

Bush Fire Assessment Report

Proposed:
New Sports Complex

At:
St Ives High School
88 Yarrabung Road,
St Ives NSW

Reference Number: 180473

Prepared For:
JDH Architects

16th November 2018

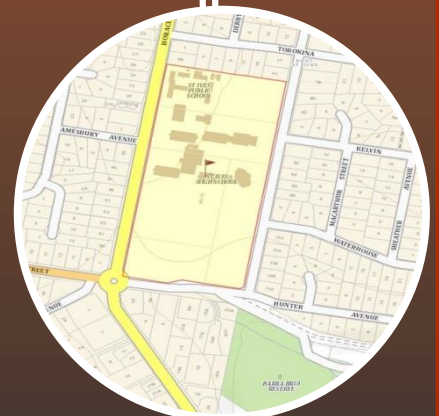
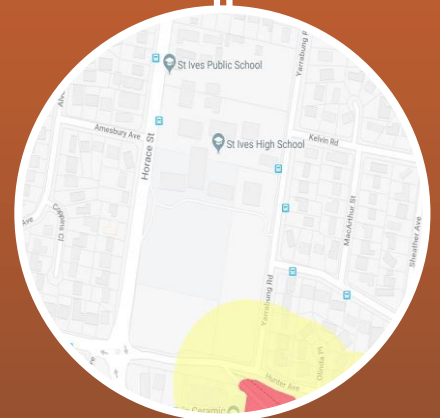


Prepared By:
Building Code & Bushfire
Hazard Solutions Pty Limited

Tel: (02) 9457 6530
Fax: (02) 9457 6532

PO Box 124
Berowra NSW 2081
ABN 19 057 337 774

www.bushfirehazardsolutions.com.au



Contents

	<u>Page No.</u>
Copyright and Disclosure	2
List of Abbreviations	3
1.0 Introduction	4
2.0 Purpose of Report	4
3.0 Scope of Report	4
4.0 Referenced Documents and Persons	4
6.0 Compliance Tables & Notes	5 - 6
6.0 Aerial view and site plan of the subject allotment	6 - 7
7.0 Bushfire Hazard Assessment	8 - 14
8.0 Site and Bushfire Hazard Determination	15 - 16
9.0 Recommendations	17
10.0 Conclusion	18 - 19
11.0 Annexure	19
- 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 and 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 statutory approval 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.

S100B applications under the Rural Fires Act 1997 (subdivisions and Special Fire Protection Purpose Developments) must be referred to the NSW Rural Fire Service for review and receipt of a Bushfire Safety Authority (BSA).

The onus is on the applicant to cross reference this document with any conditions of consent issued 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.

Where any discrepancy between this document and 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 – 2009 as amended.
BAL	Bushfire Attack Level
BCA	Building Code of Australia
BPMs	Bushfire Protection Measures
BPLM	Bushfire Prone Land Map
Council	Kuring-gai Council
EP&A Act	Environmental Planning and Assessment Act - 1979
ESD	Ecologically Sustainable Development
FRNSW	Fire and Rescue NSW
IPA	Inner Protection Area
NCC	National Construction Code
NSP	Neighbourhood Safer Place
OPA	Outer Protection Area
PBP	Planning for Bush Fire Protection – 2006
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

1.0 Introduction

The development proposal relates to the alterations and additions to an existing education establishment known as St Ives High School. The proposed alterations and additions will include the construction of a Sports Complex.

The subject property is located at 88 Yarrabung Road, St Ives NSW (Lots 4 & 5 DP 1209, Lot 1 DP 376563, Lot 1 DP 122431 and Lot 1 DP 122432), the site includes St Ives Primary School to the north. The subject property has street frontage to Horace Street to the west, Hunter Avenue to the south, Yarrabung Road to the east and abuts private residential allotments to the north.

Kuring-gai Council's Bushfire Prone Land Map identifies the subject property as partially containing the 100 metre buffer zone from Category 1 Vegetation therefore the application of Planning for Bush Fire Protection - 2006 (PBP) must apply in this instance. It is noted that the location of the proposed Sports Complex is outside the 100 metre buffer zone.

