




Member of the Fire Protection Association of Australia

Lot 11, DP 1192443, Boronia Road , North St Marys NSW 2760.

Sunday, 8 May 2016

| | | | |
|---|--|---|-----------|
| Prepared and certified by: | Matthew Willis BPAD – Level 3 Certified Practitioner Certification No: BPD-PA 09337 |  | 8/05/2016 |
| Can this proposal comply with AS3959-2009 (inc PBP addendum 3)? | Yes. | | |
| What is the recommended AS 3959-2009 level of compliance? | BAL-12.5. | | |
| Is referral to the RFS required? | Yes. Special Fire protection development. | | |
| Can this development comply with the requirements of PBP? | Yes. | | |
| Plans by FDC. | Appendix 1. | | |

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Bushfire Risk Assessment

Sunday, 8 May 2016

Contact

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Subject Property

Lot 11, DP 1192443

Boronia Road

North St Marys NSW 2760

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1. EXECUTIVE SUMMARY.

Bushfire Planning Services has been requested by Mr Steve Somerville of FDC Construction and Fit Out Pty Ltd to supply a bushfire compliance report on Lot 11, DP 1192443, Boronia Road , North St Marys, NSW 2760.

This proposal is for the construction of a new hotel complex in the current car park of the St Mary's Leagues Club. The hotel will consist of an entrance foyer and parking on the ground floor with 5 stories of accommodation above.

The site chosen for the hotel is in the south eastern corner of the developed area on the subject lot. The site chosen is currently a sealed carpark with the existing club buildings to the north and west, carpark to the south and east with an area of undeveloped land further to the east containing Woodland vegetation.

The land beneath the identified hazard to the east is on land that has been determined to be 'all upslopes and flat land' for the purpose of compliance with AS 3959 Construction of Buildings in Bushfire Prone Areas and the Rural Fire Service.

As this proposal is for the construction of a hotel complex the proposal is classified as Integrated Development and a "Special Fire Protection Development" and is required under section 100B of the Rural Fires Act to obtain a Bushfire Safety Authority from the Rural Fire Service.

To obtain a Bushfire Safety Authority the development must show compliance with clause 44 of the Rural Fires Regulation 2008, this assessment addresses those requirements.

Based on the variables used throughout this assessment it is shown that the proposal can comply with the requirements of clause 44 and therefore the RFS should conclude that this proposal can comply with the necessary requirements needed for the issuance of a 100B bushfire safety authority.

2. GENERAL.

As mentioned in the executive summary the proposed work is for a new hotel therefore this proposal is deemed as a "Special Fire Protection Purpose" development and as such is considered to be integrated development in accordance with section 91 of the EPA act.

Integrated development requires a section 100 B Bushfire Safety Authority from the Rural Fire Service to allow the proposal to proceed.

This assessment outlines the requirements and the proposals level of compliance with clause 44 of the Rural Fires Regulations 2008. Compliance with clause 44 is required to obtain a Bushfire Safety Authority from the Rural Fire Service.

The following text in italics is a copy of clause 44 of the Rural Fires Regulation 2008;

44 Application for bush fire safety authority

For the purposes of section 100B (4) of the Act, an application for a bush fire safety authority must be made in writing and must include the following:

- (a) a description (including the address) of the property on which the development the subject of the application is proposed to be carried out,
- (b) a classification of the vegetation on and surrounding the property (out to a distance of 140 metres from the boundaries of the property) in accordance with the system for classification of vegetation contained in Planning for Bush Fire Protection,
- (c) an assessment of the slope of the land on and surrounding the property (out to a distance of 100 metres from the boundaries of the property),
- (d) identification of any significant environmental features on the property,
- (e) the details of any threatened species, population or ecological community identified under the *Threatened Species Conservation Act 1995* that is known to the applicant to exist on the property,
- (f) the details and location of any Aboriginal object (within the meaning of the *National Parks and Wildlife Act 1974*) or Aboriginal place (within the meaning of that Act) that is known to the applicant to be situated on the property,
- (g) a bush fire assessment for the proposed development (including the methodology used in the assessment) that addresses the following matters:
 - (i) the extent to which the development is to provide for setbacks, including asset protection zones,
 - (ii) the siting and adequacy of water supplies for fire fighting,
 - (iii) the capacity of public roads in the vicinity to handle increased volumes of traffic in the event of a bush fire emergency,
 - (iv) whether or not public roads in the vicinity that link with the fire trail network have two-way access,
 - (v) the adequacy of arrangements for access to and egress from the development site for the purposes of an emergency response,
 - (vi) the adequacy of bush fire maintenance plans and fire emergency procedures for the development site,
 - (vii) the construction standards to be used for building elements in the development,
 - (viii) the adequacy of sprinkler systems and other fire protection measures to be incorporated into the development,
- (h) an assessment of the extent to which the proposed development conforms with or deviates from the standards, specific objectives and performance criteria set out in Chapter 4 (Performance Based Controls) of Planning for Bush Fire Protection.

Any wording that appears in blue italics is quotes from Planning for Bushfire Protection 2006 (PBP).

Some of the distance measurements used in this report have been taken from aerial photographs and as such are approximate only. If doubt exists the distances should be verified by survey.

3. BLOCK DESCRIPTION

Clause 44 requirement. “a description (including the address) of the property on which the development the subject of the application is proposed to be carried out”

