



Bush Fire Hazard Assessment Report

For Proposed; Sports & Health Centre (Commercial)

Goldsmith Ave Campbelltown NSW 2560



9th March 2018

Prepared By:
The Fire Consultants
Tel: 0418 460517
Fax: 02 98823774
PO Box 29 Forestville NSW 2087



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

Terms and Conditions

TFC retains the copyright on all reports it produces, and thus the information contained therein shall not be reproduced, in part or in whole without the prior expressed permission of the copyright holder. The information contained in this report is for the sole use of the intended recipients

Disclaimer

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 S4.14 of the EP&A Act 1979.

Whilst care is taken in the assessment and report, TFC Ltd does not warrant that the information contained in this report will be free from error or omission. Also, there is no implied assurance nor guarantee that compliance with the strategies and recommendations contained in this report will result in a development application consent being granted by the approving authority. TFC will not be liable for any financial losses incurred throughout the development planning and application process, should an application not be successful.

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

Document Name	Project Ref	Date	Author	Status
Goldsmith Ave (Sports Centre)	1	09/03/2018	S.Brooks	Complete

Contents

0 – Executive Summary	Page 5
1- Introduction	Page 6
2- Purpose of Report	Page 6
3 -Report Scope	Page 7
4 – Proposal	Page 7
5 – Statement of Bushfire Prone Land	Page 8
6 – Bushfire Hazard Assessment	
6.1 – Preface	Page 10
6.2 – Location	Page 11
6.3 – Vegetation	Page 12
6.4 - Slope under hazard	Page 15
6.5 – Asset Protection Zones	Page 16
6.6 – Access	Page 17
6.7 – Water Supply	Page 17
6.8 – Environmental Impact	Page 17
6.9 - Electricity	Page 17
6.10 – Gas Services	Page 17
6.11 – Hazard Assessment Determination	Page 18
7 – Recommendations	Page 21
8 – Conclusions	Page 22
References	Page 24
Appendix 1 – Building Plans	Page 25
Appendix 2 – Site Photos	Page 26

Executive Summary

This report has been prepared as a bush fire assessment for the proposed demolition of the existing structure and replacing it with a new Commercial Structure (Campbelltown Sports and Health Centre of Excellence) located at Goldsmith Ave Campbelltown NSW 2560 in the Municipality of Campbelltown City Council 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 has been found to be 129 metres from the nearest bush fire hazard (Forest). The site is within a Category 2 Bushfire Hazard Zone although upon inspection of the site there is little evidence of Category 2 Bushfire Hazard within 30m of the proposal. There are some small areas of vegetation (Remnant Scrub) located to the North, North-East and North-West of the proposal that have not been deemed as a hazard to the development and are therefore not part of this assessment.

The proposal is found to be in the BAL – LOW range as per Section 2.2.3.2a-b-d Exclusions – Low threat vegetation and non-vegetated areas of AS3959-2009 as the nearest Classified Bushfire Hazard (Forest) is more than 30m (129m) from the proposed development. It will also need to meet the requirements of Planning for Bush Fire Protection (NSW RFS 2006). It must also be noted that Bushfire Prone Land for this proposal must be contained or within 30m of Category 2 Bushfire Hazard Vegetation.

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 Campbelltown City 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 Category 2 Bushfire Hazard Vegetation as per Campbelltown City Council Bushfire Prone Land Map and therefore compliance with Bushfire Legislation is required. Although upon inspection of the site there is little evidence on any Category 2 Bushfire Hazard Vegetation within 30m of the proposal.

The proposed development is to demolish the existing structure and replace it with a new Sports and Health Centre.

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:	Campbelltown City Council
Council:	Campbelltown City Council
Council Reference	N/A
Address:	Goldsmith Ave Campbelltown NSW 2560 Lot 4099 DP 1206283
Site Area:	The Lot is yet to be subdivided into smaller areas/Lots
Zoning	R3 Medium Density Residential

3. Proposal

The proponent seeks to demolish the existing structure and replace it with a new Commercial Structure (Campbelltown Sports & Health Centre of Excellence) at Goldsmith Ave Campbelltown NSW 2560. The site is also known as Lot 3099 DP 1201509. It is bounded by parkland in all aspects with new residential development, in the distance, to the North, South and West. Campbelltown City Council's GIS Mapping indicates that the proposed development is located within a Category 2 Bushfire Hazard Zone, although upon inspection of the site there is little evidence of any Category 2 Bushfire Hazard within 30m of the proposal.

