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BUSHFIRE CONSULTING SERVICES PTY LTD
Designing Bushfire Protection Measures

Reference: J25/0205
Date of Issue: 7 April 2025

2025
Bush Fire Assessment Report

In relation to the proposed
granny flat and additions and alterations

At: 2 Wandella Avenue Northmead
Lot 7 DP 236345

(subject site)

Contents

Document Tracking

Item	Detail
Project Name	Bush Fire Assessment Report, proposed additions and alterations
Project Address	Lot 7 DP 236345 2 Wandella Avenue Northmead
Client Name	Kevin Qian
Project Number	J25/0205
Plan Reference	Plans by GiantA, numbered S03002, issue 5, dated 14/03/2024
Prepared by	Laura Richards
Approved by	Laura Richards
BAL under AS3959-2018	BAL 29 and the relevant additional construction requirements of PBP section 7.5

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Document Control

Version	Primary Author	Description	Date Completed
1	Laura Richards	Final	7/04/2025

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It should be borne in mind that the measures recommended in this report cannot guarantee that a building will survive a bushfire event on every occasion. This is due to the degree of vegetation management, the unpredictable behaviour of bushfires and extreme weather conditions. As such, the author is not liable to any person for any damage or loss whatsoever which has occurred or may occur in relation to the person taking action or not taking action based on the recommendations of this report.

NOTE: This bush fire assessment shall remain valid for 12 months from the date of issue.

Executive Summary

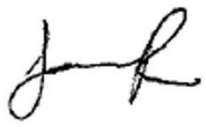
Bushfire Consulting Services was commissioned by Kevin Qian to provide a bush fire assessment for a granny flat and additions and alterations at Lot 7 DP 236345, 2 Wandella Avenue Northmead. The subject site is mapped as designated bush fire prone land by City of Parramatta Council and is located within 100 metres of bush fire prone (hazardous) vegetation. The bush fire attack level (BAL) associated with the development of the subject building has been assessed as BAL 29.

The proposal is a form of infill development and, as such, this report makes recommendations in accordance with the aim, objectives, and performance criteria of Chapter 7 of the NSW RFS document '*Planning for Bush Fire Protection'* (PBP) (NSWRFS 2019). The recommendations address the required bush fire protection measures, including:

- establishment and maintenance of asset protection zones (APZs)
- siting and design of the development
- construction requirements under AS3959-2018 (Standards Australia 2018)
- adequate access for emergency personnel
- adequate water supply, and utility requirements to reduce the risk of ignition by electrical or gas supplies
- landscaping to reduce the risk of ignition by embers, and to minimise flame contact and radiant heat on the proposed development.

Where all recommendations are implemented, the report concludes that the proposal can comply with the aim, objectives and performance criteria of PBP.

Compliance Summary

This Assessment has been Certified by: Laura Richards BPAD-Level 2 Accredited Practitioner FPAA Cert No: BPAD48551	
What is the recommended level of compliance with AS3959-2018?	BAL 29
Can this proposal comply with AS 3959-2018?	Yes
Does this development comply with the aim and objectives of PBP?	Yes
Is referral to the NSW Rural Fire Service (RFS) required?	No

List of Abbreviations

APZ	Asset Protection Zone
AS3959	Australian Standard 3959 – 2018, *Construction of Buildings in Bushfire Prone Areas*
BAL	Bushfire Attack Level
BPAD	Bushfire Planning and Design (Accreditation Scheme)
BPMs	Bushfire Protection Measures
BPLM	Bushfire Prone Land Map
Council	City of Parramatta Council
CDC	Complying Development Certificate
DA	Development Application
DEM	Digital Elevation Model
EP&A Act	*Environmental Planning and Assessment Act – 1979*
FDI	Fire Danger Index
FPAA	Fire Protection Association of Australia
IPA	Inner Protection Area
kW/m^2	Kilowatts per metre squared
LiDAR	Light Detection and Ranging
LPMA	Land & Property Management Authority
NCC	National Construction Code
PBP	*Planning for Bush Fire Protection 2019*
RF Act	*Rural Fires Act – 1997*
RFS	NSW Rural Fire Service
SEPP	State Environmental Planning Policy
SIX	Spatial Information Exchange

1. Introduction

This report has been commissioned by Kevin Qian to provide a bush fire assessment for a granny flat and additions and alterations at Lot 7 DP 236345, 2 Wandella Avenue Northmead.

The subject property is "bushfire prone land" as per the local Council bushfire prone land map as defined by section 10.3 (s10.3) of the *Environmental Planning & Assessment Act (EP&A) 1979* and therefore the requirements stipulated by legislation apply to any new development on the site.

Planning for Bush Fire Protection 2019 (Chapter 7) describes this type of development as "infill development" and therefore the requirements of section 4.14 (s4.14) of the *EP&A Act* are applicable.

The bush fire assessment and recommendations are derived from the *NSW EP&A Act*, the Rural Fire Service document *Planning for Bush Fire Protection 2019* and Australian Standard 3959-2018 '*Construction of Buildings in Bushfire Prone Areas'*.

2. Purpose of this Report

The purpose of this report is to provide the owners, the Consent Authority and the Certifier with a description of the proposed development as well as the vegetation type, slope and any other factors influencing the likely bushfire behaviour, sufficient to show that the development will be protected from the likely bushfire threat as outlined in current legislation.

This assessment includes an analysis of the hazard, threat and subsequent risk to the development and provides recommendations that satisfy the aim and objectives of Planning for Bush Fire Protection.

3. Location

The site is located and known as Lot 7 DP 236345, 2 Wandella Avenue Northmead. The property is part of the City of Parramatta Council local government area.