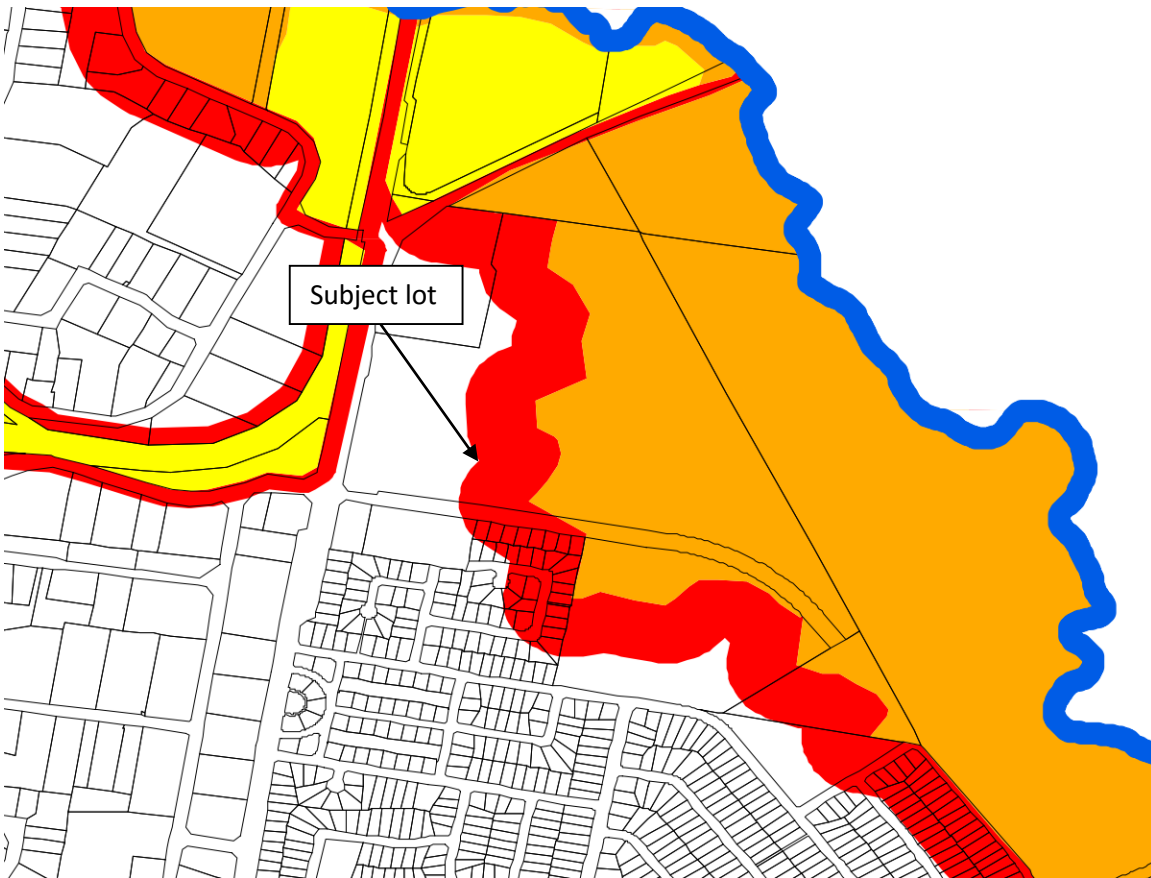
- Lot 11
- DP 1192443
- Area; 23.5ha (approximately)
- LGA; Penrith
- Address; Boronia Road , North St Marys NSW 2760

The subject lot is a large allotment with road frontage onto Forrester Road to the West and Boronia Road to the south. The western half of the allotment contains established commercial, recreational and sporting facilities.

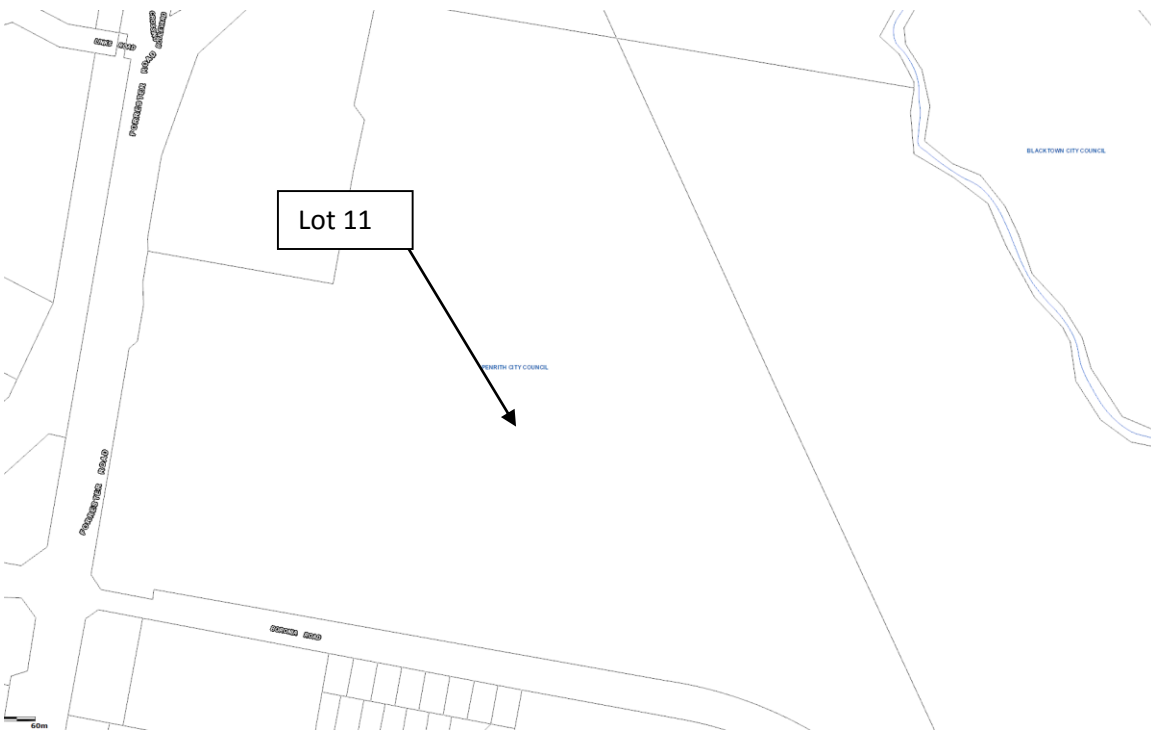
The eastern half of the allotment contains undeveloped land and sporting facilities/playing fields.



Photo 1 (above) shows a general overview of the surrounding area.



Map 1 is an extract from the councils bushfire prone land map.



Map 2 above shows the current cadastral data for the development and surrounding blocks.

4. VEGETATION

Clause 44 requirement “a classification of the vegetation on and surrounding the property (out to a distance of 140 metres from the boundaries of the property) in accordance with the system for classification of vegetation contained in Planning for Bush Fire Protection”

The study area for the vegetation is 140m surrounding the development site.

As can be seen in the aerial photograph below the majority of the study area contains existing developed land.

There is a area of woodland vegetation to the East of the development site.



Photo 2. Is an overview of the general area. The white oval shows the 140m study area for the vegetation for this proposal.

5. SLOPE

Clause 44 requirement “an assessment of the slope of the land on and surrounding the property (out to a distance of 100 metres from the boundaries of the property)”

The slope beneath the hazard has been estimated using topographical map interpretation and onsite observation.

The slope analysis for this proposal was undertaken using contours derived from 1m LIDAR DEM. This elevation data has been processed to achieve “category one” DEM products as described by the ICSM guidelines for Digital Elevation Data which specifies accuracies not exceeding 30 cm with two sigma or 95% confidence.



The following table indicates the effective slope beneath the hazard. Any aspect marked with “N/A” indicates there is only a secondary hazard or no significant hazard in that direction.

| Aspect | North | East | South | West |
|--------------|----------------------------|----------------------------|-------|------|
| Slope | All upslopes and flat land | All upslopes and flat land | N/A | N/A |

6. SIGNIFICANT FEATURES

Clause 44 requirement “identification of any significant environmental features on the property”

I have not been informed of any significant environmental features that would be affected by this proposal.

