



Bush Fire Hazard Assessment Report

**For Proposed; Alterations and Additions
9 Poate Place, Davidson. NSW 2085**



20th May 2018

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Abbreviations Used

TFC – The Fire Consultants

PBP 2006 – 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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The assessment and recommendations contained in this Bush Fire Assessment are the views of TFC. The bushfire protection assessment, recommendations and strategies contained in this report are intended to address the submission requirements for developments on bush fire prone land as required by Section 100B of the RFS Act 1997 and or S 4.14 of the EP&A Act 1979.

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A bushfire may be unpredictable and, in many cases, perform differently to the measurements and assumptions of this report and AS3959. Therefore the information contained in this report cannot be used as a guarantee against any damages or losses resulting from any bushfire events.

Document Control

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Executive Summary

This report has been prepared as a bush fire assessment for the proposed alterations and additions to the existing dwelling located at 9 Poate Place, Davidson NSW 2085 in the Northern Beaches Council LGA NSW.

The proposal is “infill” development and has been identified as being bush fire prone and is subject to consideration under Section 4.14 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) (NSW RFS 2006).

The proposal of alterations and additions has been found to be 106m from the nearest Bushfire Hazard (Forest).

The proposal is found to be in the BAL – LOW range as per Table 2.4.2 AS3959-2009. It will also need to meet the requirements of Planning for Bush Fire Protection (NSW RFS 2006).

This report makes recommendations to approve the proposal as it meets and exceeds the requirements of both the Building Code of Australia 2009 and Planning for Bushfire Protection 2006.

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

1. Introduction

This report forms a Bush Fire 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 Bush Fire Protection (2006). This report has been prepared in accordance with the submission requirements of Appendix 4 of Planning for Bush Fire Protection (NSW RFS 2006). The site is identified as being within a Buffer-Zone of Category 1 Bushfire Hazard Vegetation as per Northern Beaches Council's Bushfire Prone Land Map (Northern Beaches Council 2018) and therefore compliance with Bushfire Legislation is required.

Although it is important to highlight that the proposed alterations and additions, to create extra living space and a new garage, are not within the Buffer Zone, i.e. more than 100m from the Category 1 Bushfire Hazard Vegetation.

2. Purpose of this Report

The purpose of a Bush Fire 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 Bush Fire Protection 2006 (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 construct alterations and additions to the existing dwelling 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. Northern Beaches Council Bushfire Prone Lands Map indicates that the proposed development Lot is located within a Buffer Zone of Category 1 Bushfire Hazard Vegetation. The Category 1 Bushfire Hazard Vegetation is located to the North-West of the proposed development footprint at 106m.

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 Chapter 4 (section 4.3.5) of *Planning for Bush Fire Protection* (NSW RFS 2006).

Type of Proposal PBP 2006

<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 Bush Fire Protection (2006) NSWRFPS (PBP), the Building Code of Australia (BCA) and AS3959 2009-Construction of buildings in Bush Fire Prone Areas. The methodology for this report is based PBP (specifically Appendix 3) and AS3959-2009. 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 Bush Fire Prone Land

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

A copy of the bush fire prone land status is shown below (Figure 1).

