

Bushfire Assessment

In relation to

Proposed alterations and additions to an existing dwelling

Lot 50 DP 253666

327 Burraneer Road, Coomba Park

Prepared for:

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Project: 24233

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1. INTRODUCTION

This Bushfire Assessment has been prepared in relation to proposed alterations and additions to an existing dwelling on the land at Lot 50 DP 253666, 327 Burraneer Road, Coomba Park.

The land within the site and surrounds is mapped as bushfire prone land for the purposes of Section 10.3 of the *Environmental Planning & Assessment Act 1979* (EP&A Act).

As the land within the site is mapped as bushfire prone land, the purpose of this Bushfire Assessment is to identify the proximity of the proposed development to any potential bushfire threat and to determine what, if any, level of construction is required in accordance with the New South Wales Rural Fire Service (RFS) guideline, *Planning for Bush Fire Protection 2019* (PBP).

2. PROPOSED DEVELOPMENT

The proposed development is for alterations and additions to the existing dwelling on the land.

The proposed development is shown on draft plans prepared by Efficio Projects (Job no. 2404), *Proposed alterations & additions 327 Burraneer Road Coomba Park* (Amendment A dated 30/08/24).

An extract of the part site plan is at Figure 2.1.

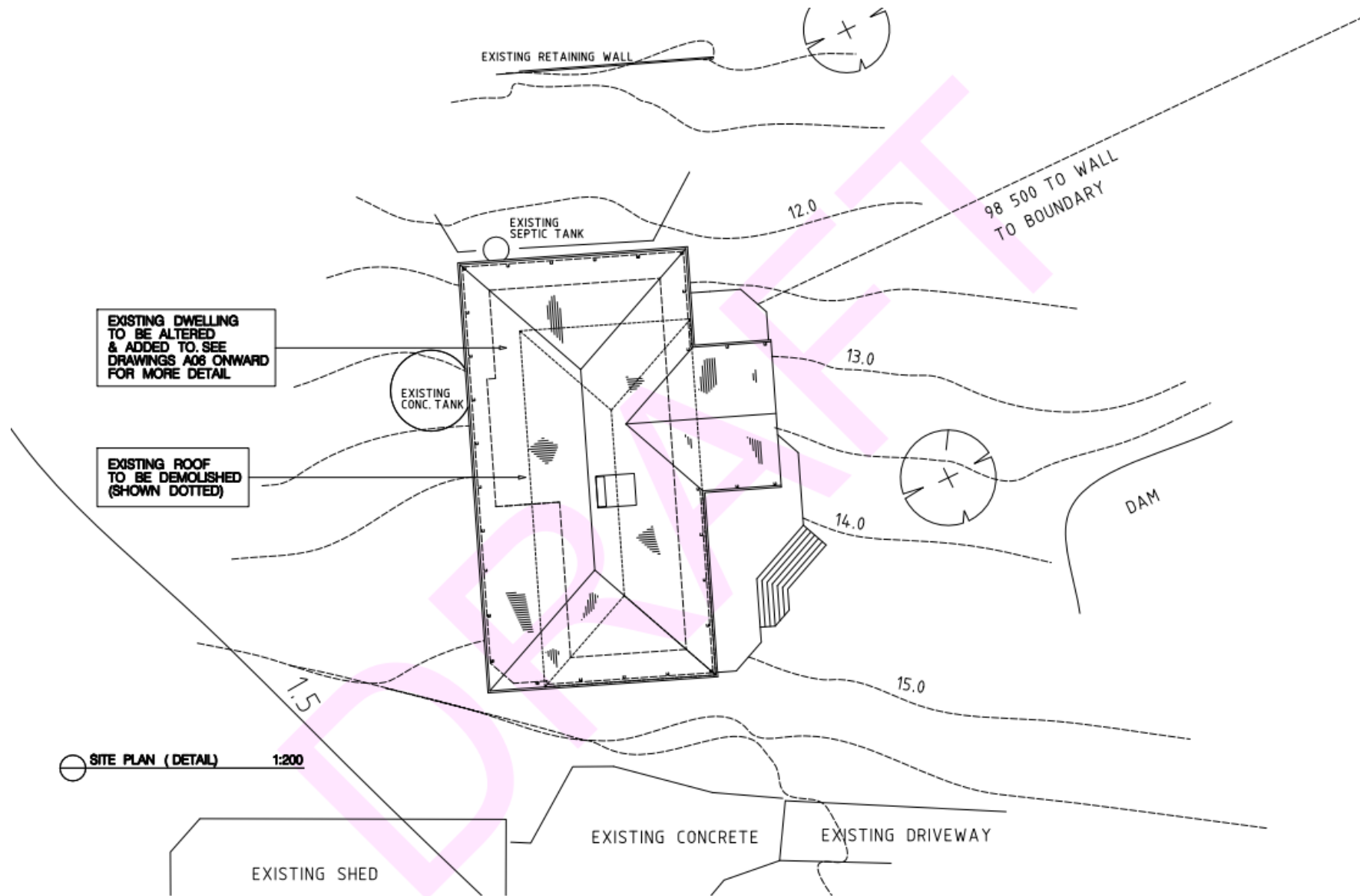


Figure 2.1: Site Plan Extract (Efficio Projects, 2024). North approx to right of page.

3. SITE DESCRIPTION

The site comprises land described as Lot 50 DP 253666, 327 Burraneer Road, Coomba Park.

The site is in the Mid-Coast Local Government Area and the relevant local environmental plan applying to the land is *Great Lakes Local Environmental Plan 2014* (LEP). The land within the site is zoned C4 *Environmental Living* under the provisions of the LEP.

The subject site has an area of about 10.12 hectares and is on the southern side of Burraneer Road. Land on the opposite (northern) side of Burraneer Road adjoins the foreshore to Wallis Lake. Similar sized allotments surround the site in all other directions.

The site contains an existing dwelling, with swimming pool and other ancillary structures, in the north-eastern part of the land.