7. THREATENED SPECIES

Clause 44 requirement “the details of any threatened species, population or ecological community identified under the [Threatened Species Conservation Act 1995](#) that is known to the applicant to exist on the property,”

I have not been informed of any threatened species that would be affected by this proposal.

8. ABORIGINAL HERITAGE

Clause 44 requirement “the details and location of any Aboriginal object (within the meaning of the [National Parks and Wildlife Act 1974](#)) or Aboriginal place (within the meaning of that Act) that is known to the applicant to be situated on the property,”

I have not been informed of any places of cultural significance that would be affected by this proposal.

9. BUSHFIRE ASSESSMENT METHODOLOGY

Clause 44 requirement “a bush fire assessment for the proposed development (including the methodology used in the assessment) that addresses the following matters:

The methodology used in the assessment of bushfire threat to the subject property is outlined in;

- *Planning for bushfire Protection 2006 as published by the New South Wales Rural Fire Service, and*
- *Australian Standard 3959-2009, Construction of buildings in Bushfire Prone Areas.*

10. SETBACKS

(i) **Clause 44 requirement** “the extent to which the development is to provide for setbacks, including asset protection zones,”

The subject lot can contain all the required asset protection zone within the boundaries of lot.

The Asset Protection Zone setbacks required for compliance with table A2.6 of Planning for Bushfire Protection are to be achieved in the following manner;

- *North, to a distance of at least 40m.*
- *East, a distance of at least 40m.*
- *South, to the property boundary (approximately 67m)*
- *West, to the property boundary (greater than 100m)*



Map 3. The yellow dotted line on the above aerial photograph indicates a 40m buffer surrounding the proposed new work.



Photo 3. Looking from the development site towards the vegetation to the east.



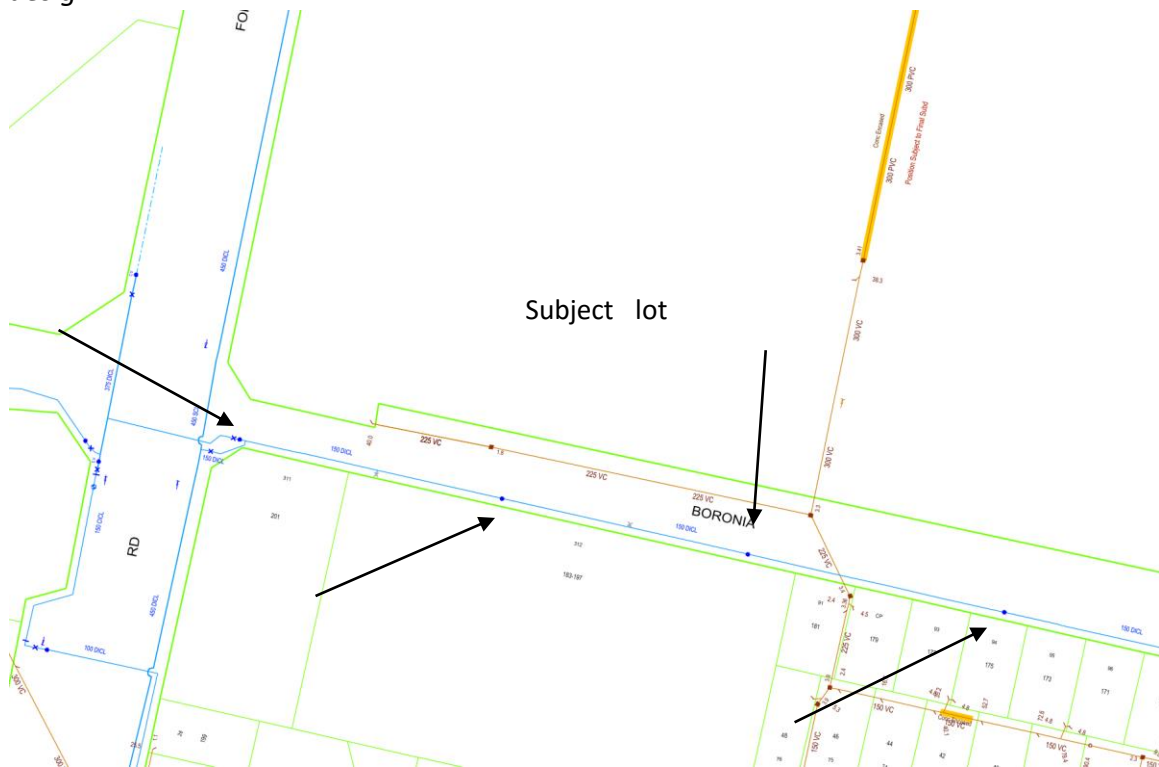
Photo 4. Looking across the development site towards the club.

11. WATER

- (ii) **Clause 44 requirement** “the sighting and adequacy of water supplies for firefighting,”

The proposed development will have access to a reticulated water supply. There are hydrant points in Boronia Road and surrounding streets.

In addition the proposal will incorporate BCA required fire suppression measures into its design.



Map 3 above is an extract from Sydney Waters hydrant map. Hydrants are indicated as blue dots on a blue line. As can be seen there are multiple hydrants within close proximity to the subject lot.

12. ACCESS

- (iii) **Clause 44 requirement** “the capacity of public roads in the vicinity to handle increased volumes of traffic in the event of a bush fire emergency,”

Boronia Road and Forrester Road are both sealed two way roads that are considered to be capable of handling emergency service vehicles.



Photo 5. Looking west along Boronia Road. The subject site is to the right of picture.



Photo 6. Looking east along Boronia Road. The subject site is to the left of picture.

13. FIRE TRAILS

- (iv) **Clause 44 requirement** “whether or not public roads in the vicinity that link with the fire trail network have two-way access,”

Fire trails are not planned or recommended as part of this development proposal.

14. PROPERTY ACCESS

- (v) **Clause 44 requirement** “the adequacy of arrangements for access to and egress from the development site for the purposes of an emergency response,”

Access from both Forrester Road and Boronia Road onto the development site is considered as adequate. Traffic movement around the subject site is on hard stand areas and is considered adequate.

15. MAINTENANCE PLANS

- (vi) **Clause 44 requirement** “the adequacy of bush fire maintenance plans and fire emergency procedures for the development site”

No additional advice or information regarding bushfire maintenance plans & fire emergency procedures has been provided by the proponent.

Under the Rural Fires Act 1997 sect 52, the local council's bushfire management committees are required to prepare and submit management plans for the rural fire district or part of the state which it is constituted.

The plan covers the following,

- *a plan of operations and*
- *a bushfire risk management plan.*

The plan of operations must be reviewed within every 2 years and the bushfire risk plan must be reviewed within each 5 years.

Should a bushfire emergency impact upon this area, the implementation of the existing councils Sect. 52 Operations & Risk Plan should be adequate for bushfire suppression, hazard management and maintenance.