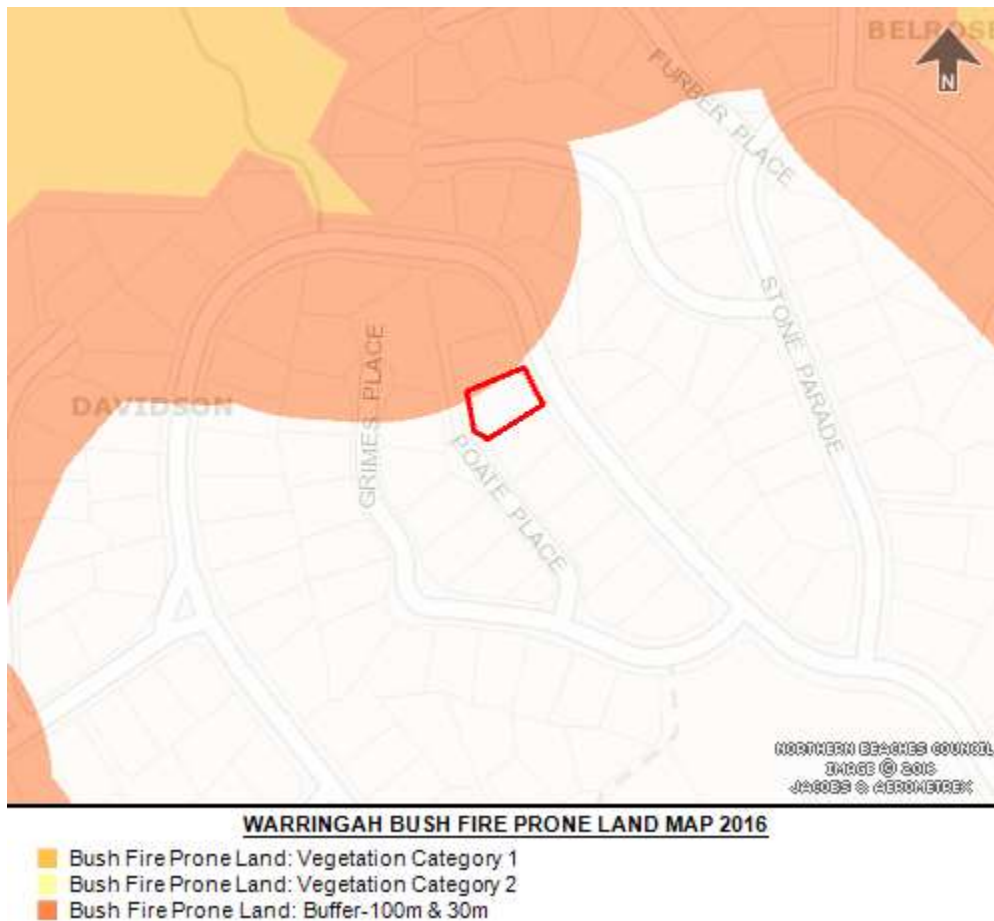


Figure 1: - 9 Poate Place, Davidson NSW 2085 Bushfire Prone Land Map (Northern Beaches Council 2018).

It should be noted that the Bush Fire Prone Land Map above indicates that the site is in a Bushfire Hazard Buffer Zone of Category 1 Bushfire Hazard Vegetation, although the actual proposed alterations and additions are not located within the Buffer Zone.

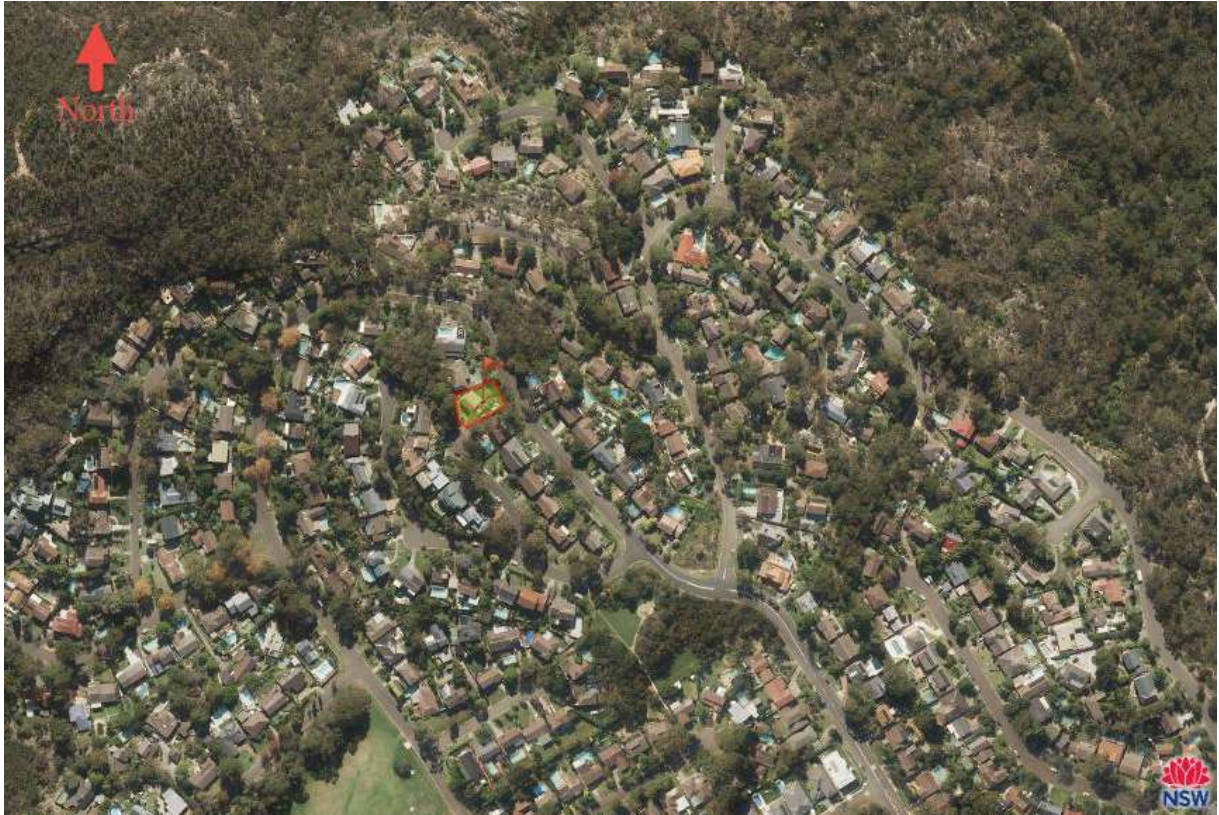


Image 1: Aerial View of the allotment (NSW Government 2018)

