



Bowantz

Bushfire & Environmental

Bushfire Protection Assessment: Proposed Alterations and Additions

Location: 49 Banyandah Street, South Durras NSW

Client: Eurobodalla Shire Council

Date: 29.08.2023

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1.0 Glossary

Acronym	Description
APZ	Asset Protection Zone
AS3959	Australian Standard 3959:2018 'Construction of buildings in bushfire prone areas'
BAL	Bushfire Attack Level
BV Act	Biodiversity Conservation Act 2016 (No 63)
BFPL	Bush Fire Prone Land
DA	Development Application
DCP	Development Control Plan
DTS	Deemed To Satisfy
EMC	Emergency Management Cycle
EMP	Emergency Management Plan
EP&A Act	Environmental Planning & Assessment Act 1979 (No 203)
FDI	Fire Danger Index
FRNSW	Fire and Rescue New South Wales
IPA	Inner Protection Area
LEP	Local Environmental Plan
LGA	Local Government Area
NCC	National Construction Code
NSW	New South Wales
NASH	National Association of Steel-framed Housing
OPA	Outer Protection Area
PBP	Planning for Bushfire Protection
RF Act	Rural Fires Act 1997 (No 65)
RF Reg	Rural Fires Regulation 2022
RFS	NSW Rural Fire Service
SFPP	Special Fire Protection Purpose

2.0 Property Details

Street Address and/or Property Name	49 Banyandah Street
Suburb and/or Locality (Town)	South Durras, NSW
Lot/DP Numbers (Subject Site)	Lot 84 DP 259212
Local Government Area (LGA)	Eurobodalla
Fire Danger Index (FDI)	100
Flame Temperature	1090K
Land Zoning at the time of Assessment	R2: Low Density Residential
Type of Development Proposal	New Dwelling
Bush Fire Prone Land (s. 10.3 EP&A Act)	Yes
Size of Lot	651.4m ²

2.1 Proposal

This bushfire protection assessment is for the addition of a new dwelling on an existing allotment as seen in **Figure 1 - Site Plan**.

The subject site is located on Bush Fire Prone Land (BFPL) as determined under section 10.3(2) of the Environmental Planning & Assessment Act 1979 (No 203) (EP&A Act). The Eurobodalla Shire Council - Bush Fire Prone Land Map confirms the subject site to be located on designated BFPL as seen in **Figure 2 - BFPL Map**.

2.2 Assessment Protocol

This proposal as presented, was assessed in accordance with Section 4.14 of the EP&A Act, Planning for Bushfire Protection 2019 (PBP), Australian Standard 3959:2018 (AS 3959) and the local planning instruments/guidelines including; the relevant Local Environmental Plan (LEP) and Development Control Plan (DCP).

This bushfire protection assessment utilised the following information sources to determine the bushfire risks associated with this development:

- Site plans and documents provided by the land owners and/or developers;
- Site inspection completed on 28th July 2023;
- Online GIS analysis and spatial recourses including; Nearmap, Google Earth, ArcGIS Online, NSW Government Spatial Map Viewer and the NSW Government Planning Portal ePlanning Spatial Viewer.

Figure 1 - Site Plan (Bowantz 2023)



Figure 2 - Bush Fire Prone Land Map (*ePlanning Spatial Viewer 2023*)



2.3 Significant Environmental Features

A thorough assessment of significant environmental features including; threatened species, populations, endangered ecological communities and species habitat that may be potentially impacted by the bushfire protection measures prescribed herein this assessment have not been included in this report.

Pursuant with the Biodiversity Conservation Act 2016 (BV Act), the proposed clearing of native vegetation or potential threatened species habitat must be assessed by a suitably qualified person. The consent authority, in this case Eurobodalla Shire Council, will assess if any potential environmental impact issues are perceived requiring further investigation and reporting.

