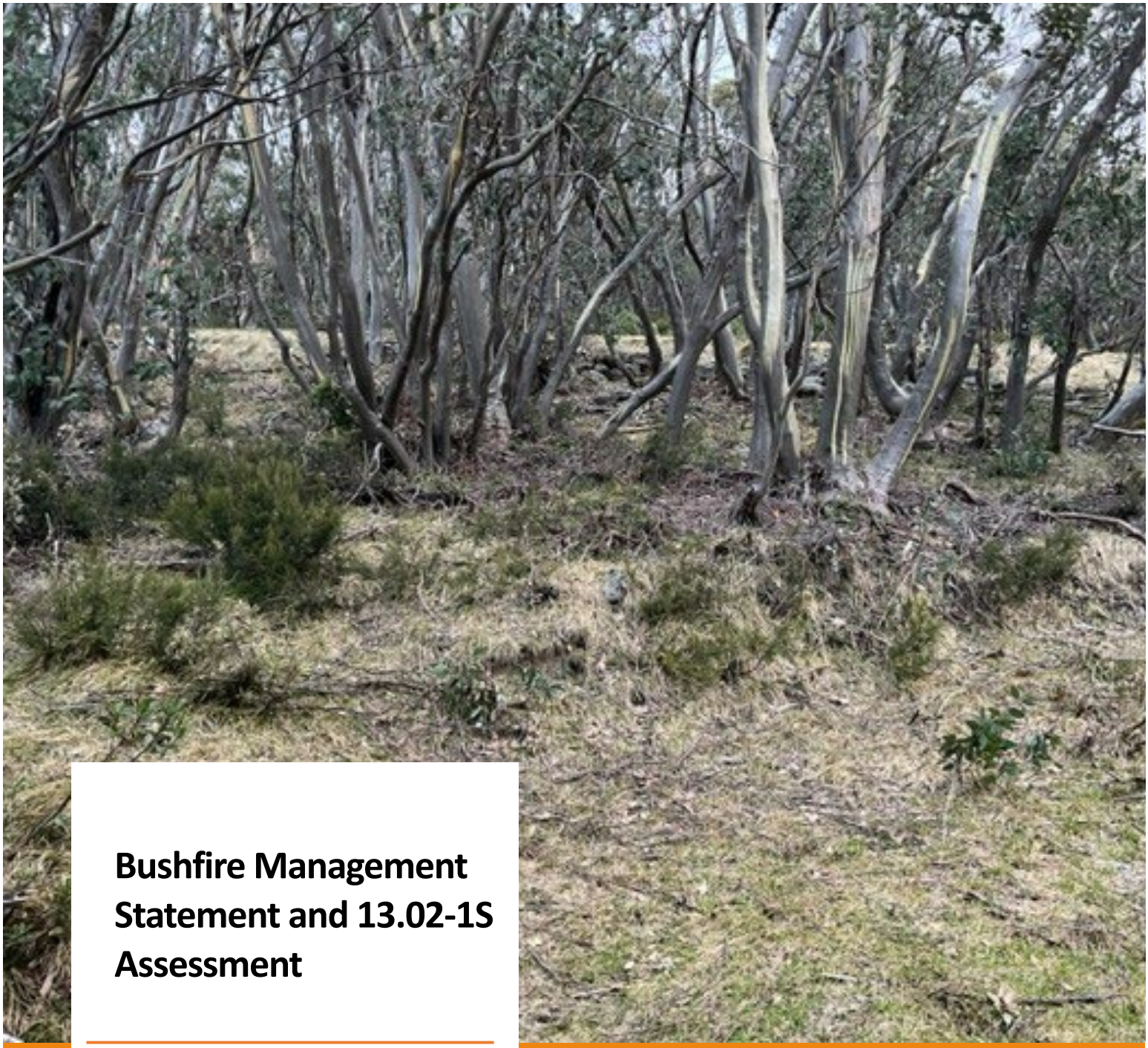

Bushfire Management Statement and 13.02-1S Assessment

14 Parallel Street
Falls Creek

September 2023

FIRE RISK Consultants

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Any fire safety work, including but not limited to planned burning, back burning and/or fire suppression, on any property or building is specifically excluded from this report.

*Where the term **"Bushfire prevention and mitigation related activities"** (or words to that effect) are used, this is to be defined as the clearance of vegetation in accordance with the Victorian State Government guidelines, including clearing and maintenance of existing fire breaks and/or fire access for fire fighters under electricity pylons and properties that have been constructed to Australian Standard AS3959 and/or the National Construction Code.*

Introduction

This report has been developed to meet the requirements of the Bushfire Management Overlay as outlined within the Victorian Planning Provisions. The site located at 14 Parallel Street, Falls Creek is within the Bushfire Management Overlay. This report outlines the required treatments to enable compliance with the Bushfire Management Overlay. The proposal is to construct additions to the existing building.

The report has been developed following extensive assessment of the landscape and local bushfire risk along with access, egress and topography.

The report addresses the following provisions of the Victorian Planning Scheme:

Clause 13.02-1S – Bushfire Planning

Clause 44.06-3 – Bushfire Hazard Site Assessment, Bushfire Hazard Landscape Assessment and Bushfire Management Statement.

To ensure sufficient information is provided to both CFA and Council to enable a detailed understanding of bushfire risk, a Pathway 2 report has been developed along with a Clause 13.02-1S assessment. This report only addresses those parts of the Victorian Planning Provisions that relate to Bushfire.

Application Details

Municipality:	Falls Creek Alpine Resort
Title Description:	59~A\PP2486
Overlays:	Bushfire Management Overlay (BMO), Design and Development Overlay (DDO), Erosion Management Overlay (EMO)
Zoning:	Comprehensive Development Zone (CDZ)

Site Description

Existing use and siting of buildings and works on and near the land:	The property is 694m² and is surrounded by other properties of a similar size. There is an existing building on the property which provides restaurant and accommodation options. The surrounding properties are of a similar nature and provide various accommodation options are associated with ski clubs.
Existing access arrangements:	Access to the property is via Parallel Street which is a sealed road with a court bowl providing turn around options at the end of the street. Access is available to the central area of Falls Creek either driving or walking.
Location of nearest fire hydrant:	Fire hydrants are provided in the local area and are maintained by Alpine Resorts Victoria.

