

Penrith Council



BAL Assessment of 132 Mayfair Rd. Mulgoa



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Introduction

The assessment is to establish the AS 3959-2009 BAL limitations of the site for the construction of a new dwelling influenced by Category 1 vegetation

The BAL components are – 100M flame width, effective vegetation, dominant slope under the effective vegetation, Asset Protection Zone (APZ) and the Fire Danger Index (FDI)

Bushfire Attack Level Assessment

Bushfire Attack Assessor

Assessment Details

Site Street Address: 132 Mayfair Rd.
Site Suburb: Mulgoa Date: 22/09/2017
Local Government Area: Penrith Fire Area: Greater Sydney Region
Alpine Area: ☐

Assessment Run

Attack Assessment Vegetation Characteristics Calculation Constants

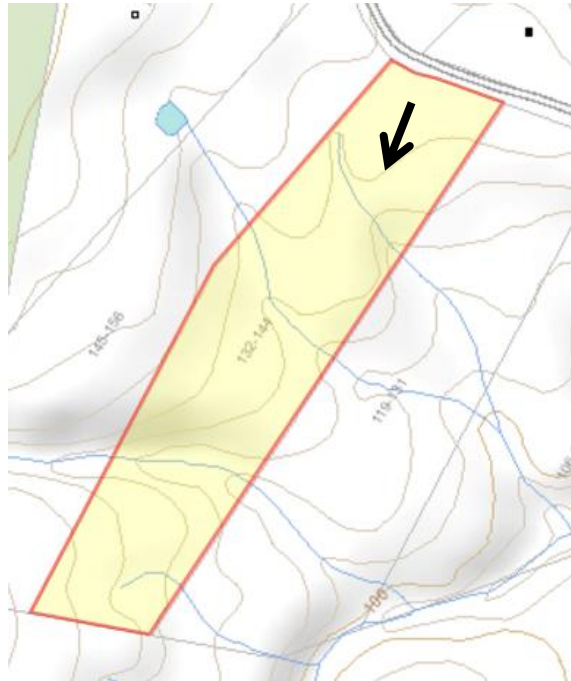
Assessment Details


Run Description: Southern downslope
Vegetation Type: Forest
Separation Distance: 39 Slope Unit: Degrees
Vegetation Slope: 7 Vegetation Slope Type: Downslope
Site Slope: 4 Site Slope Type: Downslope
Flame Width: 100 Flame Temp: 1090
Elevation of Receiver: Default Note: Leave as Default to copy peak elevation.

Results

Radiant Heat: 25.25	Rate Of Spread: 4.86	<input type="checkbox"/> Override ROS
Flame Length: 35.81	Transmissivity: 0.803	<input type="checkbox"/> Override Transmissivity
Construction Level: BAL 29	Peak Elevation of Receiver: 13.08	<input type="checkbox"/> Override Flame Angle
Threat Category: HIGH	Flame Angle: 62	<input type="checkbox"/> Override View Factor
Fire Intensity: 87935	Maximum View Factor: 0.413	
Inner Protection Area: 26	Outer Protection Area: 13	