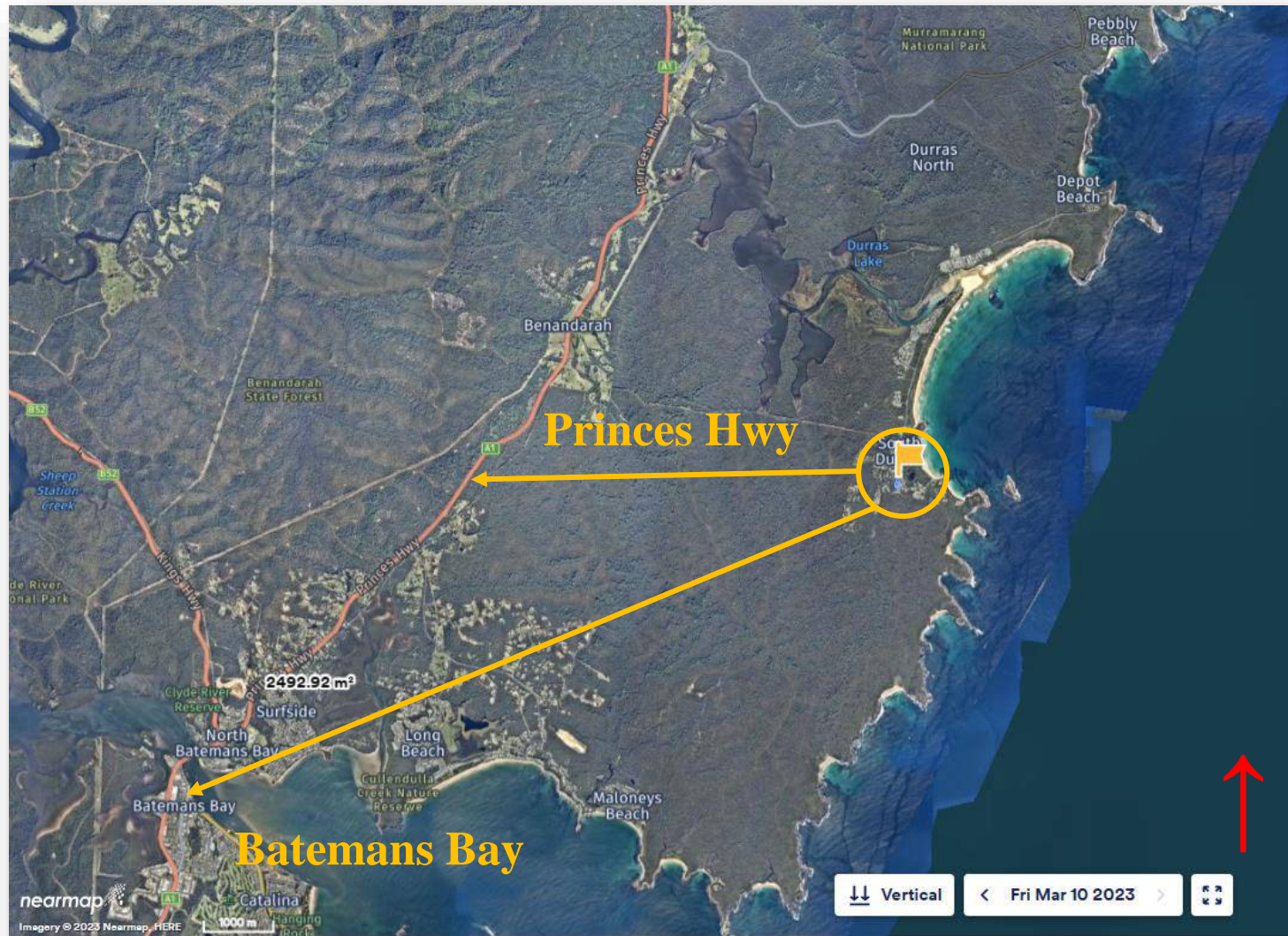
2.4 Aboriginal Heritage

A thorough assessment of significant Aboriginal heritage sites and/or objects has not been included in this report. The consent authority, in this case Eurobodalla Shire Council, will assess if any potential Aboriginal Heritage impact issues are perceived requiring further investigation and reporting.

2.5 Subject Site Location

The subject site is located in residential setting of South Durras, approximately 11.5km north-east of Batemans Bay town centre and approximately 6.3km east of The Princes Highway on the NSW South Coast as seen below in **Figure 3 - Site Location**.

Figure 3 – Site Location (Nearmap 2023)



3.0 Bushfire Hazard Assessment

3.1 Methodology

Site assessment methodology as prescribed in Appendix 1 of PBP 2019 has been used to determine the required bushfire protection measures for this proposal, including Asset Protection Zone (APZ) configurations and construction requirements for the development.

3.2 Fire Danger Index

The Fire Danger Index (FDI) for this location is FDI 100 (NSW RFS 2017)

3.3 Vegetation Assessment

Pursuant with PBP 2019, the predominant vegetation formation has been assessed in all directions from the subject site boundaries to a distance of at least 140m.

The surrounding vegetation assessment was completed using online database information including; Bionet records, NSW State Vegetation Type Map (SVTM) and onsite ground truthing using David Keith 'Ocean Shores to Desert Dunes' 2004 framework.

3.4 Slope Assessment

Pursuant with PBP 2019, the most influential slope effecting the potential fire behaviour was assessed over a distance of 100m from the outside edge of the APZ under the vegetation hazard.

The effective slope has been assessed using available online contour data for this location. Desktop analysis was then cross referenced with on-site data slope analysis using a clinometer and digital slope finder.

Table 1 - BAL Measurements

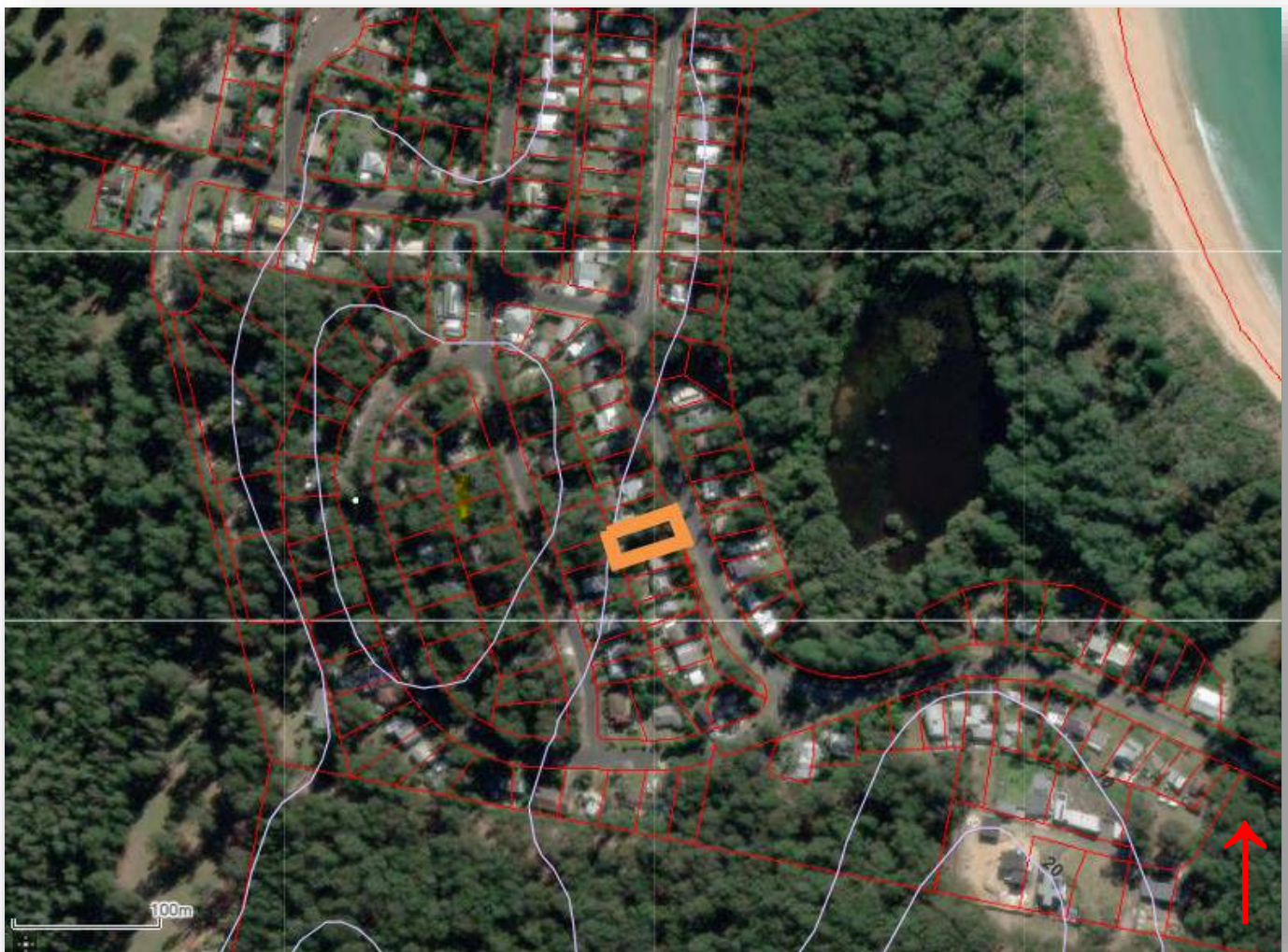
BUSHFIRE ATTACK LEVEL (BAL) – MEASUREMENTS							
Aspect	Distance to property boundary	Distance to hazard	Vegetation up to 140m	Effective Slope to 100m	BAL Method 1-PBP APP 1.	Vegetation clearing required to provide desired Asset Protection Zones	Construction Requirements AS 3959-2018
NORTH (right)	0.9m	+140m No Hazard	Managed Land	Upslope	BAL 12.5	Manage entire lot as an APZ	Sections 3 & 5 (AS3959-2018) & Tables 7.4a & A1.12.5 of PBP - 2019
EAST (front)	15m	92m	FOREST (Coastal Swamp Forest)	0-5 degrees downslope	BAL 12.5	Manage entire lot as an APZ	Sections 3 & 5 (AS3959-2018) & Tables 7.4a & A1.12.5 of PBP - 2019
SOUTH (left)	0.9m	+140m No Hazard	Managed Land	0-5 degrees downslope	BAL 12.5	Manage entire lot as an APZ	Sections 3 & 5 (AS3959-2018) & Tables 7.4a & A1.12.5 of PBP - 2019
WEST (rear)	3m	+140m No Hazard	Managed Land	Upslope	BAL 12.5	Manage entire lot as an APZ	Sections 3 & 5 (AS3959-2018) & Tables 7.4a & A1.12.5 of PBP - 2019

