



Bush Fire Hazard Assessment Report

**For Proposed, Installation of an aboveground swimming pool and
associated decking.**

9 Poate Place, Davidson. NSW 2085



21st October 2021

**Prepared By:
The Fire Consultants
Tel: 0418 460517
PO Box 5380 Hallidays Point NSW 2430**



Abbreviations Used

AS3959-2018 Construction of buildings in bushfire prone areas

TFC – The Fire Consultants

PBP 2019 – Planning for Bushfire Protection (NSW Rural Fire Service)

RFS - Rural Fire Service

BCA - Building Code of Australia

EP&A Act- Environmental Planning and Assessment Act 1979

BAL - Bushfire Attack Level

APZ - Asset Protection Zone

FRNSW - Fire Rescue NSW

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Document Control

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Executive Summary

This report has been prepared as a bushfire hazard assessment for the proposed installation of an aboveground swimming pool and associated decking on the subject Lot located at 9 Poate Place, Davidson. NSW 2085 in the Northern Beaches Council LGA NSW.

The proposal is Residential Infill Development and has been identified as being bushfire prone land and is subject to consideration under Section 4.14 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The subject Lot is identified as being slightly within a Category 1 Bushfire Hazard Vegetation Buffer Zone as per the Northern Beaches Council LGA Bushfire Prone Land Map and therefore compliance with Bushfire Legislation is required.

The proposed development has been found to be >100m from the nearest Bushfire Hazard Vegetation (Forest).

The proposal is found to be in the BAL – LOW range as per Table A1.12.2 of PBP 2019. It will also need to meet the requirements of Planning for Bushfire Protection (NSW RFS 2019).

This report makes recommendations to approve the proposal as it meets and exceeds the requirements of AS3959-2018 Construction of buildings in bushfire prone areas, the Building Code of Australia 2019 and Planning for Bushfire Protection 2019.

Building Elevation	Construction Standard (Bushfire)
North	BAL -LOW AS3959
South	BAL -LOW
East	BAL -LOW
West	BAL -LOW

Table 1 – BAL Rating for the proposed development.

1. Introduction

This report forms a Bushfire Assessment Report to Northern Beaches Council for the purposes of Section 4.14 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The report identifies that the proposal can meet the requirements of Planning for Bushfire Protection 2019. This report has been prepared in accordance with the submission requirements of Appendix 1 of Planning for Bushfire Protection (NSW RFS 2019).

The proposed development is the installation of an aboveground swimming pool with associated decking located on the subject Lot at 9 Poate Place, Davidson. NSW 2085. The site is identified as being slightly within a Buffer-Zone of Category 1 Bushfire Hazard Vegetation as per Northern Beaches Council LGA Bushfire Prone Land Map and therefore compliance with Bushfire Legislation is required.

However, the proposed development has been found to be >100m from the nearest Bushfire Hazard Vegetation (Forest).

2. Purpose of this Report

The purpose of a Bushfire Hazard Assessment report is to provide the consent authority, owners and RFS with a bushfire hazard determination consistent with the aim and objectives of Planning for Bushfire Protection 2019 (RFS) and Section 4.14 of the EP&A Act 1979. Such report provides the necessary recommendations for new building construction standards and any further bushfire mitigation measures appropriate having regard the hazard and particular circumstances of the development.

The recommendations provided in this report will assist Council and the Owner in proving a construction standard consummate with bushfire safety standards so that a safer level is provided should a bushfire occur on or near the property.

Property Details

Applicant Name:	Nigel & Emma Watts
Council:	Northern Beaches
Council Reference	N/A
Address:	9 Poate Place, Davidson NSW 2085 Lot 40 DP 251101
Site Area:	747m/sq. approx.
Zoning	R2 – Low Density Residential

3. Proposal

The proponents seek to install an aboveground swimming pool with associated decking on the subject Lot located at 9 Poate Place, Davidson NSW 2085. The site is also known as Lot 40 DP 251101. It is bounded by residential development to the North, East, South and West.