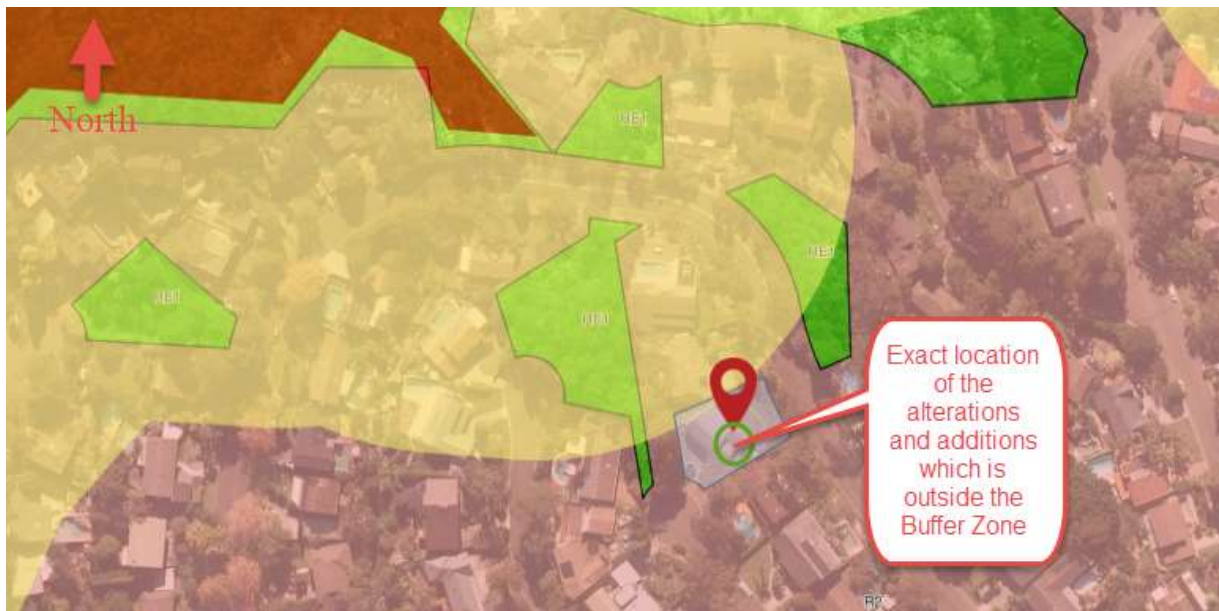


Image 2: Identifies that the location of the proposed alterations and additions is outside of the 100m Buffer Zone of Category 1 Bushfire Hazard Vegetation (NSW Government 2018)

6. Bush Fire Hazard Assessment

6.1 Preface.

This bushfire hazard assessment has been done according to the guidelines of Planning for Bushfire Protection 2006 (NSWRFS) and AS3959-2009, Construction of Buildings in Bushfire Prone Areas. Properties that are located within a designated Bushfire Prone Area as identified by a Council Area Bush Fire Prone Map and Registered with the NSWRFS, must have either a Bush Fire Hazard Assessment or a Bush Fire 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 of alterations and additions to the existing dwelling is infill development and as such must comply with Section 4.14 of the EP&A Act 1979 and PBP 2006.

The property is known as 9 Poate Place Davidson NSW 2085 (Lot 40 DP 251101) and is in a residential area within Northern Beaches Council Local Government Area. The property has direct access to Poate Place which runs to the South of the subject allotment. The vegetation that is a potential bush fire hazard is 100+m in all aspects.