As the proposal relates to the alterations and additions to an existing educational establishment it has been assessed under the provisions of Special Fire Protection Purpose Development as infill under section 4.2.5 of Planning for Bush Fire Protection 2006.

2.0 Purpose of Report

The purpose of this Bushfire Assessment Report is to provide JDH Architects and the Rural Fire Service with an independent bushfire hazard determination 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.

The recommendations contained within this report may assist in forming the basis of any specific construction conditions and/or bushfire mitigation measures that the NSW Rural Fire Service may elect to place within any consent conditions issued for the subject development.

3.0 Scope of this Report

The scope of this report is limited to providing a bushfire hazard 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 Referenced Documents and Persons

Comments provided are based on the requirements of the NSW Environmental Planning and Assessment Act 1979 (EP&A Act), the Rural Fires Act 1997, the Rural Fires Regulation 2013, the RFS document known as 'Planning for Bush Fire Protection – 2006' for the purposes of bushfire hazard determination and Australian Standard 3959 – 2009 titled 'Construction of buildings in bushfire-prone areas' as amended for building/structural provisions.

Company representatives have undertaken a site inspection of the subject property and the surrounding area.

The Proposed Site Plan by JDH Architects, DWG No: DA-03, Project No: 1030 Rev: E, Dated: 18/11/14 has been referenced in the preparation of this assessment.

5.0 Compliance Tables & Notes

The following table sets out the projects compliance with *Planning for Bush Fire Protection – 2006*.

	North	East	Southeast	West
Vegetation Structure	Maintained grounds	Remnant	Forest	Maintained grounds
Hazard Slope	N/A	5 degrees down	5 - 10 degrees down	N/A
Minimum Required APZ for new SFPP	N/A	40 metres	85 metres	N/A
Proposed APZ New Sports Complex	N/A	>100 metres	>200 metres	N/A
Significant Environmental Features	Maintained grounds / St Ives Primary School	Maintained grounds / Yarrabung Road	Maintained grounds / Hunter Avenue	Maintained grounds / Horace Road
Threatened Species	APZ Existing	APZ Existing	APZ Existing	APZ Existing
Aboriginal Relics	APZ Existing	APZ Existing	APZ Existing	APZ Existing
Bushfire Attack Level	N/A	BAL Low	BAL Low	N/A
Required Construction Level	BAL Low	BAL Low	BAL Low	BAL Low

Asset Protection Zones Compliance

The proposed sports complex has been positioned in the most appropriate location from a bushfire safety perspective, providing the maximum possible Asset Protection Zones.

The Asset Protection Zones consist of land within the subject site and land equivalent to an APZ within Hunter Avenue.

Construction Level Compliance

The highest Bushfire Attack Level to the proposed works was determined from Table 2.4.2 to be 'BAL Low'.

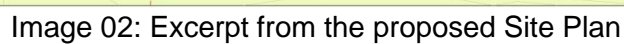
Access and Services

Guideline Ref.	Proposed Development Determinations
Property Access	The school has street frontage to Horace Road to the west, Yarrabung Road to the east, and Hunter Avenue to the south providing access to carparks and to the new works and existing buildings within the subject property. The existing access is considered adequate. Attending fire services have access to the hazard interface via Hunter Avenue or Yarrabung Road for fire suppression or hazard reduction activities.
Water Supply	Existing hydrants are available along Horace Road, Yarrabung Road and Hunter Avenue. Hydrants will be installed to service the new building.
Evacuation	It is recommended that the Bush Fire Evacuation Plan be updated as necessary to include the new works and be in accordance with the NSW Rural Fire Service guidelines for emergency management plans.