3.4 Summary of Bushfire Hazard Assessment

As seen above in **Figure 2**, BFPL occurs to encompass the lot. The greatest vegetation hazard exists to the west of the property with a potential fire run of over 10km from the west. The dominant vegetation to the west is mapped as (PCT 3659) South Coast Hinterland Silvertop Ash Forest - (SEED 2023). This vegetation is classified as a Forest using Keith, 2004 and is determined as **Forest** in PBP 2019 (NSW RFS 2019).

The effective slope that would have the most influence on the behaviour of a bushfire approaching the proposed dwelling, has been confirmed as 0-5° downslope to the front of the dwelling toward the east aspect.

Figure 4 – Contour Mapping (*Spatial Services 2023*)



4.0 Bushfire Protection Measures

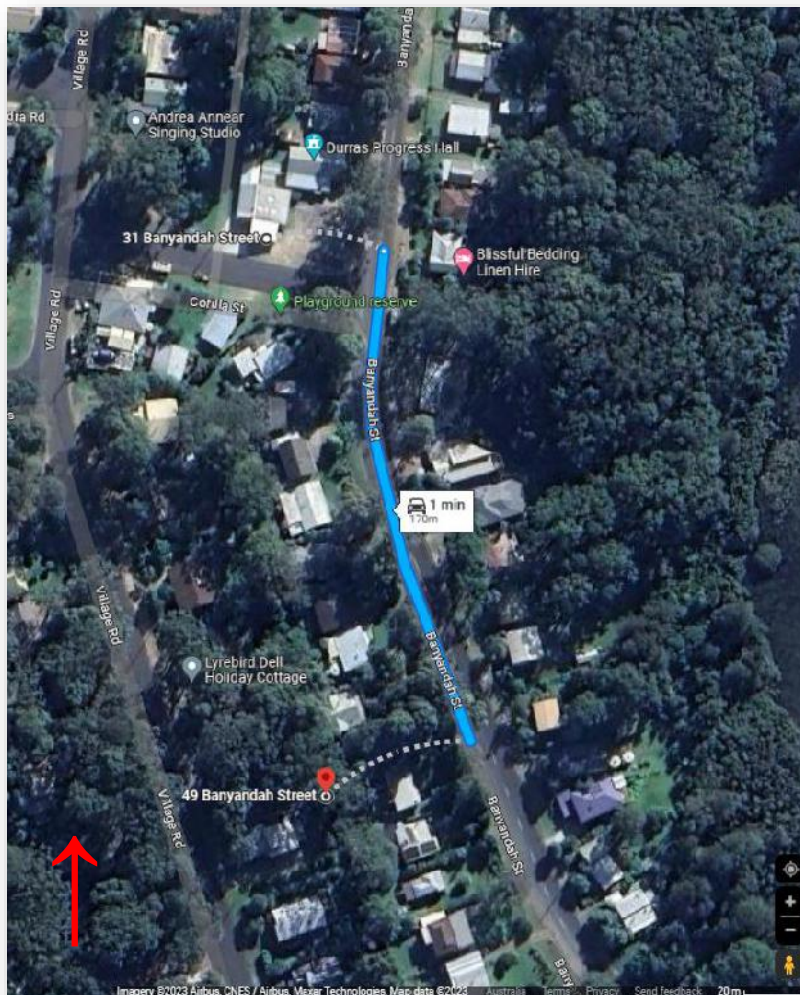
4.1 Asset Protection Zones (APZ)

All APZ areas must be maintained for the life of the development. An APZ is an area of reduced vegetation/fuel to minimise potential direct flame contact and radiant heat impacting the asset. An IPA of an APZ must be managed in accordance with APPENDIX 4 of PBP 2019 (A4.1.1). A detailed guide to APZ management has been developed by the NSW RFS and can be found here ([Standards APZlow.indd \(nsw.gov.au\)](#)).

4.2 Access

Access to the subject site is via a sound sealed road network, 'Village Road', that complies with APPENDIX 3 of PBP-2019. NSW Rural Fire Service located at Durras South Fire Station have a travel time of approximately 1 minutes to the subject site on an average summer afternoon as seen in **Figure 5 - Fire Services Access Route** (Google Maps 2023).

Figure 5 - Fire Services Access Route (Google Maps 2023)



Access on site is via a two-wheel drive all weather driveway with a minimum width and vertical clearance of 4m, a cross fall not exceeding 10° with a maximum gradient not more than 10°.

4.3 Water Supplies

The proposed water supply satisfies the requirements as outlined in PBP 2019 Section 7.4 (Table 7.4a) as follows in **Table 2 - Water Supply Compliance**;

Table 2 - Water Supply Compliance

Performance Criteria	Acceptable Solution	Compliance
An adequate water supply is provided for firefighting purposes.	Reticulated water is to be provided to the development, where available; and A static water supply is provided where no reticulated water is available.	Complies. Proposal will be serviced by a sufficient static water supply provided as dedicated fire suppression water in a steel tank.
Water supplies are located at regular intervals; and The water supply is accessible and reliable for firefighting operations.	Fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2021; Hydrants are not located within any road carriageway; and Reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads.	N/A Static Water supply with no reticulated water supply available.
Flows and pressure are appropriate.	Fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2021.	N/A Static Water supply with no reticulated water supply available.
The integrity of the water supply is maintained.	All above-ground water service pipes external to the building are metal, including and up to any taps.	Complies. All proposed above-ground water service pipes external to the building are metal, including and up to any taps.

