

Bushfire Assessment Report

Proposed:
**Dwelling and Building
Construction**

At:
DA19/0704
**16 Chapman Street,
Werrington NSW**

Reference Number: 191311D

Prepared For:
GLN Planning

3rd May 2021



Prepared By:
**Building Code & Bushfire
Hazard Solutions Pty Limited**

Tel: (02) 9457 6530

PO Box 124
Berowra NSW 2081
ABN 19 057 337 774

www.bushfirehazardsolutions.com.au



**SILVER
MEMBER**
Fire Protection
Association Australia



Contents

	<u>Page No.</u>
Copyright and disclaimers	2
List of Abbreviations	3
1.0 Introduction	4 - 5
2.0 Purpose of Report	5
3.0 Scope of Report	5
4.0 Compliance Table and Notes	6 - 10
5.0 Aerial view, Subdivision Plan and Local Planning Controls	11 - 13
6.0 Site Assessment	14 - 17
7.0 Bushfire Assessment	18 - 23
8.0 Recommendations	24 - 25
9.0 Conclusion	26
10.0 Annexure	27 - 28
- List of referenced documents and attachments	
- Attachments	

Copyright:

Where agreed to by Building Code and Bushfire Hazard Solutions Pty. Ltd, this report may only be copied, distributed or forwarded to other parties in its original format. No part of this document including any wording, images, or graphics can be modified, changed or altered in any way without the express permission of Building Code and Bushfire Hazard Solutions Pty. Ltd. (Copyright Act 1968).

Where this document is found to have been used or altered in any way without the express permission of Building Code and Bushfire Hazard Solutions Pty. Ltd. including any wording, images, or graphics, Building Code and Bushfire Hazard Solutions Pty. Ltd. will not be held liable for any incidental or consequential loss or damages, financial or otherwise resulting from the use of the modified document. Building Code & Bushfire Hazard Solutions Pty. Ltd. will if it considers it necessary, seek to advise third parties including authorities of such illegal use or modifications.

Legal status:

This report has been prepared as a submission document in support of a development application to Council and in instances may rely upon information provided by a number of external sources including Councils, State Government Agencies and it is assumed that the information provided was accurate at the time. This report cannot be relied upon for commencement of works or construction until such time as it has been endorsed or otherwise included within the consent conditions issued by Council as part of the DA determination.

Section 4.14 applications (under the Environmental Planning and Assessment Act 1979) and all infill development applications may be referred by Council to the NSW Rural Fire Service for review and concurrence during the DA process. S100B applications under the Rural Fires Act 1997 (subdivisions and Special Fire Protection Purpose Developments), Flame Zone determinations and Alternate Solutions must be referred by Council to the NSW Rural Fire Service for review and receipt of a Bushfire Safety Authority (BSA) or other such recommended conditions from the NSW Rural Fire Service before the consent can be granted.

The onus is on the applicant to cross reference this document with any conditions of consent issued by Council or any requirements supplied by the NSW Rural Fire Service following development approval. BCBHS can review and cross reference these documents however the onus is on the applicant to provide them to us and request this review – Building Code and Bushfire Hazard Solutions Pty. Ltd. is not in a position to track every DA through Council and we rely upon the applicant to undertake this role as project co-ordinator.

Where any discrepancy between this document and the development approval or the NSW Rural Fire Service requirements is found, the conditions of consent always take precedence until such time as an application to review, amend or vary these conditions is approved.

Disclaimer:

This report has been prepared with due care and diligence by Building Code and Bushfire Hazard Solutions Pty. Ltd and the statements and opinions contained in this report are given in good faith and in the belief on reasonable grounds that such statements and opinions are correct and not misleading bearing in mind the necessary limitations noted in previous paragraphs.

Further, no responsibility is accepted by Building Code and Bushfire Hazard Solutions Pty. Ltd. or any of its officers or employees for any errors, including errors in data which is supplied by a third party, or which Building Code and Bushfire Hazard Solutions Pty. Ltd. is required to estimate, or omissions howsoever arising in the preparation of this report, provided that this will not absolve Building Code and Bushfire Hazard Solutions Pty. Ltd. from liability arising from an opinion expressed recklessly or in bad faith.

Any representation, statement of opinion, or advice expressed or implied in this document is made in good faith on the basis that Building Code and Bushfire Hazard Solutions Pty. Ltd. employees and / or agents are not liable (whether by reason of negligence, lack of care or any other reason) to any person, company or their agents for any damage or loss whatsoever which has occurred or may occur in relation to that person taking or not taking (as the case may be) action in respect of any representation, statement or advice referred to above.

List of Abbreviations:

APZ	Asset Protection Zone
AS3959	Australian Standard 3959: 2018 'Construction of buildings in bushfire-prone areas'
BAL	Bushfire Attack Level
BPMs	Bushfire Protection Measures
BPLM	Bushfire Prone Land Map
Council	Penrith City Council
DA	Development Application
DCP	Penrith Development Control Plan 2014
EP&A Act	Environmental Planning and Assessment Act - 1979
ESD	Ecologically Sustainable Development
IPA	Inner Protection Area
NCC	National Construction Code
NP	National Park
NSP	Neighbourhood Safer Places
NSWFR	NSW Fire & Rescue
OPA	Outer Protection Area
PBP	Planning for Bush Fire Protection 2019
ROW	Right of Way
RF Act	Rural Fires Act - 1997
RFS	NSW Rural Fire Service
SEPP	State Environmental Planning Policy
SFPP	Special Fire Protection Purpose
SWS	Static Water Supply
UWS	University of Western Sydney

1.0 Introduction

This Bushfire Assessment Report has been prepared to address the building construction requirements of the future dwellings and buildings within the newly created allotments under DA19/0704 which was recently approved Penrith City Council.

This report does not address any future Special Fire Protection Purpose development under section 100b of the *Rural Fires Act 1997*.

The approved Development Application (DA) will result in the creation of two hundred and fifty-nine (259) residential allotments, delivered over three stages. The approved DA also results in the construction of associated civil works, open space, the creation of residue and industrial allotments and more.

The NSW Rural Fire Service has issued their General Terms of Approval, under Division 4.8 of the *Environmental Planning and Assessment Act 1979*, and Bush Fire Safety Authority, under section 100B of the *Rural Fires Act 1997* for the application (ref DA20191029000754-Original-1, dated 15th April 2020).