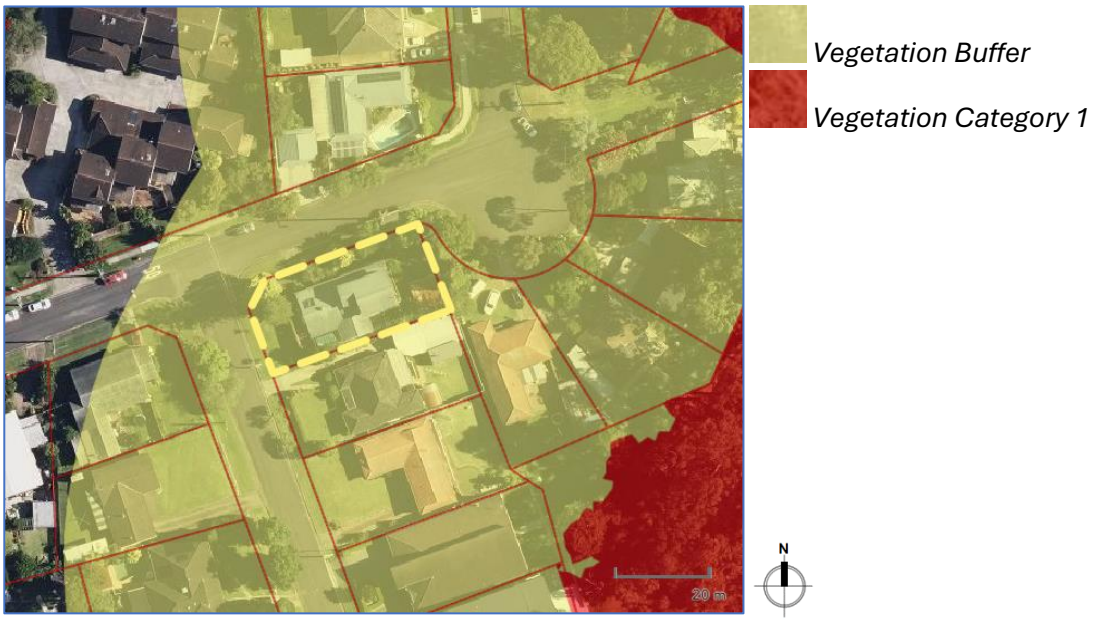
Figure 1. Location Map. Source: SIX Maps Spatial Services (NSW Government 2025a)

Site location outlined in red

Figure 2. Aerial Map. Source: SIX Maps Spatial Services (NSW Government 2025a)

Site location outlined in red

Figure 3. Bushfire Prone Land Map. Source: NSW Government Planning Portal (NSW Government 2025b)



Site location outlined in yellow

4. Property Description

The property is comprised of Lot 7 DP 236345, 2 Wandella Avenue Northmead covering approximately 694.07m^2 in area (Figure 2). It is bounded by private allotments to the northeast and southeast, Wandella Avenue to the southwest and Rifle Range Road to the northwest. It currently contains a single occupancy development, comprising a two-storey dwelling and detached garage, to be retained.

4.1 Zoning

The land is zoned R2 Low Density Residential under Parramatta Local Environmental Plan 2023. Adjacent lands are similarly zoned. (Figure 4).

There appear to be no Protected Areas associated with this land.

Figure 4. Zoning Map. Source: NSW Government Planning Viewer (NSW Government 2025b)

Site location outlined in yellow

4.2 Biodiversity Values

A search of the NSW Office of Heritage and Environment and Heritage's Biodiversity Values Map (NSW Government 2025c) has been carried out and has not revealed any high biodiversity values on the land.

4.3 The Proposal

The proposal is for alterations and additions to the existing two storey dwelling. The new works propose a conversion from one occupancy to a primary dwelling and an attached secondary dwelling with alterations and additions to the existing primary dwelling. In terms of the NCC, the classification of the building is Class 1a.

5. Site Assessment

Bushfire Consulting Services Pty Ltd attended the site on 27 March 2025. The assessment relates to the new development shown in the site plans (reference Appendix 1 below). The NSW Spatial Services mapping website has also been used as a reference (NSW Government 2025a), and 'Ocean Shores to Desert Dunes' by David Keith (Keith 2004), in determining the vegetation type.