Topographical



Effective slope under Forest vegetation = $>5-10^\circ$ downslope = 

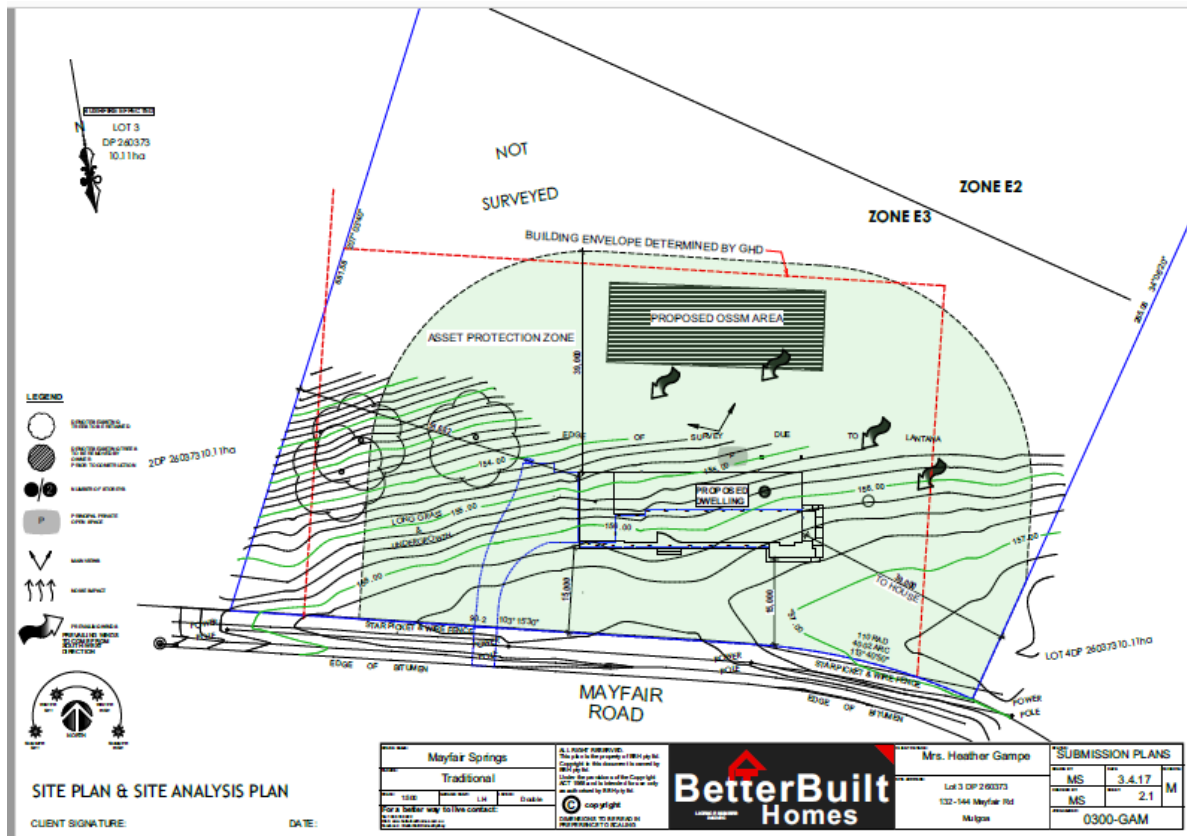
Bushfire Prone Land Map Penrith Council



Vegetation Forest on >5-10° downslope

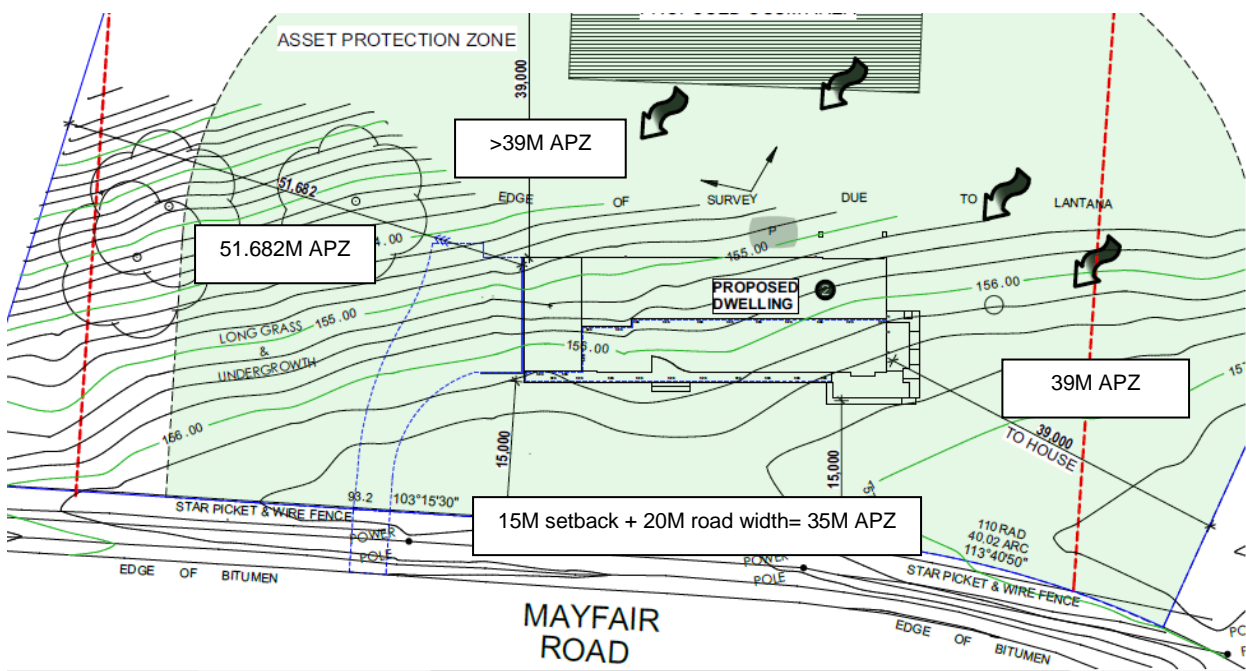


Site Plan



Better Built Homes Site Plan: House Name, Mayfair Springs: Façade Traditional: Garage hand LH: Levels Double:
Date 3.4.17: Job number 0300-GAM: Sheet 2.1: Revision M:

APZ



APZ summary

Aspect: North: 15M dwelling setback from Mayfield Rd. + 20M Mayfield road width = 35M separation from shielded managed forest: BAL19

Aspect: South: >39M separation from 5-10° down slope forest: BAL29

Aspect: East: >39M separation from >5-10° down slope forest: BAL29

Aspect: West: >51M separation from >5-10° down slope forest: BAL29

Project Objectives and Methodology

1. To assess the Bushfire Threat to the dwelling to minimize Bushfire Risk to fire fighters, residents, neighbouring properties and the environment.
2. The measures recommended for the protection of the site and dwelling are based on scientific findings to assess the maximum potential danger to the dwelling.
3. To minimize fire protection impact on flora, fauna, soil stability and water quality.