The NSW Rural Fire Service assessed the subdivision application under *Planning for Bush Fire Protection 2006*. This assessment has been prepared consistent with the aforementioned NSW Rural Fire Service approval, although updated to reflect the now enforce *Planning for Bush Fire Protection 2019*.

The overall site is known as 16 Chapman Street, Werrington (Lot 1 DP 1226122) and is identified on Penrith City Council's Bushfire Prone Land Map as containing Category 1 and Category 2 Vegetation and their associated buffer zones.

Those new allotments that are mapped as Bushfire Prone Land following the subdivision require assessment under *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* or section 4.14 of the *Environmental Planning and Assessment Act 1979*.

To satisfy either *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* or section 4.14 of the *Environmental Planning and Assessment Act 1979* the dwelling applications must satisfy the relevant specifications and requirements of *Planning for Bush Fire Protection 2019* (PBP).

In accordance with PBP the future dwellings must satisfy the Aim and Objectives detailed in Chapter 1 'Introduction' and the specific objectives and bushfire protection measures detailed in Chapter 7 'Residential Infill Development'.

The future industrial buildings (excluding any Special Fire Protection Purpose) must satisfy the aim and objectives detailed in Chapter 1 'Introduction' and the relevant requirements in Chapter 8 'Other Development' of PBP.

The subject site forms part of the 'South Werrington Urban Village' under the Penrith Development Control Plan 2014.

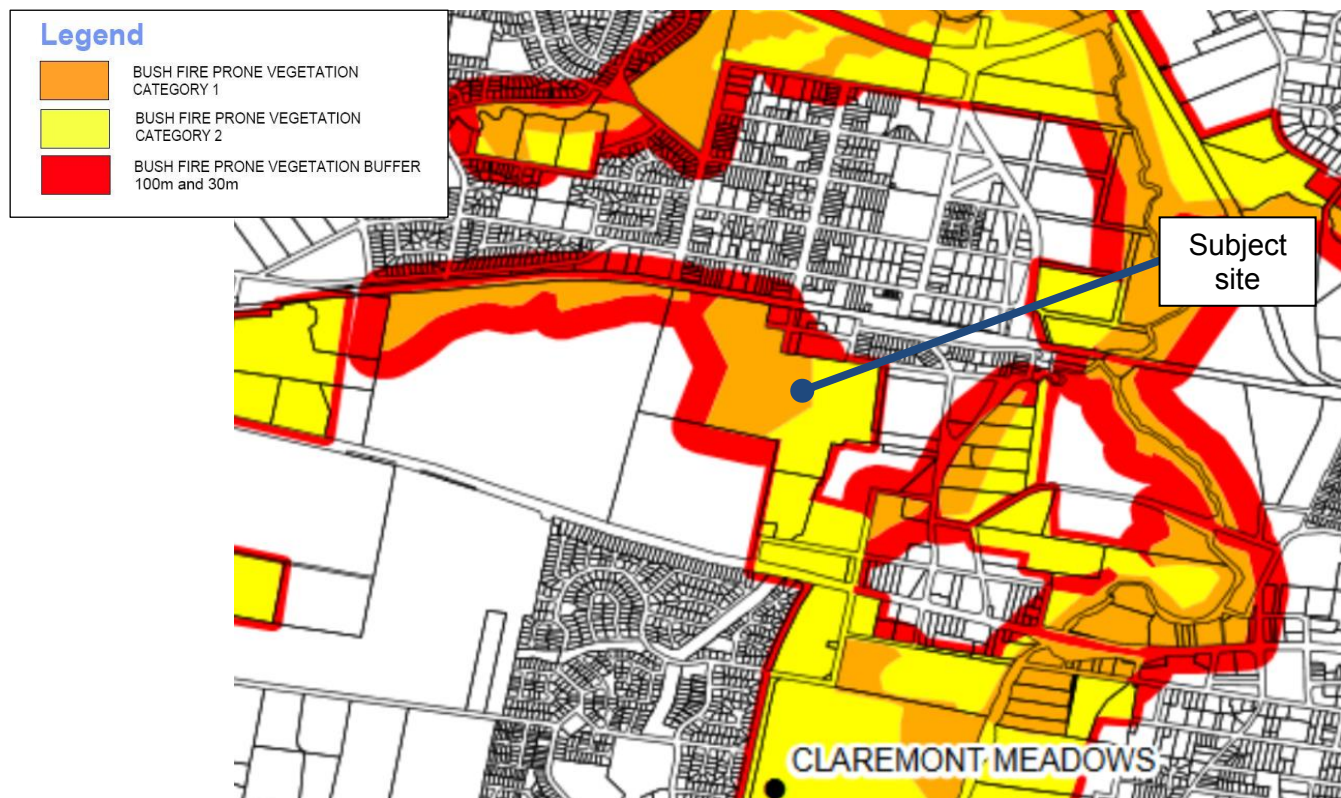


Figure 01: Extract from Penrith City Council's Bushfire Prone Land Map

2.0 Purpose of Report

The purpose of this Bushfire Assessment Report is to provide GLN Planning and Penrith City Council with an independent bushfire assessment together with appropriate recommendations for both new building construction and bushfire mitigation measures considered necessary having regard to construction within a designated 'bushfire prone' area.

This report also outlines the ultimate post-development state for the land for which any subsequent assessments must be consistent with.

The recommendations contained within this report may assist in forming the basis of any specific construction conditions and/or bushfire mitigation measures that Council may elect to place within any conditions of consent for dwelling construction applications.

3.0 Scope of this Report

The scope of this report is limited to providing a bushfire assessment and recommendations for the subject property. Where reference has been made to the surrounding lands, this report does not purport to directly assess those lands; rather it may discuss bushfire impact and/or progression through those lands and possible bushfire impact to the subject property.

4.0 Compliance Tables & Notes

The following table sets out the projects compliance with *Planning for Bush Fire Protection – 2019*.