6. Bush Fire Attack Assessment

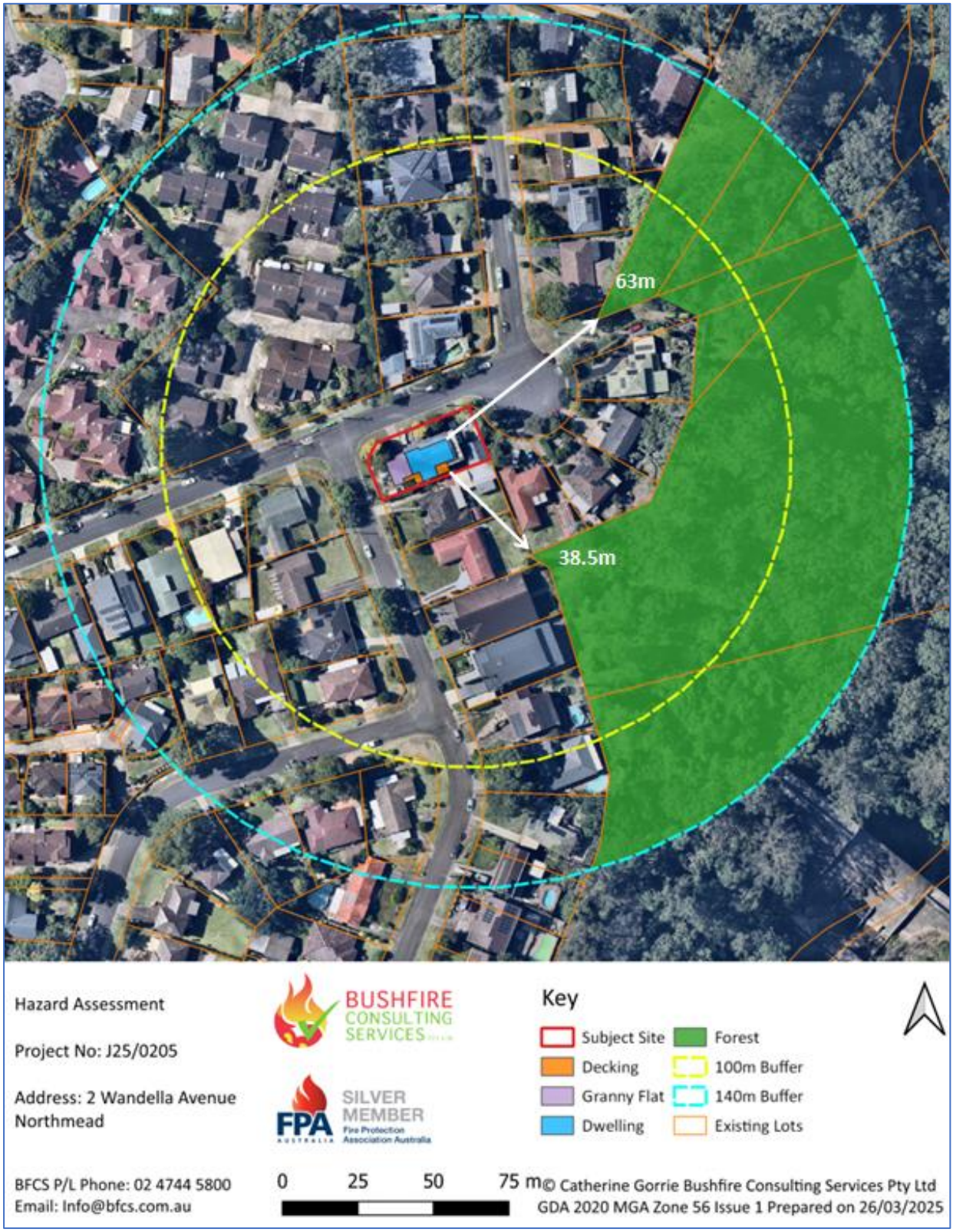
6.1 Determine Vegetation Formations

The hazardous vegetation formations for each aspect of the development within 140m of the asset have been identified according to Keith (2004). The bushfire threat emanates from bushland located to the northeast and southeast of the subject building. This vegetation is external to the subject site boundaries.

Apart from the hazard, within 140m of the site, lots contain existing residential developments with curtilages comprising lawns, shrubs and occasional trees, which do not constitute a hazard.

Based on a site visit and determination of vegetation formation using the Keith (2004) Identification Key, the primary bushland vegetation having the potential to affect the subject building is most representative of Forest in both directions.

Figure 5. Hazardous vegetation affecting the subject building. Source: NearMap (2025) with overlays by BFCS P/L. Aerial Photography date: 20/01/2025



Subject site outlined in red. Vegetation was assessed to a distance of 140m from the subject building

6.2 The effective slope

The slope of the land under the classified vegetation has a direct influence on the rate of fire spread, the intensity of the fire and the level of radiant heat flux. The effective slope of the land from the new building for a distance of 100m is derived from a site assessment combined with the most detailed contour data available. The slope is then categorised into one of following classes, relative to the location of the hazard:

all upslope vegetation (considered 0 degrees)

>0 to 5 degrees downslope vegetation

>5 degrees to 10 degrees downslope vegetation

>10 degrees to 15 degrees downslope vegetation, and

>15 degrees to 20 degrees downslope vegetation.

1m DEM data is sourced from NSW Spatial Services which is captured using LiDAR and has a horizontal accuracy of 0.3m and vertical accuracy of 0.8m at 95%.

The effective slope has been measured manually on site over a distance of 100m from the proposed development where accessible, under the classified vegetation community constituting the hazard. The slope was found to be consistent with the topographical information from NSW Spatial Services LiDAR data.

Direction from Building Footprint	Slope Description
Northeast	Downslope > 10 - 15°
Southeast	Downslope 10.3°
Southwest	N/A
Northwest	N/A
Site slope	Downslope 7.2°

Figure 6. Slope Diagram. Source: NearMap (2025) and LiDAR (NSW Government 2025a) with overlays by BFCS P/L: Aerial Photography Date: 20/01/2025

Site location outlined in red, 1m contours

Northeast Slope is ((63-56)/32.1) x 1/tan = Downslope 12.3°

Southeast/east slope is ((59-51)/44.1) x 1/tan = Downslope 10.3°

Site Slope — ((68-59)/71.1) x 1/tan = Downslope 7.2°

6.3 Fire Weather

The development is located in the City of Parramatta Council area, a part of the Greater Sydney Region, which has a [1]Fire Danger Index of 100.

6.4 Determination of APZs

An Asset Protection Zone (APZ) is a fuel-reduced area surrounding a built asset or structure. An APZ provides a buffer zone between a bush fire hazard and an asset and an area of reduced bush fire fuel that allows suppression of fire. It also provides an area from which backburning or hazard reduction can be conducted, and allows emergency services access as well as providing a relatively safe area for firefighters and home owners to defend their property.