The land is zoned R3 Medium Density Residential and the proposal is understood to comply with the requirements of Campbelltown City 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 checked="" type="checkbox"/>	New Building	<input checked="" type="checkbox"/>	Urban	<input type="checkbox"/>	Dual Occupancy
<input type="checkbox"/>	Rural Residential	<input 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) NSW RFS (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 the Campbelltown City 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).

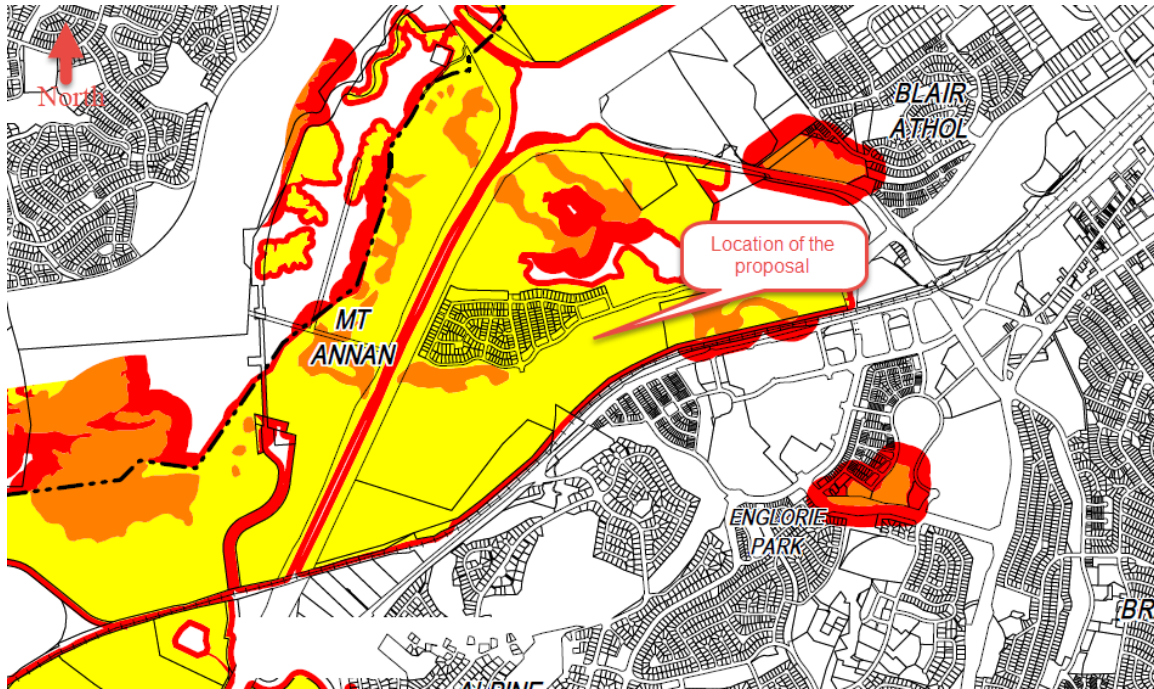


Figure 1: - Site of the proposed Sports & Health Centre at Goldsmith Ave NSW 2560 Bushfire Prone Land Map (Campbelltown City Council 2018). It should be noted that the Bush Fire Prone Land Map above indicates that the site is within a Category 2 Bushfire Hazard Vegetation Zone although upon inspection of the site there is little evidence of any Category 2 Bushfire Hazard Vegetation within 30m of the proposal. It must also be noted that Bushfire Prone Land for this proposal must be contained or within 30m of Category 2 Bushfire Hazard Vegetation.



Image 1: Aerial View of the allotment. Note the Red Lines indicate the approx. extremities of the proposed new structure facades in each aspect. The vegetation in the identified within the red-line is the nearest Category 2 Bushfire Hazard Vegetation (Forest) whilst the areas identified within the green-line is vegetation that has been deemed a non-hazard to the proposal and is therefore not part of this assessment (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 a new Sports & Health Centre on this site is infill development and as such must comply with Section 4.14 of the EP&A Act 1979 and PBP 2006.