6.0 Aerial view of the subject allotment



Image 01: Aerial view of the subject area c/- Sixmaps



7.0 Bushfire Hazard Assessment

7.01 Preface

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. All property development within affected areas is subject to the conditions detailed in the document 'Planning for Bush Fire Protection - 2006' (PBP). Set back distances for the purpose of creating Asset Protection Zones (APZ's) must be applied and any buildings must then conform to corresponding regulations detailed in Australian Standard 3959 – 2009 'Construction of buildings in bushfire prone areas'.

Planning for Bush Fire Protection – 2006, (PBP) formally adopted on the 1st March 2007 and amended May 2010 (Appendix 3) provides for the protection of property and life (including fire-fighters and emergency service personnel) from bushfire impact.

The thrust of the document is to ensure that developers of new properties or sub-divisions include the constraints associated with the construction of buildings in bushfire prone areas within their proposed development sites. PBP is applicable to proposed development inside a determined Category 1, 2 or 3 areas and also inside a buffer zone radius of 100m from a Category 1 bushfire area or 30m from a Category 2 & 3 bushfire area.

The document also acknowledges 'infill' developments associated with re-development of existing properties and allows some higher levels of building safety where the increased 'set backs' (APZ's) may not be achievable.

The subject development relates to the alterations and additions to an existing educational establishment.

To accord with PBP the development is classified as Special Fire Protection Purpose development and assessed as a section 100b application under the Rural Fires Act 1997. The site contains a functional SFPP development and has therefore been assessed under the provisions of section 4.2.5 'SFPPs as infill' of Planning for Bush Fire Protection 2006.