Potential bush fire fuels should be minimised within an APZ. This is so that the vegetation within the planned zone does not provide a path for the transfer of fire to the asset either from the ground level or through the tree canopy. PBP has minimum specifications for APZs to be established around a dwelling to be managed as an Inner Protection Area (IPA).

An IPA should provide a tree canopy cover of less than 15% and have minimal fine fuel at ground level, the grass mowed on a frequent basis, trees and shrubs retained as clumps or islands and do not take up more than 20% of the area, trees and shrubs located far enough from buildings so that they will not ignite the building, garden beds with flammable shrubs not located under trees, and are to be separated from exposed windows and doors by a distance of at least twice the height of the vegetation. Minimise plant species that keep dead material or drop large quantities of ground fuel, tree canopies are not located within 2 metres of the building, trees separated by 2-5 metres and do not provide a continuous canopy from the hazard to the building, and lower limbs of trees removed up to a height of 2 metres above the ground.

[1] The Fire Danger Index (FDI) is a numerical rating that indicates the level of fire danger in a specific area. The FDI takes into account factors such as the chance of fire starting, its rate of spread, its intensity, the chance of a fire starting, and the difficulty potential for its suppression, according to various combinations of air temperature, relative humidity, wind speed and both the long and short-term drought effects

To achieve the lowest possible BAL Rating for the subject site, we have used the Detailed Method of Determining the BAL of AS3959-2018 (Appendix B Method 2).

To identify the appropriate APZ, the relevant FFDI, vegetation formation, separation distances, effective slopes and site slopes have been used as inputs.

Minimum distances for APZs – residential development, FFDI 100 areas (≤29kW/m², 1090K)

Aspect	Vegetation Classification	Slope Under Classified Vegetation	Minimum APZ required	APZ available/ achievable
Northeast	Forest	Downslope > 10 - 15°	45m	63m
Southeast	Forest	Downslope 10.3°	*36m	38.5m
Southwest	N/A	N/A	N/A	N/A
Northwest	N/A	N/A	N/A	N/A

** Calculated by AS3959-2018 Method 2 using the NBC Bushfire Attack Assessor v4.1*

The entire lot is to be managed as an IPA. The site currently contains no classified Vegetation modification is not required. The APZ can be achieved when including adjacent managed land and roadway/s as permitted by PBP 3.2.

6.5 Identify Construction Requirements

The appropriate construction requirements for the development are determined by matching the relevant FFDI, vegetation type, the distance measured from the edge of the unmanaged vegetation to the closest external wall to identify the BAL using the relevant tables from PBP. These construction requirements are located in section 3 of AS3959-2018. These requirements are varied by the applicable additional construction requirements of PBP section 7.5.

PBP Table A1.12.5 Determination of BAL, FFDI 100 – residential developments

Aspect	Distance from hazard	Vegetation Classification	Effective Slope Under Classified Vegetation	Bushfire Attack Level (BAL) required
Northeast	63m	Forest	Downslope > 10 - 15°	BAL 29
Southeast	38.5m	Forest	Downslope 10.3°*	BAL 29
Southwest	>100m	N/A	N/A	BAL 29
Northwest	>100m	N/A	N/A	BAL 29

** Calculated by AS3959-2018 Method 2 using the NBC Bushfire Attack Assessor v4.1*

The assessment indicates that the subject building will experience radiant heat levels of <29kW/m^2 as a result of foreseeable local bushfires under conditions of an FDI of 100. The expected radiant heat levels translate to a Bushfire Attack Level (BAL) on the building of BAL 29. Construction of any new development to BAL 29 specifications is 'primarily concerned with protection from ember attack and radiant heat up to and including 29kW/m^2'.

7. Bush Fire Protection Measures

The BPMs for residential infill development include provisions relating to APZs, access, water supply, electricity and gas services, construction standards, landscaping and emergency evacuation. In order to create appropriate separation between a dwelling and the bush fire hazard, APZs commensurate with those specified for new subdivision must be provided.

7.1 Asset Protection Zones

PBP Table 7.4a Performance criteria and acceptable solutions for residential infill development

Performance Criteria	Acceptable Solutions/Comment
APZs are provided commensurate with the construction of the building	Achieved as the minimum APZ is provided

Performance Criteria	Acceptable Solutions/Comment
A defendable space is provided	Achieved as adequate defendable space is available to the front of the subject building and pedestrian firefighter access is available to the rear
APZs are managed and maintained to prevent the spread of a fire to the building	Achieved as the APZs are to be managed in accordance with the requirements of Appendix 4 of PBP
The APZ is provided in perpetuity	Achieved as APZs requirements will be specified in the Development Consent conditions
APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised	Achieved as the APZ is located on lands with a slope less than 18 degrees. The slope under the site APZ is <10°

7.2 Access

Performance Criteria	Acceptable Solutions/Comment
Firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation	Achieved as property access roads are two-wheel drive, all-weather roads
The capacity of access roads is adequate for firefighting vehicles	Achieved as it is assumed that the capacity of road surfaces is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes)
There is appropriate access to water supply	Achieved as a hydrant is located approximately 15m from the lot to the northwest, assumed to be in accordance with the relevant clauses of AS 2419.1:2005

Performance Criteria	Acceptable Solutions/Comment
Firefighting vehicles can access the dwelling and exit the property safely	Achieved as the development is located within an urban area where an unobstructed path (no greater than 70m) is provided between the most distant external part of the proposed dwelling and the nearest part of the public access road (where the road speed limit is not greater than 70kph) that supports the operational use of emergency firefighting vehicles