Proposed Stage 1A:

	North	East	South	West
Vegetation Structure	Woodland	Remnant	Proposed Stage 1B	Lot threat vegetation
Slope	0 - 5 degrees down	0 – 5 degrees down	N/A	N/A
Required Asset Protection Zone	15 metres	10 metres	N/A	N/A
Available Asset Protection Zone	>19 metres	>16.6 metres	N/A	N/A
Significant Landscape Features	Proposed perimeter road and conservation reserve	Proposed perimeter road and central park	Proposed Stage 1B	UWS Penrith Campus
Highest Bushfire Attack Level	BAL 29	BAL 29	BAL Low	BAL Low

Proposed Stage 1B:

	North	Northeast	South	West
Vegetation Structure	Proposed Stage 1A	Remnant	Proposed Stage 4B	Lot threat vegetation
Slope	N/A	0 - 5 degrees down	N/A	N/A
Required Asset Protection Zone	N/A	10 metres	N/A	N/A
Available Asset Protection Zone	N/A	>58 metres	N/A	N/A
Significant Landscape Features	Proposed Stage 1A	Proposed road	Proposed Stage 4B	UWS Penrith Campus
Highest Bushfire Attack Level	BAL Low	BAL 12.5	BAL Low	BAL Low

Proposed Stage 2A:

	North	East	South	West
Vegetation Structure	Remnant	Proposed Stage 2B	Proposed Stage 4B	Proposed Stage 1B
Slope	0 - 5 degrees down	N/A	N/A	N/A
Required Asset Protection Zone	10 metres	N/A	N/A	N/A
Available Asset Protection Zone	>16.6 metres	N/A	N/A	N/A
Significant Landscape Features	Proposed perimeter road and central park	Proposed Stage 2B	Proposed Stage 4B / Juvenile Detention Centre	Proposed Stage 1B
Highest Bushfire Attack Level	BAL 29	BAL Low	BAL Low	BAL Low

Proposed Stage 2B:

	North	East	South	West
Vegetation Structure	Maintained curtilages	Proposed Stage 3	Proposed Stage 4A	Remnant
Slope	N/A	N/A	N/A	0 degrees & up
Required Asset Protection Zone	N/A	N/A	N/A	10 metres
Available Asset Protection Zone	N/A	N/A	N/A	≥10 metres
Significant Landscape Features	Neighbouring residential allotments	Proposed Stage 3	Proposed Stage 4A	Central Park
Highest Bushfire Attack Level	BAL Low	BAL Low	BAL Low	BAL 29

Proposed Stage 3:

	North	East	South	West
Vegetation Structure	Low threat vegetation	Lot threat vegetation	Lot threat vegetation	Proposed Stage 2B
Slope	N/A	N/A	N/A	N/A
Required Asset Protection Zone	N/A	N/A	N/A	N/A
Available Asset Protection Zone	N/A	N/A	N/A	N/A
Significant Landscape Features	Eastern Park / Walker Street	Neighbouring residential & commercial allotments	Stage 4A / Wollemi College	Proposed Stage 2B
Highest Bushfire Attack Level	BAL Low	BAL Low	BAL Low	BAL Low

Proposed Stage 4A (Industrial):

	North	East	South	West
Vegetation Structure	Proposed Stages 2B & 3	Lot threat vegetation	Lot threat vegetation	Proposed Stage 4B
Slope	N/A	N/A	N/A	N/A
Required Asset Protection Zone	N/A	N/A	N/A	N/A
Available Asset Protection Zone	N/A	N/A	N/A	N/A
Significant Landscape Features	Proposed Stages 2B & 3	Wollemi College	Juvenile Detention Centre / Private allotment	Juvenile Detention Centre / Proposed Stage 4B
Highest Bushfire Attack Level	BAL Low	BAL Low	BAL Low	BAL Low

Proposed Stage 4B (Industrial):

	North	East	South	West
Vegetation Structure	Proposed Stages 1B & 2A	Proposed Stage 4A	Lot threat vegetation	Lot threat vegetation
Slope	N/A	N/A	N/A	N/A
Required Asset Protection Zone	N/A	N/A	N/A	N/A
Available Asset Protection Zone	N/A	N/A	N/A	N/A
Significant Landscape Features	Proposed Stages 1B & 2A	Proposed Stage 4A	Juvenile Detention Centre	UWS Penrith Campus
Highest Bushfire Attack Level	BAL Low	BAL Low	BAL Low	BAL Low

Asset Protection Zones Compliance

The subdivision application has demonstrated that the minimum required Asset Protection Zones under Planning for Bush Fire Protection 2006 were achieved.

The subject allotments also provide and in most instances exceed the Asset Protection Zones in accordance with A1.12.2 of Planning for Bush Fire Protection 2019.

The separation from the hazard interfaces primarily consists of perimeter roads.

Construction Level Compliance

Any dwelling or auxiliary structure located within 6 metres of a dwelling is required to comply with the relevant Bushfire Attack Level as shown on the attached Bushfire Attack Level Overlay.

The highest Bushfire Attack Level applies to the entire dwelling / structure.

In accordance with section 3.5 of AS3959 – 2018 any elevations not exposed to the source of bushfire can be reduced by one level, except where the highest Bushfire Attack Level was determined to be BAL 12.5 which applies to the entire building.

Compliance Summary of Bushfire Protection Measures			
Bushfire Protection Measure (s7.4)	Acceptable Solution	Performance Solution	Report Section
Asset Protection Zones	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.03
Access	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.03
Electricity Services	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.03
Gas Services	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.03
Construction Standards	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.03
Landscaping	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.03
Emergency Management	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.03

5.0 Aerial view, Subdivision Plan & Local Planning Controls



Figure 02: Aerial view of the subject area (C/- Nearmap)