6.2 Location



Image 3: - Site Aerial. (NSW Government 2018)

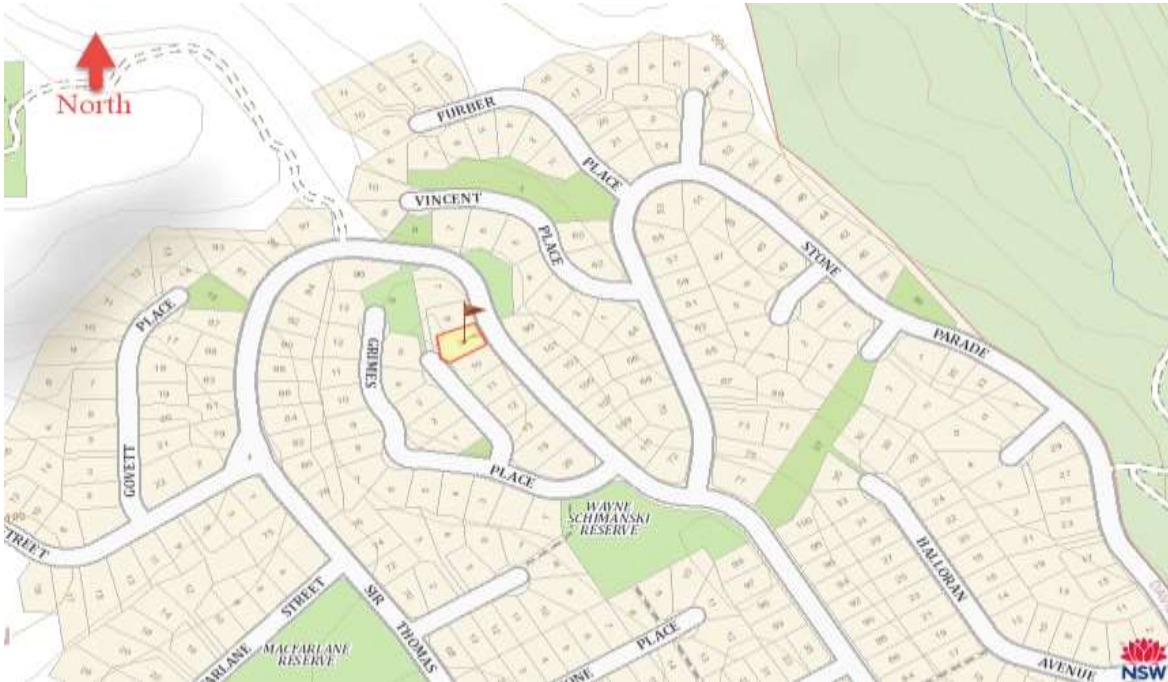


Figure 2: -Street Location of Property (NSW Government 2018)

6.3 Vegetation.

The vegetation that effects the development and is deemed the "Hazard" is mapped by Council on the applicable Bush Fire 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 106m 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 contain hazard upon it. The separation distance to the hazard is assessed as follows;

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



Image 4: - Indicates the separation distances to Bushfire Hazard Vegetation is more than 100m (NSW Government 2018). The areas highlighted by the Red are not categorised as being Bushfire Hazard Vegetation by the Northern Beaches Council Bushfire Prone Land Map and is therefore not considered as a threat to the proposal.

6.4 Slope

The slope that would most significantly affect a bushfire is assessed for 100 metres from the building. The slope that is measured is under the hazard. Since the nearest Classified Bushfire Hazard Vegetation is 100+m to the of the proposed development the need to assess the slope under the classified vegetation is not applicable.



Image 5 - Indicates the distance to the nearest Bushfire Hazard Vegetation - Forest (NSW Government 2018)

Direction	Effective Slope
North	N/A
East	N/A
South	N/A
West	N/A

6.5 Asset Protection Zones (APZ)

The current inner APZ from the proposed alterations and additions are not applicable as the nearest Classified Bushfire Hazard Vegetation is 106m 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 2018).

Direction/Aspect	Effective Slope	Distance to Hazard	Required by PBP Table 2.4	Land-use	Vegetation type/Formation	Complies
North	N/A	100+m	N/A	Residential	Managed Land	Yes
East	N/A	100+m	N/A	Residential	Managed Land	Yes
South	N/A	100+m	N/A	Residential	Managed Land	Yes
West	N/A	100+m	N/A	Residential	Managed Land	Yes

Table 1: - APZ distances

6.6 Access for Fire Services and Escape

The subject property has direct access to Poate Place which allows an egress route to safety. The road is an all-weather road and suitable for fire appliances. The all-weather road allows occupants to evacuate the site whilst allowing oncoming emergency vehicles to pass safely. Should occupants be required to escape the area in emergency then they should be able to do so.

Access is therefore considered suitable.

6.7 Water Supply

The site is connected to mains pressure reticulated water supply and there are fire hydrants located in Poate Place. The nearest Reticulated Mains Pressure Hydrants is located outside No 7 Poate Place. Furthermore, there are static water supplies located in the vicinity.