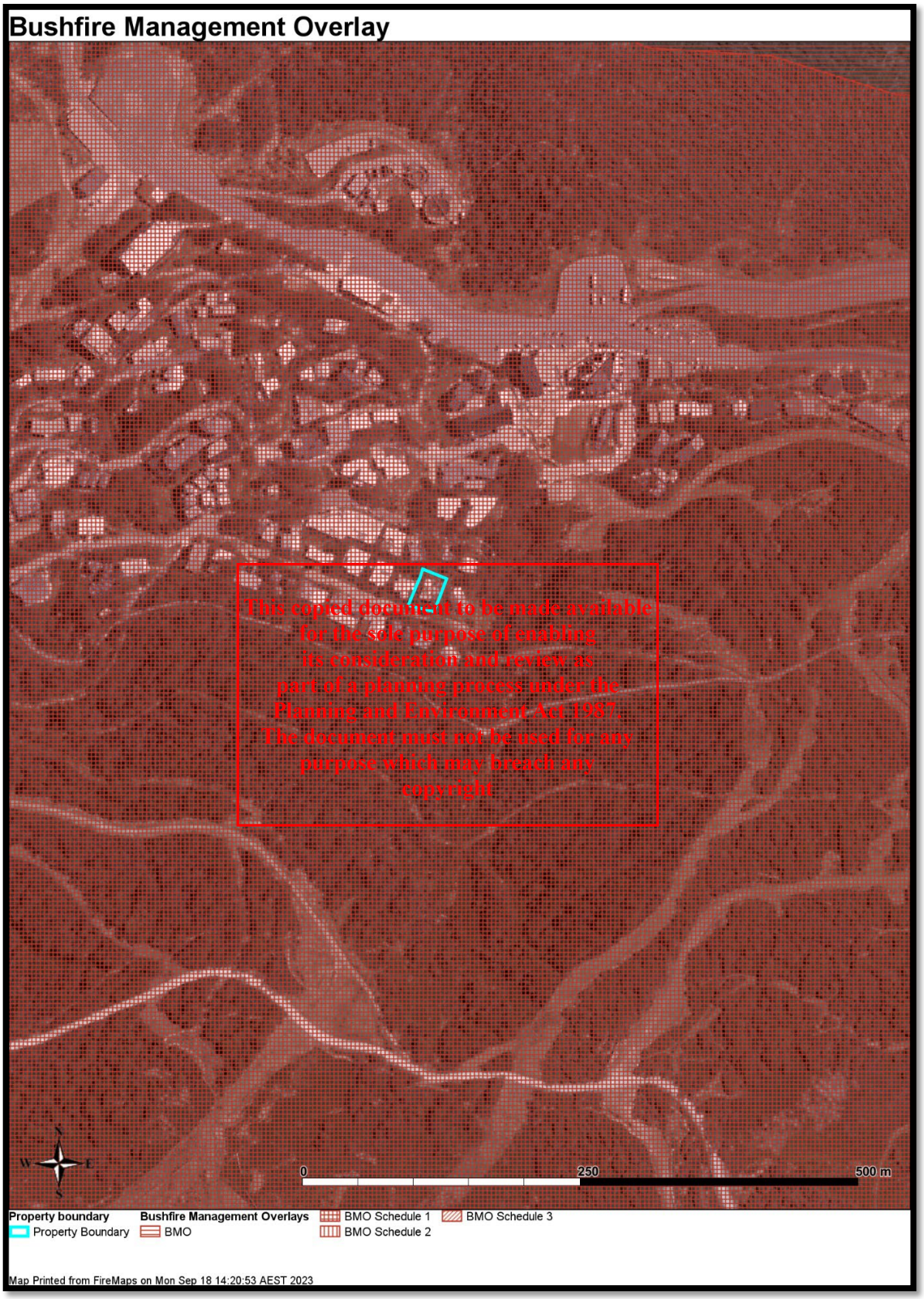


Figure 1 - Overview of the site with the BMO shaded

Access and egress

The site is accessible from Parallel Street with walking paths and roadways connecting to the surrounding areas. The surrounding road network provides multiple access and egress options from the property. Parallel Street is a dead end with a court bowl that provides turning abilities.

From the end of Parallel Street, access to Bogong High Plains Road is available from multiple paths. Bogong High Plains Road provides two options to leave the Falls Creek area. The most likely egress route will be towards Mt Bogong.

The egress options from Falls Creek are through extensive areas of forested vegetation. If a bushfire is burning in the surrounding area, it will likely be too dangerous to leave the Falls Creek area.

Topography

The topography on and surrounding the property consists of slopes and gullies associated with alpine areas. The Falls Creek area is located along a ridgeline with the landscape sloping down to gullies on all sides.

Due to the limited vegetation on and surrounding the property, it is unlikely for increased bushfire activity. In the surrounding landscape, outside the resort area, it is highly likely for the topography to influence bushfire behaviour.

Vegetation

There is minimal vegetation on the property, and this will continue to be managed to achieve the defendable space requirements of the Bushfire Management Overlay. Within the resort area the vegetation mainly consists of treed vegetation with limited to no undergrowth. The properties within the residential/accommodation area of Falls Creek are primarily cleared of vegetation that can be considered as classifiable when assessed against AS3959.

In the surrounding area, forests dominate the landscape. The forested areas extend for some distance and are associated with a landscape that includes numerous gullies and ridgelines.

Bushfire risk in southeast Australia

The southeast of Australia is one of the most fire prone areas in the world.

The rate a bushfire can spread is a direct result of the weather, fuel hazard (including dryness, quantity and arrangement) and the topography in which the fire is burning. Bushfire fuel is the only one of these three factors that it is possible to modify.

Extreme fire conditions can occur in south-eastern Australia when dry winters and springs are followed by summers where bushfire fuels become very dry.

When these conditions combine, fires can be expected to move quickly under the influence of strong, gusty north westerly winds. These fires can then move rapidly in a different direction when the subsequent south–westerly wind change arrives. Fires that start under these conditions can reach a very high intensity, even in areas of relatively low fuel loads and can be difficult to control until the weather conditions abate.

The height of a bushfire's intensity is directly linked to its destructiveness and the more difficult it is to control. As the intensity increases so does the difficulty of containment and effective suppression. Very high intensity fires with flame heights greater than 10 metres are generally uncontrollable.

Bushfire intensity is a function of the heat content of the fuel, the quantity of fuel and the rate of spread of the bushfire. The heat content of vegetation fuels is roughly constant. It has been found that the quantity and distribution of fine fuels are the main factor influencing bushfire behaviour. Larger fuels burning during a bushfire do not contribute significantly to the spread of a bushfire.

Fine fuels available to a bushfire are fuels such as grass, leaves, dead pine needles and twigs that ignite readily and are consumed rapidly when dry. They are often defined as those dead fuels less than 6mm in thickness. Fine fuel load (measured in tonnes per hectare) has therefore been used as a convenient measure of the underlying bushfire hazard in areas dominated by woody vegetation. The fine fuel load at any given time is a balance between the rate of fuel build up, and factors that remove fuel such as litter decomposition and fire. In the absence of fire, fuel loads in forests and woodlands with a shrubby or heathy understorey build up to a quasi-equilibrium state where the rate of fuel production equals the rate of decomposition. The maximum levels vary for different vegetation types and for the same vegetation types in different locations.

It has been found that fuel structure is possibly more important than the total fine fuel load in determining bushfire behaviour. Fuels in forests, woodlands and shrublands can be categorised into four layers with differing effects on fire behaviour (Hines, et al., 2010). These layers are:

Surface fine fuels: leaves, bark, small twigs and other fine fuel lying on the ground. These fuels provide the horizontal continuity that allows a bushfire to spread

Near surface fine fuels: grasses, low shrubs, bracken etc. up to about .5 m above the ground surface. Fuels in this layer will burn when the surface fuel layer burns and will increase bushfire intensity

Elevated fuels: larger shrubs and small saplings with most of the fuel closer to the top of this layer and a clear gap between them and the surface fuels. These interact with the two-layer fuel layers to further increase bushfire intensity. They also contribute to the vertical continuity of fire that allows fire to 'climb' into the tree canopy

Bark fuels: flammable bark on trees, saplings and large bushes from ground level to the canopy. Loose fibrous bark on string-bark eucalypts, and candle bark on some gums can generate large amounts of burning embers which can start spot fires ahead of the main fire front.

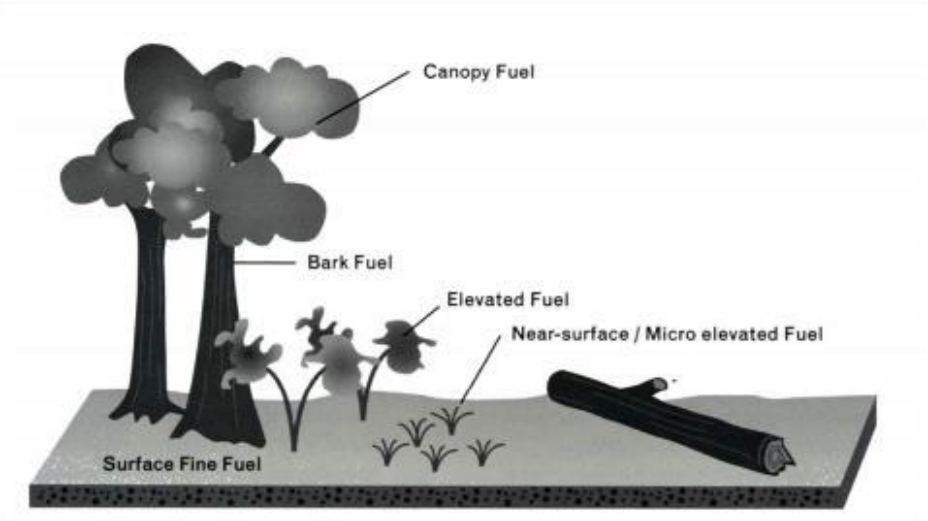


Figure 2 - Overview of fuel structure that affects bushfire behaviour

Bushfire Hazard Landscape Assessment

The Bushfire Hazard Landscape Assessment is completed to provide an assessment of the bushfire hazard more than 150 metres away from the subject site. This assessment considers all available information to determine the effects of a bushfire from more than 150m from the site.

For this assessment, the landscape risk has been assessed at one kilometre and 10 kilometres.

Fire History

The available records demonstrate that there is bushfire history in the surrounding landscape. Major bushfires have threatened the Falls Creek area in 2003 and 2007. These bushfires did not enter the Falls Creek community but threatened the surrounding area for a period of time.

Other smaller fires have occurred within the surrounding landscape, but these have not escalated into large bushfire events.

Due to the surrounding vegetation, there is the potential for bushfires to occur in the future if the conditions are elevated.