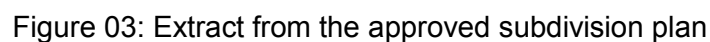




Figure 04: Urban Structure Plan (South Werrington Urban Village) – Penrith DCP

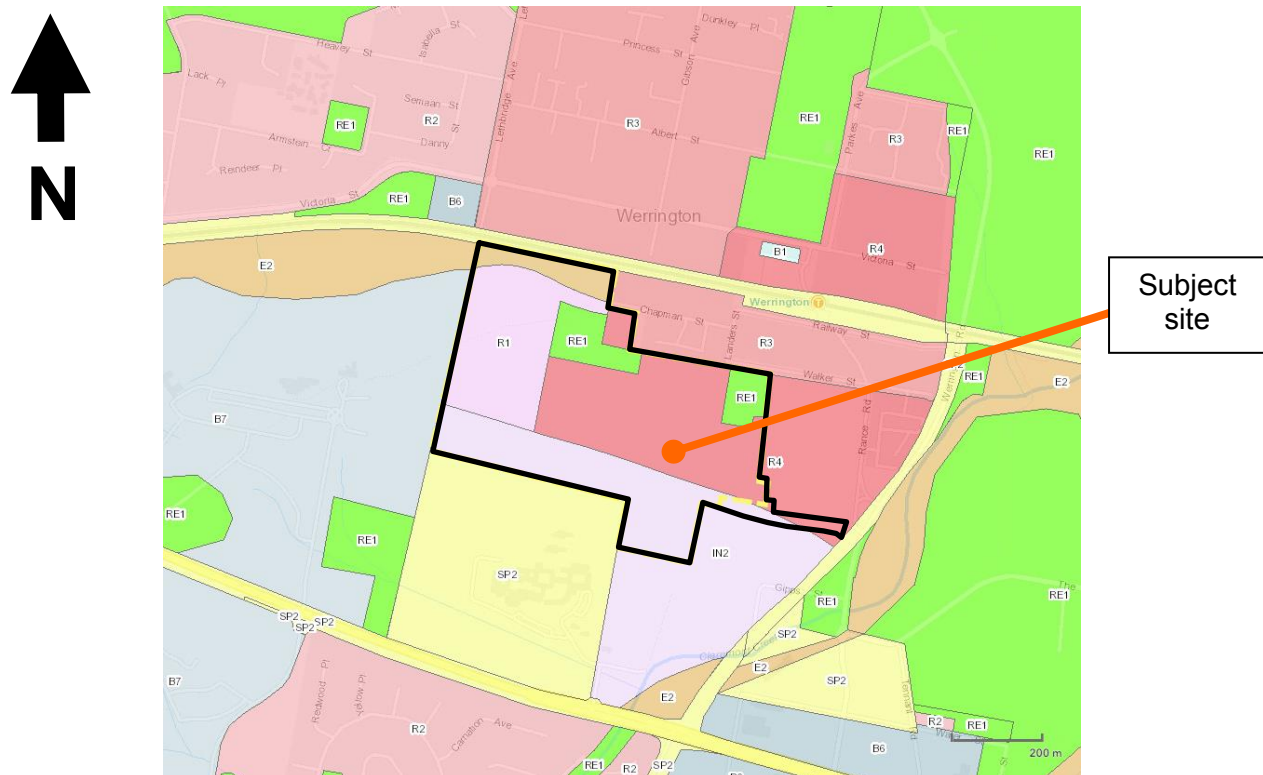


Figure 05: Zoning of subject area (C/- NSW Planning Portal)

6.0 Site Assessment

6.01 Location

The overall site is known as 16 Chapman Street, Werrington (Lot 1 DP 1226122) and is located within Penrith City Councils Local Government Area. The overall site also partially extends over Lot 2 DP 1176624 (Wollemi College).

The overall site forms part of the 'South Werrington Urban Village' under the Penrith Development Control Plan 2014 and is zoned 'R1 General Residential', 'R4 High Density Residential', 'IN2 Light Industrial', 'RE1 Public Recreation' and 'E2 Environmental Conservation'.

The overall site has street frontage to Chapman Street to the north and Walker Street to the northeast and abuts the main western railway and existing residential development to the north, existing residential and commercial development to the east, Wollemi College, Cobham Juvenile Justice Centre and a private allotment to the south and the University of Western Sydney Penrith (Werrington North) Campus to the west.

The subject allotments are located within Stages 1A, 1B, 2A, 2B, 3, 4A and 4B in DA19/0704 which was recently approved by Penrith City Council.

The vegetation identified as being the hazard is within the proposed northern residue (Lot 1000) and proposed Central Park (Lot 1065).

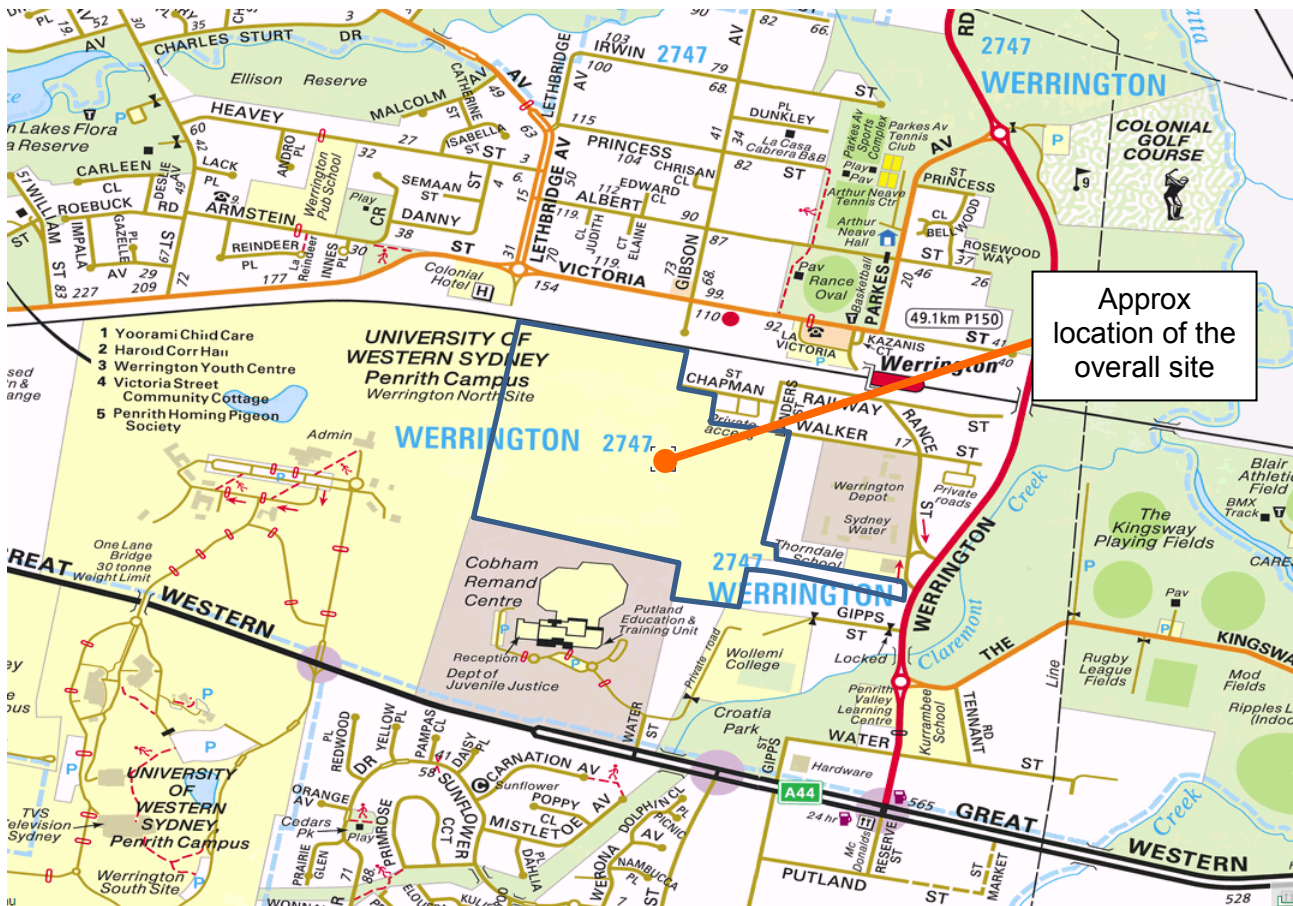


Figure 06: Extract from street-directory.com.au

6.02 Vegetation

In accordance with Appendix 1 'Site Assessment Methodology' of PBP we have undertaken an assessment of all vegetation formations within 140 metres of the development site for each aspect as per Keith (2004).