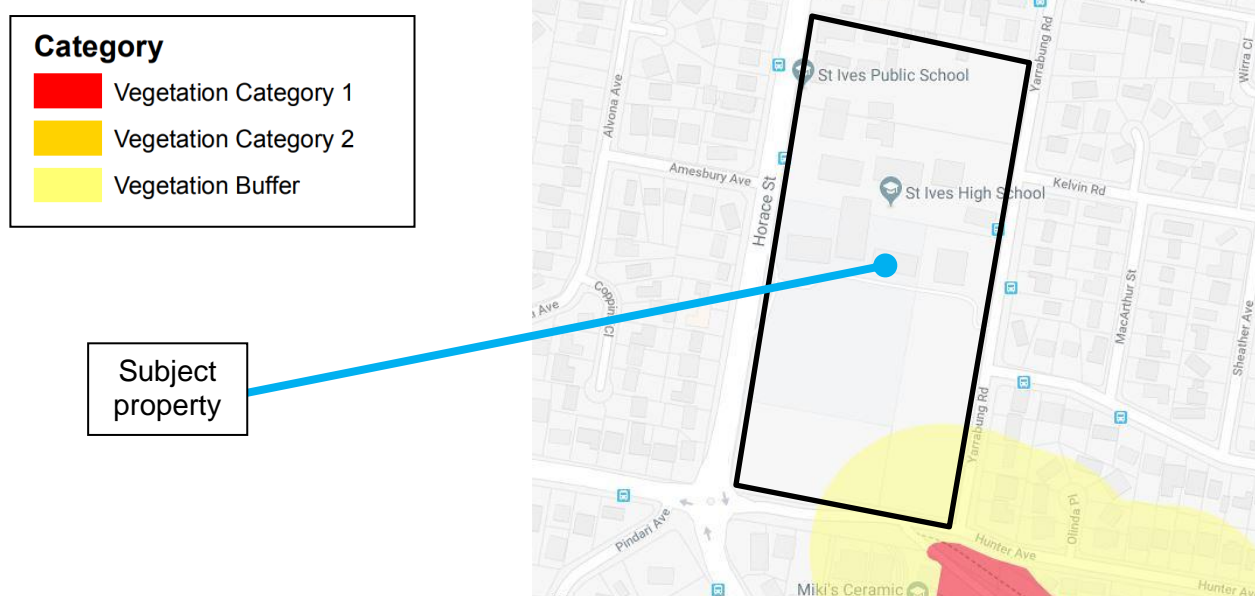


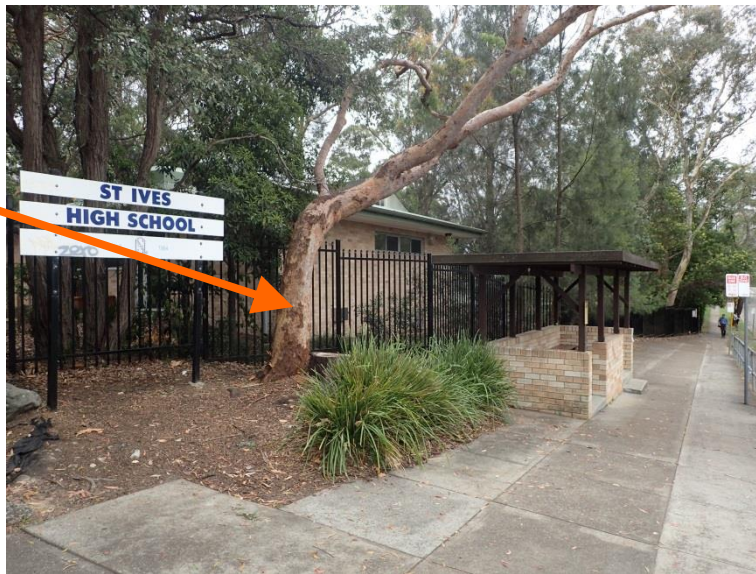
Image 03: Extract from Kuring-gai Council's Bushfire Prone Land Map

7.02 Location

The subject property is known as St Ives High School located at 88 Yarrabung Road, St Ives NSW (Lots 4 & 5 DP 1209, Lot 1 DP 376563, Lot 1 DP 122431 and Lot 1 DP 122432) and is within Kuring-gai Councils Local Government Area. The subject property has street frontage to Horace Street to the west, Hunter Avenue to the south, Yarrabung Road to the east and abuts private residential allotments to the north.

The vegetation identified on Kuring-gai Council's BPLM as being the hazard is to the southeast within Barra Brui Bush linking to Garigal National Park. An area of Sydney Turpentine Ironbark Forest (STIF) is also located along the eastern boundary within the subject site.

Subject
property



Photograph 01: View from Yarrabung Road towards the school



Subject
property

Image 04: Extract from Street-directory.com.au

7.03 Vegetation

The predominant vegetation within the subject site around the existing buildings was found to consist of maintained lawns, landscaped gardens, playing fields and lawns.

The vegetation identified on Kuring-gai Council's BPLM as being the hazard is to the southeast within Barra Brui Bush linking to Garigal National Park. An area of Sydney Turpentine Ironbark Forest (STIF) is also located along the eastern boundary within the subject site.

The vegetation posing a hazard to the southeast was found to consist of trees 5 - 20 metres in height with a foliage cover of 30 - 70% and an understory of small trees, shrubs and grasses. The vegetation posing a hazard along the eastern boundary was found to consist of Ironbark trees with a minimal under storey. This vegetation was found to provide a less than 30 metre fire run toward the proposed works.

For the purpose of assessment under 'Planning for Bush Fire Protection' the vegetation posing a hazard to the southeast has been determined to be Forest and the vegetation to the east as Remnant.



Photograph 02: View of the vegetation to the southeast within Barra Brui Bush



Photograph 03: View into the vegetation to the east within the School grounds

7.04 Slope and Topography

The slope that would most significantly affect bushfire behaviour within the hazard must be assessed for at least 100 metres from within the hazards. As there are no bushfire hazards located within 100 metres of the proposed works, a slope assessment is formally not required.