6.8 Environmental Impact

It is not proposed that any further environmental impact will occur due from the alterations and additions.

6.9 Electricity Services

The site is provided with electricity direct from overhead transmission lines.

6.10 Gas Services

Any gas connection is installed and maintained in accordance with AS1596, metal piping should be used.

6.11 Hazard Assessment Determination

PBP refers to the appropriate construction standard for a development as determined by Tables contained within AS3959- 2009 "Construction of buildings in Bush Fire Prone Areas." This provides a recommendation for the Bush Fire Attack (BAL) Level required for a development. The following Bush Fire Attack Levels have been determined for 9 Poate Place, Davidson NSW 2085.

FDI Appropriate to Development – Northern Beaches Council LGA 100
AS3959 Table 2.4.2

Direction/ Aspect	Distance to Vegetation	Vegetation Formation	Slope in degrees	Construction Requirements AS3959-2009
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 2: - Summary of Building Compliance Requirements AS3959-2009.

The site has been found to be in the BAL-LOW range of which AS3959-2009 Section 4 does not provide construction requirements and is based on there being insufficient risk to warrant specific bushfire construction requirements.

The proposed alterations and additions to the existing dwelling must also comply with the specification and requirements of Section 4.3.5 of *Planning for Bush Fire Protection, Infill development*. This assessment is provided below in detail.

Performance requirement Chapter 4 PBP 2006	Acceptable Solution	Compliance
in relation to Asset Protection Zones: <ul style="list-style-type: none"> • A defensible space is provided onsite. • An asset protection zone is provided and maintained for the life of the development. 	APZ determined in accordance with Appendix 2 and Section 3.3 Exceptional Circumstances for APZs.	Yes - Meets requirement. The nearest classified bushfire hazard vegetation (Forest) is 106 metres
in relation to siting and design: <ul style="list-style-type: none"> • The existing building are sited and designed to minimise the risk of bush fire attack. 	Buildings are designed and sited in accordance with the siting and design principles in this section (see also figure 4.7).	Yes – the structure is in a cleared area allowing for fire-fighting on all sides and evacuation
in relation to construction standards: <ul style="list-style-type: none"> • It is demonstrated that the proposed building can withstand bush fire attack in the form of wind, smoke, embers, radiant heat and flame contact. 	Construction determined in accordance with Appendix 3	Yes – The BAL is determined as being BAL-LOW.
in relation to access requirements: <ul style="list-style-type: none"> • safe, operational access is provided (and maintained) for emergency services personnel in suppressing a bush fire while residents are seeking to relocate, in advance of a bush fire. 	<p>Compliance with section 4.1.3 for property access roads.</p> <p>Compliance with section 4.2.7 for access standards for internal roads.</p>	<p>Yes - Existing Road system and driveway meet the width requirements and does not place Firefighters at risk</p> <p>Access available away from hazard.</p>
in relation to water and utility services: <ul style="list-style-type: none"> • adequate water and electricity services are provided for fire- fighting operations • gas and electricity services are located so as not to contribute to the risk of fire to a building. 	Compliance with section 4.1.3 for services - water, electricity and gas.	<p>Yes- The site is connected to mains pressure reticulated water supply</p> <p>Electrical supply as per existing.</p> <p>Gas not exposed to radiant heat or flame nor landscaping elements for embers.</p>
in relation to landscaping: <ul style="list-style-type: none"> • it 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 Appendix 5 of <i>Planning for Bush Fire Protection</i> (2006)	<p>Yes</p> <p>No significant planting under windows or other exposed elements of house – considered acceptable.</p>

Table 3: Compliance with Specifications and Requirements of *Planning for Bush Fire Protection*.
Chapter 4

Compliance with Specific Objectives PBP as per 4.3.2

Objective	Details
Ensure that the bushfire risk to adjoining land is not increased	The development does not add to the bushfire risk
Provide Minimum Defendable Space	A defendable space is provided
Provide better bushfire protection, on a redevelopment site, than the existing situation. This should not result in any new works being exposed to a greater risk than the existing building.	The proposal has been found to be in the BAL-LOW range of which AS3959-2009 Section 4 does not provide construction requirements and is based on there being insufficient risk to warrant specific bushfire construction requirements.
Ensure the footprint of the proposed building does not extend towards the hazard beyond existing building lines on neighbouring land.	The development is to construct alterations and additions to the existing dwelling on the Lot with the hazard being more than 100m from the proposal in all aspects.
Not result in an increased bushfire management and maintenance responsibility on adjoining land owners unless they have agreed to the development	The development does not increase hazard or bushfire management on adjoining lands
Ensure Building design and construction enhance the chances of occupant and building survival	The recommendations enhance the existing structure and survival

7 Recommendations

As the proposed development site has been assessed as BAL-LOW there are no specific construction methods required by of AS3959-2009 Section 4 Construction for Bushfire Attack Level-LOW (BAL-LOW).