Figure 3 shows the bushfire history according to DEECA records.

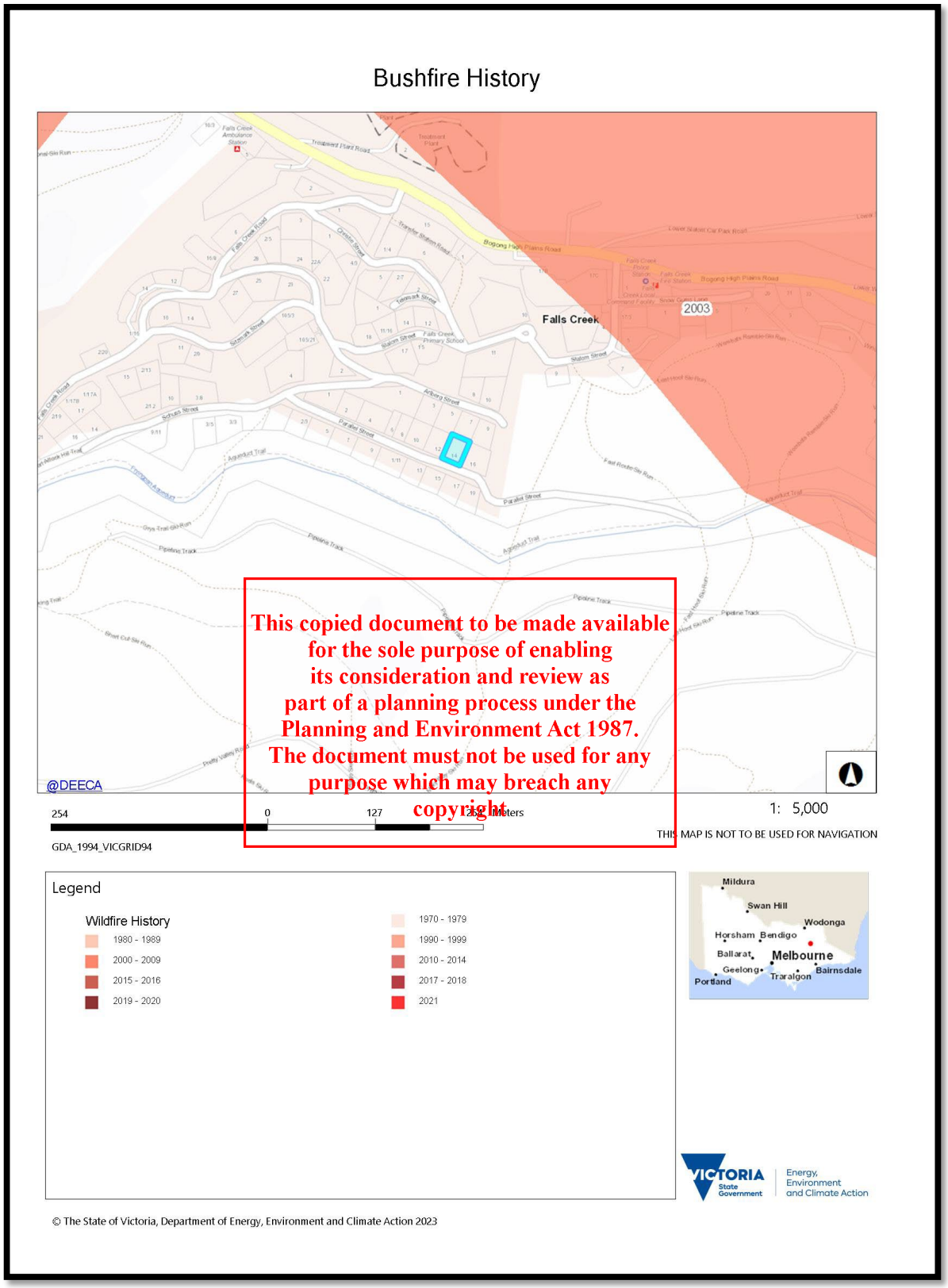


Figure 3 - Bushfire History with the property identified. The shapes represent multiple bushfire and fuel reduction burning events.

Likely Bushfire Scenarios

Figures 4 and 5 indicate the likely scenarios from a bushfire in the surrounding area and how they may impact on the proposed building. This assessment considers all aspects however history shows us that bushfires would be likely to impact on the property from a north westerly direction and then subsequently from a south westerly direction after the wind change. These two fire scenarios cause the greatest amount of damage, including loss of life, in south-eastern Australia during bushfire events.

The following table describes the scenarios that may impact on the building:

Table 1 - Bushfire scenarios

Scenario reference	Description
Scenario A	Figure 4 and 5 outlines the potential for a bushfire to approach the property under a north westerly wind influence. The dominant vegetation to the north west of the property are forested areas that extends more than 10 kilometres from the site. The surrounding landscape is conducive to supporting large bushfires that can burn for many days or weeks prior to impacting on the area. The managed areas immediately surrounding the property and in the Falls Creek developed area will support the reduction in bushfire behaviour as the bushfire approaches. It is likely for a bushfire approaching from the north west to generate significant embers that will impact on the building and surrounding areas.
Scenario B	To the southwest of the property, the immediate landscape is dominated by a similar landscape to Scenario A. The forested vegetation mixed with undulating topography will allow bushfires to burn for days or weeks prior to impacting on the property. The landscape to the immediate south west is dominated by other structures and managed properties and it is unlikely for a bushfire front to directly impact. The topography and vegetation is conducive to generating significant embers that will land on and around the property.

In summary, both scenarios are possible with ember attack, radiant heat and direct flame contact likely if no defendable space is implemented as part of this project.

Landscape type

The determination of the landscape type enables the consideration of other treatments depending on the level of risk. These treatments may include additional construction requirements, vegetation management or other solutions. Note that whilst the determination of a landscape risk level is part of this analysis, the determination of the need for additional treatments will be considered as part of further assessments within this report.

Table 2 -Bushfire landscape assessment

	Landscape risk descriptors
Type 1	There is little vegetation beyond 150 metres of the site (except grasslands and low threat vegetation). • Extreme bushfire behaviour is not possible. • The type and extent of vegetation is unlikely to result in neighbourhood-scale destruction of property. • Immediate access is available to a place that provides shelter from bushfire.
Type 2	The type and extent of vegetation located more than 150 metres from the site may result in neighbourhood-scale destruction as it interacts with the bushfire hazard on and close to a site. • Bushfire can only approach from one aspect and the site is located in a suburban, township or urban area managed in a minimum fuel condition. • Access is readily available to a place that provides shelter from bushfire. This will often be the surrounding developed area.
Type 3	The type and extent of vegetation located more than 150 metres from the site may result in neighbourhood-scale destruction as it interacts with the bushfire hazard on and close to a site. • Bushfire can approach from more than one aspect. • The site is located in an area that is not managed in a minimum fuel condition. • Access to an appropriate place that provides shelter from bushfire is not certain
Type 4	The broader landscape presents an extreme risk. • Fires have hours or days to grow and develop before impacting. • Evacuation options are limited or not available.

In accordance with the Technical Guide, the landscape has been assessed as Type 4.

