfire Hazard Practitioner BFP-118  
Scope 1, 2, 3a and 3b



**8. REFERENCES:**

- *AS 3959:2018 - Construction of Building in Bushfire-Prone Areas.*
- *Building Amendments (Bushfire-Prone Areas) Regulations 2014 (18<sup>th</sup> June 2014).*
- *National Construction Code 2016 Building Code of Australia (Volume 2).*
- *Director's Determination - Requirements for Building in Bushfire-Prone Areas (transitional) (Version 2.2, 6<sup>th</sup> February 2020).*
- *The LIST - Department of Primary Industry Parks Water & Environment.*

**9. GLOSSARY**

<b>AS 3959:2018</b>	Australian Standards AS 3959:2018 <i>Construction of buildings in bushfire-prone areas.</i>
<b>BAL (Bushfire Attack Level)</b>	A means of measuring the severity of a building's potential exposure to ember attack, radiant heat, and direct flame contact, using increments of radiant heat expressed in kilowatts per metre squared, and the basis for establishing the requirements for construction to improve protection of building elements from attack by bushfire. The following BAL levels, based on heat flux exposure threshold are used within AS3959:2018; BAL-LOW, BAL-12.5, BAL-19, BAL-29, BAL-40, BAL-FZ.
<b>Bushfire</b>	An unplanned fire burning vegetation.
<b>Bushfire Hazard Management Plan</b>	A plan showing means of protection from bushfire in a form approved in writing by the Chief Officer.
<b>Bushfire-Prone Area</b>	An area that is subject to, or likely to be subject to, bushfire attack. Land that has been designated under legislation; or Has been identified under environmental planning instrument, development control plan or while processing and determining a development application.
<b>Carriageway (also vehicular access)</b>	The section of the road formation, which is used by traffic, and includes all the area of the traffic lane pavement together with the formed shoulder.
<b>Class 1a, 1b, 2, 3, 4, 5, 6, 7, 8, 9a, 9b, 9c, 10a, 10b &amp; 10c buildings</b>	A system of classifying buildings of similar uses and functions to facilitate a referencing system within the National Construction Code.
<b>Classified vegetation</b>	Vegetation that has been classified in accordance with Clause 2.2.3 of AS3959:2018.
<b>Distance to</b>	The distance between the building or building area to the classified vegetation.
<b>FDI (Fire Danger Index)</b>	The chance of a fire starting, its rate of spread, its intensity, and the difficulty of its suppression, according to various combinations of air temperature, relative humidity, wind speed and both long- and short-term drought effects.
<b>Firefighting water point</b>	The point where a fire appliance can connect to a water supply for firefighting purposes. This includes a coupling in the case of a fire hydrant, offtake or outlet, or the minimum water level in the case of a static water body (including a dam, lake, or pool).
<b>Hazard Management Area</b>	The area between a habitable building or building area and bushfire-prone vegetation, which provides access to a fire front for fire fighting, which is maintained in a minimal fuel condition and in which there are no other hazards present which will significantly contribute to the spread of a bushfire.
<b>Hose lay</b>	The distance between two points established by a fire hose laid out on the ground, inclusive of obstructions.
<b>Predominate vegetation</b>	The vegetation that poses the greatest bushfire threat to the development site.
<b>Slope Effective slope</b>	The slope of the ground under the classified vegetation. The calculated slope under the classified vegetation considering variations in the topography.
<b>Water supply - Reticulated (Fire hydrant)</b>	An assembly installed on a branch from a water pipeline, which provides a valved outlet to permit a supply of water to be taken from the pipeline for fire fighting.
<b>Water supply - Static</b>	Water stored on a tank, swimming pool, dam, or lake, that is always available for firefighting purposes.

## **ATTACHMENT 1 SUMMARY OF CONSTRUCTION REQUIREMENTS FOR BAL-29, AS 3959:2018**

### GENERAL:

- Buildings assessed as being BAL-29 shall conform with Section 3 and Section 7 of AS 3959:2018.
- All external finishes shall ensure gaps no greater than 2mm are present.

### SUB-FLOOR SUPPORTS:

- No special construction standards if the subfloor space is enclosed with a wall that conforms with Clause 7.4 or a mesh compliant with Clause 3.6.
- Unenclosed sub-floor space, the support posts, columns, stumps, piers and poles shall be of a bushfire resisting material.