The property is at Goldsmith Ave Campbelltown NSW 2560 (Lot 3099 DP 1201509) and is in a residential area within the Campbelltown City Council Local Government Area. The property has direct access to Goldsmith Ave which runs to the North of the subject allotment. The vegetation that is a potential bush fire hazard (Forest) is to the West at 129m. The small areas of vegetation (Remnant Scrub) located to the North, North-East and North-West of the proposal have not been deemed as a hazard to the development and are therefore not part of this assessment.

6.2 Location



Image 2: - Site Aerial showing the existing structure that will be demolished (NSW Government 2018)

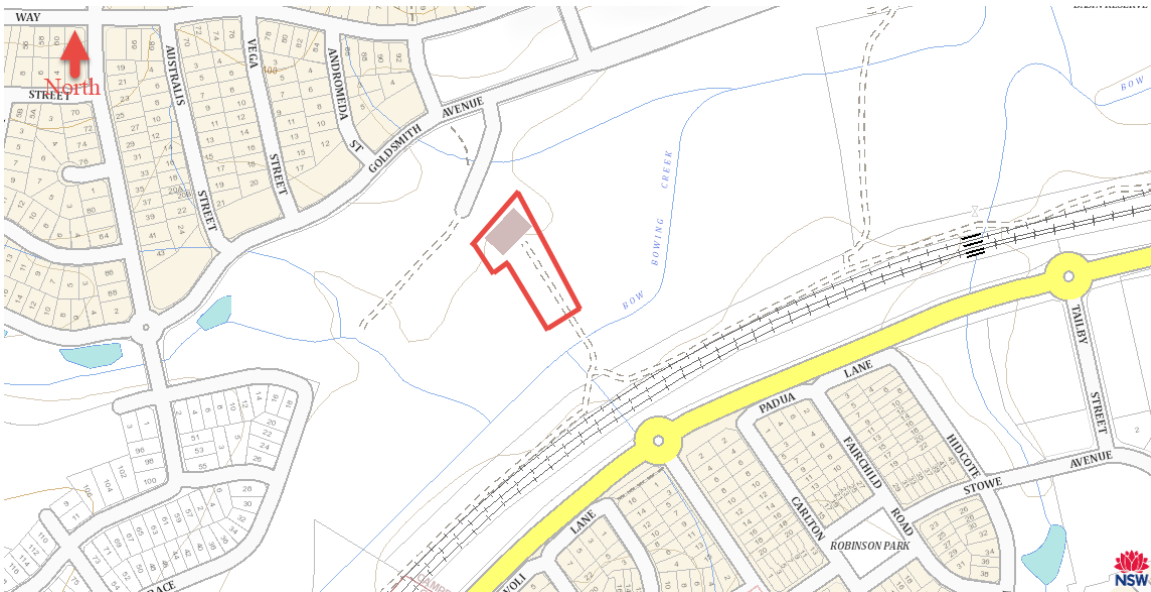


Figure 2: - Street Location of Property also indicating the approx. building footprint of the proposal (NSW Government 2018)

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 2 Bushfire Hazard Vegetation. Upon inspection of the site there is little evidence of the Category 2 Bushfire Hazard Vegetation affecting the proposal. The Lot is predominately clear with a scattering of trees (Remnant Vegetation) and areas of "low height grasses", which in the event of a bushfire occurring, will not adversely impact the proposal. There will be large areas, sports fields, adjacent to the proposal which are considered as maintained vegetation.

Furthermore, PBP 2006 Appendix A2.3 states that "*Remnant vegetation is a parcel of vegetation with a size of less than 1 Ha or a shape that provides a potential fire run directly toward buildings not exceeding 50m. These remnants are considered a low hazard and APZ setbacks and building construction standards for these will be the same as for rainforests*".

The predominant Bushfire Hazard Vegetation formation using "Keith 2004" identification is Forest to the West of the proposal at 129m. It must also be reiterated that the small areas of vegetation (Remnant Scrub) located to the North, North-East and North-West of the proposal have not been deemed as a hazard to the development and are therefore not part of this assessment.