Table 2 - Water Supply Compliance (continued)

<p>A static water supply is provided for firefighting purposes in areas where reticulated water is not available.</p>	<p>Where no reticulated water supply is available, water for firefighting purposes is provided in accordance with Table 5.3d of PBP 2019; and A connection for firefighting purposes is located within the IPA or non-hazard side and away from the structure; 65mm Storz outlet with a ball valve is fitted to the outlet; and Ball valve and pipes are adequate for water flow and are metal; and Supply pipes from tank to ball valve have the same bore size to ensure flow volume; and Underground tanks have an access hole of 200mm to allow tankers to refill direct from the tank; and A hardened ground surface for truck access is supplied within 4m; and Above-ground tanks are manufactured from concrete or metal; and Raised tanks have their stands constructed from non-combustible material or bush fire-resisting timber (see Appendix F of AS 3959); and Unobstructed access can be provided at all times; and Underground tanks are clearly marked; and Tanks on the hazard side of a building are provided with adequate shielding for the protection of firefighters; and All exposed water pipes external to the building are metal, including any fittings; and Where pumps are provided, they are a minimum 5hp or 3kW petrol or diesel-powered pump, and are shielded against bush fire attack; any hose and reel for firefighting connected to the pump shall be 19mm internal diameter; and Fire hose reels are constructed in accordance with AS/NZS 1221:1997, and installed in accordance with the relevant clauses of AS 2441:2005.</p>	<p>Complies. Proposal serviced by a 40,000L steel water tank with 5,000L dedicated to fire suppression activities (Table 5.3d PBP 2019). A 65mm storz fitting stand pipe is available for connection located in the IPA within 4m of all-weather access driveway. Bore size of valves and pipes are adequate for sufficient water flow. Unobstructed access is available at all times.</p>
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4.4 Electricity Services

The proposed electricity services satisfies the requirements as outlined in PBP 2019 Section 7.4 (Table 7.4a) as follows in **Table 3** - Electricity Services Compliance;

Table 3 - Electricity Services Compliance

Performance Criteria	Acceptable Solution	Compliance
Location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings.	Where practicable, electrical transmission lines are underground; and Where overhead, electrical transmission lines are proposed as follows: <ul style="list-style-type: none"> ➤ Lines are installed with short pole spacing (30m), unless crossing gullies, gorges or riparian areas; and ➤ No part of a tree is closer to a power line than the distance set out in accordance with the specifications in ISSC3 Guideline for Managing Vegetation Near Power Lines. 	Complies. Electricity Supply is proposed to be provided underground from the street supply to the main dwelling.

4.5 Gas Services

The proposed gas services satisfies the requirements as outlined in PBP 2019 Section 7.4 (Table 7.4a) as follows in **Table 4** - Gas Services Compliance;

Table 4 - Gas Services Compliance

Performance Criteria	Acceptable Solution	Compliance
Location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.	Reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities, and metal piping is used; and All fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side; and Connections to and from gas cylinders are metal; and Polymer-sheathed flexible gas supply lines are not used; and Above-ground gas service pipes are metal, including and up to any outlets.	N/A No bottled gas proposed.

4.6 Construction Standards

Building and construction standards are designed to improve a buildings resistance to bushfire attack from burning embers, radiant heat and flame contact. The construction level is determined by site specific data, calculated to determine an assets potential exposure to bushfire attack mechanisms. A Bushfire Attack Level (BAL) has been assigned to this proposal using the methods outlined in APPENDIX 1 of PBP 2019, including Table A1.12.5. The separation distances from the hazard and effective slope are provided above in **Table 1 - Bal Measurements**. Compliance with the National Construction Code (NCC) and AS 3959:2018 (Construction of buildings in bushfire prone areas) Section 3 and Section 6 & 7 is a requirement of this proposal. Compliance with Section 7.4 of PBP 2019 is provided below in **Table 5 - Construction Standards Compliance**.

Table 5 - Construction Standards Compliance

Performance Criteria	Acceptable Solution	Compliance
The proposed building can withstand bush fire attack in the form of embers, radiant heat and flame contact.	BAL is determined in accordance with Tables A1.12.5 to A1.12.7 of PBP 2019; Construction provided in accordance with the NCC and as modified by section 7.5 of PBP 2019 (please see advice on construction in the flame zone).	Complies. BAL was determined using Table A1.12.5 of PBP 2019. Proposal to comply with Section 7.5 and 8 of PBP 2019.
Proposed fences and gates are designed to minimise the spread of bush fire.	Fencing and gates are constructed in accordance with section 7.6 of PBP 2019.	Complies. New fences and gates to be constructed of non-combustible materials within 6m of the dwelling.
Proposed Class 10a buildings are designed to minimise the spread of bush fire.	Class 10a buildings are constructed in accordance with section 8.3.2 of PBP 2019.	Complies. Class 10a buildings are to be constructed in accordance with section 8.3.2 of PBP 2019.
Home-based child care: the proposed building can withstand bush fire attack in the form of wind, localised smoke, embers and expected levels of radiant heat.	An APZ is provided in accordance with Table A1.12.2 or A1.12.3 in Appendix 1 of this document around the entire building or structure; and The existing dwelling is required to be upgraded to improve ember protection. This is to be achieved by enclosing or covering openings with a corrosion-resistant steel, bronze or aluminium mesh with a maximum aperture of 2mm. Where applicable this includes the openable portion of the windows, vents, weepholes and eaves, but does not include roof tile spaces. Weather strips, draught excluders or draught seals shall be installed at the base of side hung external doors as per AS 3959.	N/A - No home-based child care operations proposed.

The Deemed To Satisfy (DTS) provisions of the NCC for construction requirements for buildings on bushfire prone land (or buildings deemed to require additional construction requirements in relation to bushfire attack mechanisms) are prescribed in;

- AS 3959:2018 Construction of buildings in bushfire prone areas; and
- NASH Standard: Steel Framed Construction in Bushfire Prone Areas 2021.