It is recommended Northern Beaches Council and the NSW Rural Fire Service approve the proposed alterations and additions to the existing dwelling at 9 Poate Place, Davidson NSW 2085 in respect to Bush Fire Requirements.

7.1 Environmental Impact of any proposed bushfire measures

Measure	Environmental Impact	Comment
APZ	Minimal	APZ 100+m
Construction	No Impact	Constructed on existing envelope
Water Supply	No Impact	Existing supply
Utilities	No Impact	Existing supplies
Vehicle Access	No Impact	Direct access to road

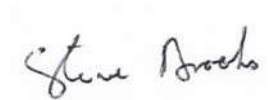
8. Conclusion

The proposed alterations and additions to the existing dwelling at 9 Poate Place, Davidson NSW 2085 can meet the planning requirements of *Planning for Bush Fire Protection* (NSW RFS 2006) and, are capable of meeting Australian Standard AS3959-2009 and the *Building Code of Australia* in relation to construction (ABCB 2015).

In accordance with the bush fire 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 79BA of the EP&A Act (NSW RFS 2006).*

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.

- Australian Building Codes Board (ABCB), 2009, *Building Code of Australia*, Volume 2, Canberra.
- 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, 2006, *Planning for Bush Fire Protection*. Sydney
- NSW Rural Fire Service. 2010. *Addendum: Appendix 3 Planning for Bush Fire Protection*. Sydney
- NSW Rural Fire Service, 2009, website – www.rfs.nsw.gov.au :
- Standards Australia, AS 3959-2009 *Construction in Bushfire Prone Areas* (amended 2001) SAI Global, Melbourne.
- Northern Beaches Council, 2018 *Bush Fire Prone Land Map*
- NSW Government Six Maps
- NSW Government Planning Portal 2018