Date of site inspection: 22.9.17

Council application: Construction of a new dwelling.

Bushfire Protection Factors

Bushfire Threat Assessment with reference to Planning for Bushfire Protection 2006 directives on Asset Protection Zones, access for firefighters and residents to the site, dwelling and water supplies.

The proposal will comply with the requirements of Planning for Bushfire Protection 2006 and AS 3959-2009 BAL29 to all aspects except for BAL19 to the northern aspect to achieve an adequate barrier to minimize the impact of ember, radiant heat and flame attack.

Factors	Details
Legislative Requirement	Section 79BA Environmental Planning & Assessment Act 1979
Limitations of Bushfire Protection	The proposal will comply with the requirements of Planning for Bushfire Protection 2006 and AS 3959-2009 BAL29 to all aspects except for BAL19 to the northern aspect to achieve an adequate barrier to minimize the impact of ember, radiant heat and flame attack.
Specific objectives for APZ	<p>Proposals for development are to comply with the following:</p> <ul style="list-style-type: none">• ensure that bushfire risk to adjoining lands is not increased; <i>The proposed new dwelling and APZ's constructed to BAL29 to all aspects except for BAL19 to the northern aspect replaces forest vegetation and presents a higher level of non combustible materials than Forest.</i>• provide a minimum defendable space; <i>The defendable space between the dwelling and the remaining forest is equal to or >39M with access to the defendable space from Mayfield Rd.</i>• provide better bushfire protection on a redevelopment site than the existing situation. This should not result in new works being exposed to greater risk than an existing building;

	<p><i>The proposed dwelling will require treatment as BAL29 to all aspects except for BAL19 to the northern aspect to ensure a safer outcome to those aspects.</i></p> <ul style="list-style-type: none"> ensure that the footprint of the proposed building does not extend towards the hazard beyond existing building lines on neighbouring land; <i>There aren't any established building lines on the vacant neighbouring lots</i> not result in an increased bushfire risk management and maintenance responsibility on adjoining land owners unless they have agreed to the development; <i>No such imposition is placed on a neighbour</i> ensure building design and construction enhance the chances of occupant and building survival <i>Such design and construction has been considered throughout the design stage with the development of the Inner Protection Area to improve site safety</i>
APZ	Equal to or >39M to all aspects except for 35M to the northern managed Lot 8 DP239393 north of Mayfield Rd.
Address & Title Details	132 Mayfair Rd. Mulgoa L3 DP260373
Flame length & Radiant heat	Radiant heat 25.25kW/M ² Flame length 35.81M
Local Government Area	Penrith Council
Area	Approx. 9.703Ha.
Bushfire Risk Assessment (PBP 2006)	Bushfire Prone Land within Penrith Council Bushfire Prone Land Map.
Bushfire Attack Level	BAL29 to all aspects except for BAL19 to the northern (Mayfield Rd.) aspect
Vegetation Classification	Forest
Asset Protection Zone (APZ)	Equal to or >39M to all hazardous aspects and 35M to the northern managed vegetation.
Slope Assessment	>5-10° downslope
Threat Category	HIGH
FFDI	100
Significant Environmental Features	Nil observed
Threatened Species	Nil observed