The separation distance to the hazard is assessed as follows;

Direction	Distance to Hazard
East	30+m
South	30+m
North	30+m
West	30+m



Image 3 – Indicates the areas of Remnant Scrub (Green) and Forest Classified Vegetation (Red) at 129m from the proposal. Both areas are not considered as being a threat to the proposal due the Remnant Scrub being deemed as a non-hazard and the Forest Classified Vegetation being more than 30m from the proposal (NSW Government 2018)

Bushfire Hazard Assessment Campbelltown Sports & Health Centre of Excellence
Goldsmith Ave Campbelltown NSW 2560 9th March 2018

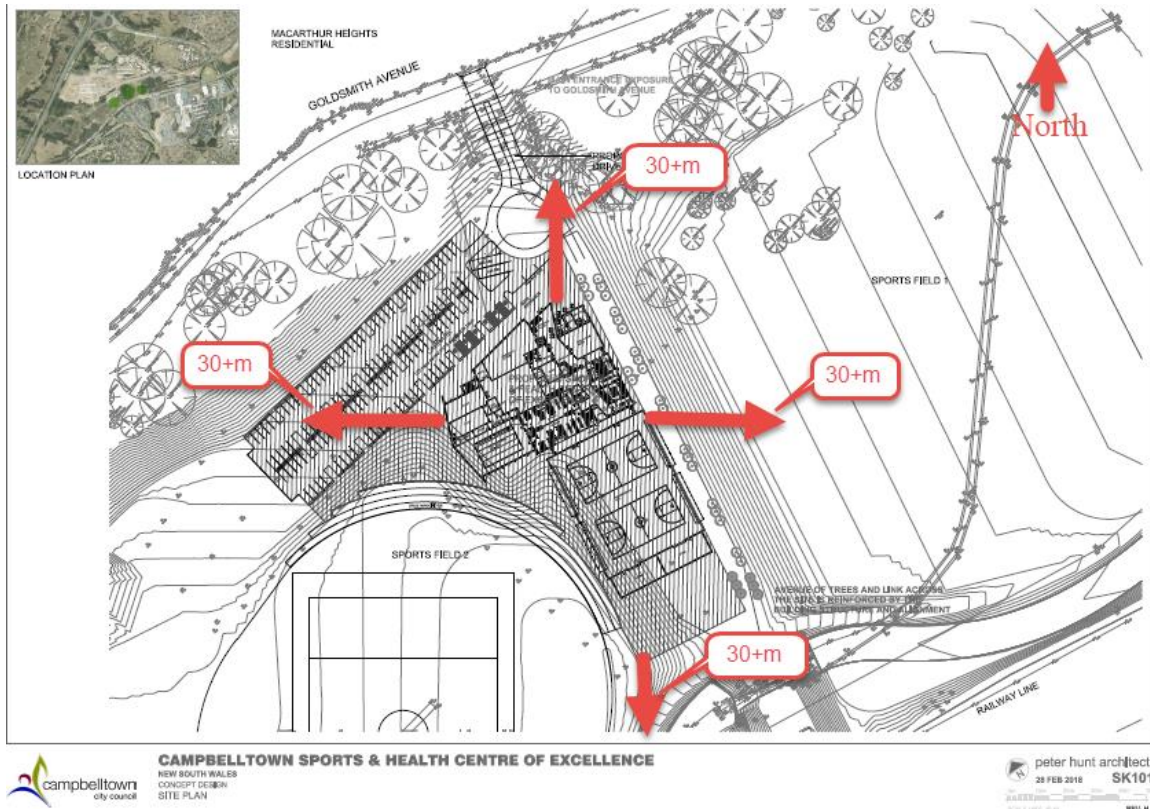


Figure 3- Indicates the distances to Category 2 Bushfire Hazard Vegetation. As it is more than 30m the proposal is in the BAL-LOW range (Peter Hunt Architect 2018)



Photo 1 – Indicates the vegetation that is considered as Remnant Scrub and not being deemed as a hazard to the proposal (Steve Brooks 2018).