16. BUILDING CONSTRUCTION STANDARDS

- (vii) **Clause 44 requirement** “the construction standards to be used for building elements in the development,”

The Rural Fire Service will require a construction level of BAL 12.5 for new works.

17. SPRINKLER SYSTEMS

(viii) **Clause 44 requirement** “the adequacy of sprinkler systems and other fire protection measures to be incorporated into the development,”

Any sprinklers will be required to be installed in accordance with the BCA and associated Australian Standards.

18. COMPLIANCE WITH CHAPTER 4 OF PBP

Clause 44 requirement “assessment of the extent to which the proposed development conforms with or deviates from the standards, specific objectives and performance criteria set out in Chapter 4 (Performance Based Controls) of Planning for Bush Fire Protection.”

| Performance Criteria | Acceptable Solution | Compliance | Assessment / Comment |
|--|---|----------------|---|
| <i>Radiant heat levels of greater than 10kW/m² will not be experienced by occupants or emergency services workers entering or exiting a building</i> | <i>an APZ is provided in accordance with the relevant tables and figures in PBP</i> | Yes | <i>Compliance with table A2.6 is achievable.</i> |
| | <i>exits are located away from the hazard side of the building</i> | Achievable | |
| | <i>the APZ is wholly within the boundaries of the development site</i> | Yes | |
| <i>Applicants demonstrate that issues relating to slope are addressed: maintenance is practical, soil stability is not compromised and the potential for crown fires is negated</i> | <i>mechanisms are in place to provide for the maintenance of the APZ over the life of the development</i> | Achievable | <i>As the Asset Protection Zone is contained within already developed land.</i> |
| | <i>the APZ is not located on lands with a slope exceeding 18 degrees</i> | Not applicable | <i>There is no land with a slope of 18° or greater within the APZ area.</i> |

| Performance Criteria | Acceptable Solution | Compliance | Assessment / Comment |
|--|---|---------------------------|--|
| <i>APZs are managed and maintained to prevent the spread of a fire towards the building</i> | <i>in accordance with the requirements of 'Standards for Asset Protection Zones (RFS 2005)</i> <i>(Note - a Monitoring and Fuel Management Program should be required as a condition of development consent)</i> | <i>Reasonably Assumed</i> | All land within the required APZ is considered to be already managed land. |
| <i>Vegetation is managed to prevent flame contact and reduce radiant heat to buildings, minimise the potential for wind driven embers to cause ignition and reduce the effect of smoke on residents and fire-fighters</i> | compliance with Appendix 5 (PBP) | <i>Reasonably Assumed</i> | |
| <i>Internal road widths and design enable safe access for emergency services and allow crews to work with equipment about the vehicle.</i> | <i>internal roads are two-wheel drive, sealed, all-weather roads</i> | <i>Not applicable</i> | No new internal roads are planned as part of this proposal. |
| | <i>internal perimeter roads are provided with at least two traffic lane widths (carriageway 8 metres minimum kerb to kerb) and shoulders on each side, allowing traffic to pass in opposite directions</i> | <i>Not applicable</i> | |
| | <i>roads are through roads. Dead end roads are not more than 100 metres in length from a through road, incorporate a minimum 12 metres outer</i> | <i>Not applicable</i> | |

| Performance Criteria | Acceptable Solution | Compliance | Assessment / Comment |
|-----------------------------|---|-----------------------|-----------------------------|
| | <i>radius turning circle, and are clearly sign posted as a dead end</i> | | |
| | <i>traffic management devices are constructed to facilitate access by emergency services vehicles.</i> | <i>Not applicable</i> | |
| | <i>a minimum vertical clearance of four metres to any overhanging obstructions, including tree branches, is provided.</i> | <i>Not applicable</i> | |
| | <i>curves have a minimum inner radius of six metres and are minimal in number to allow for rapid access and egress</i> | <i>Not applicable</i> | |
| | <i>the minimum distance between inner and outer curves is six metres</i> | <i>Not applicable</i> | |
| | <i>maximum grades do not exceed 15 degrees and average grades are not more than 10 degrees</i> | <i>Not applicable</i> | |
| | <i>cross-fall of the pavement is not more than 10 degrees</i> | <i>Not applicable</i> | |
| | <i>roads do not traverse through a wetland or other land potentially subject to periodic</i> | <i>Not applicable</i> | |

| Performance Criteria | Acceptable Solution | Compliance | Assessment / Comment |
|--|---|---------------------------|---|
| | <i>inundation (other than flood or storm surge)</i> | | |
| | <i>roads are clearly sign-posted and bridges clearly indicate load ratings</i> | <i>Not applicable</i> | |
| | <i>the internal road surfaces and bridges have a capacity to carry fully-loaded firefighting vehicles (15 tonnes)</i> | <i>Not applicable</i> | |
| <i>Water supplies are easily accessible and located at regular intervals.</i> | <p><i>Access points for reticulated water supplies to SFPP developments incorporate a ring main system for all internal roads.</i></p> <p><i>Fire hydrant spacing, sizing and pressures comply with AS 2419.1/2005. Where this cannot be met, the RFS will require a test report of the water pressures anticipated by the relevant water supply authority, once development has been completed. In such cases, the location, number and sizing of hydrants shall be determined using fire engineering principles.</i></p> <p><i>The provisions of public roads in section 4.1.3 in</i></p> | <i>Reasonably assumed</i> | The proposal will incorporate BCA required fire suppression measures. |

| Performance Criteria | Acceptable Solution | Compliance | Assessment / Comment |
|--|--|-----------------------|-----------------------------|
| | <i>relation to parking are met.</i> | | |
| <p>Non-reticulated water supply areas.</p> <p>A water supply reserve dedicated to firefighting purposes is installed and maintained. The supply of water can be an amalgam of minimum quantities for each lot in the development and be reticulated within dedicated firefighting lines.</p> | <p><i>10,000 L is the minimum dedicated water supply required for firefighting purposes for each occupied building, excluding drenching systems.</i></p> <p><i>The provision for suitable connection for RFS and or New South Wales fire brigades purposes in section 4.1.3 in relation to water supplies is made available.</i></p> | <i>Not applicable</i> | |
| <p>Electricity</p> <p>Location of electricity services will not lead to ignition of surrounding bushland or the fabric of buildings or risk to life from damaged electrical infrastructure.</p> | <i>Electrical transmission lines are underground.</i> | <i>Achievable</i> | |
| <p>Gas</p> <p>Location of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.</p> | <p><i>Reticulated or bottled gas is installed and maintained in accordance with AS 1596/2002 and the requirements of relevant authorities.</i></p> <p><i>Metal piping is to be used.</i></p> <p><i>All fixed LPG tanks are kept clear of all flammable materials and</i></p> | <i>Achievable</i> | |