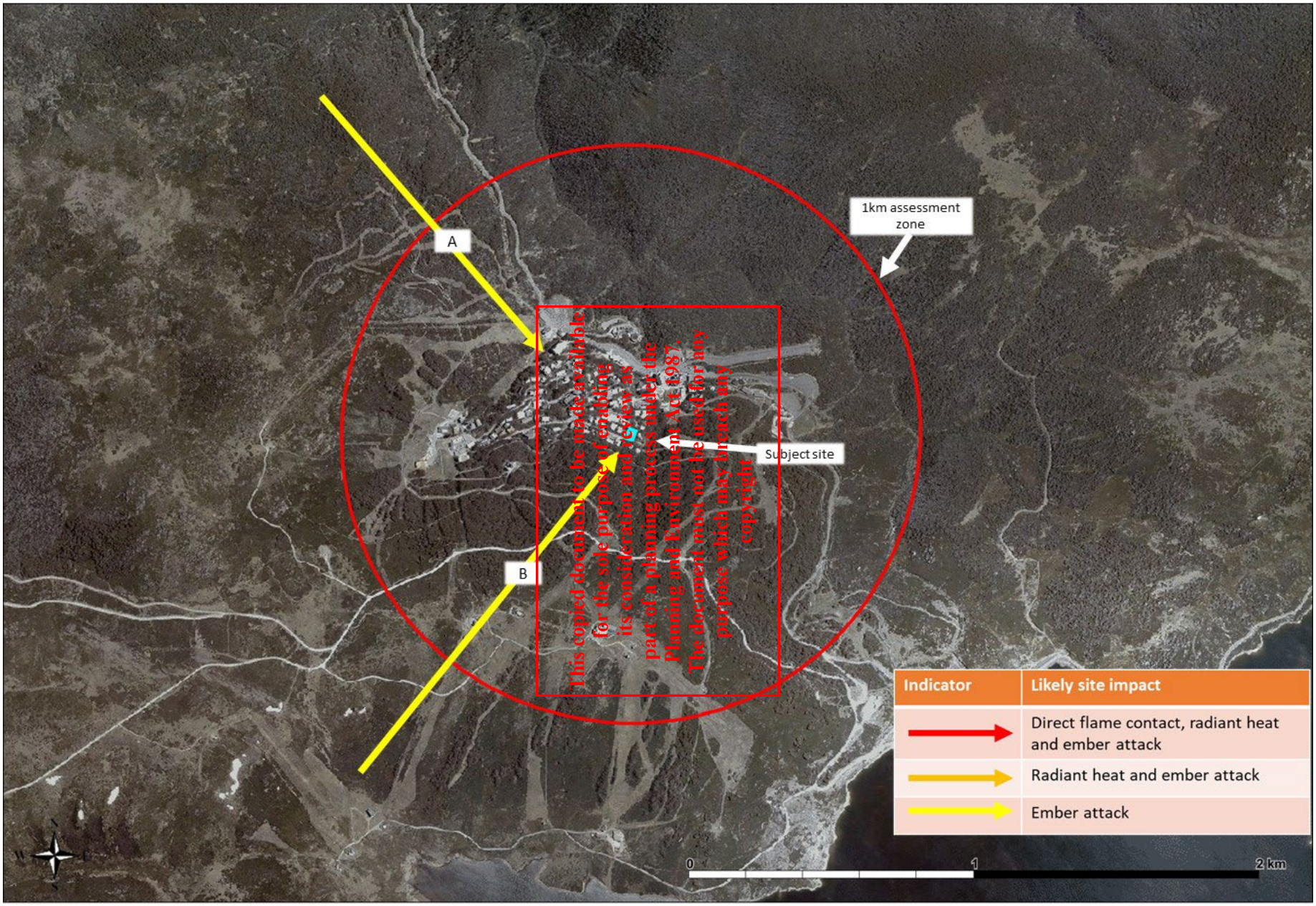


Figure 4 - Aerial photo showing site and identified bushfire attack scenarios (1 kilometre)

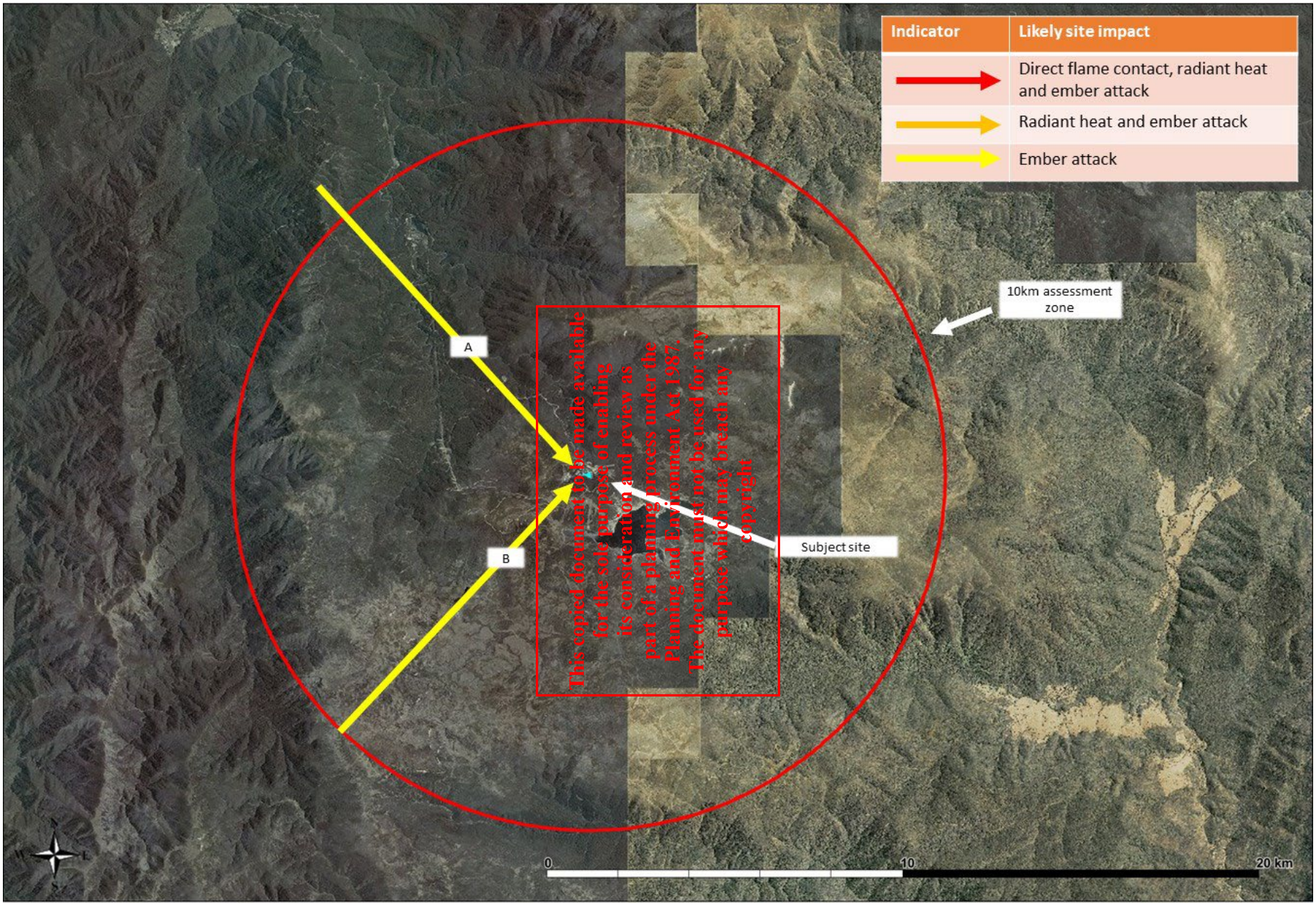


Figure 5 - Aerial photo showing landscape 10 km from site and potential bushfire scenarios

Clause 13.02 assessment

Clause 13.02 of the Planning Scheme outlines its objective as:

To strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life.

The analysis against Clause 13.02 is reliant on the information contained within the Bushfire Hazard Landscape Assessment.

The following strategies from Clause 13.02-1S are aimed at ensuring a focus on the protection of life is achieved:

Table 3 - Clause 13.02 strategy assessment

	Strategy	Response
1	Prioritising the protection of human life over all other policy considerations.	Compliance with the Bushfire Management Overlay has ensured that the prioritisation of human life is achieved. The Alpine Planning Scheme specifies elevated risk treatment requirements to offset the landscape risk that is present. For this development, a solution is proposed that achieves the BMO requirements. The design solution includes: • The building will be upgraded to meet the BAL 29 requirements. • Defendable space is provided to the property boundary in addition to the property management that is occurring on the adjoining properties and the surrounding area. • Fire hydrants are located in Parallel Street. • The building will comply with the National Construction Code which requires suitable fire safety systems and egress routes. These systems will also be required to be maintained for the life of the building.
2	Directing population growth and development to low risk locations and ensuring the availability of, and safe access to, areas where human life can be better protected from the effects of bushfire.	The building is located on an existing property with other buildings in the surrounding area. The development is occurring within a zone that which is supportive of development. The development of this property will see a reduction in bushfire risk to the adjoining landowners due to the increased management of the vegetation on the property.
3	Reducing the vulnerability of communities to bushfire through the consideration of bushfire risk in decision making at all stages of the planning process.	This report addresses the Bushfire Management Overlay and has considered the bushfire risk and identified treatments based on this risk.

Bushfire Hazard Site Assessment

The bushfire hazard within 150 metres is outlined within Figure 6 and Table 4.