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 Category 2 Bushfire Hazard Vegetation is more than 30m from the proposed development the need to assess the slope under the classified vegetation is not applicable.



Image 4: - Indicates the distances to what can be Classified as Category 2 Bushfire Hazard Vegetation - Forest (identified within the red-lined area) which is more than 30m (129m) West from the proposal. Note the vegetation in the Green area has been deemed as a non- hazard to the proposal and is therefore not part of this assessment (NSW Government 2018)

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

6.5 Asset Protection Zones (APZ)

The current inner APZ from the proposed Sports and Health Centre are not applicable as the nearest Classified Bushfire Hazard Vegetation is 30+m from the proposed development. There are proposed sports fields, adjacent to the proposal, which are considered as maintained land and therefore will not pose a threat to the proposal in terms of a bushfire hazard.



Image 5: - Indicates the proposed new Sports and Health Centre in proximity to the Category 2 Bushfire Hazard Vegetation in the red-line area to the West of the proposal. Note the vegetation in the Green area has been deemed as a non-hazard to the proposal and is therefore not part of this assessment (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	30+m	N/A	Parkland	Low Threat Vegetation/Managed Land	Yes
South	N/A	30+m	N/A	Parkland	Low Threat Vegetation	Yes
East	N/A	30+m	N/A	Parkland	Managed Land	Yes
West	N/A	30+m	N/A	Parkland	Managed Land	Yes

Table 1: - APZ distances

6.6 Access for Fire Services and Escape

The subject property has direct access to Goldsmith Ave to the North of the proposal and allows an egress route to safety. The road is surfaced and suitable for fire appliances. 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 on Goldsmith Ave. Furthermore, the proposal will be equipped with components for Building Fire Safety measures (e.g. Booster Systems, Fire Hose Reels, etc.).

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 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 the proposed Campbelltown Sports & Health Centre of Excellence at Goldsmith Ave Campbelltown NSW 2560.

FDI Appropriate to Development – Campbelltown City Council LGA 100
AS3959 Table 2.4.2

Direction/ Aspect	Distance to Vegetation	Vegetation Formation	Slope in degrees	Construction Requirements AS3959-2009
South	30+m	Low Threat Vegetation	N/A	BAL-LOW
East	30+ m	Low Threat Vegetation	N/A	BAL-LOW
North	30+ m	Low Threat Vegetation	N/A	BAL-LOW
West	30+ m	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 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 defendable 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 129 metres from the proposal
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 new structure will be 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. driveway meets 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	Complying APZ 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 new structure will be built to BAL-LOW as 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 demolish the existing structure and construct a new Sports and Health Centre on the Lot which does not extend towards the hazard.
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 that Campbelltown City Council and the NSW Rural Fire Service approve the proposed new Sports & Health Centre at Goldsmith Ave Campbelltown NSW 2560 in respect to Bush Fire Requirements.

7.1 Environmental Impact of any proposed bushfire measures

Measure	Environmental Impact	Comment
APZ	No Impact	APZ already in existence and no change planned
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

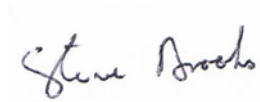
8. Conclusion

The proposed new Sports & Health Centre at Goldsmith Ave Campbelltown NSW 2560 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). The required Asset Protection Zones determined from Table 2.4 of PBP 2006 exceed the intent of Section 3.3 of PBP 2006.

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 4.14 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, 2009, website – www.rfs.nsw.gov.au :
- Standards Australia, AS 3959-2009 *Construction in Bushfire Prone Areas* (amended 2001) SAI Global, Melbourne.
- Campbelltown City Council, 2018 *Bush Fire Prone Land Map*
- NSW Government Six Mapping