The Northern Beaches Council LGA Bushfire Prone Land Map indicates that the proposed development Lot is located slightly within a Buffer Zone of Category 1 Bushfire Hazard Vegetation. The Category 1 Bushfire Hazard Vegetation is located >100m to the North-West of the proposed development footprint.

The land is zoned R2 – Low Density Residential for residential purposes and the proposal is understood to comply with the requirements of Northern Beaches Council LEP and DCP. This report only addresses the planning and construction issues relevant to the proposal. The proposal constitutes “infill” development as defined and as such must meet the specifications and requirements in Appendix 1 of *Planning for Bushfire Protection 2019*.

Type of Proposal PBP 2019

<input type="checkbox"/>	New Building	<input checked="" type="checkbox"/>	Urban	<input type="checkbox"/>	Dual Occupancy
<input type="checkbox"/>	Rural Residential	<input checked="" type="checkbox"/>	Alterations/Additions	<input type="checkbox"/>	Isolated Rural

4. Scope of Report and Referenced Documents

The scope of this report is limited to the actual property concerned. A representative of TFC has visited the site and surrounding area but did not enter neighbouring private lands. This report is based on requirements of the EP&A Act, Planning for Bushfire Protection 2019 NSW RFS (PBP), the Building Code of Australia (BCA) and AS3959 - 2018 Construction of buildings in Bushfire Prone Areas. The methodology for this report is based PBP (specifically Appendix 1). Vegetation and site information was gathered from site inspection, Council Vegetation data and Aerial Photos. The report used base drawings as provided by the applicant to TFC.

5. Statement that the site is Bushfire Prone Land

The land has been identified on Northern Beaches Council LGA Bushfire Prone Land Map which covers the entire site.

A copy of the bushfire prone land status is shown below (Image 1).



Image 1 - 9 Poate Place, Davidson. NSW 2085 Bushfire Prone Land Map (NSW Government 2021). It should be noted that the Bushfire Prone Land Map above indicates that the site is slightly within a Bushfire Hazard Buffer Zone of Category 1 Bushfire Hazard Vegetation, although, it must be noted, the actual proposal is not located within the Buffer Zone.

Hazard

Bushfire Prone Land

- Vegetation Category 1
- Vegetation Category 2
- Vegetation Category 3
- Vegetation Buffer



Image 2 - Aerial View of the allotment (NSW Government 2021)

6. Bushfire Hazard Assessment

6.1 Preface.

This bushfire hazard assessment has been done according to the guidelines of Planning for Bushfire Protection 2019 (NSWRFS). Properties that are located within a designated Bushfire Prone Area as identified by a Council Area Bushfire Prone Map and Registered with the NSWRFS, must have either a Bushfire Hazard Assessment or a Bushfire Hazard Certificate (in certain Complying Development instances) completed and submitted prior to Council or a Private Certifier being able to approve the development.

The proposed development is Residential Infill Development and as such must comply with Section 4.14 of the EP&A Act 1979 and PBP 2019.

The property is known as 9 Poate Place Davidson NSW 2085 (Lot 40 DP 251101) and is within a residential area of the Northern Beaches Council Local Government Area. The property has direct access to Poate Place which runs to the South of the subject allotment and the vegetation that is not a potential bushfire hazard is located >100m in all aspects.

6.2 Location



Image 3 - Site Aerial. (NSW Government 2021)



Figure 1 - Street Location of Property (NSW Government 2021)

6.3 Vegetation.

The vegetation that effects the development and is deemed the "Hazard" is mapped by Council on the applicable Bushfire Prone Land map as Category 1 Bushfire Hazard Vegetation. The Lot is mainly cleared and the predominant Bushfire Hazard Vegetation formation using "Keith 2004" identification is Forest located >100m from the proposal to the North-West.