7.3 Water Supplies

Performance Criteria	Acceptable Solutions/Comment
An adequate water supply is provided for fire-fighting purposes	Achieved as reticulated water is provided to the development
Water supplies are located at regular intervals	Achieved as fire hydrant spacing, design and sizing are assumed to comply with the relevant clauses of AS 2419.1:2005
The water supply is accessible and reliable for fire fighting operations	Achieved as 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 (assumed)
Flows and pressure are appropriate	Achieved as fire hydrant flows and pressures are assumed to comply with the relevant clauses of AS 2419.1:2005
The integrity of the water supply is maintained	Achieved as any new above-ground water service pipes external to the building are to be metal, including and up to any taps

7.4 Electricity Services

Performance Criteria	Acceptable Solutions/Comment
Location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings	N/A as the electricity supply is existing

7.5 Gas Services

Performance Criteria	Acceptable Solutions/Comment
Location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings	Where applicable, 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 All fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side, connections to and from gas cylinders are metal Polymer-sheathed flexible gas supply lines are not used, and above-ground gas service pipes are metal, including and up to any outlets

7.6 Construction Standards

Performance Criteria	Acceptable Solutions/Comment
The proposed building can withstand bush fire attack in the form of embers, radiant heat and flame contact	BAL 29 has been determined in accordance with *AS3959-2018 Method 2 using the NBC Bushfire Attack Assessor v4.1* The additional construction requirements of section 7.5 of PBP are to be incorporated into the development and are provided as an Appendix
Proposed fences and gates are designed to minimise the spread of bush fire	Any new fences and gates are to be constructed from non-combustible material only

Performance Criteria	Acceptable Solutions/Comment
Proposed Class 10a buildings are designed to minimise the spread of bush fire	There are no bush fire protection requirements for Class 10a buildings located more than 6m from a dwelling in bush fire prone areas. Where a Class 10a building is located within 6m of a dwelling it must be constructed in accordance with the NCC

7.7 Landscaping

Performance Criteria	Acceptable Solutions/Comment
Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions	Achieved as any landscaping within the APZ is to comply with the NSW RFS 'Asset protection zone standards' (PBP Appendix 4) A clear area of low-cut lawn or pavement is maintained adjacent to the house, 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

8. Likely Impact of any BPMs

The proposed bushfire protection measures will not adversely impact on the environment. It should be noted that this report has not focused on environmental issues and as the land is a fully developed residential site, such features are unlikely to exist on the site.

9. "The SEPP Code", Part 1, Division 2 clause 1.19A

Land on which complying development may not be carried out—bush fire prone land

Criteria	Compliance
(1) To be complying development specified for any complying development code (except the Housing Alterations Code)—	
(a) the development must not be carried out on land in bush fire attack level-40 (BAL-40) or the flame zone (BAL-FZ), and (b) in the case of development specified for the Rural Housing Code—any associated access way to the development must be on land that is— (i) not in bush fire attack level-40 (BAL-40) or the flame zone (BAL-FZ), or (ii) grasslands.	Yes, the BAL is 29
(2) This clause does not apply to the following development— (a) non-habitable detached development that is more than 6m from any dwelling house, (b) landscaped areas, (c) non-combustible fences, (d) swimming pools.	
(3) For the purposes of this clause, land is not in bush fire attack level-40 (BAL-40) or the flame zone (BAL-FZ) if—	
a) A person who is recognised by the NSW Rural Fire Service as a suitably qualified consultant in bush fire risk assessment determines, in accordance with the methodology specified in Planning for Bush Fire Protection, that the land is not in bush fire attack level-40 (BAL-40) or the flame zone (BAL-FZ), or	Yes, the author of this report is recognised by the NSW Rural Fire Service as a suitably qualified consultant in bush fire risk assessment
(b) in the case of development carried out on grasslands—the development conforms to the specifications and requirements of Table	N/A

Criteria	Compliance
7.9a of Planning for Bush Fire Protection that are relevant to the development	

10. Part 3 Housing Code

Assessment of Compliance with SEPP (Exempt and Complying Development Codes) 2008, Part 3 Housing Code, Division 2 Clause 3.4

(1) This clause does not apply to the following complying development under this code—

(a) non-habitable detached development that is more than 6m from any dwelling house,

(b) landscaped areas,

(c) non-combustible fences,

(d) swimming pools.

Note. See clause 1.19A for additional provisions relating to bush fire prone land.

(2) If complying development under this code is carried out on bush fire prone land, the following development standards also apply in addition to any other development standards:

Criteria	Compliance
a) Repealed	N/A
b) The lot on which the development is to be carried out must have direct access to a public road or a road vested in or maintained by the council	Yes
c) The dwelling house must be able to be connected to mains electricity	Yes
d) If reticulated or bottled gas is installed and maintained on the lot i) it must be installed and maintained in accordance with AS/NZS 1596:2014, The storage and handling of LP Gas and the requirements of relevant authorities (metal piping must be used), and	These requirements will be provided by the owner or builder to any gas installer for compliance, if applicable

Criteria	Compliance
ii) the storage and handling of any LP gas on the lot must comply with the requirements of the relevant authorities (including the use of metal piping)	
e) any gas cylinders stored on the lot within 10m of any dwelling house must: (i) have its release valves directed away from the dwelling house, and ii) be enclosed on the hazard side of the installation (iii) have metal connections to and from the cylinder	These requirements will be provided by the owner or builder to any gas installer for compliance, if applicable
f) there must not be any polymer sheathed flexible gas supply lines to gas meters adjacent to the dwelling house	These requirements will be provided by the owner or builder to any gas installer for compliance, if applicable
g) if the development is carried out on a lot in Zone RU5, there must be— (i) a reticulated water supply connection to the lot and a fire hydrant within 70m of any part of the development, or (ii) a 10,000 L capacity water tank on the lot,	N/A as the zone is R2
h) if the development is carried out on a lot in any zone other than Zone RU5, there must be— (i) a reticulated water supply connection to the lot, and (ii) a fire hydrant within 70m of any part of the development,	Yes, the zone is R2: Low Density Residential and there is a reticulated water supply connection to the lot, and a fire hydrant is located approximately 15m from the lot to the northeast which is within 70m of any part of the development
i) The development must conform to the specifications and requirements of Planning for Bush Fire Protection that are relevant to the development	Yes, see above