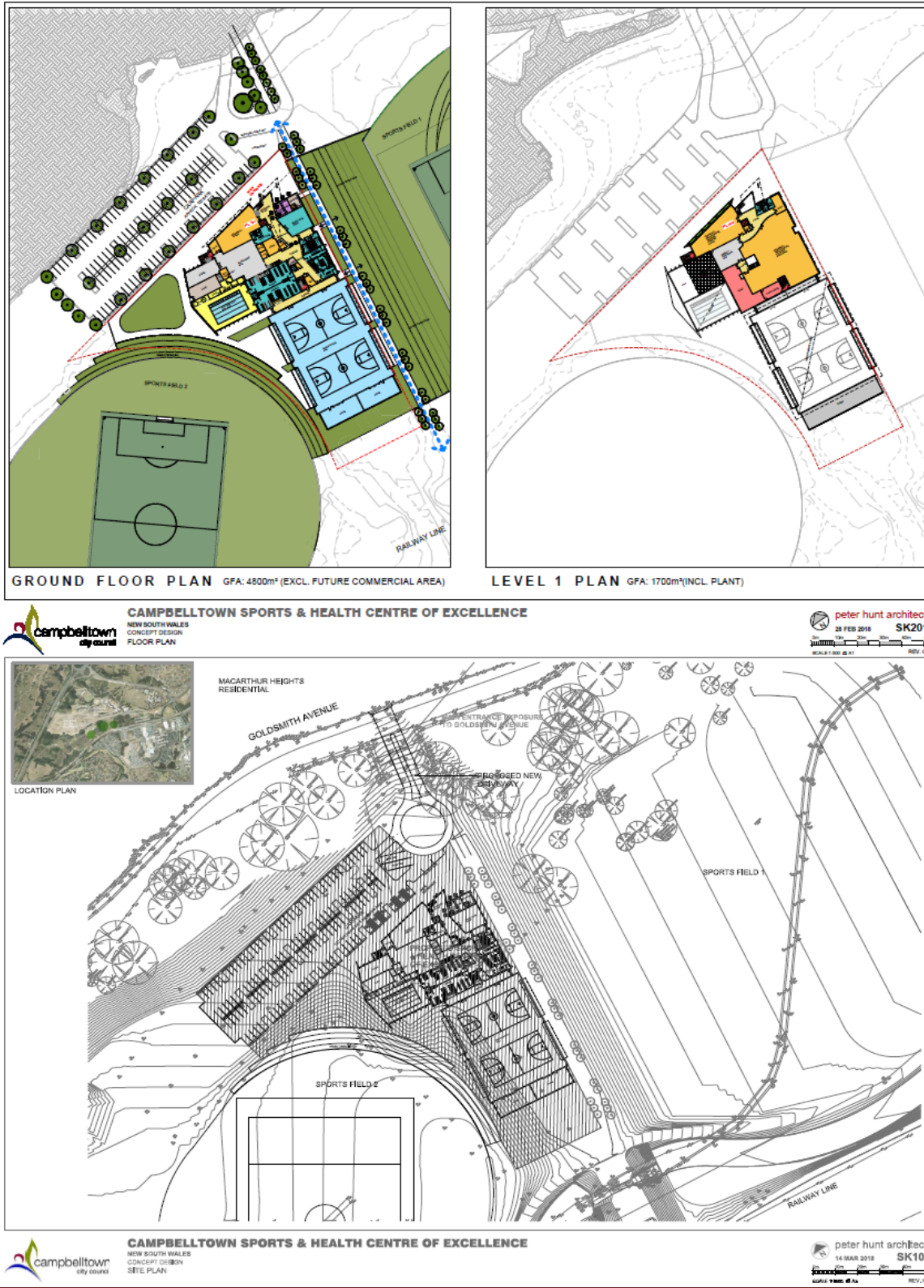
Disclaimer

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 as supplied by the applicant.



Appendix 2

Site Photos.



Photo 2 -Indicates the current structure and the location of the proposed new structure (Steve Brooks 2018)



Photo 3 – Indicates an area of Non-Hazard Vegetation to the North of the proposal (Steve Brooks 2018)



Photo 4 – Indicates an area Non-Hazard Vegetation North-West of the proposal(Steve Brooks 2018)



Photo 5 – Indicates an area of Non-Hazard Vegetation (Steve Brooks 2018)



Photo 6 – Indicates the view South from the existing structure and Non-Hazard Vegetation (Steve Brooks 2018)



Photo 7 - Indicates a small area of Non-Hazard Vegetation North-West of the proposal (Steve Brooks 2018)



Photo 8 – Indicates the area of Forest Classified Vegetation (Category 2) approx. 129m West of the proposal (Steve Brooks 2018)