The property is located within other residential properties to the North, South, East and West whilst to the North -West is Forest Classified Vegetation which is rated as Category 1 Bushfire Hazard Vegetation. For the purposes of this compliance report this assessment notes that the property does not contain hazard upon it. The separation distance to the hazard is assessed as follows;

Direction	Distance to Hazard
East	>100m
North	>100m
South	>100m
West	>100m



Image 4 - Indicates the separation distances to Bushfire Hazard Vegetation is more than 100m from the proposed development (NSW Government 2021). The areas highlighted by the Red are not categorised as being Bushfire Hazard Vegetation on the Northern Beaches Council LGA Bushfire Prone Land Map and is therefore not considered as a threat to the proposal.

6.4 Slope

The effective slope that would most significantly affect a bushfire is assessed for 100m from the proposed development. The slope that is measured is under the hazard.

Since the nearest Classified Bushfire Hazard Vegetation is >100m to the of the proposed development the need to assess the effective slope under the classified vegetation is not applicable.



Image 5 - Indicates the distance to the nearest Bushfire Hazard Vegetation - Forest (NSW Government 2021)

Direction	Effective Slope
North	N/A >100m
East	N/A >100m
South	N/A >100m
West	N/A >100m

6.5 Asset Protection Zones (APZ)

The current inner APZ from the proposed development are not applicable as the nearest Classified Bushfire Hazard Vegetation is located >100m to the North-West of the proposed development.



Image 6 - Indicates the resulting APZs from the proposal. As highlighted previously, the areas in the Red are not considered a bushfire threat to the proposal (NSW Government 2021).

Direction/Aspect	Effective Slope	Distance to Hazard	Required by PBP Table A1.12.2	Land-use	Vegetation type/Formation	Complies
North	N/A	>100m	N/A	Residential	Managed Land	Yes
South	N/A	>100m	N/A	Residential	Managed Land	Yes
East	N/A	>100m	N/A	Residential	Managed Land	Yes
West	N/A	>100m	N/A	Residential	Managed Land	Yes

Table 2 - APZ distances

6.6 Hazard Assessment Determination

PBP refers to the appropriate construction standard for a development as determined by Tables contained within AS3959- 2018 "Construction of buildings in Bushfire Prone Areas." This provides a recommendation for the Bushfire Attack (BAL) Level required for a development. The following Bushfire Attack Levels have been determined for 9 Poate Place, Davidson NSW 2085.

FDI Appropriate to Development – Northern Beaches Council LGA 100

Direction/ Aspect	Distance to Vegetation	Vegetation Formation	Slope in degrees	Construction Requirements AS3959-2018
North	>100 metres	Forest	N/A	BAL-LOW
East	>100 metres	Forest	N/A	BAL-LOW
South	>100 metres	Forest	N/A	BAL-LOW
West	>100 metres	Forest	N/A	BAL-LOW

Table 3 - Summary of Building Compliance Requirements AS3959-2018.

The proposed development has been found to be in the BAL-LOW range of which AS3959-2018 Section 4 does not provide construction requirements and is based on there being insufficient risk to warrant specific bushfire construction requirements.

6.7 Compliance with the Performance Criteria of Table 7.4a PBP 2019

The following indicates that the proposed development complies/not complies with the Performance Criteria outlined in Table 7.4a of PBP 2019 for Residential Infill Development.

Performance Criteria Section 7 PBP 2019	Acceptable Solution	Compliance
Asset Protection Zones APZs are provided commensurate with the construction of the building; and A defensible space is provided.	An APZ is provided in accordance with Table A1.12.2 or A1.12.3 in Appendix 1 of PBP 2019.	Complies – The APZs in all aspects exceed the required distances found in Table A1.12.2. for FFDI-100 of PBP 2019.
APZs are managed and maintained to prevent the spread of a fire to the building.	APZs are managed in accordance with the requirements of Appendix 4 of PBP.	Complies – The APZ is to be managed/maintained as an IPA within the subject Lot in all aspects and neighbouring Lots which meets the intent of Section 3.2 Asset Protection Zones, Section A1.10 – Low Threat Vegetation Exclusions and Appendix 4 of PBP 2019. The IPA/APZ on the subject Lot will be managed in accordance with Appendix 4 of PBP.
The APZ is provided in perpetuity.	APZs are wholly within the boundaries of the development site.	Complies – the APZs are maintained within the subject Lot boundaries and neighbouring Lots which meets the intent of Section 3.2 – Asset protection Zones, Section A1.10 – Low Threat Vegetation Exclusions and Appendix 4 – APZ Requirements of PBP 2019.