Construction standard requirements determined for this proposal are provided below in **Table 6 - Construction Requirements**;

Table 6 - Construction Requirements

Construction Element	Determined Construction Requirements	Must Comply With AS 3959:2018 Sections;	Must Comply With NASH Standards Section;
Roof and Subfloor	BAL 12.5	Section 3 and Section 5	N/A
North Elevation	BAL 12.5	Section 3 and Section 5	N/A
East Elevation	BAL 12.5	Section 3 and Section 5	N/A
South Elevation	BAL 12.5	Section 3 and Section 5	N/A
West Elevation	BAL 12.5	Section 3 and Section 5	N/A
Class 10a within 6m	N/A	N/A	N/A

4.7 Landscaping

Landscaping in bushfire prone areas must be designed and maintained to aid in reducing the impacts of an approaching bushfire in perpetuity. Compliance with Section 7.4 of PBP 2019 is provided below in **Table 7 - Landscaping Compliance**.

Table 7 - Landscaping Compliance

Performance Criteria	Acceptable Solution	Compliance
Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions.	Compliance with the NSW RFS ‘Asset protection zone standards’ (see Appendix 4); A clear area of low-cut lawn or pavement is maintained adjacent to the house; Fencing is constructed in accordance with section 7.6; and Trees and shrubs are located so that: The branches will not overhang the roof; The tree canopy is not continuous; and Any proposed windbreak is located on the elevation from which fires are likely to approach.	Complies. Landscaping of APZ areas is to be managed in accordance with APPENDIX 4 of PBP 2019 and APPENDIX A of this report. A clear area of low-cut lawn or pavement is to be managed surrounding the dwelling. Table 5 of this report prescribes non-combustible fencing and gates. Surrounding vegetation to be managed in perpetuity to comply with APPENDIX 4 of PBP 2019.

4.8 Emergency Management

Emergency Management in NSW is also known as the Emergency Management Cycle (EMC). EMC uses the acronym PPRR or Preparedness, Prevention, Response and Recovery.

Preparedness - Ensuring communities are prepared for disasters and emergencies by utilising one or all of the following; educating the local community on strategic plans to deal with given situations, undertaking mitigation activities to eliminate or reduce the risk of emergency situations, ensuring emergency services are aware of their roles before, during and after an event. Enforcing planning objectives to avoid high risk developments in vulnerable locations.

Prevention - Focusing on reducing or eliminating the likelihood or severity of an emergency situation by putting actions, structures, infrastructure, mitigation activities and education in place to help prevent the potential disaster. This would involve instating planning principles to local development avoiding high risk developments in vulnerable locations.

Response - Assistance and immediate help to minimise, contain or control the effects of an emergency. Emergency services and the greater community responding to the situation before, during and after the events. This can include response actions such as; backburning, sand bagging, evacuations, establishment of safe refuge locations and a multi organisational approach.

Recovery - Minimise recovery times and overall disruption to those affected. A previously underestimated element of dealing with disasters and emergencies (AIDR 2018). Recovery focuses on helping communities and individuals get back to their normal way of life as quickly as possible. Examples of recovery actions are; rebuilding important infrastructure, community support programs, emergency accommodation and government grants for both households and businesses. Compliance with Section 7.4 of PBP 2019 is provided below in

Table 8 - Emergency Management Compliance;

Table 8 - Emergency Management Compliance

Performance Criteria	Acceptable Solution	Compliance
Home-based child care: a bush fire emergency and evacuation management plan is prepared.	A Bush Fire Emergency Management and Evacuation Plan is prepared by the operator consistent with the NSW RFS publication: A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan, and the AS 3745:2010.	N/A - No home-based child care operations proposed.
Prepare a Bushfire Survival Plan	Discuss what to do if a bushfire threatens your home. Prepare your home and get it ready for bushfire season. Know the bushfire alert levels. Keep all the bushfire numbers, websites and the smartphone APP available.	Property owners to prepare a bushfire survival plan prior to occupation of the site, following the directions provided by the NSW RFS – (Bush fire survival plan - NSW Rural Fire Service).

5.0 Conclusion

This proposal for the development on Lot 84 DP 259212 as presented, complies with the requirements and specifications prescribed within PBP 2019. **Table 9 - Compliance Summary**, identifies each bushfire protection measure including recommendations and relevant sections of this report.

Table 9 - Compliance Summary

Bushfire Protection Measure	Recommendations	Acceptable Solution	Performance Solution	Section of Report
APZ	APZ distances are provided in Table 1 – BAL Measurements. APZ’s must be maintained for the life of the development in accordance with Section 4.1 of this report.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.1
Access	Property access must also be maintained for the life of the development in accordance with APPENDIX 3 and Table 7.4a of PBP 2019.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.2
Water Supplies	Non-reticulated water supply must meet the acceptable solutions prescribed in Table 5.3d and Table 7.4a of PBP 2019, including a 5,000L static water supply dedicated to fire suppression activities.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.3
Electricity Services	Electricity supply located underground to the proposed dwelling.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.4
Gas Services	Gas services are to be installed and maintained in accordance with AS/NZS 1596:2014 and Section 4.5 of this report.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.5
Construction Standard	The proposed dwelling to be constructed in accordance with Section 4.6 of this report.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.6
Landscaping	Landscaping to be designed and managed in accordance with APPENDIX 4 of PBP 2019 and APPENDIX 1 of this report.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.7
Emergency Management	No home-based childcare is proposed for this development. However, a bushfire survival plan should be prepared prior to occupation of the site.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.8

6.0 Recommendations

It is our recommendation that the proposal as presented, be approved with the implementation of the bushfire protection measures, construction requirements and maintenance schedules prescribed in this report.

7.0 References

Australian Building Codes Board 2022, *National construction code, Volume 1 and Volume 2*: Australian Building Codes Board.

Commonwealth of Australia 2020, *Royal commission into natural disaster arrangements*, viewed 3 August 2023, <<https://naturaldisaster.royalcommission.gov.au/publications/html-report>>.

Google Maps 2022, Satellite map, 10,000:1, viewed 4 July 2023, <[31 Banyandah St, South Durras NSW 2536 to 49 Banyandah Street, South Durras NSW 2536 - Google Maps](#)>.

Keith, D 2004, *Ocean shores to desert dunes*. Hurstville, N.S.W.: Dept. of Environment and Conservation (NSW).

New South Wales Government 2022, ePlanning spatial viewer, viewed 3 August 2023, <[ePlanning Spatial Viewer \(nsw.gov.au\)](#)>.

NSW Rural Fire Service 2019a, *Bushfire risk management plan, Eurobodalla Bushfire Management Committee 2019*, viewed 3 August 2023, <[Model Bush Fire Risk Management Plan 2008 \(nsw.gov.au\)](#)>.