| Performance Criteria | Acceptable Solution | Compliance | Assessment / Comment |
|---|---|--------------------------|----------------------|
| | <p><i>located on the non-hazard side of the development.</i></p> <p><i>If gas cylinders need to be kept close to the building the release valves must be directed away from the building and away from any combustible material, so that they do not act as catalysts to combustion.</i></p> <p><i>Polymer sheathed flexible gas supply lines to gas meters adjacent to buildings are not to be used.</i></p> | | |
| <p><i>An emergency and evacuation management plan is approved by the relevant fire authority for the area.</i></p> | <p><i>An emergency/evacuation plan is prepared consistent with the RFS guidelines for the preparation of emergency evacuation plan.</i></p> <p><i>Compliance with AS 3745/2002 emergency control organisation and procedures for buildings, structures and workplaces for residential accommodation”.</i></p> <p><i>Compliance with AS 4083/1997 “planning for emergencies - for health care facilities”.</i></p> | <p><i>Achievable</i></p> | |
| <p><i>Suitable management arrangements are established for consultation and implementation of the</i></p> | <p><i>An emergency planning committee is established to consult with residents (and their families in the</i></p> | <p><i>Achievable</i></p> | |

| Performance Criteria | Acceptable Solution | Compliance | Assessment / Comment |
|--|---|------------------------------|----------------------|
| <p><i>emergency and evacuation plan.</i></p> | <p><i>case of aged care accommodation and schools) and staff in developing and implementing an emergency procedures manual.</i></p> <p><i>Detailed plans of all emergency assembly areas including “on-site” and “offsite” arrangements as stated in a S3745/2002 are clearly displayed, and an annual (as a minimum) trial emergency evacuation is conducted.</i></p> | | |
| <p><i>In relation to eco-tourism accommodation:</i></p> <p><i>suitable refuge areas and evacuation/management arrangements are in place commensurate with the bushfire risk.</i></p> | <p><i>At least one building should be used as a local refuge area and comply with the APZ and construction requirements for residential buildings</i></p> <p><i>Cavan’s are within 50 m of a refuge building and are clearly signposted.</i></p> <p><i>The pass from cabins to the refuge areas are safe with management of surface fuels to less than or equal to 4 t per hectare.</i></p> <p><i>The overall accommodation for tourist does not exceed 12 persons.</i></p> | <p><i>Not applicable</i></p> | |

| Performance Criteria | Acceptable Solution | Compliance | Assessment / Comment |
|----------------------|--|------------|----------------------|
| | <i>A mechanism for the relocation of occupants on days of a total fire ban or adverse fire activity is provided in the local area in which the development operates.</i> | | |

Explanation of terms;

- **'Achievable'**. With appropriate design this aspect can achieve the acceptable solution.
- **'Assumed'**. It is considered reasonable to assume this requirement has been met.
- **'N/A'**. This item is not considered as relevant to this proposal.
- **'Yes'**. This item can/does comply with the acceptable solution.

19. COMPLIANCE WITH THE AIMS AND OBJECTIVES OF PLANNING FOR BUSHFIRE PROTECTION.

| <u>Aims of Planning for Bushfire Protection</u> | <u>Opinion</u> | <u>Compliant</u> |
|--|--|------------------|
| The aim of PBP is to use the NSW development assessment system to provide for the protection of human life (including fire fighters) and to minimise impacts on property from the threat of bush fire, while having due regard to development potential, on-site amenity and protection of the environment". | <i>The development assessment procedure has identified that the subject lot is/was considered to be bushfire prone land. It is considered that this proposal can comply with the aim of PBP of minimising the impacts of a bushfire on the property.</i> | Yes |
| <u>PBP specific objectives</u> | <u>Opinion</u> | <u>Compliant</u> |

| | | |
|---|--|-----|
| Afford occupants of any building adequate protection from exposure to a bush fire; | <i>In accordance with table A2 .6 of Planning for Bushfire Protection.</i> | Yes |
| Provide for a defensible space to be located around buildings; | <i>It is considered there is adequate defensible space around the development.</i> | Yes |
| Provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent direct flame contact and material ignition | <i>Flame contact between the building and identified hazard is considered highly unlikely as is material ignition.</i> | Yes |
| Ensure that safe operational access and egress for emergency service personnel and residents is available | <i>It is considered that the access and egress for the site is adequate for firefighting purposes.</i> | Yes |
| Provide for ongoing management and maintenance of bush fire protection measures, including fuel loads in the asset protection zone (APZ); | <i>Normal maintenance can provide for this.</i> | Yes |
| Ensure that utility services are adequate to meet the needs of fire fighters (and others assisting in bush firefighting). | <i>All utilities are to be in accordance with the requirements of the Building Code of Australia and appropriate Australian Standards.</i> | Yes |

20. BUSHFIRE SAFETY AND COMPLIANCE RECOMMENDATIONS.

| Number | PBP objective | Recommendation |
|--------|--------------------------------|--|
| 1. | Asset Protection Zone | a) It is recommended that the maintenance plan for the hotel/complex include the regular maintenance of the Asset protection Zone on the subject lot. |
| 2. | Building Construction Standard | b) New construction shall comply with the requirements of BAL-12.5 Australian Standard AS3959-2009 "Construction of buildings in bush fire-prone areas" and section A3.7 Addendum Appendix 3 of "Planning for Bush fire Protection". |
| 3. | Emergency | c) The current emergency management plan for the complex should be reviewed to ensure that the triggers and emergency actions in case of bushfire are appropriate. |

21. CONCLUSIONS

It is shown through this assessment that this proposal has all the necessary requirements to meet the conditions of clause 44 of the Rural Fires Regulations and that it is reasonable to expect that the Rural Fire Service will issue a section 100B Bushfire Safety Authority for this development.

Bushfires are affected by many external influences such as climactic conditions, vegetation type, moisture content of the fuel, slope of the land and human intervention to name a few and are difficult to predict.

This report does not intend to provide a guarantee that the subject property will survive if a bushfire should impact the surrounding area. The purpose of this report is to show the developments level of compliance or in some cases non-compliance with the New South Wales legislation regarding building in bushfire prone areas.

Where non-compliance is found measures will be suggested that should make the building less susceptible to the various attack mechanisms of a bushfire and comply with the performance requirements of the Building Code of Australia.

The opinions expressed in this report are based on the writers experience and interpretation of the relevant guidelines and standards. Notwithstanding the above, these guidelines and standards are open to interpretation. All care has been taken to ensure that the opinions expressed in this report are consistent with past successful outcomes.

If any further clarification is required for this report please do not hesitate to contact me using the details above.