Performance Criteria Section 7 PBP 2019	Acceptable Solution	Compliance
The APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimized.	The APZs are located on lands with a slope less than 18 degrees.	Complies – The APZ of the proposed development is made up of maintained land within the subject Lot which are <18 degrees slope.
In relation to access/egress: Firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation. The capacity of access roads is adequate for firefighting vehicles. There is appropriate access to water supply.	Property access roads are two-wheel drive, all-weather roads. The capacity of road surfaces and any bridges/ causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes), bridges and causeways are to clearly indicate load rating. Hydrants are provided in accordance with the relevant clauses of AS 2419.1:2005. There is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available.	Complies - The subject Lot has direct access to Poate Place to the South which allows occupants an egress route to safety. Poate Place is a surfaced two-wheel drive road and is suitable for fire appliances. Complies - The capacity of Poate Place and surrounding roads is enough to carry fully loaded firefighting vehicles (up to 23 tonnes). Complies – Reticulated mains pressure fire hydrants are located along Poate Place with the nearest being located outside No.7 Poate Place.

Performance Criteria Section 7 PBP 2019	Acceptable Solution	Compliance
<p>Firefighting vehicles can access the dwelling and exit the property safely.</p>	<p>There are no specific access requirements in 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.</p>	<p>Complies – The subject Lot can be easily accessed without placing emergency personnel in danger.</p>
<p>In relation to Water Supplies</p> <p>An adequate water supply is provided for firefighting purposes.</p> <p>Water supplies are located at regular intervals; and the water supply is accessible and reliable for firefighting operations.</p>	<p>Reticulated water is to be provided to the development, where available; and a static water supply is provided where no reticulated water is available.</p> <p>Fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2005; 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.</p>	<p>Complies - The site is connected to reticulated mains pressure water supply. Reticualtes mains pressure fire hydrants are located along Poate Place and the nearest hydrant being located outside No.7 Poate Place.</p> <p>Complies.</p>

Performance Criteria Section 7 PBP 2019	Acceptable Solution	Compliance
<p>Flows and pressure are appropriate.</p> <p>The integrity of the water supply is maintained.</p>	<p>Fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005.</p> <p>All above-ground water service pipes external to the building are metal, including and up to any taps.</p>	<p>Complies</p> <p>Complies - All above-ground service pipes, including taps, will be metal.</p>
<p>In relation to Electricity Supply:</p> <p>The Location of electricity services limits the possibility of ignition of surrounding bushland or the fabric of buildings.</p>	<p>Where practicable, electrical transmission lines are underground; and where overhead, electrical transmission lines are proposed as follows: 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</p>	<p>Complies - The existing dwelling is provided with electricity via an above ground supply which is clear of trees and branches.</p>
<p>In relation to Gas Supply:</p> <p>The location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings</p>	<p>Reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities, and metal piping</p>	<p>N/A</p>

Performance Criteria Section 7 PBP 2019	Acceptable Solution	Compliance
	<p>is used; all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side.</p> <p>Connections to and from gas cylinders are metal.</p> <p>Polymer-sheathed flexible gas supply lines are not used; and above-ground gas service pipes are metal, including and up to any outlets</p>	
<p>In relation to Construction Standards:</p> <p>The proposed building can withstand bush fire attack in the form of embers, radiant heat and flame contact.</p> <p>Proposed fences and gates are designed to minimise the spread of bushfire.</p> <p>Proposed Class 10a buildings are designed to minimise the spread of bush fire.</p> <p>.</p>	<p>BAL is determined in accordance with Tables A1.12.5 to A1.12.7; and construction provided in accordance with the NCC and as modified by section 7.5 (please see advice on construction in the flame zone).</p> <p>Fences and gates are constructed in accordance with section 7.6.</p> <p>Class 10a buildings are constructed in accordance with section 8.3.2.</p>	<p>Complies - The proposed development has been found to be in the BAL-LOW range of which AS3959-2018 Section 4 does not provide construction requirements and is based on there being insufficient risk to warrant specific bushfire construction requirements.</p> <p>N/A</p> <p>N/A</p>