Conservation Act	
Nat. Parks and Wildlife Act 1974	Nothing encompassed by the Act was observed.
Water Supply	<p>It is proposed to provide 120 000L in a concrete tank to fulfil the Rural residential Lot requirement of >10 000M² = minimum 20 000L. Underground tanks have an access hole of 200mm to allow tankers to refill direct from the tank. A hardened ground surface for truck access is supplied within 4 metres of the access hole.</p> <p>Above ground tanks are manufactured of concrete or metal and raised tanks have their stands protected. Plastic tanks are not used. Tanks on the hazard side of a building are provided with adequate shielding for the protection of firefighters.</p> <p>All above ground water pipes external to the building are metal up to and including any taps.</p> <p>A suitable connection for firefighting purposes is made available and located within the IPA and away from the structure. A 65mm Storz outlet with a Gate or Ball valve is provided. Gate or Ball valves and pipes are adequate for water flow and are metal and not plastic. .(Planning for Bushfire Protection 2006.Non reticulated water supply areas. Pages 26 & 27)</p>
External Egress/Access	<p>Bushfire hazard egress is easterly from 132 Mayfair Rd onto Mulgoa Rd.</p> <p>Fire fighter and vehicular access to the site is from Mayfair Rd.</p>
Internal Egress/Access	<p>The dwelling site is 15M south of Mayfield Rd. and passing bays are not required. Road specification.</p> <p>A 12M turning circle at the dwelling and curved access/egress driveway to the dwelling reflecting the curve dimensions below is required. For tanker access and ease of filling, a pipe fitted with a 65mm Storz outlet with a Gate or Ball valve from the proposed tank to the nearest practical point of the dwelling access road will be provided.</p> <p>A minimum carriageway width of 4 metres to the dwelling from Mayfield Rd.</p> <p>A minimum vertical clearance of 4 metres to overhanging obstructions including tree branches.</p> <p>The crossfall is not more than 10°.</p> <p>Curves have a minimum inner radius of 6 metres and are minimal in number.</p> <p>The minimum distance between inner and outer curves is 6 metres.</p> <p>Maximum grades for sealed roads do not exceed 15° and not greater than 10° for unsealed roads.</p>

Recommended conditions.

Subject	Recommendation
Construction Level for residential development	Construction requirement to comply with Planning for Bushfire Protection 2006 & AS 3959-2009 is BAL29 to all aspects except for BAL19 to the northern (Mayfair Rd.) aspect.
Asset Protection Zone Vegetation	<p>Prior to commencement of site works & in perpetuity, comply with the extract below- Extract: Manage all gardens as an Inner Protection Area (IPA).(Planning for Bushfire Protection 2006 Appendix 2 A2.2(vi))</p> <p>An IPA should provide a tree canopy of less than 15% and should be located greater than 2 metres from any part of the roofline of a dwelling. Garden beds of flammable shrubs are not to be located under trees and should be no closer than 10 metres from an exposed window or door. Trees should have lower limbs removed up to a height of 2 metres above the ground.</p>

Future Maintenance

Hazard management on adjoining land	The managers of the influential bushfire hazards on Lots 2 & 4 DP260373 have a duty of care to reduce/manage the hazard under the Rural Fires Act 1997 Part 4 Div.2A. Sec.74.
Future dwelling maintenance	To minimize opportunities for ember attack/entry the half yearly removal of fuel from the roof and an annual inspection of the roof for loose roof cladding is recommended. Clean gutters at least at 6 month intervals.
Bushfire management and maintenance.	Management of the APZ on all sides of the buildings will be the owner's ongoing responsibility.
APZ vegetation management in perpetuity. A landscape plan should consider the mature plant/tree population in the Inner Protection Area so not to overplant	<p>Manage all gardens as an Inner Protection Area (IPA).(Planning for Bushfire Protection 2006 Appendix 2 A2.2(vi))</p> <p>An IPA should provide a tree canopy of less than 15% and should be located greater than 2 metres from any part of the roofline of a dwelling. Garden beds of flammable shrubs are not to be located under trees and should be no closer than 10 metres from an exposed window or door. Trees should have lower limbs removed up to a height of 2 metres above the ground.</p> <p>Tree canopy must not overhang the roof.</p>

References

NSW Rural Fire Service, Planning for Bushfire Protection 2006.

NSW Rural Fire Service Building in Bushfire Prone Areas

Penrith Council Bushfire Prone Land Map

Standards Australia. AS 3959 – 2009

Rural Fires Act 1997

Conclusion

Compliance with AS 3959-2009 Construction Level BAL29 on all aspects except for BAL19 to the northern (Mayfield Rd.) aspect will provide adequate protection against bushfire attack providing Asset Protection Zone and building maintenance is practiced across the total site and dwelling.

Disclaimer The report is prepared in accordance with current accepted practice as described in Australian Standard AS 3959 – 2009 and amendments thereto “Construction of Buildings in Bushfire Prone Areas” and N.S.W. Rural Fire Services guide “Planning for Bushfire Protection 2006” and other relevant regulations.

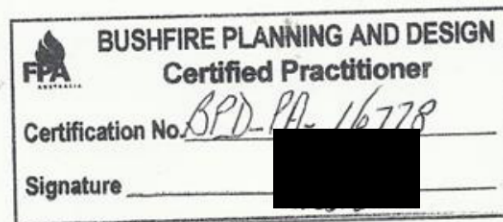
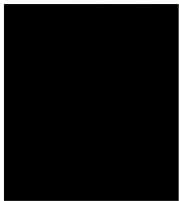
This report is not an insurance policy because owing to the unpredictable nature of bushfires and of weather conditions at the time of a bushfire this report cannot be taken as a warranty that the recommended bushfire mitigation measures will protect the property from damage in every possible bushfire condition.

Ultimately the responsibility is the owner's to accept the risks associated with development in bushfire prone areas.

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