NSW Rural Fire Service, 2019b, *Planning for Bushfire Protection*. Sydney: NSW Rural Fire Service, viewed 3 August 2023, <[Planning for Bush Fire Protection 2019 \(nsw.gov.au\)](#)>.

NSW Rural Fire Service 2010, *Standards for asset protection zones*, viewed 3 August 2023, <[Standards APZlow.indd \(nsw.gov.au\)](#)>.

Spatial Collaboration Portal 2022, *Spatial Collaboration Portal*, viewed 3 August 2023, <[Spatial Collaboration Portal \(nsw.gov.au\)](#)>.

Standards Australia 2018, *AS 3959 Construction of Buildings in Bushfire Prone Areas*, Sydney: SAI Global Limited, viewed 3 August 2023.

Standards Australia 2005, *AS 2419.1, 'Fire hydrant installations'*, Sydney: SAI Global Limited, viewed 3 August 2023.

Standards Australia 2014, *AS 1596 The storage and handling of LP Gas*: SAI Global Limited, viewed 5 May 2022. Standards Australia 2005, *AS 2419.1 Fire hydrant installations System design, installation and commissioning*: SAI Global Limited, viewed 3 August 2023.

7.1 Legislation References

ENVIRONMENTAL PLANNING & ASSESSMENT ACT 1979, viewed 3 August 2023, <[Environmental Planning and Assessment Act 1979 No 203 - NSW Legislation](#)>.

ENVIRONMENTAL PLANNING & ASSESSMENT REGULATION 2021, viewed 3 August 2023, <[Environmental Planning and Assessment Regulation 2021 - NSW Legislation](#)>.

RURAL FIRES ACT 1997, viewed 3 August 2023, <[Rural Fires Act 1997 No 65 - NSW Legislation](#)>.

RURAL FIRES REGULATION 2022, viewed 3 August 2023, <[Rural Fires Regulation 2022 - NSW Legislation](#)>.

STATE ENVIRONMENTAL PLANNING POLICY (SEPP) (Housing) 2021, viewed 3 August 2023, <[State Environmental Planning Policy \(Housing\) 2021 - NSW Legislation](#)>.

APPENDIX A - APZ Management

APZ areas must be managed appropriately for the life of the development to ensure ongoing protection from the impact of bushfires. Maintenance of the IPA and OPA as described below should be undertaken regularly, particularly in advance of the bush fire season.

Outlined in APPENDIX 4 of PBP 2019 and listed below in table **A1** - APZ Management, are the management actions required to ensure APZ areas are appropriately maintained. Further details on management of APZ areas can be found at –

<[Standards APZlow.indd \(nsw.gov.au\)](#)>.

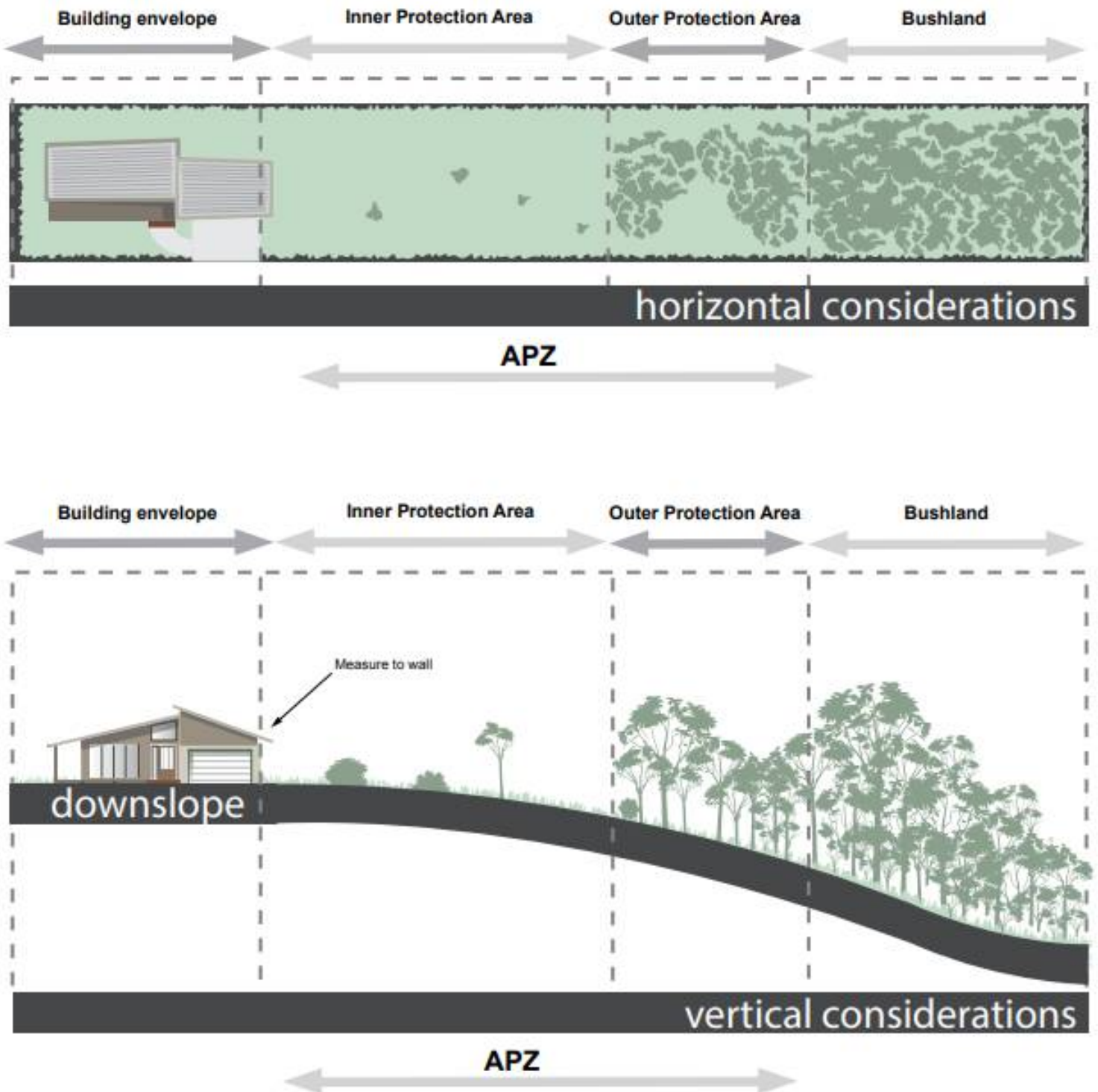
‘Standards for Asset Protection Zones’ is a guide released by the NSW RFS describing APZ establishment and maintenance in detail.