Performance Criteria Section 7 PBP 2019	Acceptable Solution	Compliance
<p>In relation to Landscaping:</p> <p>Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions</p>	<p>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</p>	<p>Complies – The APZ will be managed as an Inner Protection Area within the subject Lot which meets the intent of Section A1.10 – Low Threat Vegetation Exclusions and Appendix 4 of PBP 2019. The APZs meet the standards outlined in Appendix 4 of PBP 2019 in relation to APZ Standards.</p> <p>The proposed development footprint is in a clear area with no trees or shrubs in the vicinity.</p>

7 Recommendations

- The proposed development site has been assessed as BAL-LOW there are no specific construction methods required by of AS3959-2018 and Section 4 Construction for BAL-LOW.
- All above ground water pipes are to be metal including and up to any taps.
- The Asset Protection Zone is to be maintained as an Inner Protection Area on the subject Lot and the vegetation selections for landscaping, vegetation management and property management should be in accordance with Appendix 4 PBP 2019 and the RFS document “Standards for Asset Protection”.
- It is recommended that a Bushfire Emergency Plan be developed for the existing dwelling if not already done so.

It is recommended Northern Beaches Council and the NSW Rural Fire Service approve the proposed installation of an aboveground swimming pool with associated decking on the subject Lot at 9 Poate Place, Davidson NSW 2085 in respect to Bushfire Requirements.

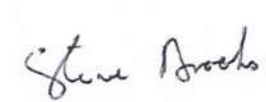
8. Conclusion

The proposed development of the installation of an above ground swimming pool with associated decking on the subject Lot located at 9 Poate Place, Davidson NSW 2085 can meet the planning requirements of *Planning for Bushfire Protection 2019* and, are capable of meeting Australian Standard AS3959-2018 and the *Building Code of Australia* in relation to construction (ABCB 2019).

In accordance with the bushfire measures contained with this report and the site-specific assessment as per PBP and AS3959, it is our opinion that combined will provide a satisfactory level of bush fire safety to the property and satisfies the requirements of the RFS and Councils obligations for this area.

The Council can determine the matter as complying with the specifications and requirements Planning for Bush Fire Protection and section 4.14 of the EP&A Act (NSW RFS 2019).

Prepared by Steve Brooks



BPAD - Certification No. 40765

Graduate Diploma Bushfire Planning and Design (UWS)

Graduate Certificate in Fire Investigation (CSU)



FPA Australia Corporate Member

References.

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- Keith David, 2004, *Ocean Shores to Desert Dunes: the native vegetation of NSW and the ACT*, Dept of Environment and Conservation, NSW Government.
- NSW Rural Fire Service, 2019, *Planning for Bushfire Protection*. Sydney
- NSW Rural Fire Service, 2021, website – www.rfs.nsw.gov.au :
- Standards Australia, AS 3959-2018 *Construction in Bushfire Prone Areas* SAI Global, Melbourne.
- NSW Government Six Maps 2021
- NSW Government E-Planning Spatial Viewer 2021

Disclaimer

Disclaimer: Quote from Planning for Bushfire Protection, “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”. Although the standard is designed to improve the performance of the building, there can be no guarantee, because of the variable nature of bushfires that any one building will withstand bushfire attack on every occasion.

The opinions and assessment in regard to bushfire development in a Bushfire Prone Area given by TFC are therefore given in good faith.

Appendix 1

Plans from the applicant