Yours Sincerely

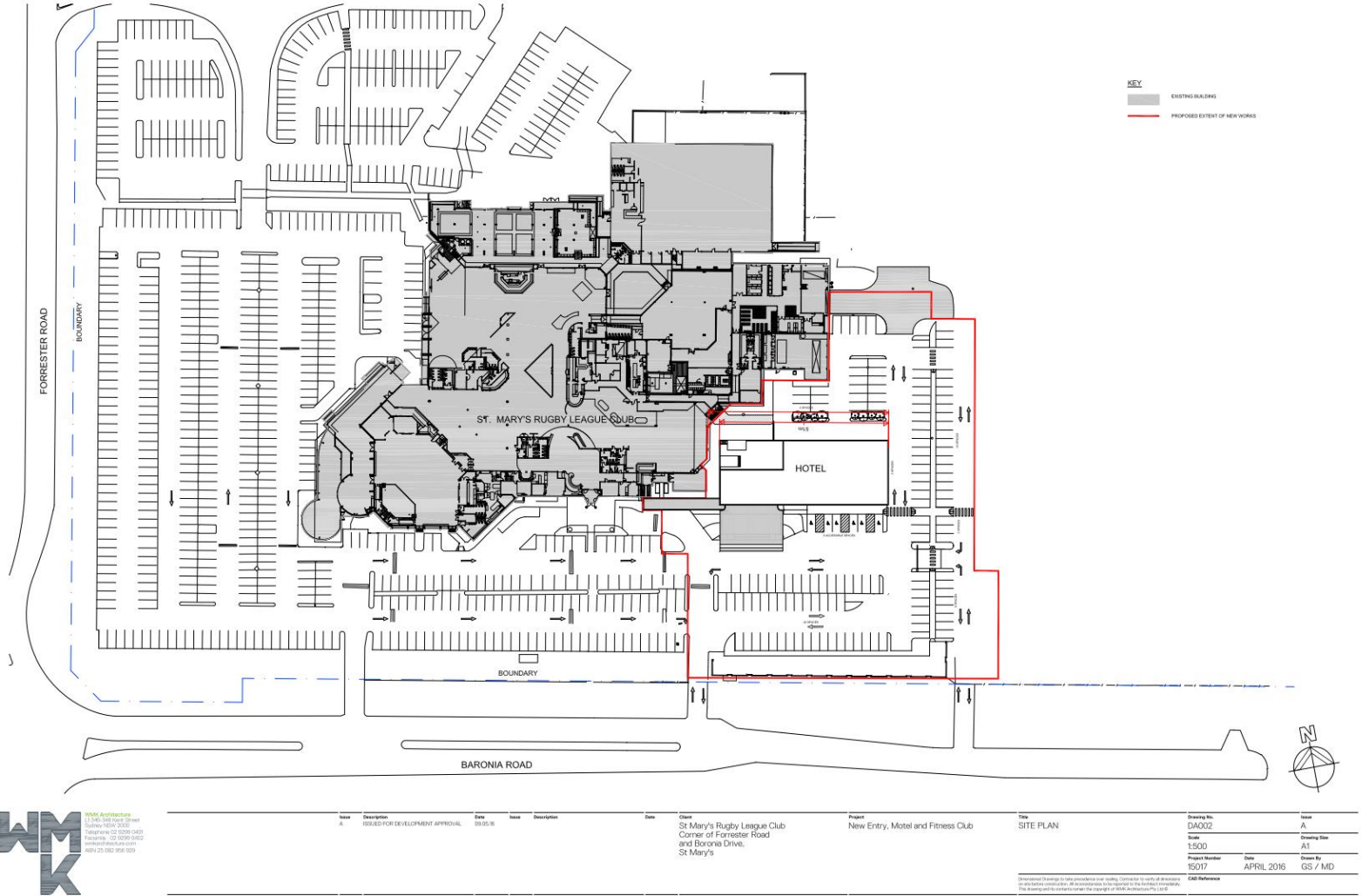


Matthew Willis

Grad Dip Planning for Bushfire Prone Areas

Bushfire Planning Services Pty Limited.

22. APPENDIX 1





- FINISHES LEGEND**
- EP10 PRECAST CONCRETE PANELS WITH INTEGRATED CHARCOAL COLOUR FINISH
 - EP20 COLOUR BACK GLASS RE-FILL SPANDREL PANEL (SP) TO MATCH WINDOW GLAZING
 - EP30 POWDER COATED ALUMINIUM WINDOW FRAME - BLACK COLOUR FINISH
 - EP34 COMPOSITE METAL PANEL CLADDING WITH EXPRESSED JOINTS - BRONZE COLOUR FINISH
 - EP35 COMPOSITE METAL PANEL CLADDING WITH EXPRESSED JOINTS - CHARCOAL FINISH COLOUR
 - EP36 SHOP FRONT GLAZING SYSTEM WITH POWDER COATED ALUMINIUM FRAMES - REFER TO EP33
 - EP37 POWDER COATED ALUMINIUM BLADES WITH SUPPORT POST FINISH - COLOUR CHARCOAL FINISH TO MATCH CANOPY
 - EP38 COMPOSITE METAL PANEL CLADDING WITH EXPRESS JOINTS - BRONZE COLOUR FINISH
 - EP39 POWDER COATED ALUMINIUM LOUVRES TO MATCH WINDOW FRAMES - REFER TO EP33
 - EP70 ANODISED EXTRUDED ALUMINIUM BATTENS NOM. 105MM X 305MM WITH CONCEALED FINISH TO PRECAST SUBSTRATE BRONZE COLOUR FINISH
 - EP11 TEXTURED CEMENT RENDERED BRICK WALL - LIGHT GRAY COLOUR FINISH

- LEGEND**
- FG FIXED GLASS
 - SP SPANDREL PANEL

01 ELEVATION - 01
SOUTH ELEVATION



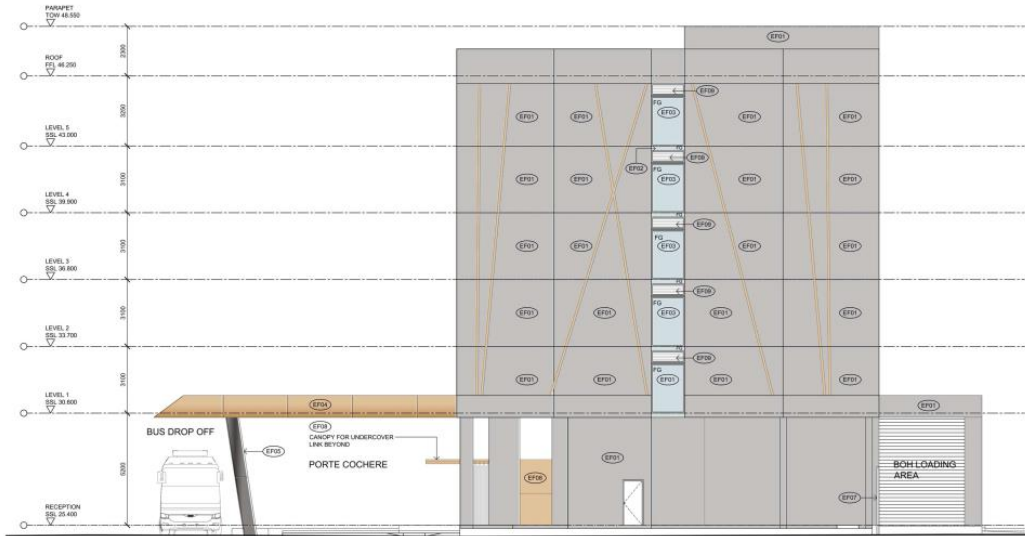
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ABN 29 052 959 029