For completion we have included a slope analysis. The slope that would most significantly influence bushfire behaviour was measured onsite using an inclinometer and verified from topographic imagery of the subject area and found to be:

- 5 degrees down slope within the hazard to the east
- 5 - 10 degrees down slope within the hazard to the southeast

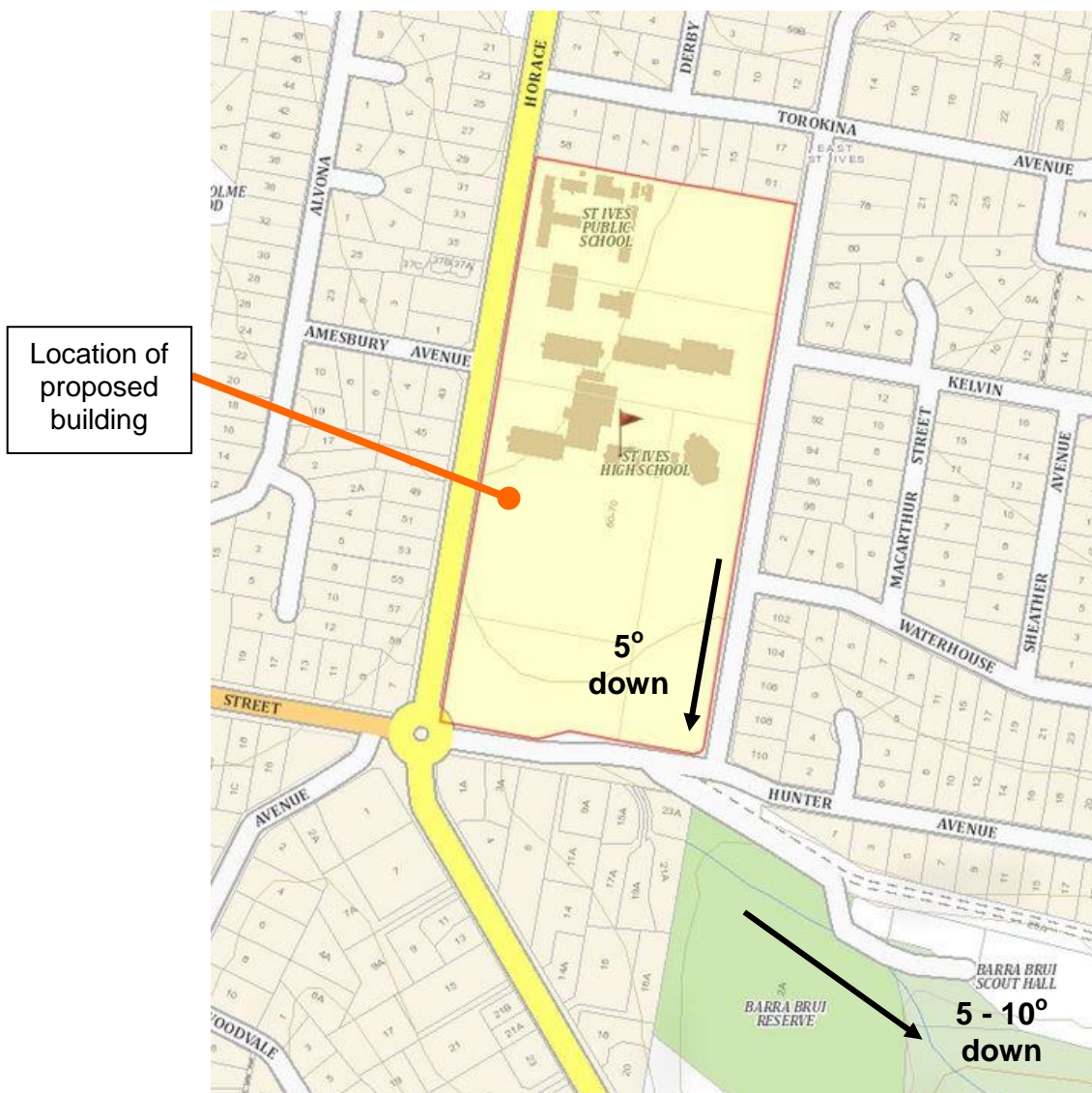


Image 05: Extract from Sixmaps

7.05 Asset Protection Zones

Asset Protection Zones (APZs) for new Special Fire Protection Purpose (SFPP) development are determined from Table A2.6 of PBP or bushfire design modelling achieving a radiant heat impact of no more than 10kW/m^2 at the closest point of the available building footprint.