Table A1 - APZ Management

Vegetation Strata	Inner Protection Area (IPA)	Outer Protection Area (OPA) (ref. Table A1.12.4 - PBP 2019)
Trees	Tree canopy cover should be less than 15% at maturity; Trees at maturity should not touch or overhang the building; Lower limbs should be removed up to a height of 2m above the ground; Tree canopies should be separated by 2 to 5m; and Preference should be given to smooth barked and evergreen trees.	Tree canopy cover should be less than 30% ; and Canopies should be separated by 2 to 5m.
Shrubs	Create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings should be provided; Shrubs should not be located under trees; Shrubs should not form more than 10% ground cover; and Clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.	Shrubs should not form a continuous canopy; and Shrubs should form no more than 20% of ground cover.
Grasses	Grass should be kept mown (as a guide grass should be kept to no more than 100mm in height); and Leaves and vegetation debris should be removed.	Grass should be kept mown to a height of less than 100mm; and Leaf and other debris should be removed.

Figure A1 - APZ Depiction (PBP 2019)

Typical Inner and Outer Protection Areas:



APPENDIX B - Construction and Property Maintenance

To ensure this proposal is granted adequate bushfire protection measures for the life of the development, a construction maintenance schedule should be developed to maintain crucial elements of the design. The NSW RFS have multiple resources to assist property owners with improving the survivability of their homes.

An unprepared property is not only a risk to the building owner/occupant, but may also present an increased danger to neighbouring buildings and firefighters. Even buildings which are built to comply with all relevant bushfire construction requirements are placed at risk through poor maintenance (PBP 2019).

Post bush fire research recorded by the NSW RFS indicates that proper maintenance of dwellings and their curtilage significantly improves the survivability of structures (PBP 2019).

The following two pages are a brief guide developed by the NSW RFS to assist home owners in preparing for bushfires. It is recommended that all people living in bushfire prone areas complete this guide as a minimum prior to the bushfire season in your local area.

GET READY FOR BUSH FIRE PREPARE YOUR HOME

A well prepared home is more likely to survive a bush fire.

Even if your plan is to leave early, the more you prepare your home, the more likely it will survive a bush fire or ember attack.

A well prepared home can also:

- Be easier for you or firefighters to defend
- Be less likely to put your neighbours' homes at risk
- Give you more protection if a fire threatens suddenly and you cannot leave

✔ TOP 5 ACTIONS TO MAKE YOUR HOME SAFER

There are simple things you can do around your home to prepare it for a bush fire. Some are regular actions, like mowing the lawn, others are one-off, but all could help save you, your family and your home.

PREPARATION ACTION	WHO'S RESPONSIBLE	COMPLETE
<input type="checkbox"/> Trim overhanging trees and shrubs. This can stop the fire spreading to your home:		___/___/___
<input type="checkbox"/> Mow grass and remove the cuttings. Having a cleared area around your home will give firefighters a safe area to work.		___/___/___
<input type="checkbox"/> Remove material that can burn around your home. This includes things such as door mats, wood piles, mulch, leaves, outdoor furniture.		___/___/___
<input type="checkbox"/> Clear and remove all the debris and leaves from the gutters surrounding you home. Burning embers can set your home on fire.		___/___/___
<input type="checkbox"/> Prepare a sturdy hose/s that will reach all around your home. Make sure you have a reliable source of water (pool, tank, dam) and a diesel/petrol pump available.		___/___/___



NSW RURAL FIRE SERVICE



THE AIDER PROGRAM

If you have limited ability to prepare and cannot access support from family, friends or other services to prepare your property on bush fire prone land, then the NSW RFS may be able to provide assistance via the Assist Infirm, Disabled and Elderly Residents (AIDER) Program.

For more information, contact the AIDER Team:

P: 02 8741 4955

E: aider@rfs.nsw.gov.au

W: www.rfs.nsw.gov.au/plan-and-prepare/aider

✔ MORE PERMANENT PROTECTION FOR YOUR HOME

PROTECTION ITEMS	
<input type="checkbox"/> Block areas where embers can enter the house (external walls, windows, doors, under house)	<input type="checkbox"/> Replace wood fences with metal fences
<input type="checkbox"/> Install metal fly screens on all windows and vents	<input type="checkbox"/> Use stones instead of mulch
<input type="checkbox"/> Install metal gutter guards	<input type="checkbox"/> Repair damaged or missing tiles on roof
<input type="checkbox"/> Position gas cylinders on side of house and away from trees and gardens, direct any pressure valves away from house	<input type="checkbox"/> If you have a pool, tank or dam, put a Static Water Supply (SWS) sign on your property entrance, so firefighters know where they can get water
<input type="checkbox"/> Install a fire sprinkler system to gutters	<input type="checkbox"/> Check and maintain adequate levels of home and contents insurance. Ensure it is up to date.
<input type="checkbox"/> Move garden beds away from house	

For more information on what you can do to prepare for bush fire this season:



NSW Rural Fire Service Website
www.rfs.nsw.gov.au
www.myfireplan.com.au



**Your nearest NSW RFS
 Fire Control Centre:**



Bush Fire Information Line
 1800 NSW RFS (1800 679 737)