11. Recommendations

The following recommendations are made for the bushfire measures for the proposed granny flat and additions and alterations at Lot 7 DP 236345, 2 Wandella Avenue Northmead, and are based upon the relevant provisions of the NSW Rural Fire Service Guideline entitled *Planning for Bush Fire Protection 2019*.

1. Asset Protection Zones

At the commencement of the development, and in perpetuity, the entire site shall be managed as an Inner Protection Area (IPA) Asset Protection Zone, as outlined in PBP 2019 Appendix 4.

Trees

- 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 ground
- canopies should be separated by 2 to 5m
- preference should be given to smooth barked and evergreen trees

Shrubs

- create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings
- shrubs should not be located under trees
- shrubs should not form more than 10% ground cover
- clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation

Grass

- should be kept mown (as a guide grass should be kept to no more than 100mm in height)
- leaves and vegetation debris should be removed.

2. Construction Standards

New construction shall comply with Sections 3 and 7 (BAL 29) of AS3959-2018 *'Construction of buildings in bush fire-prone areas'*, as varied by the applicable additional construction requirements of PBP section 7.5 (shown as Appendix 4 below).

3. Gas Services

Where applicable, reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 *The storage and handling of LP Gas* and the requirements of relevant authorities, and metal piping is used.

All fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side, connections to and from gas cylinders are metal.

Polymer-sheathed flexible gas supply lines are not used, and above-ground gas service pipes are metal, including and up to any outlets.

4. Fences and gates

All new fences and gates are to be constructed from non-combustible material only.

5. Landscaping

Any new landscaping within the APZ is to comply with the NSW RFS '*Asset protection zone standards*' (PBP Appendix 4).

6. Emergency and Evacuation Planning

The need to formulate an emergency evacuation plan is suggested. To do so, occupants can complete a Bush Fire Safety Plan on the NSW RFS Website http://www.rfs.nsw.gov.au/ under publications / bushfire safety.

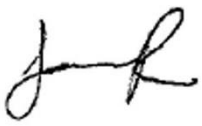
12. Summary

This report consists of a bush fire assessment for the proposed granny flat and additions and alterations at Lot 7 DP 236345, 2 Wandella Avenue Northmead. The report concludes that the proposed development is on designated bushfire prone land and the legislative requirements for development in bushfire prone areas are applicable.

This report has considered all the elements of bushfire attack and finds that the development has a Bushfire Attack Level of BAL 29. The development satisfies the Objectives and Performance requirements of '*Planning for Bush Fire Protection*' 2019, subject to implementation of the recommendations made by this report.

Notwithstanding the precautions adopted, it should always be remembered that bushfires burn under a wide range of conditions and an element of risk, no matter how small, always remains and although the standard is designed to improve the performance of such buildings, there can be no guarantee because of the variable nature of bushfires that any one building will withstand bushfire attack on every occasion.

This report is a bush fire assessment that provides the required information to assist local Council in determining compliance in accordance with Planning for Bush Fire Protection and AS3959-2018. The local Council is the final consenting authority and the construction of the building must comply with the recommendations included in the Council's conditions of consent.



Laura Richards | Accredited Bushfire Planning and Design Practitioner

Fire Protection Association Australia BPAD-Level 2 (BPAD 48551)

(a person who is recognised by the NSW Rural Fire Service as a suitably qualified consultant in bush fire risk assessment)

Corporate Silver Member Fire Protection Association Australia

Grad Cert Bushfire Protection (UWS 2018)

Grad Dip Bushfire Protection (UWS 2023)

Bushfire Consulting Services Pty Ltd

Tel: 02 4744 5800 | Mob: 0425 833 893

13. References

Keith D 2004, *Ocean Shores to Desert Dunes, the Native Vegetation of NSW and the ACT,* Department of Environment and Conservation, Sydney

NearMap 2025, *NearMap Photomap Aerial Imagery*, NearMap Australia, Barrangaroo, NSW

NSW Government 2025a, *NSW Spatial Services*, NSW Department of Finance, Services and Innovation.

NSW Government 2025b, *NSW Planning Portal*, NSW Department of Planning and Environment.

NSW Government 2025c, *Biodiversity Values Map*, NSW Department of Environment and Heritage.

NSW RFS 2019, *Planning for Bush Fire Protection*, NSW Rural Fire Service, Sydney.

Standards Australia 2018, *Australian Standard AS 3959-2018 'Construction of Buildings in Bushfire Prone Areas'*, SAI Global, Australia.

Watson, P 2012, *Fuel Load Dynamics in NSW Vegetation Part 1: Forests and Grassy Woodlands*, University of Wollongong.