The overall site was found to be vacant, consisting of periodically slashed pastures and pockets of Cumberland Plain Woodland (CPW), a Critically Endangered Ecological Community (CEEC) listed under the *Biodiversity Conservation Act 2016*.

The CPW onsite has been identified as being NSW Plant Community Type 849: Grey Box-Forest Red Gum Grassy Woodland on Flats of the Cumberland Plain, Sydney Basin, being a Grassy Woodland formation.

DA19/0704 includes the creation of two (2) open space allotments (Central and Eastern Parks) and a single residue allotment (Lot 1000) comprising of the land zoned 'E2: Environmental Conservation'.

Central Park will retain and protect two areas of CPW outside the detention basins, with both being less than a hectare in size. The retained CPW within Central Park has been assessed as Remnant hazards in accordance with A1.11 of PBP and consistent with the approval issued by the NSW Rural Fire Service.



Image 07: Extract from the Landscape Masterplan of Central Park (Reserve)

Eastern Park will comprise largely of a detention basin. It is understood that this detention basin will be constructed such to provide a secondary function of passive / active recreation space (low cut grass for the southern portion of the basin). This Park has subsequently not been determined to present a bushfire threat.

The single residue allotment (Lot 1000) comprises of the land zoned 'E2: Environmental Conservation' and will protect and enhance the existing CPW. A Vegetation Management Plan has been prepared by Horticultural Management Services (dated 14th March 2016) to ensure the conservation measures are achieved. For the purpose of assessment under PBP the entirety of proposed Lot 1000, excluding a 7 metre APZ enforced by the NSW Rural Fire Service, has been assessed as a Woodland hazard.

A review of historic aerial imagery and onsite observations confirmed that the grassland within the adjacent UWS Penrith Campus, Wollemi College, Cobham Juvenile Justice Centre and private allotment to the south is subject to regular mowing / slashing and consequently not considered to pose a grassfire threat.

Further to our observations UWS have provided an extract from their existing Ground Maintenance Contract which verifies the extensive management of this area stating *'The grass areas indicated in yellow must have twenty (20) mowing services per year'*.



Figure 08: Extract from the UWS Ground Maintenance Contract

The above management regime is consistent with that of an Asset Protection Zone and therefore we are of the opinion that the UWS land does not warrant classification as a grassland hazard. This assessment is consistent with the approval issued by the NSW Rural Fire Service.

6.03 Slope and Topography

The slope of the land under the classified vegetation has a direct influence on the forward rate of spread, fire intensity and radiant heat exposure. The effective slope is considered to be the slope under the classified vegetation which will most significantly influence bushfire behaviour toward the development site.

In accordance with A1.4 'Determine slope' of PBP the slope assessment is to be derived from the most detailed contour data available.

The slope that would **most significantly** influence bushfire behaviour was determined from topographic imagery (1 metre contours sourced from ELVIS - Geoscience Australia) in conjunction with site observations and are described in the Compliance Tables on pages 6 - 9 of this report.