The site has a fall from south-east to north-west, with elevations around the dwelling site at approximately 20 metres AHD, falling to 10 metres AHD in the north-western part of the site.

The land around the existing dwelling is in a managed condition, comprising mainly mown lawn with a managed understorey for at least 30 metres to the north, west and south. Remnant forest vegetation over (generally) a disturbed understorey characterises the northern one-third of the site.

The allotment immediately adjoining the northern end of the eastern site boundary (Lot 491 DP 807623, 325 Burraneer Road) appears to be regularly maintained and comprises managed grasses with scattered clumps of trees.

The nearest areas of potential bushfire hazard vegetation to the proposed new building work are in the southern part of the site, and also in the north-western part of the land at Lot 492 DP 807623, 305 Burraneer Road (which adjoins the central part of the eastern site boundary). These areas of vegetation are characteristic of forest formation.

Burraneer Road, near the site, is a two-way public road. Parts of Burraneer Road further to the south-east are bitumen sealed. The site is accessed via an existing property access driveway/road (about 160 metres long) entering the north-eastern corner of the site from Burraneer Road.

The site is not serviced by reticulated water or sewer. Electricity supply is via overhead powerlines.



Figure 3.1: Bushfire prone land map

The following photos show the condition of land within the site.



Photo 3.1: Existing dwelling



Photo 3.2: Looking east, showing the condition of land within the site to the north (left) of the existing dwelling



Photo 3.3: Land within the site to the west of the existing dwelling, looking south



Photo 3.4: Looking east, showing the condition of land within the site to the south of the existing dwelling. Forest vegetation in the north-western part of the land at 305 Burraneer Road is in the background, behind the existing shed.



Photo 3.5: View of the vegetation in the north-western part of the land at 305 Burraneer Road (looking south along the eastern site boundary). The eastern elevation of the existing shed on the site is just outside the right hand side of the photo.

3.1 Vegetation Classification

The land around the existing dwelling is in a managed condition, comprising mainly mown lawn with a managed understorey for at least 30 metres to the north, west and south.