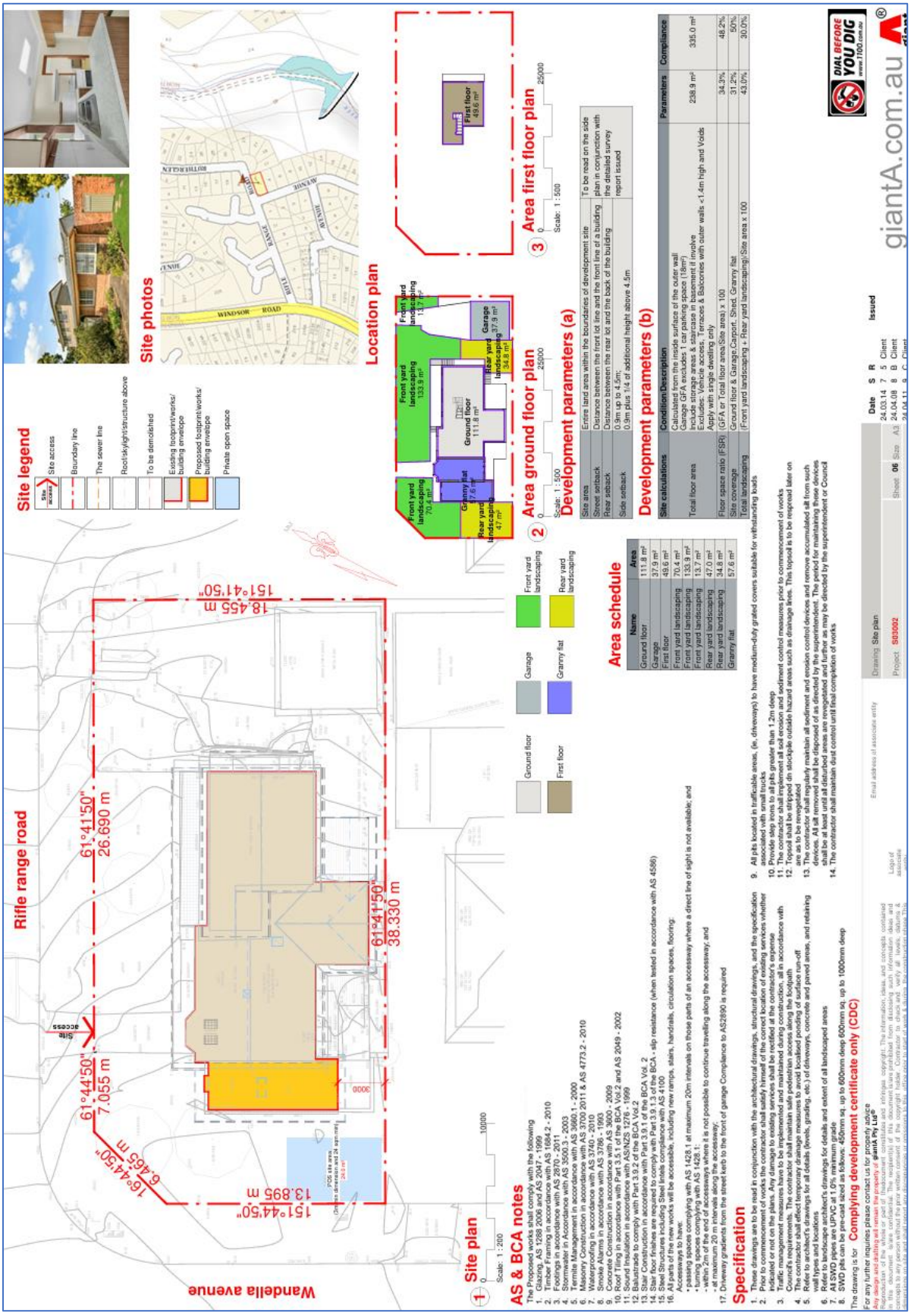
14. Legislation

Environmental Planning & Assessment Act 1979

Rural Fires Act 1997

Rural Fires Regulation 2022

Appendix 1 - Site Plan



Appendix 2 – Photos of Site and Surrounds

Source: BFCS P/L 27/03/2025

Subject site

Vegetation to the east

Vegetation to the east

Appendix 3 – Bushfire Risk Assessment Certificate

This form is completed by a recognized consultant in bushfire risk assessment in accordance with section s4.14 of the *Environmental Planning and Assessment Act 1979 No 203*

PROPERTY ADDRESS:	Lot 7 DP 236345 2 Wandella Avenue Northmead
DESCRIPTION OF PROPOSAL:	Granny flat and additions and alterations
PLAN REFERENCE: (relied upon in report preparation)	Plans by GiantA, numbered S03002, issue 5, dated 14/03/2024
BAL RATING	BAL 29 (If the BAL rating is FZ the application is to be referred to NSW RFS for assessment)
DOES THE PROPOSAL RELY ON ALTERNATE SOLUTIONS:	YES NO (Circle the relevant response) (If YES the application is to be referred to NSW RFS for assessment)

I, Laura Richards, of Bushfire Consulting Services Pty Ltd, have carried out a bushfire risk assessment on the above mentioned proposal and property. A detailed Bushfire Assessment Report is attached which includes the submission requirements set out in Appendix 2 of *Planning for Bushfire Protection 2019* together with recommendations as to how the relevant specifications and requirements are to be achieved.

REPORT REFERENCE:	J25/0205
REPORT DATE:	7/04/2025
CERTIFICATION NO/ACCREDITED SCHEME:	BPAD-Level 2 Accredited Practitioner FPAA Cert No: BPAD48551

Note: this certificate must be completed and signed by a person recognised by the NSW Rural Fire Service as a qualified consultant in bush fire risk assessment in accordance with s4.14 of *the EP&A Act 1979* No 203.

****

I hereby certify, in accordance with Section 4.14 of the Environmental Planning and Assessment Act 1979 No 203:

That I am a person recognised by the NSW Rural Fire Service as a qualified consultant in bushfire risk assessment; and

That subject to the recommendations contained in the attached Bushfire Risk Assessment Report the proposed development conforms to the relevant specifications and requirements*.