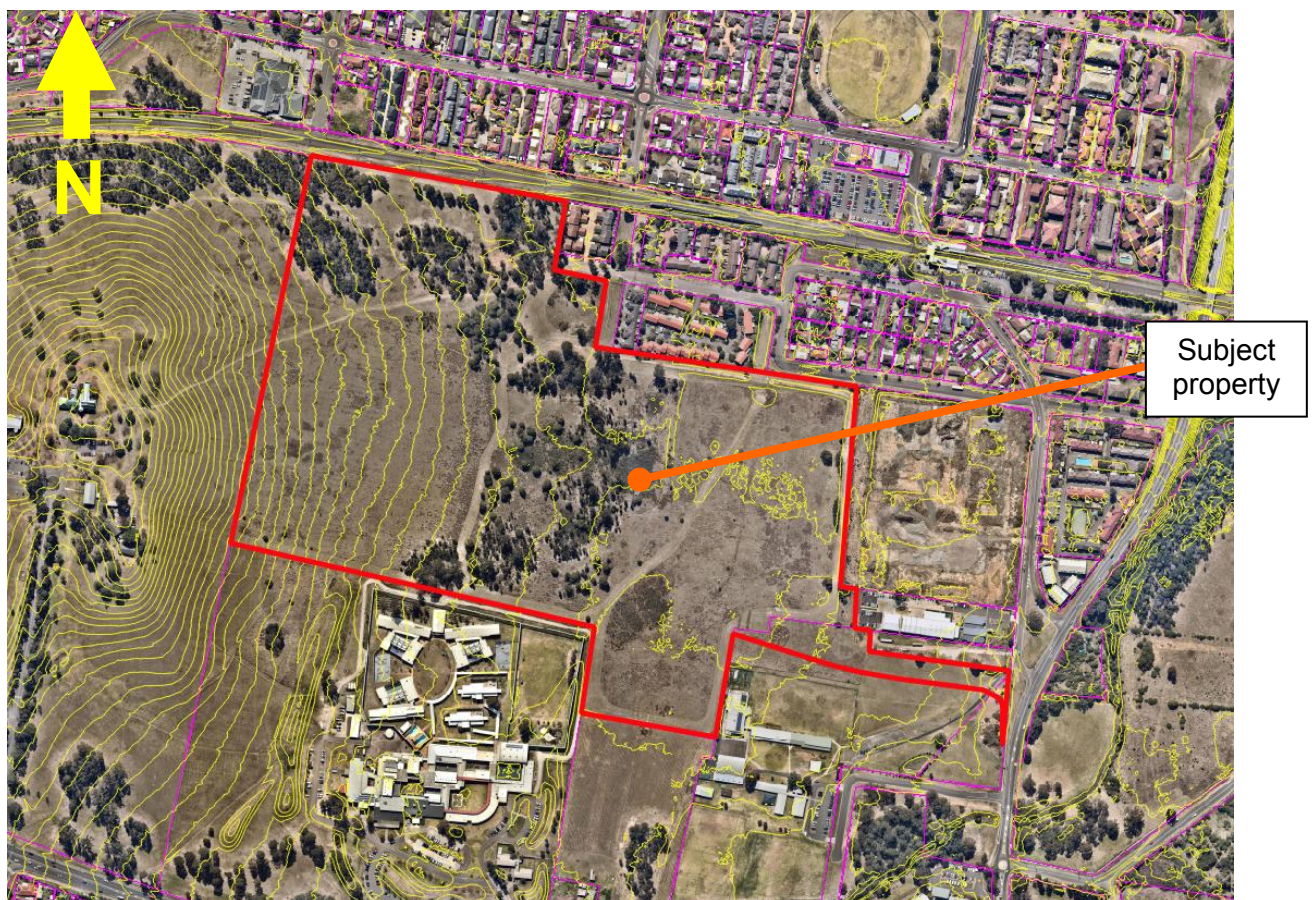


Figure 09: Aerial view of the subject area overlaid with 1 metre contours

6.04 Fire Weather

All development which attracts an Asset Protection Zone under PBP requires the identification of the relevant Forest Fire Danger Index (FFDI). The FFDI required to be used for development assessment purposes is based on the local government boundaries, being Penrith City Council in this instance.

In accordance with the NSW Rural Fire Service publication 'NSW Local Government Areas FDI' (2017) Penrith City Council forms part of the Greater Sydney Region Fire Weather District and attracts an FFDI of 100.

7.0 Bushfire Assessment

7.01 Planning for Bush Fire Protection - 2019

Properties considered to be affected by possible bushfire impact are determined from the local Bushfire Prone Land Map as prepared by Council and or the Rural Fire Service.

In this instance the subject site is depicted on Penrith City Council's Bushfire Prone Land Map as containing Category 1 and Category 2 Vegetation and their associated buffer zones and is therefore considered 'bushfire prone'.

Those new allotments that are mapped as Bushfire Prone Land following the subdivision require assessment under *State Environmental Planning Policy (Exempt and Complying Development Codes)* 2008 or section 4.14 of the *Environmental Planning and Assessment Act* 1979.

To satisfy either *State Environmental Planning Policy (Exempt and Complying Development Codes)* 2008 or section 4.14 of the *Environmental Planning and Assessment Act* 1979 the dwelling applications must satisfy the relevant specifications and requirements of *Planning for Bush Fire Protection 2019* (PBP).

In accordance with PBP the future dwellings must satisfy the aim and objectives detailed in Chapter 1 'Introduction' and the specific objectives and bushfire protection measures detailed in Chapter 7 'Residential Infill Development'.

The future industrial buildings (excluding any Special Fire Protection Purpose) must satisfy the aim and objectives detailed in Chapter 1 'Introduction' and the relevant requirements in Chapter 8 'Other Development' of PBP.

7.02 Specific Objectives

The following table lists the specific objectives for Residential Infill development in accordance with section 7.3 of PBP applicable to the future dwellings and our comments on compliance or otherwise.

Specific Objective	Comment
<i>provide a defensible space to enable unimpeded access for firefighting around the building;</i>	<p>The proposal achieves and in most instances exceeds the minimum required Asset Protection Zones (APZs) for Residential Subdivision.</p> <p>The APZs generally comprise of perimeter roads which will be serviced by in-ground hydrants at regular intervals.</p> <p>Ample defensible spaces are provided by attending fire services and residents.</p>
<i>provide better bush fire outcomes on a redevelopment site than currently exists, commensurate with the scale of works proposed;</i>	<p>The proposal does not relate to a redevelopment.</p> <p>The proposal will satisfy all relevant Bushfire Protection Measures for a newly constructed residential estate.</p>

Specific Objective	Comment
<i>design and construct buildings commensurate with the bush fire risk;</i>	All future dwellings must be constructed to the corresponding Bushfire Attack Level as shown on the attached BAL Overlay. The application of the relevant BAL rating will ensure future dwelling are constructed commensurate with the bushfire risk.
<i>provide access, services and landscaping to aid firefighting operations;</i>	The new estate will provide a comprehensive road and hydrant network to aid fire-fighting operations. The new estate was assessed and approved by the NSW Rural Fire Service as complying with the relevant specifications and requirements of <i>Planning for Bush Fire Protection 2006</i> .
<i>not impose an increased bush fire management and maintenance responsibility on adjoining land owners; and</i>	The proposal will not result in any increased bushfire management and or maintenance responsibilities on adjoining land owners.
<i>increase the level of bush fire protection to existing dwellings based on the scale of the proposed work and level of bush fire risk.</i>	There are no existing dwellings.

7.03 Bushfire Protection Measures

Section 7.4 'Bush fire protection measures' of PBP outlines the specific Bushfire Protection Measures (BPMs) applicable to residential infill development, including APZs, Access, Services, Construction, Landscaping & Emergency Management Plan.

The following section addresses each BMP and the future dwelling's compliance or otherwise.

Asset Protection Zones

The subdivision application (DA19/0704) has demonstrated that the minimum required Asset Protection Zones under Planning for Bush Fire Protection 2006 were achieved.

The subject allotments also provide and in most instances exceed the Asset Protection Zones in accordance with A1.12.2 of Planning for Bush Fire Protection 2019.

The available APZs consist of the land entirely within the subject site (including proposed roads).

All allotments, excluding proposed Lot 1000, Lot 1065 and Lot 3000, are required to be maintained in accordance with an Inner Protection Area (IPA).

The IPA must comprise:

- Minimal fine fuel at ground level;
- Grass mowed or grazed;
- 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 or within 10 metres of any windows or doors;
- Minimal plant species that keep dead material or drop large quantities of ground fuel;
- Tree canopy cover not more than 15%;
- Tree canopies 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.

Access

The overall site has street frontage to Chapman Street to the north and Walker Street to the northeast.

The road design of the estate provides an additional access /egress route to the east to Werrington Road and also facilities future connections to the south and west in accordance with the Penrith DCP.