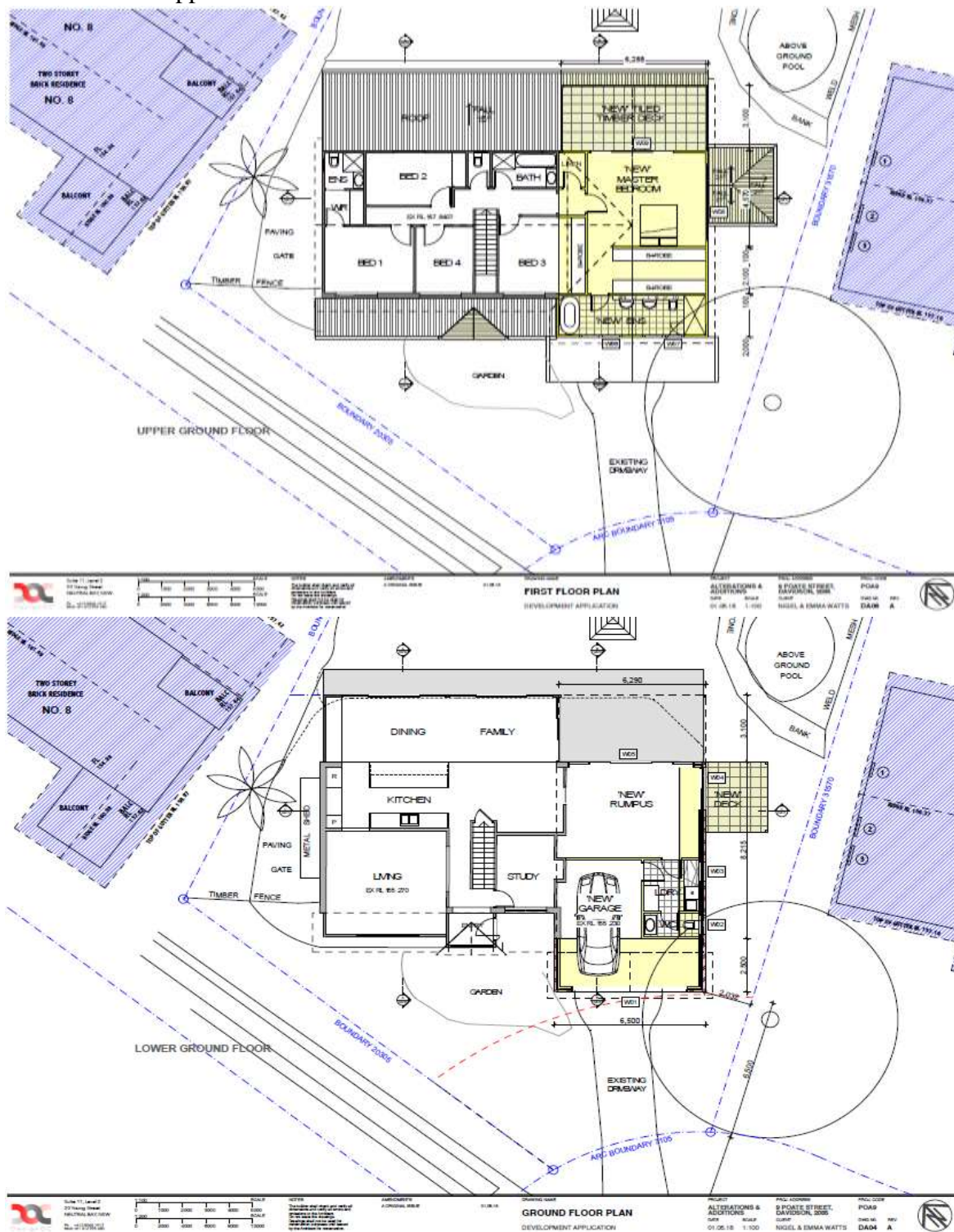
Disclaimer

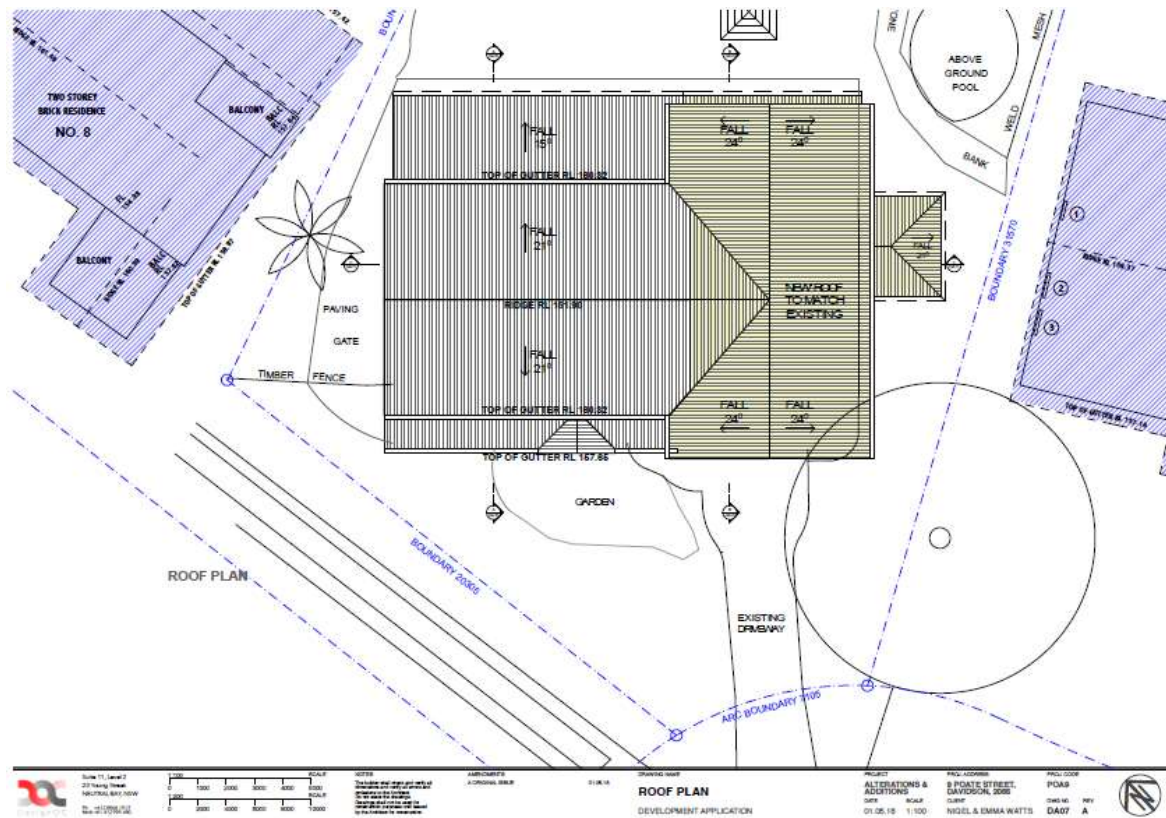
Disclaimer: Quote from Planning for Bushfire Protection, “notwithstanding the precautions adopted, it should always be remembered that bushfires burn under a wide range of conditions and an element of risk, no matter how small always remains”. Although the standard is designed to improve the performance 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.