### FLOORS:

- No specific construction standards apply if sub-floor space is enclosed on compliance with Clause 7.4 or a mesh compliant with Clause 3.6.
- The bearers, joists, less than 400 mm above ground level, shall be of a non-combustible material and/or bushfire resisting timber. Flooring shall be non-combustible material and/or bushfire resisting timber and/or timber where the underside is lined with sarking type material or mineral wool insulation.

### WALLS:

- External walls shall be non-combustible material of minimum thickness of 90 mm and/or timber logs with nominal thickness of 90 mm and minimum thickness of 70 mm, and/or fibre cement minimum 6 mm thick; or steel sheet, and/or bushfire resisting timber. All vents and weepholes to be covered by a mesh compliant with Clause 3.6.

### WINDOWS:

- Shall be protected by bushfire shutters that conform with Clause 3.7 and Clause 7.5.1 or frame made of bushfire resisting materials. The glazing shall be of toughened glass a minimum of 5 mm thickness.
- Where glazing is less than 400 mm from a horizontal surface or above a surface of  $\leq 18^\circ$  from the horizontal and extending more than 110 mm in width from the window frame shall be screened externally with a screen compliant with Clause 3.6 and Clause 7.5.2.

### DOORS:

- Side hung external doors - Doors shall be protected by bushfire shutters, or screens, or be constructed of a bushfire resisting material. Suitable weather strips etc shall be installed. Any glazing elements shall be toughened glass 6 mm thick.
- Sliding doors - Shall be protected by bushfire shutters, or screens, or constructed of a bushfire resisting material. Glazing elements to be toughened glass of 6 mm thickness.

### VEHICLE ACCESS DOORS:

- The vehicle access doors shall be made from bushfire resisting materials and shall be protected with suitable weather strips etc.

### ROOFS:

- Roofing material and roof-covering accessories shall be non-combustible. Ridge capping and under corrugations to be sealed. Roof ventilation openings, eg gable and roof vents, shall be fitted with a mesh compliant with Clause 3.6.
- Tiled roofs - To be fully sarked located on top of roof framing, may be under battens.
- Sheet roofs - To be fully sarked located on top of roof framing, may be under battens; or all gaps sealed at the fascia, wall line, hips and ridges by a mesh or a non-combustible material.
- Gables shall conform with Clause 7.4. Fascias and bargeboards shall be bushfire resisting material and/or metal fixed at 450 mm centres. Eaves shall be a minimum 4.5 mm thick fibre cement and/or bushfire resisting timber.
- Veranda, carport and awning roofs - That are part of the main roof space shall meet all the requirements for the main roof. That are separated from the main roof space by an external wall compliant with Clause 7.4 shall have a non-combustible roof covering and the complete support structure shall be of a bushfire resisting material.

### ROOF PENETRATIONS:

- Any roof penetration shall be sealed. Openings in vented roof lights, roof ventilators or vent pipes shall be covered by a mesh compliant with Clause 3.6. All overhead glazing shall be Grade A safety glass conforming with AS 1288.

### VERANDAS, DECKS, STEPS, RAMPS AND LANDINGS:

- Any material used to enclose the a subfloor must comply with Clause 7.4. All opening to be covered by a mesh compliant with Clause 3.6.
- Decking, stair treads and trafficable surfaces, supports and framing material shall be constructed of non-combustible material. Balustrades, handrails or other barriers less than 125 mm from the building shall be of bushfire resisting materials. Veranda posts shall be made from bushfire resisting materials.