A review of the subdivision plan for DA19/0704 has found that the new roads will have a carriageway of 9 metres. This exceeds the minimum carriageway requirements for Access (perimeter roads and non-perimeter roads) under section 5.3.2 of PBP.

The most distant external point of all future building envelopes are located within 70 metres of the new two-way internal roads and therefore the Access requirements detailed in Table 7.4a of PBP are not applicable.

Fire services will have free vehicle access around the estate via public roads. Attending fire services can access the hazards via the new roads for hazard reduction or fire suppression activities.

Access for fire services and opportunities for occupant evacuation are considered adequate for this property.

Water Supply

The estate will include the installation of hydrants along the new public roads. The sizing, spacing and pressures of the proposed hydrants must be in accordance with AS2419.1-2005. In addition this water supply must satisfy section 4.1.3 of *Planning for Bush Fire Protection 2006*.

The most distant external point of the future dwellings will be located within 70 metres of a new public road which will be serviced by in-ground hydrants conforming to AS2419.1-2005. There are therefore no required static water supplies for the individual allotments.

The required water supply for the estate is considered adequate for the replenishment of attending fire services.

Services – Electricity & Gas

The new estate is required to have electrical and gas services comply with section 4.1.3 of *Planning for Bush Fire Protection 2006* under the NSW Rural Fire Service approval.

Recommendations will be included to ensure compliance with gas services requirements detailed in Table 7.4a of PBP for the future dwellings and buildings.

The subdivision application already addressed the provision of electrical transmission lines and subsequently the electrical services requirements detailed in Table 7.4a of PBP are not applicable.

Construction

Any dwelling or auxiliary structure located within 6 metres of a dwelling is required to comply with the relevant Bushfire Attack Level as shown on the attached Bushfire Attack Level Overlay.

The highest Bushfire Attack Level applies to the entire dwelling / structure.

In accordance with section 3.5 of AS3959 – 2018 any elevations not exposed to the source of bushfire can be reduced by one level, except where the highest Bushfire Attack Level was determined to be BAL 12.5 which applies to the entire building.

Landscaping

Any new landscaping within the residential allotments must comply with Section 3.7 'Landscaping' of *Planning for Bush Fire Protection 2019*.

Emergency Management Plan

Evacuation is possible by utilising existing road infrastructure.

It is encouraged that the occupants of the future dwellings complete a Bush Fire Survival Plan. The template for this plan is available at <https://www.rfs.nsw.gov.au/resources/bush-fire-survival-plan>.

7.04 Aim & Objectives

The following table details the aim and objectives of Planning for Bush Fire Protection 2019 and the proposals ability to comply.

Aim / Objective	Comment
<p>The aim of PBP is to provide for the protection of human life and minimise impacts on property from the threat of bush fire, while having due regard to development potential, site characteristics and protection of the environment.</p>	<p>With the inclusion of the recommendations made herein it is of our opinion that the aim of PBP has been satisfied.</p>
<p>afford buildings and their occupants protection from exposure to a bush fire;</p>	<p>The future dwellings will be constructed to relevant Bushfire Attack Level under AS3959 2018.</p> <p>These construction measures in combination with the other bushfire protection measures described herein will afford buildings and their occupants protection from the exposure to a bushfire.</p>
<p>provide for a defensible space to be located around buildings;</p>	<p>There is a defensible space available to all identified hazards, being maintained grounds and new public roads.</p>
<p>provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings;</p>	<p>The approved APZs provide appropriate separation between the hazards and future dwellings.</p>
<p>ensure that appropriate operational access and egress for emergency service personnel and occupants is available;</p>	<p>The most distant external point of the future dwellings will be less than 70 metres from a new public road supporting the operational use of fire fighting vehicles.</p> <p>Perimeter access is also available to all identified bushfires hazard for attending fire services via the new public roads.</p>

Aim / Objective	Comment
<p>provide for ongoing management and maintenance of bush fire protection measures, (BPMs); and</p>	<p>All grounds within the residential allotments not built upon is required to be maintained in accordance with an Inner Protection Area.</p> <p>Any new landscaping is to comply with the provisions of Table 7.4a and Appendix 4 of PBP – 2019.</p>
<p>ensure that utility services are adequate to meet the needs of firefighters.</p>	<p>Hydrants will be available throughout the new public road network and are available along surrounding existing public roads for the replenishment of fire service vehicles.</p> <p>The most distant external point of the future dwellings will be within 70 metres of a public road that supporting a hydrant network.</p>

It is therefore of our opinion that the proposal can satisfactorily comply with the aim and objectives of Planning for Bush Fire Protection 2019.

8.0 Recommendations

The following recommendations are provided as the minimum necessary for compliance with Planning for Bush Fire Protection – 2019 and Australian Standard 3959 'Construction of buildings in bushfire-prone areas - 2018. Additional recommendations are provided to supplement these minimum requirements where considered necessary.

Asset Protection Zones

1. That all grounds within the subject residential and commercial allotments not built upon are to be maintained in accordance with an Inner Protection Area as detailed in the NSW Rural Fire Service's document 'Standards for Asset Protection Zones' and Appendix 4 of *Planning for Bush Fire Protection 2019*.

Construction

2. That any future dwelling be constructed to the relevant Bushfire Attack Level (BAL) under Australian Standard 3959 'Construction of buildings in bushfire-prone areas' 2018 as depicted on the attached Bushfire Attack Level overlay (attachment 01).
3. That any future dwelling required to be constructed to a BAL under AS3959 2018 must also be constructed to the 'Additional Construction Requirements' detailed in section 7.5 of the pre-release of Planning for Bush Fire Protection 2018.

Note: In accordance with section 3.5 of AS3959 – 2018 any elevations not exposed to the source of bushfire can be reduced by one level, except where the highest Bushfire Attack Level was determined to be BAL 12.5 which applies to the entire building.

Landscaping

4. That any new landscaping is to comply with Section 3.7 'Landscaping' under *Planning for Bush Fire Protection 2019*.

Gas (where applicable)

5. That any new gas services are to comply with Table 7.4a of Planning for Bush Fire Protection 2019 as follows:
 - 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.

Emergency management

6. That the occupants of the subject dwelling complete a Bush Fire Survival Plan.

Access

7. That obstructed access be provided around the future dwellings.

9.0 Conclusion

This Bushfire Assessment Report has been prepared to address the building construction requirements of the future dwellings and buildings within the approved allotments in DA19/0704 which was recently approved by Penrith City Council.