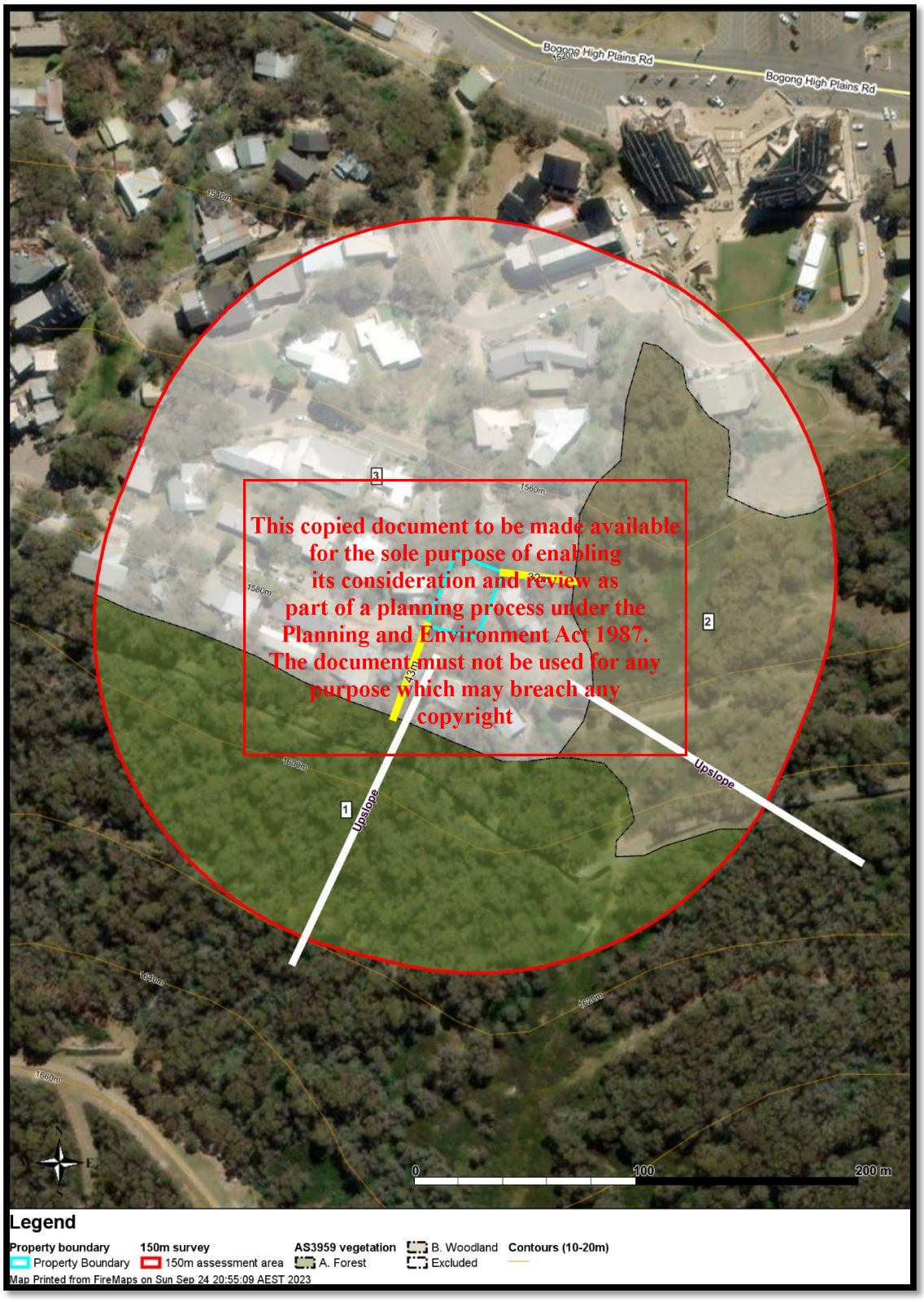


Figure 6 - Bushfire Site Hazard Assessment

Table 4 - Bushfire Site Hazard Assessment vegetation assessment

Plot	Vegetation classification	Slope	Separation distance	Description
1	Class A - Forest	Upslope	43 metres	The vegetation to the south is a typical forested environment that is located within an Alpine area of Victoria.
2	Class B - Woodland	Upslope	32 metres	The vegetation to the east of the building is modified and due to the presence of trails and cleared areas, it is aligned to the woodland descriptors contained within AS3959.
3	Excluded	N/A	N/A	Whilst there are scattered trees in the landscape, the undergrowth has been removed and is considered managed vegetation. These meet the descriptors outlined within clause 2.2.3.2 of AS3959.

**The 150 metre assessment area has been measured from the property boundary.*

The assessment of vegetation has identified three plots within the 150 metre assessment area outlined in Figure 6.

Bushfire Management Statement

53.02-4.1 Landscape, siting and design objectives

- **Development is appropriate having regard to the nature of the bushfire risk arising from the surrounding landscape.**
- **Development is sited to minimise the risk from bushfire.**
- **Development is sited to provide safe access for vehicles, including emergency vehicles.**
- **Building design minimises vulnerability to bushfire attack.**

Approved Measure (AM) 2.1 – Landscape

Requirement

The bushfire risk to the development from the landscape beyond the site can be mitigated to an acceptable level.

The bushfire risk to the development from the surrounding landscape can be considered elevated. However, due to the high levels of vegetation fragmentation in the immediate surrounding area bushfire behaviour could be reduced.

The requirement to develop a design that meets the Bushfire Management overlay – Schedule 1 of the Alpine Planning Scheme allows the building to comply with this requirement. The Schedule requires the building to achieve a BAL29 construction level. This is more than the outcome of an assessment against

AS3959 and can therefore support the design of the building to reduce the risk from the landscape.

The landscape bushfire risk has been classified as Type 4[1].

Has Approved Measure (AM) 2.1 been fully met? **Yes** ✓ **No** ☐

Approved measure (AM) 2.2 – Siting

Requirement

A building is sited to ensure the site best achieves the following:

The maximum separation distance between the building and bushfire hazard

The building is being constructed within the property and there are limited siting options due to an existing building being extended. The risk will be reduced through the upgrade of the entire building to BAL29.

The closest classifiable vegetation is approximately 32 metres to the south.

The building is in close proximity to a public road

The building is accessible from Parallel Street with the building set back from the road edge a short distance. It is likely that firefighters will operate from the road in the event of a fire on the property.

Access can be provided to the building for emergency service vehicles

Emergency service vehicles can access the building. The access provisions outlined within the Bushfire Management Overlay can be achieved.

Any other comments

The landscape risk has been assessed and compliance with the Bushfire Management Overlay will assist with managing the elevated landscape risk.

Has Approved Measure (AM) 2.2 been fully met? **Yes** ✓ **No** ☐

Approved Measure (AM) 2.3 – Building design

Requirement

A building is designed to be responsive to the landscape risk and reduce the impact of bushfire on the building.

The building will be designed to reflect the risk from the vegetation in the surrounding landscape and comply with the BMO Schedule requirements. The BAL29 construction requirements ensures an elevated level of protection from the surrounding landscape. As outlined previously, the landscape risk has been classified as Type 4.

The building will be constructed to a minimum of **BAL 29**.

Has Approved Measure (AM) 2.3 been fully met? **Yes** ✓ **No** ☐

[1] https://www.planning.vic.gov.au/__data/assets/pdf_file/0029/107669/Technical-Guide-Planning-Permit-Applications-Bushfire-Management-Overlay.pdf

53.02-4.2 – Defendable Space and Construction Objectives

- **Defendable space and building construction mitigate the effect of flame contact, radiant heat and embers on the building.**

Approved Measure (AM) 3.1 – Bushfire Construction and Defendable Space

The construction of buildings must be one of the following:

- **BAL-40 construction in accordance with AS3959 Building in Bushfire Prone Areas (Standards Australia).**
- **Determined by a suitably qualified and experienced practitioner that the building will be capable of withstanding an equivalent level of predicted bushfire attack and levels of exposure.**
- **A suitably qualified and experienced practitioner has the same meaning as 'fire safety engineer' within the Building Regulations 2006.**
- **Determined using an alternative methodology to the satisfaction of the relevant fire authority.**

Buildings must be provided with defendable space to the satisfaction of the relevant fire authority.

The building has been designed for the existing and proposed areas to meet the BAL29 requirements of AS3959. It is acknowledged that the outcomes of the AS3959 assessment without consideration of the landscape risk indicates that a BAL12.5 requirement is achievable. We have been advised that there is a policy in place within the Alpine Resorts area that permits buildings that are being upgraded to meet the BAL29 requirement and not BAL40 as specified within the BMO Schedule.

Defendable space will be provided as outlined in the Bushfire Management Plan and in accordance with Table 6 (below). Refer to the Bushfire Management Plan (Appendix 2) for further details.