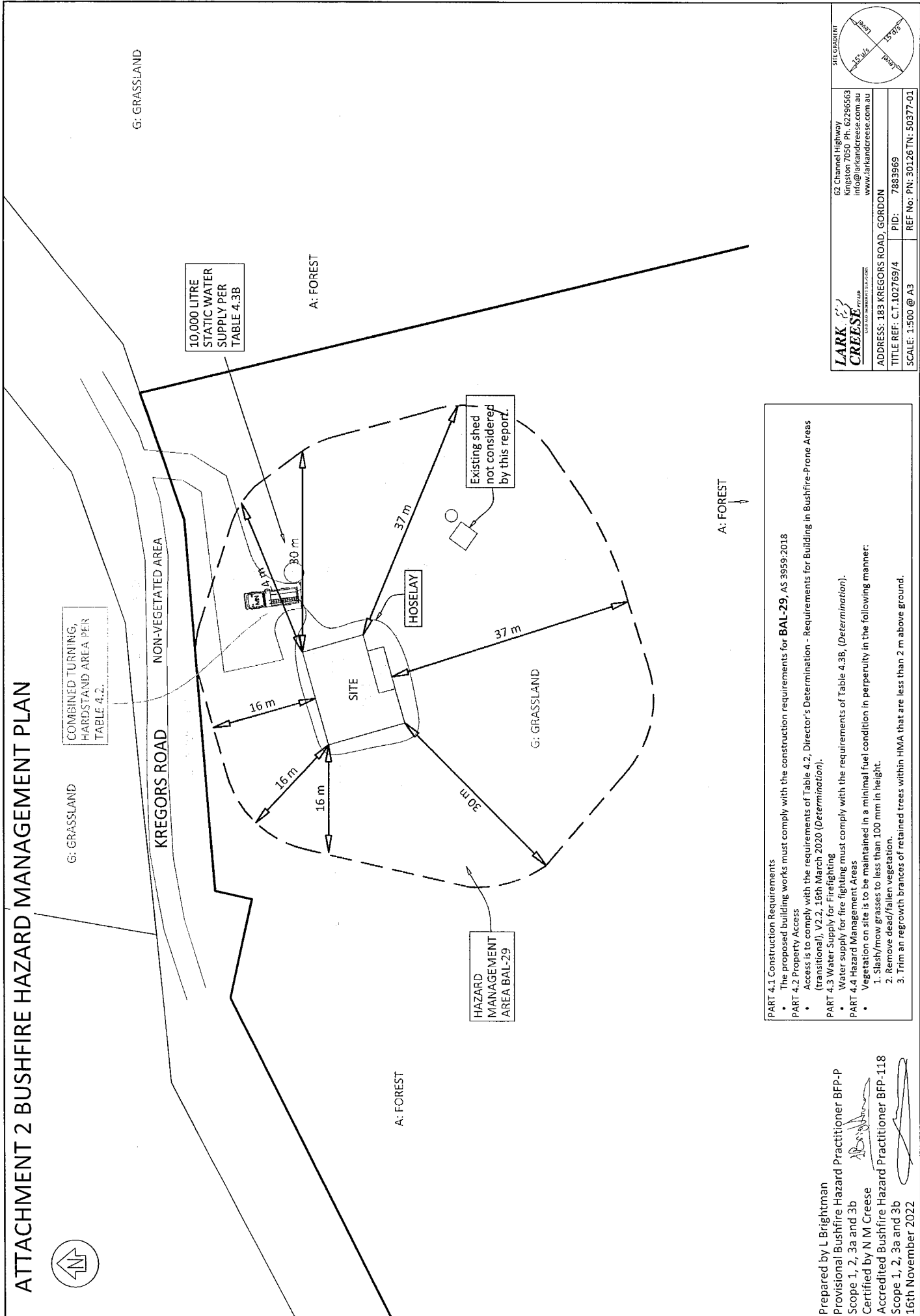
### WATER AND GAS SUPPLY PIPES:

- Any above ground pipes shall be metal. External gas pipes and fittings above ground shall be of steel or copper having a minimum wall thickness in accordance with gas regulations or 0.9 mm whichever is greater. Metal pipes shall extend 400 mm within the building and 100 mm below ground.

**NOTE:** Non-combustible means material such as cement sheeting, brick and blockwork, corrugated iron sheeting, or other non-flammable material as determined by AS 1530.1 or the National Construction Code.

**WARNING:** This summary is not a complete list of works required to comply with AS 3959:2018. Refer to the original document for full requirements.

# ATTACHMENT 2 BUSHFIRE HAZARD MANAGEMENT PLAN



A: FOREST

**PART 4.1 Construction Requirements**

- The proposed building works must comply with the construction requirements for **BAL-29**, AS 3959:2018

**PART 4.2 Property Access**

- Access is to comply with the requirements of Table 4.2, Director's Determination - Requirements for Building in Bushfire-Prone Areas (transitional), V2.2, 16th March 2020 (Determination).

**PART 4.3 Water Supply for Firefighting**

- Water supply for fire fighting must comply with the requirements of Table 4.3B, (Determination).

**PART 4.4 Hazard Management Areas**

- Vegetation on site is to be maintained in a minimal fuel condition in perpetuity in the following manner:
  - Slash/mow grasses to less than 100 mm in height.
  - Remove dead/fallen vegetation.
  - Trim an regrowth branches of retained trees within HMA that are less than 2 m above ground.

Prepared by L Brightman  
 Provisional Bushfire Hazard Practitioner: BFP-P  
 Scope 1, 2, 3a and 3b  
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 16th November 2022

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**SITE ORIENTATION**