The NSW Rural Fire Service has issued their General Terms of Approval, under Division 4.8 of the *Environmental Planning and Assessment Act 1979*, and Bush Fire Safety Authority, under section 100B of the *Rural Fires Act 1997* for the application (ref DA20191029000754-Original-1, dated 15th April 2020).

The NSW Rural Fire Service assessed the subdivision application under *Planning for Bush Fire Protection 2006*. This assessment has been prepared consistent with the aforementioned NSW Rural Fire Service approval, but updated as necessary to address the now enforced *Planning for Bush Fire Protection 2019*.

The overall site is known as 16 Chapman Street, Werrington (Lot 1 DP 1226122) and is identified on Penrith City Council's Bushfire Prone Land Map as containing Category 1 and Category 2 Vegetation and their associated buffer zones.

Those new allotments that are mapped as Bushfire Prone Land following the subdivision require assessment under *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* or section 4.14 of the *Environmental Planning and Assessment Act 1979*.

To satisfy either *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* or section 4.14 of the *Environmental Planning and Assessment Act 1979* the dwelling applications must satisfy the relevant specifications and requirements of *Planning for Bush Fire Protection 2019* (PBP).

In accordance with PBP the future dwellings must satisfy the Aim and Objectives detailed in Chapter 1 'Introduction' and the specific objectives and bushfire protection measures detailed in Chapter 7 'Residential Infill Development'.

The future industrial buildings (excluding any Special Fire Protection Purpose) must satisfy the aim and objectives detailed in Chapter 1 'Introduction' and the relevant requirements in Chapter 8 'Other Development' of PBP.

In accordance with the bushfire safety measures contained in this report, and consideration of the site specific bushfire risk assessment it is our opinion that when combined, they will provide a reasonable and satisfactory level of bushfire protection to the future dwellings and buildings.

Should you have any enquiries regarding this project please contact me at our office.

Prepared by
Building Code & Bushfire Hazard Solutions

Stuart McMonnies

Manager Bushfire Section

G. D. Design in Bushfire Prone Areas.

Certificate IV Fire Technology

Fire Protection Association of Australia BPAD – L3 Accredited Practitioner

Certification number – BPAD9400



10.0 Annexure 01

List of Referenced Documents

Australian Building Codes Board (2019). *National Construction Code Volume One - Building Code of Australia*. ABCB

Australian Building Codes Board (2019). *National Construction Code Volume Two - Building Code of Australia*. ABCB

Cardno. Subdivision Plan with Staging (dwg no 80219053-001-SK080, rev 8, dated 01/07/2020)

EL VIS -Elevation -Foundation Spatial Data. Elevation.fsdf.org.au. Available at: <http://elevation.fsdf.org.au/>

Environmental Planning and Assessment Act 1979

Keith, D. (2004). "Ocean Shores to Desert Dunes" Department of Environment and Conservation, Sydney

NSW Department of Planning and Environment (2019). *Planning Portal*. Accessed at: <https://www.planningportal.nsw.gov.au/>

NSW Rural Fire Service (2019). *Planning for Bushfire Protection. A Guide for Councils, Planners, Fire Authorities and Developers*.

Rural Fires Act 1997

Rural Fires Regulations 2013

Rural Fire Service NSW (2005). *Standards for Asset Protection Zones*

Rural Fire Service NSW (2017). *NSW Local Government Areas FDI*

NSW Rural Fire Service. General Terms of Approval and Bushfire Safety Authority for DA19/0704 (ref DA20191029000754-Original-1, dated 15th April 2020)

Standards Australia (2018). *AS3959 Construction of buildings in bushfire-prone areas*.

Standards Australia (2014). *AS/NZS 1596 The storage and handling of LP Gas*

'South Werrington Urban Village' under the Penrith Development Control Plan 2014

Acknowledgements to:

Geoscience Australia
Penrith City Council's Bushfire Prone Land Map
Nearmap
NSW Gov. ePlanning Spatial Viewer
Street-directory.com.au

Attachments

Attachment 01: Bushfire Attack Overlay

Attachment 02: Compliance Certificate

**LEGEND**

APZ (IPA - NO CONSTRUCTION)

BAL 29

BAL 19

BAL 12.5

BUSHFIRE CONSTRUCTION (BAL) OVERLAY

REFERENCE NO.	191311			LOT 1 DP 1226122		
ADDRESS	16 CHAPMAN STREET, WERRINGTON NSW					
DATE.	16/07/2019		DRAWN BY	IT	SCALE: NTS	
REVISION	F	REVISION DATE	03/05/2021			
CLIENT	GLN PLANNING					



Building Code & Bushfire Hazard Solutions

(Pty. Limited) ABN 19 057 337 774
PO Box 124, Berowra NSW 2081
Telephone: (02) 9457 6530
www.bushfirehazardsolutions.com.au



BUSHFIRE RISK ASSESSMENT CERTIFICATE UNDER PART 4 DIVISION 4.3 SECTION 4.14 OF THE EP&A ACT 1979 NO 203

PROPERTY ADDRESS:	16 Chapman Street, Werrington
DESCRIPTION OF PROPOSAL:	Construction of dwellings
PLAN REFERENCE: (relied upon in report preparation)	BAL Overlay prepared by Building Code & Bushfire Hazard Solutions, ref 191311, rev date 03/05/21.
BAL RATING:	BAL 29, BAL 19, BAL 12.5 & BAL Low <small>(If the BAL rating is FZ the application is to be referred to NSW RFS for assessment)</small>
BUSHFIRE ASSESSMENT REPORT REFERENCE:	191311D
REPORT DATE	3 rd May 2021
CERTIFICATION NO/ACCREDITED SCHEME	BPAD9400

I Stuart McMonnies of Building Code and Bushfire Hazard Solutions Pty Ltd hereby certify, in accordance with Part 4 Division 4.3 Section 4.14 of the *Environmental Planning and Assessment Act 1979 No 203*:

1. That I am a person recognised by the *NSW Rural Fire Service* as a qualified consultant in bushfire risk assessment; and
2. That subject to the recommendations contained in the Bushfire Risk Assessment Report the proposed development conforms specifications and requirements of the documents entitled *Planning for Bush Fire Protection* prepared by the *NSW Rural Fire Service* in co-operation with the Department of Planning and any other documents as prescribed by Part 4 Division 4.3 Section 4.14 of the *Environmental Planning and Assessment Act 1979 No 203*.

I am aware that the Bushfire 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 Bushfire Protection 2019*.

Signature

Date: 3rd May 2021