Table 6 of Clause 53.02-5 – Vegetation management requirements

Defendable space is provided and is managed in accordance with the following requirements:

1. Grass must be short cropped and maintained during the declared fire danger period.
2. All leaves and vegetation debris must be removed at regular intervals during the declared fire danger period.
3. Within 10 metres of a building, flammable objects must not be located close to the vulnerable parts of the building.
4. Plants greater than 10 centimetres in height must not be placed within 3 metres of a window or glass feature of the building.
5. Shrubs must not be located under the canopy of trees.
6. Individual and clumps of shrubs must not exceed 5 square metres in area and must be separated by at least 5 metres.
7. Trees must not overhang or touch any elements of the building.
8. The canopy of trees must be separated by at least 5 metres.
9. There must be a clearance of at least 2 metres between the lowest tree branches and ground level.

A building is constructed to the bushfire attack level:

That corresponds to the defendable space provided in accordance with Table 2 to Clause 53.02-5. The building will be constructed to **BAL 29.**

Any other comments?

Additional managed areas in the surrounding landscape can be relied upon to reduce the bushfire risk.

Has Approved Measure (AM) 3.1 been fully met? **Yes** ✓ **No** ☐

53.02-4.3 – Water Supply and Access Objectives

- The allotment is serviced by the installation of ground ball street hydrants.
- Vehicle access is designed and constructed to enhance safety in the event of a bushfire.

Approved Measure AM 4.1 – Water Supply and Access

Water Supply Requirement

The building is provided with a static water supply for firefighting and property protection purposes as specified in Table 4 to Clause 53.02-5.

The water supply may be in the same tank as other water supplies provided that a separate outlet is reserved for firefighting water supplies.

Lot Size (m^2)	Hydrant Available	Capacity (litres)	Fire Authority Fittings & Access Required	Select Response
Less than 500	Not Applicable	2,500	No	☐
500 – 1000*	Yes	5,000	No	✓
500 – 1000	No	10,000	Yes	☐
1001 and above	Not Applicable	10,000	Yes	☐
*Note: a hydrant is available if it is located within 120 metres of the rear of the building Note: Fittings must be in accordance with the published requirements of the relevant fire authority				
Confirm Static Water Supply meets the following requirements	Unless otherwise agreed in writing by the relevant fire authority, the 5,000 litre water supply must: • Be stored in an above ground water tank constructed of concrete or metal. • Have all fixed above-ground water pipes and fittings required for firefighting purposes made of corrosive resistant metal. • Include a separate outlet for occupant use.			

Additional Information:

The site will be provided with a minimum of 5,000 litre static water supply. This will be in addition to water supplies required for domestic use.

Has Approved Measure AM 4.1 (Water Supply) been fully met? **Yes** ✓ **No** ☐

Access Requirement

Vehicle access is designed and constructed as specified in Table 5 to Clause 53.02-5.

Column A	Column B
Length of access is less than 30 metres	✓ There are no design and construction requirements if fire authority access to water supply is not required under AM 1.3
Length of access is less than 30 metres	☐ Where fire authority access to the water supply is required under AM1.3 fire authority vehicles must be able to get within 4 metres of the water supply outlet
Length of access is greater than 30 metres	The following design and construction requirements apply: ☐ All weather construction ☐ A load limit of at least 15 tonnes ☐ Provide a minimum trafficable width of 3.5 metres ☐ Be clear of encroachments for at least 0.5 metres on each side and at least 4 metres vertically ☐ Curves must have a minimum inner radius of 10 metres ☐ The average grade must be no more than 1 in 7 (14.4%) (8.1°) with a maximum grade of no more than 1 in 5 (20%) (11.3°) for no more than 50 metres ☐ Dips must have no more than a 1 in 8 (12.5 per cent) (7.1 degrees) entry and exit angle
Length of access is greater than 100 metres	A turning area for fire fighting vehicles must be provided close to the building by one of the following: ☐ A turning circle with a minimum radius of eight metres ☐ A driveway encircling the dwelling ☐ The provision of other vehicle turning heads such as a T head or Y Head – which meet the specification of Austroad Design for an 8.8 metre service vehicle.
Length of access is greater than 200 metres	☐ Passing bays must be provided at least every 200 metres. ☐ Passing bays must be a minimum of 20 metres long with a minimum trafficable width of 6 metres.

Additional Information:

There are no access requirements due to the proximity of the building to the road and that access is not required to the static water supply by firefighters.

Has Approved Measure AM 4.1 (Access) been fully met?	**Yes** ✓	**No** ☐

Conclusion

The construction of the new building on this site can be achieved safely and in accordance with the Bushfire Management Overlay.

Due to the location of the building, the likely bushfire impact will be through embers landing on and around the property and low levels of radiant heat from a bushfire that approaches from the north and south.

The outcome of the landscape assessment has identified the bushfire risk to the property and demonstrates how this can be managed.

The design solution including water supply, emergency vehicle access, construction level and defendable space will ensure this design achieves the requirements of the Bushfire Management Overlay and Clause 13.02 of the Planning Scheme.

Appendix 1 – Bushfire Management Statement

The building will be designed and constructed to a minimum Bushfire Attack level of **BAL 29.**

Defendable Space

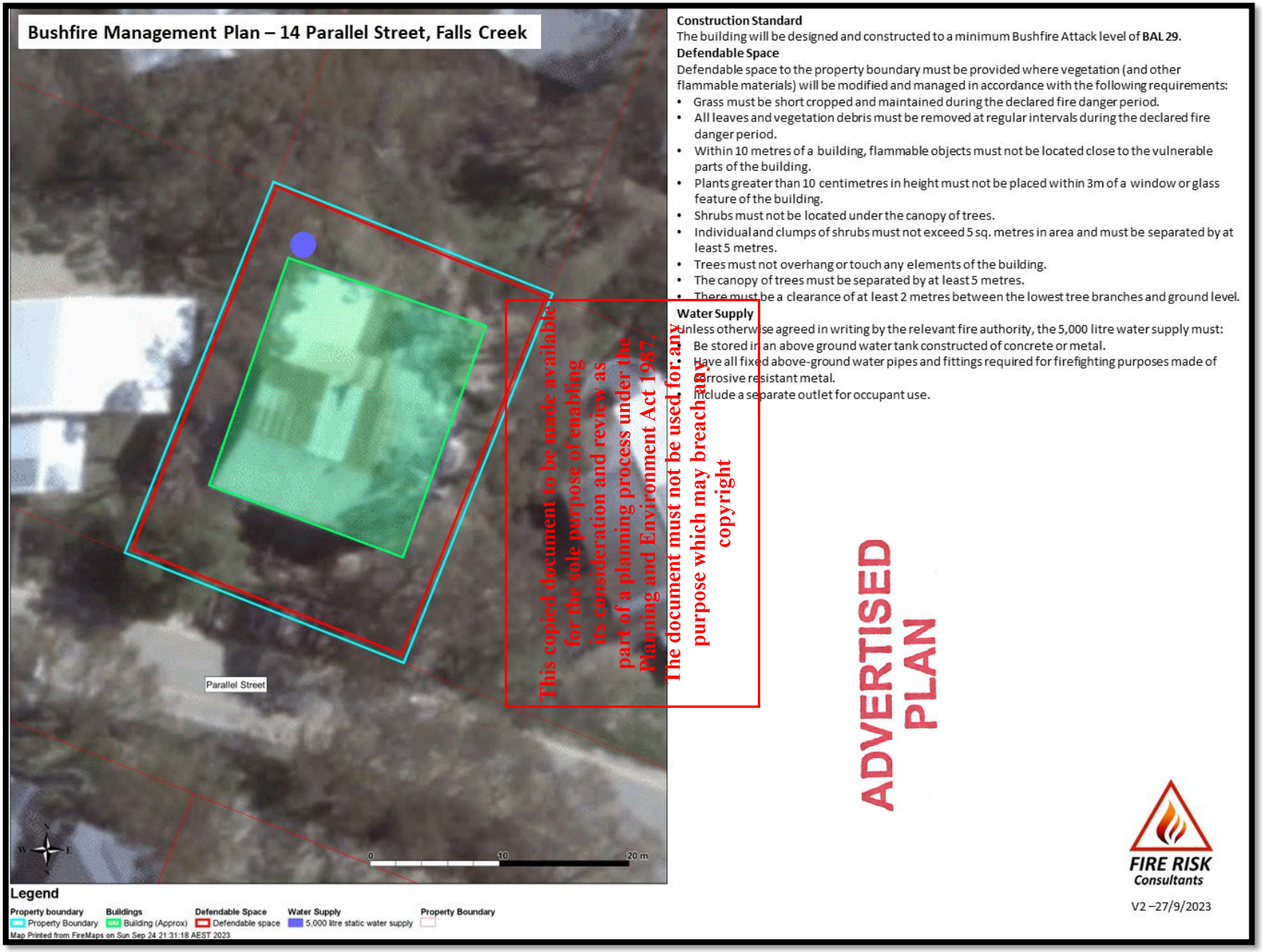
Defendable space to the property boundary must be provided where vegetation (and other flammable materials) will be modified and managed in accordance with the following requirements:

- Grass must be short cropped and maintained during the declared fire danger period.
- All leaves and vegetation debris must be removed at regular intervals during the declared fire danger period.
- Within 10 metres of a building, flammable objects must not be located close to the vulnerable parts of the building.
- Plants greater than 10 centimetres in height must not be placed within 3m of a window or glass feature of the building.
- Shrubs must not be located under the canopy of trees.
- Individual and clumps of shrubs must not exceed 5 sq. metres in area and must be separated by at least 5 metres.
- Trees must not overhang or touch any elements of the building.
- The canopy of trees must be separated by at least 5 metres.
- There must be a clearance of at least 2 metres between the lowest tree branches and ground level.

Water Supply

Unless otherwise agreed in writing by the relevant fire authority, the 5,000 litres water supply must:

- Be stored in an above ground water tank constructed of concrete or metal.
- Have all fixed above-ground water pipes and fittings required for firefighting purposes made of corrosive resistant metal.
- Include a separate outlet for occupant use.


Bushfire Management Plan – 14 Parallel Street, Falls Creek
Parallel Street
0
10
20 m
Legend
Property boundary
Property Boundary
Buildings
Building (Approx)
Defendable Space
Defendable space
Water Supply
5,000 litre static water supply
Property Boundary
Map Printed from FireMaps on Sun Sep 24 21:31:18 AEST 2023
Construction Standard
The building will be designed and constructed to a minimum Bushfire Attack level of BAL 29.
Defendable Space
Defendable space to the property boundary must be provided where vegetation (and other flammable materials) will be modified and managed in accordance with the following requirements:
• Grass must be short cropped and maintained during the declared fire danger period.
• All leaves and vegetation debris must be removed at regular intervals during the declared fire danger period.
• Within 10 metres of a building, flammable objects must not be located close to the vulnerable parts of the building.
• Plants greater than 10 centimetres in height must not be placed within 3m of a window or glass feature of the building.
• Shrubs must not be located under the canopy of trees.
• Individual and clumps of shrubs must not exceed 5 sq. metres in area and must be separated by at least 5 metres.
• Trees must not overhang or touch any elements of the building.
• The canopy of trees must be separated by at least 5 metres.
• There must be a clearance of at least 2 metres between the lowest tree branches and ground level.
Water Supply
Unless otherwise agreed in writing by the relevant fire authority, the 5,000 litre water supply must:
Be stored in an above ground water tank constructed of concrete or metal.
Have all fixed above-ground water pipes and fittings required for firefighting purposes made of corrosive resistant metal.
Include a separate outlet for occupant use.
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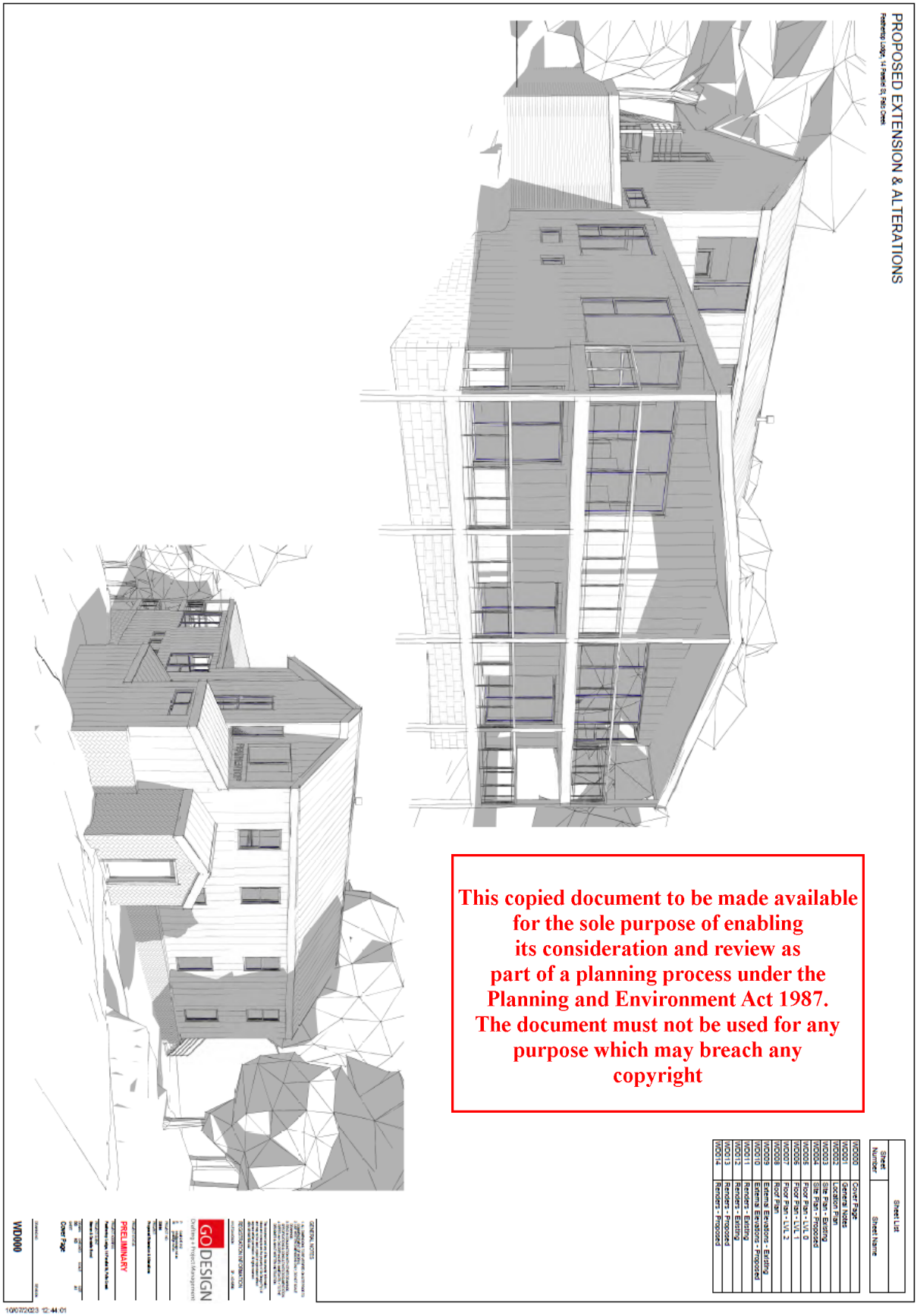
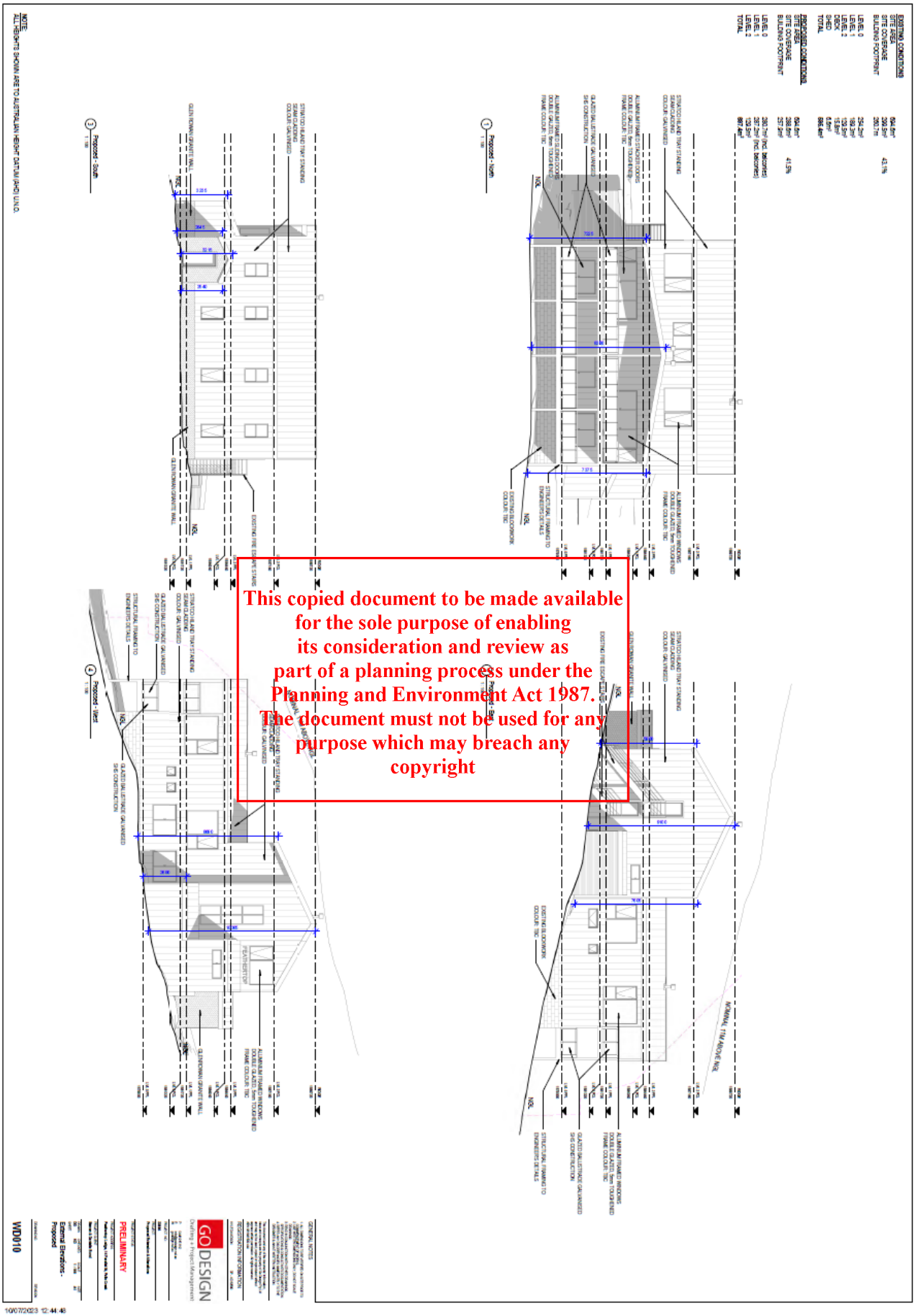
Appendix 2 – Photos