The nearest areas of potential bushfire hazard vegetation to the proposed new building work are in the southern part of the site, and also in the north-western part of the land at Lot 492 DP 807623, 305 Burraneer Road (which adjoins the central part of the eastern site boundary). These areas of vegetation are characteristic of forest formation.

For the purposes of determining Asset Protection Zones (APZs) and Bushfire Attack Levels (BALs), the predominant vegetation formation within 140 metres of the dwelling and proposed new work has been classified as *forest* as described in Appendix 1.2 of PBP.

3.2 Assessment of the slope of the land

The assessment of slope has been undertaken in accordance with the methodology in Section A1.5 of PBP.

The assessment of slope was undertaken via analysis of 1 metre Resolution Digital Elevation Model and through field analysis using a hand-held inclinometer and range finder.

The slope of land most likely to influence bushfire behaviour in relation to the dwelling and proposed new work has been assessed as upslope to the south and south-east. The slope of land to the north, west and south-west of the dwelling is ~5° downslope.

4. BUSHFIRE ASSESSMENT

4.1 Bushfire Attack Levels

The site is in the North Coast fire (weather) area and is subject to a Fire Danger Index (FDI) of FDI 80.

Appendix 1 of PBP provides the site assessment methodology for determining the applicable Bushfire Attack Level (BAL). Once the BAL is determined, construction requirements for the corresponding BAL apply subject to AS3959-2018: *Construction of buildings in bushfire-prone areas* subject to Section 7.5 of PBP.

The nearest area of potential bushfire hazard vegetation is to the south-east of the dwelling, in the north-western part of the land at Lot 492 DP 807623, 305 Burraneer Road (which adjoins the central part of the eastern site boundary). The nearest vegetation is 20-<29 metres from the existing dwelling

The highest BAL for the proposed development, as per Table A1.12.6 of PBP (Determination of BAL, FFDI 80 – residential development), has been assessed as BAL-29. This is based on the distance to the nearest vegetation on the land to the south-east of the dwelling.

4.2 Performance criteria and acceptable solutions

The proposed development is for the purposes of alterations and additions to an existing dwelling on the land and is residential infill development for the purposes of PBP. Residential infill development refers to the development of land by the erection of, or alteration or addition to, a dwelling which does not require the spatial extension of services including public roads, electricity, water or sewerage and is within an existing lot (PBP, 2019).

Infill development is assessed in accordance with the performance criteria and acceptable solutions in Chapter 7 (Residential Infill Development) of PBP. The Bushfire Protection Measures for residential infill development include provisions relating to APZs, access, water supply, electricity and gas services, construction standards, and landscaping.

Table 4.1 considers the acceptable solutions in Chapter 7 (Residential Infill Development) of PBP.

Table 4.1: Relationship to Acceptable Solutions (Table 7.4a) of PBP

PERFORMANCE CRITERIA	RELATIONSHIP OF PROPOSAL TO ACCEPTABLE SOLUTIONS
ASSET PROTECTION ZONES	
<ul style="list-style-type: none"> ➤ APZs are provided commensurate with the construction of the building; and ➤ A defensible space is provided 	<p>The following land is to be maintained as an APZ around the dwelling (including the proposed new work):</p> <ul style="list-style-type: none"> • Land for not less than 20 metres to the east/south-east of the existing dwelling (or to the eastern/south-eastern site boundary with land at 305 and 327 Burraneer Road, whichever is lesser); and • Land for not less than 35 metres in all other directions from the dwelling. <p>The existing and continued maintenance of land around the dwelling will facilitate areas of defensible space around the building.</p>
<ul style="list-style-type: none"> ➤ APZs are managed and maintained to prevent the spread of a fire to the building. 	As above.
<ul style="list-style-type: none"> ➤ the APZ is provided in perpetuity. ➤ APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised. 	APZs are and will be wholly within the boundaries of the site. There are no apparent issues in relation to soil stability.
ACCESS	
<ul style="list-style-type: none"> ➤ Firefighting vehicles are provided with safe, all-weather access to structures. 	The existing property access road from Burraneer Road is mostly through grassland areas within the site. The existing condition of the property access road appears adequate to facilitate all-weather two-wheel drive access to the dwelling location.