The minimum required APZs for new SFPP development were determined from Table A2.6 of PBP to be 85 metres to the southeast and 40 metres to the east.

As the proposal relates to the re-development of an existing SFPP approved prior to August 2002 it is eligible for assessment under the provisions of section 4.2.5 'SFPPs as infill' of Planning for Bush Fire Protection 2006, which can allow for a reduction in the minimum required APZs for new SFPP development.

Regardless of being eligible for the application of section 4.2.5 of PBP the proposed sports complex has been positioned in the most appropriate location from a bushfire safety perspective, providing the maximum possible Asset Protection Zones.

The closest point of the proposed sports complex was found to be located >200 metres from the bushfire hazard to the southeast and >100 metres from the bushfire hazard to the east, significantly exceeding the minimum required APZs for new SFPP development.

The Asset Protection Zones consist of land within the subject site and land equivalent to an APZ being Hunter Avenue.



Photograph 04: View from the location of the sports complex across the existing APZs within the subject property

7.06 Fire Fighting Water Supply

The school is connected to the reticulated town's water main for its needs. There are existing hydrants located along Horace Road, Hunter Avenue and Yarrabung Road for the replenishment of attending fire services.

An internal hydrant system will be extended into the school to service the proposed sports complex.

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

7.07 Property Access

Clear access to the school is available from existing public road infrastructure. Persons seeking to egress from the school are able to do so freely from the internal road system and along existing road infrastructure.

Similarly, fire services will have free access to the proposed new works via Horace Road and the existing internal roads / grounds. Attending fire services have access to the hazard interface via Hunter Avenue, Yarrabung Road and school grounds for fire suppression or hazard reduction activities.

It is recommended that the Bush Fire Evacuation Plan be updated as necessary to include the new works and be in accordance with the NSW Rural Fire Service guidelines for emergency management plans.

The existing internal access provisions are considered adequate.

7.08 PBP 2006 s4.2.5 SFPPs as *infill* development

The proposal relates to an existing Special Fire Protection Purpose development (approved prior to August 2002) and therefore the application can be assessed under the provisions of section 4.2.5 'SFPPs as infill' of PBP.

Section 4.2.5 of PBP states:

In circumstances where alterations or additions to existing SFPP's facilities are proposed, appropriate bush fire protection measures and compliance with the intent and performance criteria of each measure within section 4.3.5.

However, it is also acknowledged that existing circumstances may make the preferred standards difficult to achieve. In such cases, the specific objectives in Section 4.2.3 are to be followed.

'Alterations and additions to existing SFPP's (i.e. approved prior to 1st August 2002), including their external appearance or finish, which may involve an increase in size and footprint of the building or redevelopment of an existing building are considered to be infill development'.

The new building work should comply with AS 3959 – 1999 (and Appendix 3 of PBP) or be no closer to the hazard than the existing building*

- *As per Addendum Appendix 3 this should now read AS3959 - 2009*

The following table details the intent and performance criteria of section 4.3.5 and our comments on the proposals ability to satisfy them as required under section 4.2.5 of PBP.

Performance Criteria	Comment
<p>in relation to Asset Protection Zones:</p> <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. 	<p>There will be no hazard within 100 metres of the subject building and therefore a defensible space is provided. The minimum required APZs for new SFPP development will be exceeded to both aspects. This APZ comprise of land within the subject site and Hunter Avenue.</p>
<p>in relation to siting and design:</p> <ul style="list-style-type: none"> buildings are sited and designed to minimise the risk of bush fire attack. 	<p>The proposed sports complex has been positioned in the most appropriate location from a bushfire safety perspective, providing the maximum possible Asset Protection Zones.</p>
<p>in relation to construction standards:</p> <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. 	<p>The highest Bushfire Attack Level to the proposed works was determined from Table 2.4.2 to be 'BAL Low'.</p>
<p>in relation to access requirements:</p> <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, (satisfying the intent and performance criteria for access roads in sections 4.1.3 and 4.2.7). 	<p>The subject site has street frontage to Horace Road to the west, Yarrabung Road to the east and Hunter Avenue to the south.</p> <p>The existing access provisions are considered adequate for fire service access.</p>
<p>in relation to water and utility services:</p> <ul style="list-style-type: none"> adequate water and electricity services are provided for firefighting operations gas and electricity services are located so as not to contribute to the risk of fire to a building. 	<p>There are reticulated water mains available in this area. The new sports complex will have fire hose reels and hydrants installed.</p> <p>Existing hydrants are also available along the surrounding streets for the replenishment of fire service vehicles.</p> <p>The existing water supply is considered adequate for the replenishment of attending fire services.</p>
<p>in relation to landscaping:</p> <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. 	<p>All grounds around the existing school buildings were found to be well maintained.</p>