1 View of the building from Parallel Street.	
2 Typical vegetation to the east of the property.	

3 Looking westerly along Parallel Street.	
4 Typical vegetation to the south of the properties.	
5 Typical vegetation to the south of the properties.	

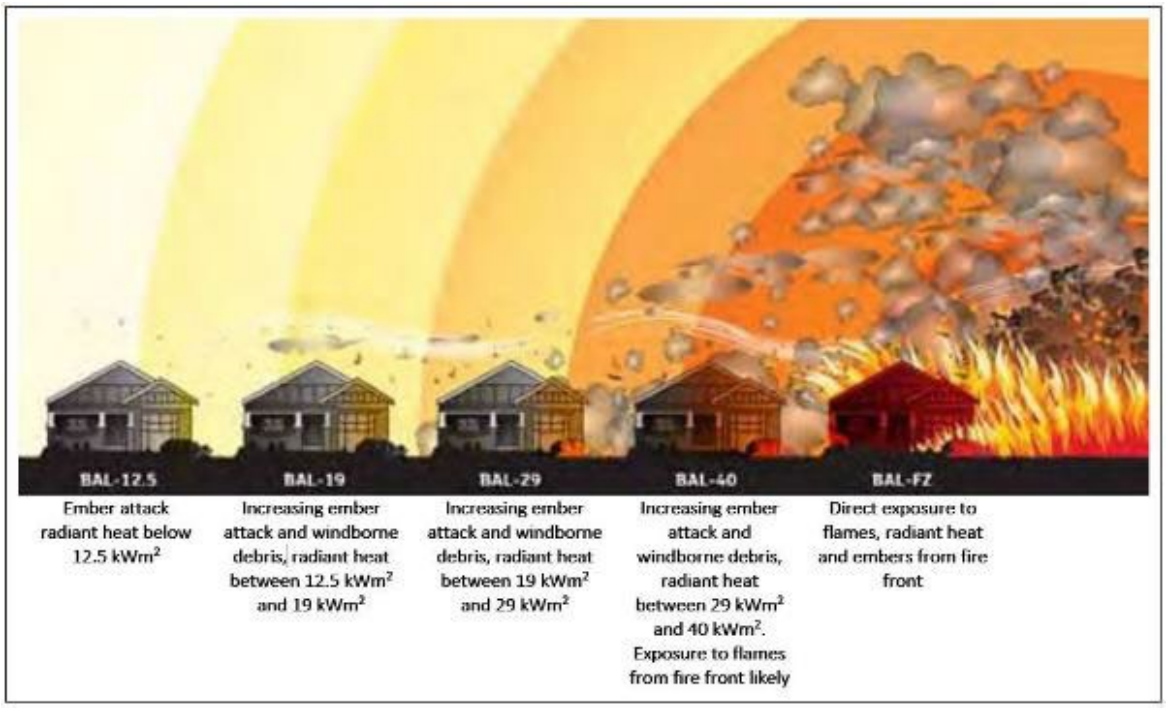
Appendix 3 – Provided Plans





Appendix 4 – BAL levels explained

The following diagram outlines the type of bushfire attack method that may impact on the building. This then indicates the relevant BAL construction level as determined by the Bushfire Management Overlay.



Appendix 5 – References

1. Francis Hines, Kevin G Tolhurst, Andrew AG Wilson and Gregory J McCarthy 2010, *Overall Fuel Hazard Guide* 4th Edition, Department of Sustainability and Environment, 44 pp
2. Ahern, A. and Chladil, M. (1999) *How far do bushfires penetrate urban areas?* Aon Re Worldwide and Tasmanian Fire Service.
3. Attorney-General's Department (2015) *National Emergency Risk Assessment Guidelines.* Commonwealth of Australia.
4. Blanchi, R. and Leonard, J. (2005) *Investigation of Bushfire Attack Mechanisms Resulting in House Loss in the ACT Bushfire 2003.* CSIRO and Bushfire CRC.
5. Bull, H. (2011) *Fire Ecology: Guide to Environmentally Sustainable Bushfire Management in Rural Victoria.* Burwood East: Country Fire Authority
6. Byram, G. (1959) Combustion of Forest Fuels, in: *Forest Fire: Control and Use.* New York: McGraw-Hill, pp. 113-126
7. Cheney, P. and Sullivan, A. (2008) *Grassfires: fuel, weather and fire behaviour, second edition.* CSIRO Publishing, Melbourne.
8. DSE (2012) *Code of Practice for Bushfire Management on Public Land.* Melbourne: Department of Sustainability and Environment.
9. Gill, M. (2008) *Underpinnings of fire management for biodiversity conservation in reserves* (No. 73). East Melbourne, Victoria: Department of Environment, Land, Water and Planning.
10. Gould, J. S., McCaw, W. L., Cheney, N. P., Ellis, P. F. and Mathews, S. (2007) *Field guide: fuel assessment and fire behaviour prediction in dry eucalypt forest.* Ensis -CSIRO, Canberra, ACT and Department of Environment and Conservation, Perth, WA.
11. Leonard, J. (2009) *Report to the 2009 Victorian Bushfires Royal Commission: Building Performance in Bushfires* (Report to the VBRC). p. 80. CSIRO
12. Luke, H. R, and McArthur, A. G. (1986) *Bushfires in Australia.* CSIRO Division of Forest Research, Canberra
13. Standards Australia (2018) *AS 3959-2018 Construction of Buildings in Bushfire Prone Areas* (No. up to amendment 3 (Nov 2011). Sydney: SAI Global.
14. Standards Australia Limited (2009) *AS/NZS ISO 31000:2009 Risk management – Principles and guidelines.* Sydney: SAI Global Limited.
15. Tolhurst, K. (1994) Effects of Fuel Reduction Burning on Fuel Loads in a Dry Sclerophyll Forest. In DEST (1994) *Fire & Biodiversity: The Effects & Effectiveness of Fire Management,* Biodiversity Series, Paper No. 8, Biodiversity Unit, Canberra.
16. Tolhurst, K. and Cheney, N. (1999) *Synopsis of the Knowledge Used in Prescribed Burning in Victoria.* Melbourne: Department of Natural Resources and Environment, Fire Management.