PERFORMANCE CRITERIA	RELATIONSHIP OF PROPOSAL TO ACCEPTABLE SOLUTIONS
➤ <i>The capacity of access roads is adequate for firefighting vehicles.</i>	The existing condition of the property access road appears adequate to carry firefighting vehicles. There are no bridges or causeways.
➤ <i>There is appropriate access to water supply.</i>	A ≥20,000 litre water supply is already on site in conjunction with the existing dwelling. If any tank(s) are to be relocated, and if possible, they are to be sited so that access for a Category 1 fire appliance can be provided and maintained to within 4 metres of the access point to the water supply tank(s).
➤ <i>Firefighting vehicles can access the dwelling and exit the property safely.</i>	The existing condition of the property access road appears adequate to facilitate access to/egress from the site for firefighting vehicles. There is a relatively large concrete apron to the northern elevation of the existing shed which can facilitate the turning of vehicles.
WATER SUPPLIES	
➤ <i>Adequate water supplies are provided for firefighting purposes.</i>	No reticulated water is available. A ≥20,000 litre water supply is already on site in conjunction with the existing dwelling.
➤ <i>Water supplies are located at regular intervals; and</i> ➤ <i>The water supply is accessible and reliable for firefighting operations.</i>	N/A. The site is not serviced by reticulated water or hydrants.
➤ <i>Flows and pressure are appropriate.</i>	N/A. The site is not serviced by reticulated water or hydrants.
➤ <i>The integrity of the water supply is maintained.</i>	Any new above-ground water service pipes or tanks are to be metal.
➤ <i>A static water supply is provided for firefighting purposes in areas where reticulated water is not available.</i>	A ≥20,000 litre water supply is already on site in conjunction with the existing dwelling. If any tank(s) are to be relocated, and if possible, they are to be sited so that access for a Category 1 fire appliance can be provided and maintained to within 4 metres of the access point to the water supply tank(s).
ELECTRICITY SERVICES	
➤ <i>location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings.</i>	There are no details of any changes to electricity supply.
GAS SERVICES	
➤ <i>location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings</i>	Existing and/or new bottled gas installations are to be consistent with the relevant acceptable solutions of PBP.
CONSTRUCTION STANDARDS	
➤ <i>the proposed building can withstand bush fire attack in the form of embers, radiant heat and flame contact.</i>	The highest assessed BAL is BAL-29 and will apply to any new work to the existing dwelling.

PERFORMANCE CRITERIA	RELATIONSHIP OF PROPOSAL TO ACCEPTABLE SOLUTIONS
➤ <i>proposed fences and gates are designed to minimise the spread of bush fire</i>	No details of any new fences/gates near the dwelling.
➤ <i>proposed Class 10a buildings are designed to minimise the spread of bush fire.</i>	N/A. No Class 10a buildings are proposed.
LANDSCAPING	
➤ <i>landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions.</i>	Recommendations are made for landscaping (if proposed) to be in accordance with Appendix 4 of PBP.

Section 7.8 of PBP includes considerations for infill development where alterations/additions are proposed to a dwelling built prior to 2002 and the existing building has little or no BPMs incorporated into its design. In this circumstance, PBP provides that:

- a. *consideration be given to upgrading the existing structure; and*
- b. *new works are to comply with the NCC.*

As the existing dwelling appears to have been constructed prior to 2002, and incorporates no bushfire resisting construction, recommendations are made for the upgrading of the existing building to improve ember protection in accordance with the RFS Development Assessment and Planning guideline – *Upgrading of Existing Buildings*.

Non-combustible gutter guard is to be installed to gutters and roof valleys of both the existing dwelling and proposed additions.

New building work is to be in accordance with the relevant provisions of AS3959-2018.