8.0 Site & Bushfire Hazard Determination

8.01 Planning for Bush Fire Protection - 2006

Planning for Bush Fire Protection – 2006 (PBP) is applicable to those lands determined as being within a 'bushfire prone area' in accordance with a local Bushfire Prone Land Map as provided by the Rural Fire Service and Council.

The most appropriate method of determining site bushfire hazard under the terms of PBP is to consider the site in a singular form.

Bushfire prone areas are defined as those areas;

- *within or within 100m of high or medium bushfire hazards; or*
- *within or within 30m of low bushfire hazards.*

In this instance the subject property has been identified as being bushfire prone land therefore it is appropriate to apply PBP.

8.02 Australian Standard AS 3959 – 2009 'Construction of buildings in bushfire –prone areas'

Australian Standard 3959 – 2009 'Construction of buildings in bushfire-prone areas' provides for six (6) levels of building construction these being BAL - Low, BAL - 12.5, BAL - 19, BAL - 29, BAL - 40 and BAL - FZ. The Australian Standard 3959 specifies construction standards for buildings within various Bushfire Attack Levels as determined by the Planning for Bush Fire Protection – 2006 document. The NSW Rural Fire Service will not accept deemed to satisfy provisions for BAL Flame Zone and therefore have a NSW variation to the listed standard provisions of BAL FZ under AS3959 - 2009.

8.03 Correlation between bushfire impact and AS3959

Bushfire Attack Level	Maximum radiant heat impact (kW/m ²)	Level of construction under AS3959-2009
Low		No special construction requirements
12.5	≤12.5	BAL - 12.5
19	12.6 to 19.0	BAL - 19
29	19.1 to 29.0	BAL - 29
40	29.1 to 40.0	BAL - 40
Flame Zone	>40.0	BAL FZ No deemed to satisfy provisions

8.04 Site Specific Bushfire Hazard Determination

All property development must be assessed on an individual basis as broad-brush approaches of documents such as PBP may not be applicable in every instance. The proposed development located at St Ives High School was assessed against the requirements of Planning for Bush Fire Protection 2006 noting the following:

- a) Water supplies for firefighting purposes are considered adequate.
- b) The proposed new sports complex is within a Bushfire Attack Level of 'BAL Low'.
- c) The existing access provisions are considered adequate.

8.05 Viable Construction Method

The aim of Planning for Bush Fire Protection – 2006 is to use the NSW development assessment system to provide for protection of human life (including firefighters) and to minimise impacts on property from the threat of bushfire.

The highest Bushfire Attack Level to the proposed new works was determined from Table 2.4.2 of Australian Standard 3959 'Construction of buildings in bushfire-prone areas' – 2009 to be 'BAL LOW'

AS3959 – 2009 This Standard does not provide construction requirements for buildings assessed in bushfire-prone areas in accordance with Section 2 as being BAL—LOW.

AS3959 – 2009. The Bushfire Attack Level BAL—LOW is based on insufficient risk to warrant specific bushfire construction requirements.

9.0 Recommendations

The following recommendations are provided as the minimum necessary for compliance with Planning for Bush Fire Protection – 2006 and Australian Standard 3959 'Construction of buildings in bushfire-prone areas' - 2009. Additional recommendations are provided to supplement these minimum requirements where considered necessary.