* The relevant specifications and requirements being; specifications and requirements of the document entitled Planning for Bush Fire Protection prepared by the NSW Rural Fire Service in co-operation with the Department of Planning and any other document as prescribed by Section s4.14 of the *Environmental Planning and Assessment Act 1979 No 203*.

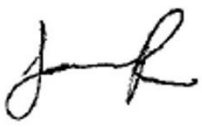
I am aware that the bush fire assessment report, prepared for the above mentioned site is to be submitted in support of a development application for this site and will be relied upon by Council as the basis for ensuring that the bushfire risk management aspects of the proposed development have been addressed in accordance with *Planning for Bush Fire Protection 2019*.

Attachments:

✅ Bush Fire Risk Assessment Certificate

✅ Recommendations

✅ Statement of vegetation impact in relation to APZ



SIGNATURE:

DATE: 7/04/2025

Appendix 4 - Modifications of section 7.5 of PBP

7.5 Additional construction requirements

To ensure the performance criteria for construction standards given in section 7.4 can be met, PBP adopts additional measures over and above AS 3959 and NASH Standard as follows:

- construction measures for ember protection at BAL-12.5 and BAL-19 provided by AS 3959
- construction measures for development in BAL-FZ; and
- requirements over and above the performance criteria contained within AS 1530.8.1 and AS 1530.8.2 apply in regards to flaming.

7.5.1 Ember protection

Based on the findings from the 2009 Victorian Bush Fires Royal Commission, PBP aims to maintain the safety levels previously provided by AS 3959:1999 in relation to ember protection at lower Bush Fire Attack Levels.

In particular, the areas addressed are in relation to:

- sarking;
- subfloor screening;
- floors;
- verandas, decks, steps, ramps and landings;
- timber support posts and beams; and
- fascias and bargeboards.

7.5.2 NSW State Variations under G5.2(a) (i) and 3.10.5.0(c)(i) of the NCC

Certain provisions of AS 3959 are varied in NSW based on the findings of the Victorian Bush Fires Royal Commission and bush fire industry research.

The following variations to AS 3959 apply in NSW for the purposes of NSW G5.2(a)(i) of Volume One and NSW 3.10.5.0(c)(i) of Volume Two of the NCC;

- clause 3.10 of AS 3959 is deleted and any sarking used for BAL-12.5, BAL-19, BAL-29 or BAL-40 shall:
    - be non-combustible; or

        - comply with AS/NZS 4200.1, be installed on the outside of the frame and have a flammability index of not more than 5 as determined by AS 1530.2; and
- clause 5.2 and 6.2 of AS 3959 is replaced by clause 7.2 of AS 3959, except that any wall enclosing the subfloor space need only comply with the wall requirements for the respective BAL; and
- clause 5.7 and 6.7 of AS 3959 is replaced by clause 7.7 of AS 3959, except that any wall enclosing the subfloor space need only comply with the wall requirements for the respective BAL; and
    - fascias and bargeboards, in BAL-40, shall comply with:
    - clause 8.4.1(b) of AS 3959; or
    - clause 8.6.6 of AS 3959.

Appendix 5 – Method 2 Calculations

NBC Bushfire Attack Assessment Report V4.1

AS3959 (2018) Appendix B - Detailed Method 2

Print Date: 1/04/2025 **Assessment Date:** 1/04/2025

Site Street Address:	2 Wandella Avenue, Northmead
Assessor:	Catherine Gorrie; Bushfire Consulting Services Pty Ltd
Local Government Area:	Parramatta **Alpine Area:** No

Equations Used

Transmissivity: Fuss and Hammins, 2002
Flame Length: RFS PBP, 2001/Vesta/Catchpole
Rate of Fire Spread: Noble et al., 1980
Radiant Heat: Drysdale, 1985; Sullivan et al., 2003; Tan et al., 2005
Peak Elevation of Receiver: Tan et al., 2005
Peak Flame Angle: Tan et al., 2005

Run Description: East

Vegetation Information

Vegetation Type:	North Coast WSF (Shrubby)		
Vegetation Group:	Wet Sclerophyll Forests (Shrubby)		
Vegetation Slope:	10.3 Degrees	**Vegetation Slope Type:**	Downslope
Surface Fuel Load(t/ha):	22	**Overall Fuel Load(t/ha):**	35.98
Vegetation Height(m):	1.4	Only Applicable to Shrub/Scrub and Vesta	

Site Information

Site Slope	7.2 Degrees	**Site Slope Type:**	Downslope
Elevation of Receiver(m)	5.1	**APZ/Separation(m):**	38.5

Fire Inputs

Veg./Flame Width(m):	100	**Flame Temp(K):**	1090

Calculation Parameters

Flame Emissivity:	95	**Relative Humidity(%):**	25
Heat of Combustion(kJ/kg	18600	**Ambient Temp(K):**	308
Moisture Factor:	5	**FDI:**	100

Program Outputs

Level of Construction:	BAL 29	**Peak Elevation of Receiver(m):**	12.33
Radiant Heat(kW/m2):	26.3	**Flame Angle (degrees):**	57
Flame Length(m):	39.25	**Maximum View Factor:**	0.427
Rate Of Spread (km/h):	5.37	**Inner Protection Area(m):**	22
Transmissivity:	0.81	**Outer Protection Area(m):**	17
Fire Intensity(kW/m):	99892		

BAL Thresholds

	BAL-40:	BAL-29:	BAL-19:	BAL-12.5:	10 kw/m2:	Elevation of Receiver:
Asset Protection Zone(m):	28	36	50	66	94	5.1