| Issue | Description | Date | Issue | Description | Date | Client | Project | Title | Drawing No. | Issue | |
|-------|---------------------------------|----------|-------|-------------|------|--|-----------------------------------|-----------------|-------------------------|--------------------|---------------------|
| A | ISSUED FOR DEVELOPMENT APPROVAL | 03.05.16 | | | | St Mary's Rugby League Club Corner of Forrester Road and Boronia Drive, St Mary's | New Entry, Motel and Fitness Club | SOUTH ELEVATION | DA500 | A | |
| | | | | | | | | | Scale 1:100 | Drawing Size A1 | |
| | | | | | | | | | Project Number 15017 | Date APRIL 2016 | Drawn By GS / MD |
| | | | | | | | | | CAD Reference | | |

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- FINISHES LEGEND**
- (EPD) PRECAST CONCRETE PANELS WITH INTEGRATED CHARCOAL COLOUR FINISH
 - (EFG) COLOUR BACK GLASS RIFLE SPANDREL PANEL (BPT) TO MATCH WINDOW GLAZING
 - (EFD) POWDER COATED ALUMINIUM WINDOW FRAME - BLACK COLOUR FINISH
 - (EFS) COMPOSITE METAL PANEL CLADDING WITH EXPRESSED JOINTS - BRONZE COLOUR FINISH
 - (EFC) COMPOSITE ALUMINIUM PANEL CLADDING WITH EXPRESSED JOINTS - CHARCOAL FINISH COLOUR
 - (EFA) SKIP FRONT GLAZING SYSTEM WITH POWDER COATED ALUMINIUM FRAMES - REFER TO EFD
 - (EFG) POWDER COATED ALUMINIUM SLIDES WITH SUPPORT POST FINISHES - COLOUR CHARCOAL FINISH TO MATCH CANOPY
 - (EFD) COMPOSITE METAL PANEL CLADDING WITH EXPRESSED JOINTS - BRONZE COLOUR FINISH
 - (EFC) POWDER COATED ALUMINIUM LOUVRES TO MATCH WINDOW FRAMES - REFER TO EFD
 - (EFS) ANODISED EXTRUDED ALUMINIUM BATTENS FROM 100MM X 10MM WITH CONCEALED FINIS TO PRECAST SUBSTRATE - BRONZE COLOUR FINISH
 - (EFT) TEXTURED CEMENT RENDERED BRICK WALL - LIGHT GRAY COLOUR FINISH

- LEGEND**
- FG FINED GLASS
 - SP SPANDREL PANEL



01 ELEVATION - 02
EAST ELEVATION



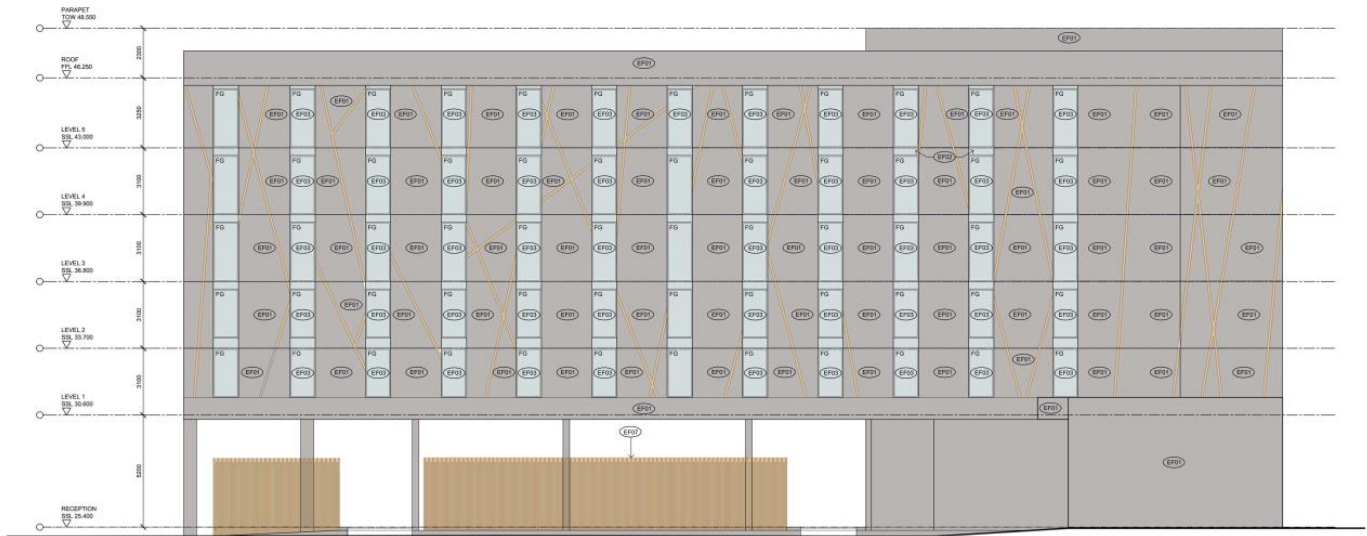
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| Issue | Description | Date | Issue | Description | Date | Client | Project | Title | Drawing No. | Issue | |
|-------|---------------------------------|----------|-------|-------------|------|--|-----------------------------------|----------------|-------------------------|--------------------|---------------------|
| A | ISSUED FOR DEVELOPMENT APPROVAL | 03.05.16 | | | | St Mary's Rugby League Club Corner of Forrester Road and Boronia Drive, St Mary's | New Entry, Motel and Fitness Club | EAST ELEVATION | DA501 | A | |
| | | | | | | | | | Scale 1:100 | Drawing Size A1 | |
| | | | | | | | | | Project Number 15017 | Date APRIL 2016 | Drawn By GS / MD |