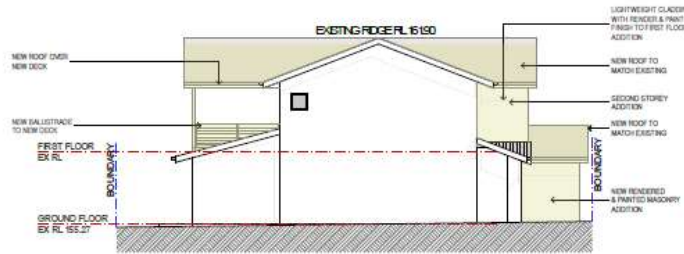
The opinions and assessment in regard to bushfire development in a Bushfire Prone Area given by TFC are therefore given in good faith.

Appendix 1

Plans from the applicant



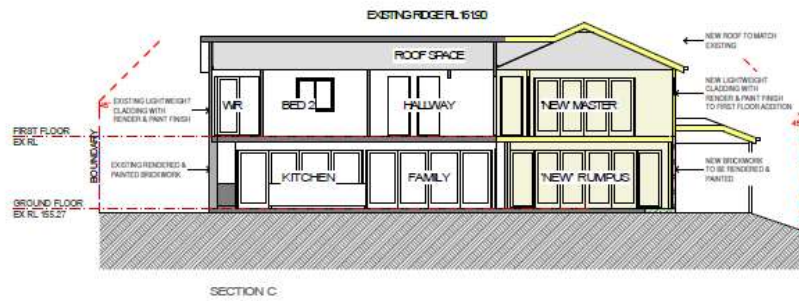




<p>Scale 1:1, Level 2 23 Young Street NEWCASTLE NSW NSW 2059 Ph: 0810096142</p>	<p>0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000</p> <p>SCALE</p>	<p>NOTES</p> <p>1. Dimensions are given in millimetres unless otherwise stated.</p> <p>2. All dimensions are to the face of the work unless otherwise stated.</p> <p>3. All dimensions are to be confirmed by the contractor.</p>	<p>DATE: 21.05.18</p>	<p>PROJECT: EAST & WEST ELEVATIONS</p> <p>DEVELOPMENT APPLICATION</p>	<p>PROJECT: ALTERATIONS & ADDITIONS</p> <p>DATE: 01.05.18</p> <p>SCALE: 1:100</p>	<p>PROJECT: 9 POATE STREET, DAVIDSON, NSW</p> <p>CLIENT: NIGEL & EMMA WATTS</p>	<p>PROJECT: POAB</p> <p>DATE: 2018-05-18</p> <p>REV: A</p>
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<p>Scale 1:1, Level 2 23 Young Street NEWCASTLE NSW NSW 2059 Ph: 0810096142</p>	<p>0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000</p> <p>SCALE</p>	<p>NOTES</p> <p>1. Dimensions are given in millimetres unless otherwise stated.</p> <p>2. All dimensions are to the face of the work unless otherwise stated.</p> <p>3. All dimensions are to be confirmed by the contractor.</p>	<p>DATE: 21.05.18</p>	<p>PROJECT: SECTIONS A & B</p> <p>DEVELOPMENT APPLICATION</p>	<p>PROJECT: ALTERATIONS & ADDITIONS</p> <p>DATE: 01.05.18</p> <p>SCALE: 1:100</p>	<p>PROJECT: 9 POATE STREET, DAVIDSON, NSW</p> <p>CLIENT: NIGEL & EMMA WATTS</p>	<p>PROJECT: POAB</p> <p>DATE: 2018-05-18</p> <p>REV: A</p>
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 <p>Scale 1:1, Level 1 20 May 2018 Nigel & Emma Watts</p>	<p>1:100 0 1000 2000 3000 4000 5000 1:1000 0 1000 2000 3000 4000 5000</p>	<p>NOTES 1. This drawing is a section of a building and should not be used for any other purpose. 2. The drawing is for information only and should not be used for any other purpose. 3. The drawing is for information only and should not be used for any other purpose.</p>	<p>ARCHITECT A. J. JONES 21/05/18</p>	<p>DRAWING NAME SECTION C DEVELOPMENT APPLICATION</p>	<p>PROJECT ALTERATIONS & ADDITIONS DATE 01.05.18 SCALE 1:100</p>	<p>PROJ. ADDRESS 9 POATE STREET DAVIDSON, NSW NIGEL & EMMA WATTS</p> <p>PROJ. USER PGAS DATE 18 MAY DATA A</p>
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