(02) 4474 2855

APPENDIX C - Site Images

Image C1 - Site Overview



Image C2 - North aspect



Image C3 - East aspect



Image C4 – South aspect



Image C5 - West aspect



APPENDIX D – BAL Mapping

Image D1 - BAL Ratings



Image D2 – Prescribed Building Envelope

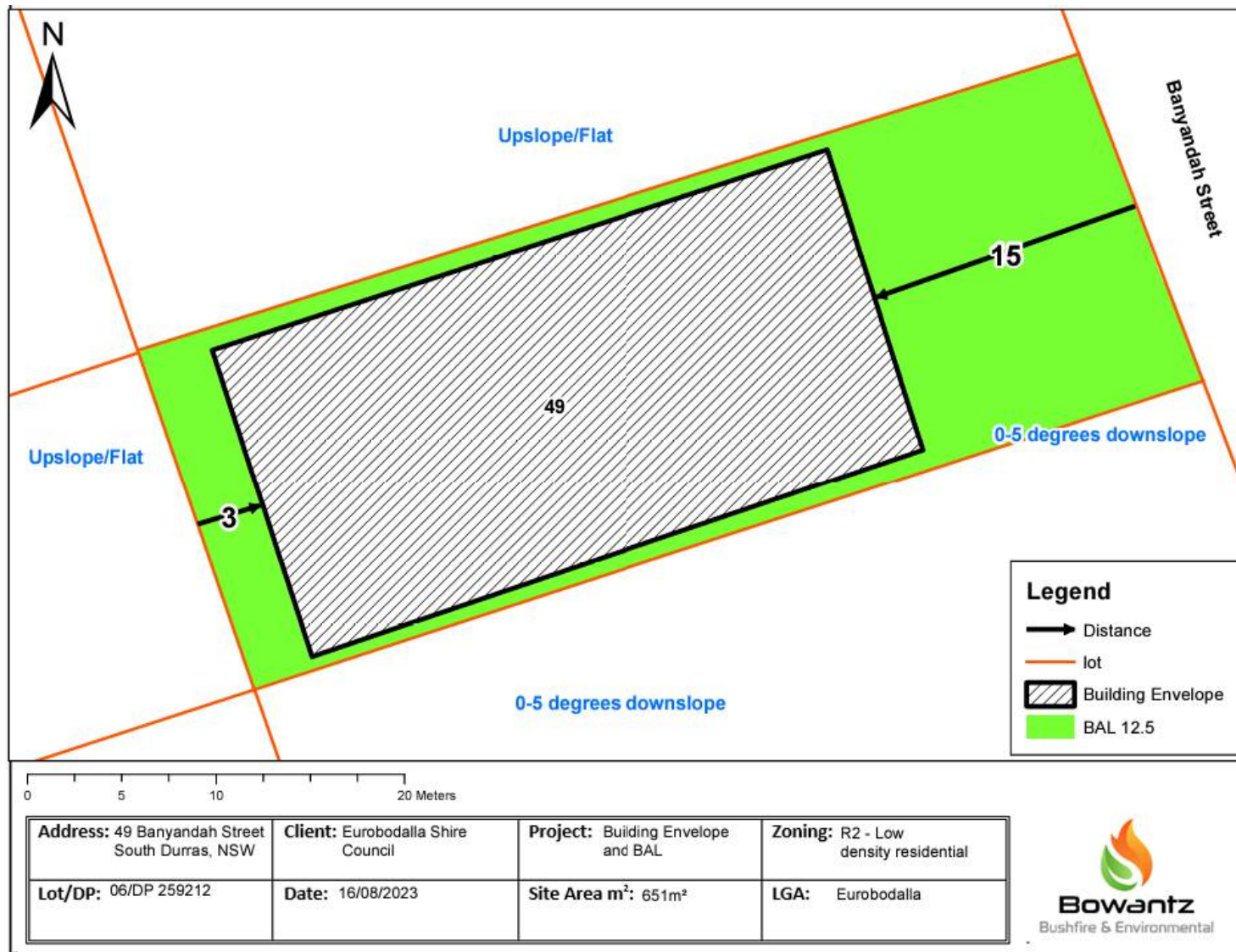


Image D3 - Asset Protection Zones (APZ's)

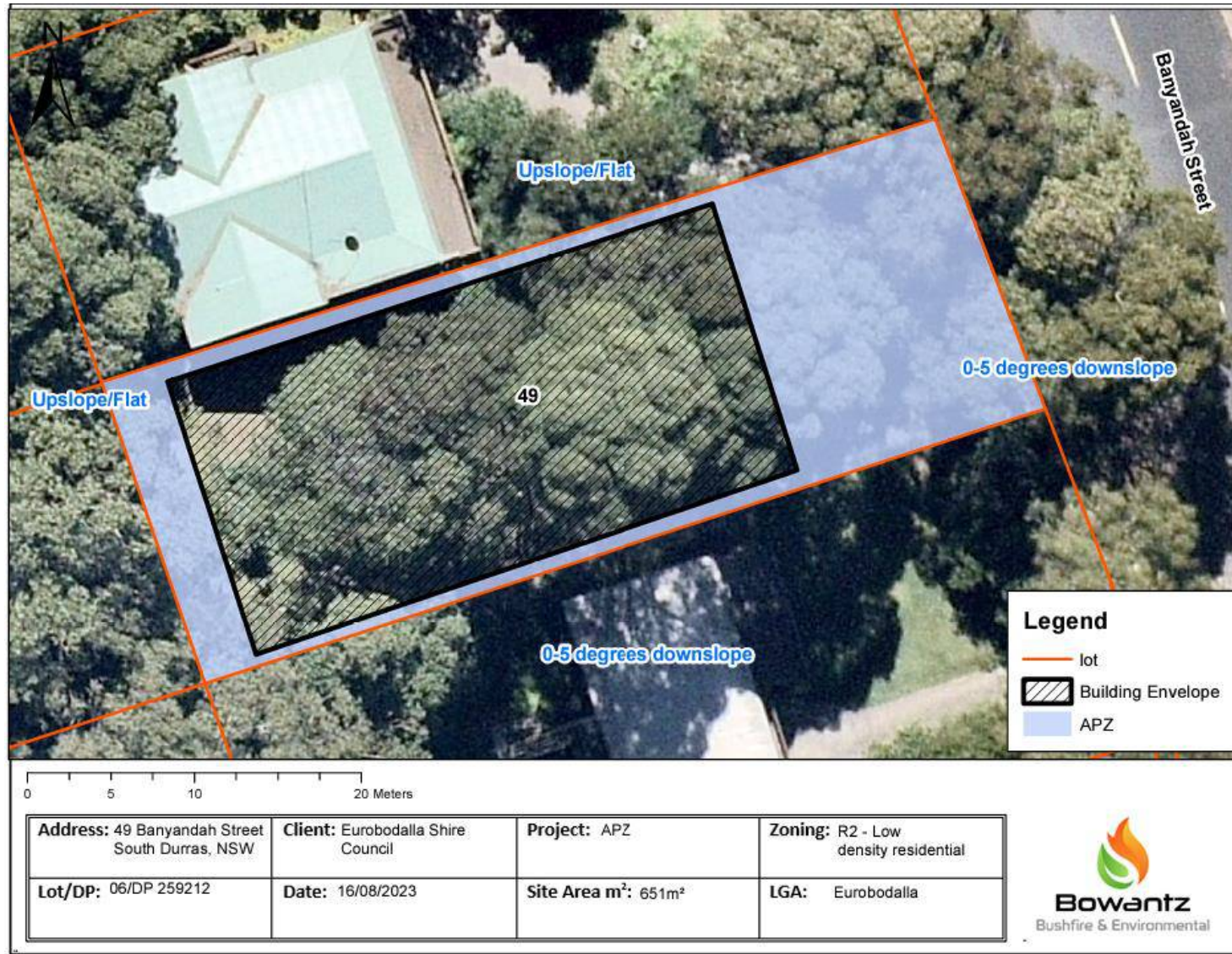


Image D4 - Vegetation Hazards