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- FINISHES LEGEND**
- (EPD) PRECAST CONCRETE PANELS WITH INTEGRATED CHARCOAL COLOUR FINISH
 - (EPG) COLOUR BACK GLASS RE-FILL SPANDREL PANEL (SP) TO MATCH WINDOW GLAZING
 - (EPH) POWDER COATED ALUMINIUM WINDOW FRAME - BLACK COLOUR FINISH
 - (EPS4) COMPOSITE METAL PANEL CLADDING WITH EXPRESSED JOINTS - BRONZE COLOUR FINISH
 - (EPF) COMPOSITE ALUMINIUM PANEL CLADDING WITH EXPRESSED JOINTS - CHARCOAL FINISH COLOUR
 - (EPK) SHOP FRONT GLAZING SYSTEM WITH POWDER COATED ALUMINIUM FRAMES - REFER TO EPD
 - (EPN) POWDER COATED ALUMINIUM SLICES WITH SUPPORT POST FINISH - COLOUR CHARCOAL FINISH TO MATCH CANOPY
 - (EPO) COMPOSITE METAL PANEL CLADDING WITH EXPRESS JOINTS - BRONZE COLOUR FINISH
 - (EPP) POWDER COATED ALUMINIUM LOUVRES TO MATCH WINDOW FRAMES - REFER TO EPD
 - (EPQ) ANCOURED EXTRUDED ALUMINIUM BATTENS NOM. 10MM X 10MM WITH CONCEALED FINISH TO PRECAST SUBSTRATE BRONZE COLOUR FINISH
 - (EPR) TEXTURED CEMENT RENDERED BRICK WALL - LIGHT GRAY COLOUR FINISH

- LEGEND**
- FG FIXED GLASS
 - SP SPANDREL PANEL



01 ELEVATION - 03
NORTH ELEVATION



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| A | ISSUED FOR DEVELOPMENT APPROVAL | 03.05.16 | | | | St Mary's Rugby League Club Corner of Forrester Road and Boronia Drive, St Mary's | New Entry, Motel and Fitness Club | NORTH ELEVATION | DA502 | A | |
| | | | | | | | | | Scale 1:100 | Drawing Size A1 | |
| | | | | | | | | | Project Number 15017 | Date APRIL 2016 | Drawn By GS / MD |
| CAD Reference | | | | | | | | | | | |

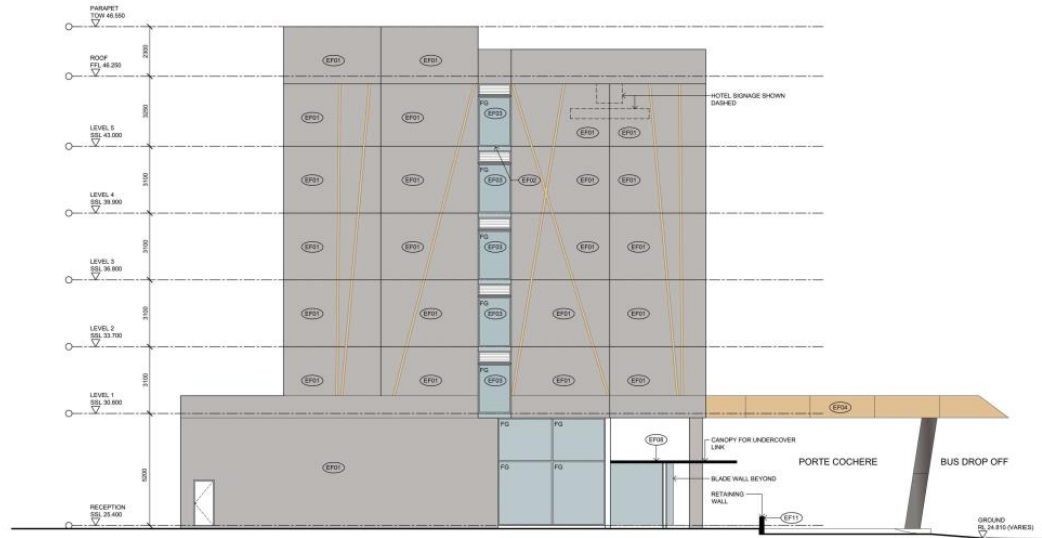
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FINISHES LEGEND

- (EP01) PRECAST CONCRETE PANELS WITH INTEGRATED CHARCOAL COLOUR FINISH
- (EP02) COLOUR BACK GLASS REFILL SPANDREL PANEL (SP) TO MATCH WINDOW GLAZING
- (EP03) POWDER COATED ALUMINIUM WINDOW FRAME - BLACK COLOUR FINISH
- (EP04) COMPOSITE METAL PANEL CLADDING WITH EXPRESSED JOINTS - BRONZE COLOUR FINISH
- (EP05) COMPOSITE METAL PANEL CLADDING WITH EXPRESSED JOINTS - CHARCOAL FINISH COLOUR
- (EP06) SHIP FRONT GLAZING SYSTEM WITH POWDER COATED ALUMINIUM FRAMES - REFER TO EP03
- (EP07) POWDER COATED ALUMINIUM SLICES WITH SUPPORT POST FINISH - COLOUR CHARCOAL FINISH TO MATCH CANOPY
- (EP08) COMPOSITE METAL PANEL CLADDING WITH EXPRESS JOINTS - BRONZE COLOUR FINISH
- (EP09) POWDER COATED ALUMINIUM LOUVERES TO MATCH WINDOW FRAMES - REFER TO EP03
- (EP10) ANODISED EXTRUDED ALUMINIUM BATTENS NOM. 10MM X 100MM WITH CONCEALED FINISH TO PRECAST SUBSTRATE BRONZE COLOUR FINISH
- (EP11) TEXTURED CEMENT RENDERED BRICK WALL - LIGHT GRAY COLOUR FINISH

LEGEND

- FG FINED GLASS
- SP SPANDREL PANEL



01 ELEVATION - 04
WEST ELEVATION



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|-------|---------------------------------|----------|-------|-------------|------|--|-----------------------------------|----------------|-------------------------|--------------------|---------------------|
| A | ISSUED FOR DEVELOPMENT APPROVAL | 03.05.16 | | | | St Mary's Rugby League Club Corner of Forrester Road and Boronia Drive, St Mary's | New Entry, Motel and Fitness Club | WEST ELEVATION | DAS03 | A | |
| | | | | | | | | | Scale 1:100 | Drawing Size A1 | |
| | | | | | | | | | Project Number 15017 | Date APRIL 2016 | Drawn By GS / MD |
| | | | | | | | | | | CAD Reference | |

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23. APPENDIX 2



Map 4. The above map shows both a 40m APZ required for Woodland Vegetation and a 60m APZ (white dashed line for forest vegetation). Both can be incorporated into the already managed lands.

24. REFERENCES

National Construction Code

Building Code of Australia

Volumes 1&2

Canprint

New South Wales Rural Fires Act 1997

Section 100b

Planning NSW [2006]

Planning for Bushfire Protection

A Guide for Councils, Planners, Fire Authorities, Developers and Home Owners

Standards Australia [2009]

Australian Standards 3959

Australian Building Code Board

Edition 2009

Rural Fires Regulation 2008

Clause 44