Asset Protection Zones

1. All grounds within the subject site from the proposed sports complex to the northern, southern and western boundaries and for a minimum distance of 100 metres to the east are required to be maintained as an Asset Protection Zone and in accordance with Appendix 5 'Landscape and Property Maintenance' of PBP. This will allow for gardens (including native trees and shrubs) in the APZ managed as clumps or islands, covering no more than 20% of the area.

Note: At the time of our inspection the APZ's were existing and no vegetation modification is required to create or establish any APZ's.

Construction

N/A

Emergency Management

2. That the bushfire emergency / evacuation plan is updated consistent with the NSW Rural Fire Service Guidelines for the *Preparation of Emergency / Evacuation Plan*.

Water Supply

3. That the new hydrant sizing, spacing and pressures must comply with AS2419.1 – 2005.

10.0 Conclusion

Given that the property is deemed bushfire prone under Kuring-gai Council's Bushfire Prone Land Map any development would need to meet the requirements of Planning for Bush Fire Protection – 2006 and of the construction requirements of Australian Standard 3959 – 2009. The determination of any bushfire hazard must be made on a site-specific basis that includes an assessment of the local bushland area and its possible impact to the subject property.

The development proposal relates to the alterations and additions to an existing education establishment known as St Ives High School. The proposed alterations and additions will include the construction of a sports complex.

The vegetation identified on Kuring-gai Council's BPLM as being the hazard is to the southeast within Barra Brui Bush connecting to Garigal National Park. An area of Sydney Turpentine Ironbark Forest (STIF) is also located along the eastern boundary within the subject site.

The minimum required APZs for new SFPP development were determined from Table A2.6 of PBP to be 85 metres to the southeast and 40 metres to the east.

As the proposal relates to the re-development of an existing SFPP approved prior to August 2002 it is eligible for assessment under the provisions of section 4.2.5 'SFPPs as infill' of Planning for Bush Fire Protection 2006, which can allow for a reduction in the minimum required APZs for new SFPP development.

Regardless of being eligible for the application of section 4.2.5 of PBP the proposed sports complex has been positioned in the most appropriate location from a bushfire safety perspective, providing the maximum possible Asset Protection Zones.

The closest point of the proposed sports complex was found to be located >200 metres from the bushfire hazard to the southeast and >100 metres from the bushfire hazard to the east, significantly exceeding the minimum required APZs for new SFPP development.

The highest Bushfire Attack Level to the proposed sports complex was determined to be 'BAL Low' therefore there are no construction provisions applicable under AS3959 – 2009.

The existing access provisions and proposed water supply is considered adequate.

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 subject development.

We are therefore in support of the development.

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

Prepared by
Building Code & Bushfire Hazard Solutions P/L



Duncan Armour

Reviewed and endorsed by
Building Code & Bushfire Hazard Solutions P/L



Stuart McMonnies

G. D. Design in Bushfire Prone Areas.
Certificate IV Fire Technology
Fire Protection Association of Australia BPAD – L3 Accredited Practitioner
Accreditation number – BPAD 9400



11.0 Annexure 01

List of Referenced Documents

- a) Environmental Planning and Assessment Act - 1979
- b) Rural Fires Act 1997 as amended
- c) 'Planning for Bush Fire Protection' - 2006 - NSW Rural Fire Services & Planning NSW
- d) 'Construction of buildings in bushfire prone areas' - AS 3959 – 2009 (as - amended) – Standards Australia
- e) 'Ocean Shores to Desert Dunes' David Keith
- f) 'Kuring-gai Council's Bushfire Prone Land Map'
- g) Proposed Site Plan by JDH Architects, DWG No: DA-03, Project No: 1030 Rev: E, Dated: 18/11/14
- h) Acknowledgements to:
NSW Department of Lands – SIXMaps
Street-directory.com.au

Attachments

Attachment 01: N/A