5. RECOMMENDATIONS

In relation to the proposed alterations and additions to an existing dwelling on land at Lot 50 DP 253666, 327 Burraneer Road, Coomba Park, the following is recommended:

- A. The following land within the site is to be maintained as an Asset Protection Zone (APZ) in perpetuity:
 - i. Land for not less than 20 metres to the east/south-east of the existing dwelling (or to the eastern/south-eastern site boundary with land at 305 and 327 Burraneer Road, whichever is lesser); and
 - ii. Land for not less than 35 metres in all other directions from the dwelling.
- B. APZs should be maintained in accordance with the requirements of an Inner Protection Area (IPA) as described in Appendix 4, Section A4.1.1 of PBP and any grassy vegetation within the IPA is to be maintained to a height <100mm. A clear area of low-cut lawn or pavement is to be maintained immediately around the existing and proposed dwellings.
- C. Construction of any new building work is to be to the requirements for BAL-29 as per *AS 3959-2018 (Construction of buildings in bushfire-prone areas)* and Section 7.5 of PBP 2019, or *National Association of Steel Framed Housing (2021) Steel Framed Construction in Bush Fire Areas*.
- D. If not already installed, consideration should be given to the installation of non-combustible leafless guttering and/or metal leaf guard in the gutters and/or roof valleys of the dwelling to reduce the potential build-up of flammable material.
- E. The existing dwelling is to be upgraded to improve ember protection, including the following:
 - i. Enclosing or covering openings with a corrosion-resistant steel, bronze or aluminium mesh with a maximum aperture of 2mm. Where applicable, this includes the openable portion of the windows, vents, weepholes and eaves, but does not include roof tile spaces.
 - ii. Weather strips, draught excluders or draught seals shall be installed at the base of side-hung external doors as per AS 3959.
- F. A minimum 20,000 litre water supply (any new tank(s) are to be of concrete or metal construction) is to be maintained on site for the dwelling and available for firefighting purposes. If not already provided, a 65mm Storz fitting is to be provided to the water supply tank(s). All tank penetrations, above ground pipes and fittings should be metal.

- G. If any water supply tank(s) – in relation to (F) above – are to be relocated (and if possible) they are to be sited so that a hardened ground surface is available for Category 1 firefighting truck access to within 4 metres of the Storz fitting required by (E) above.
- H. If not already provided, a pump is to be provided on site for firefighting purposes and is to be a minimum 5hp petrol or diesel-powered pump, shielded against bushfire attack. Fire hose(s) for firefighting are to be provided and should be a minimum 19mm internal diameter.
- I. Any new or replacement above-ground water service pipes external to the building are to be metal, including and up to any taps.
- J. Any new or existing bottled gas is to be installed and/or maintained in accordance with AS/NZ 1596:2014 and the requirements of relevant authorities, and:
 - i. All fixed gas cylinders are to be kept clear of all flammable materials to a distance of 10 metres and shielded on the hazard side;
 - ii. If gas cylinders need to be kept close to the building, safety valves are to be directed away from the building and at least 2 metres away from any combustible material, so they do not act as a catalyst to combustion;
 - iii. above-ground gas service pipes external to the building are to be metal, including and up to any outlets; and
 - iv. connections to and from gas cylinders are to be metal.
- K. Occupants are advised to prepare a Bush Fire Survival Plan, to be revised annually prior to each bushfire season. A *Guide to Making a Bush Fire Survival Plan* has been developed by the NSW RFS to assist residents in the preparation of their plan and can be found at the NSW RFS website - www.rfs.nsw.gov.au.

NOTE & DISCLAIMER:

- (i) *This assessment relates to the proposed development described in Section 2 only. Only the plans referenced in this assessment have been considered.*
- (ii) *This assessment has been based on bushfire protection guidelines as outlined in the document entitled Planning for Bush Fire Protection 2019 (PBP).*
- (iii) *Notwithstanding the precautions recommended, it should always be remembered that bushfires burn under a range of conditions and an element of risk, no matter how small, always remains.*
- (iv) *This assessment does not imply or infer any approval for the removal and/or thinning of vegetation for Asset Protection or other purposes. It is the responsibility of the client/landowner to obtain all necessary approvals in this regard.*

6. REFERENCES

NSW Rural Fire Service (2019)
Planning for Bush Fire Protection 2019

Standards Australia (2018)
AS 3959-2018 Construction of buildings in bushfire-prone areas