

BUSHFIRE ATTACK LEVEL (BAL) ASSESSMENT & STATEMENT OF COMPLIANCE



Subject Property

Lot & DP: Lot 101 DP881832

Address: Lachlan Macquarie Institute (LMI)
No.381 Hillview Drive Murrumbateman 2582 (Yass Valley)

Area & Zoning: ≈ 8.8 ha, Zoned RU1 Rural Production

Bushfire Prone

Land Mapping: The subject property and all adjoining lands are identified as Category 3 Grassland Vegetation only.

Proposed

Development: Pergola addition to existing Function Centre with Ancillary Accommodation facility (Class 3 & 9b).

Standard / Policy

Referred to: NSW Planning for Bushfire Protection Guidelines 2019 (PBP)

Plans / advice

Reviewed: Attached Appendices 1 – 5.

For the purpose of this assessment and associated recommendations for bushfire safety and compliance requirements, the following is specifically noted and/or assumed.

The proposed development is effectively a small (≈40sqm) and non-combustible (steel / metal) structure to be incorporated as part of the LMI facility / complex with an existing development foot-print of ≈1,000sqm.

The proposed development would not reasonably increase the potential occupancy or later the use of the LMI facility.

The proposed development will be located on the northern elevation of the existing LMI facility, and is estimated to be >50m from any boundary. Likewise, the existing LMI facility is also >50m from any boundary.

The proposed development is access directly from Hillview Drive which is a fully formed and sealed public roadway providing a carriageway of ≈6-7m (including verge / drainage areas).

Apart from areas of remnant (low threat) vegetation and potential grassland within the subject property itself, adjoining rural allotments to the north and south of the site would be the primary source of an external and uncontrolled fire event which may significantly threaten the proposed development site.

The subject property has been historically landscaped and managed to ensure an entirely cleared and open grassland curtilage, but has retained a minor or scattered areas of historic plantings (both native and exotic) for shade / aesthetics.

Notwithstanding the retention of remnant trees and shrubs within vicinity of the proposed development site, the removal or reduction of existing landscaped vegetation within the subject property is not a constraint to development and otherwise permissible for Asset Protection Zone (APZ) purposes as required.

Vehicle access to the proposed development site will be via an existing property access arrangement of $\approx 100\text{m}$ in length, which includes vehicle parking and turning areas within direct vicinity of the existing facility.

The existing property access reasonably provides a carriageway width of $>3\text{-}4\text{m}$ along most sections with ample opportunities for a larger / heavy vehicles to pass or turn around at most points along the route or easily at the proposed development site itself.

Reticulated town water supply is currently not available to the subject property. Water supply for both domestic and firefighting purposes will be provided by onsite rainwater capture and storage (tank or dam).

Electrical power supply is currently provide by overhead powerlines running along the eastern boundary of (easement within) the subject property (Greenwood Road) and by underground cabling from the easement to the main LMI facility.

Gas supply for heating / cooking is currently provided by replaceable gas bottle storage incorporated as part of the LMI facility.

Date of Assessment: 13th December 2021

BAL Assessment Procedure: Site Assessment Methodology as per Appendix 1 of NSW Planning for Bushfire Protection 2019 (PBP).

Relevant FDI: 100 (Southern Ranges)¹.
Classified

Vegetation Type: For the purpose of this assessment, the predominant vegetation formation identified within, adjoining and adjacent to the subject property is GRASSLAND.

Slope: For the purpose of this assessment, land gradient for either effective or site slopes do not exceed 5° down slope (i.e. $0\text{-}5^\circ$).

**Site Distance to Vegetation,
Effective Slope & BAL:**

Distance (m)	Vegetation (<i>Location / Direction</i>)	Effective Slope	Site Slope	BAL
>50m	GRASSLAND (<i>Subject Property</i>)	N/A	N/A	LOW

¹ [Microsoft Word - Local government areas and FDI.docx \(nsw.gov.au\)](#)

>100m	All Categorised Vegetation (All surrounding land / all directions)	N/A	N/A	LOW
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Determined

Highest BAL: BAL-LOW as per PBP Appendix 1 –Table A1.12.5.

*Other Estimate /
Recommended*

BAL: As per determined highest BAL.

**General Statement
of Compliance:**

Section 7.9 of PBP (Grassland Deeming Provisions) states;

The risk posed by grass fires is different to that of fires in other vegetation types. Grass fires burn at a higher intensity and spread more rapidly with a shorter residence time. Embers produced by grass fires are smaller and fewer in number than those produced from forest fires.

In recognition of the characteristics of grassland fire behaviour, the NSW RFS has developed a simplified set of Deeming Provisions for residential infill development. This process provides another acceptable set of simple requirements for infill development located in a grassland hazard area.

A site assessment as detailed in Appendix 1 is not required, nor is referral to the NSW RFS.

Where an APZ of 50m can be provided, no further BPMs are required. Where an APZ of 20-49m can be provided, the set of provisions shown in Table 7.9a apply. However where the Grassland Deeming Provisions cannot be achieved or a merit based approach is desired, the standard assessment process outlined in Appendix 1 must be adopted.

The maximum slope for the Deeming Provisions is restricted to 15 degrees downslope.

For developments in grassland hazard areas where the deeming provisions are applied, compliance with Table 7.9a is prescribed as a variation for the purposes of NSW G5.2(a)(i) of Volume One and NSW 3.10.5.0(c)(i) of Volume Two of the NCC.

The deeming provisions and the residential infill development APZ tables are derived from different methodologies, however both are considered compliant outcomes.

Notwithstanding the above deemed provisions, this report conservatively recommends basic and additional standards for bushfire protection measures as an additional margin of safety given any isolation or restricted vehicle access to the subject property during a significant bushfire event.

The following tables list applicable / considered compliance and/or associated recommendations.

Table 1 (Derived from PBP Table 7.9a)

Bushfire Protection Measure	Grassland Deeming Provision	Compliance / comment
APZ	<i>limited to a maximum of 15 degrees downslope</i>	Complies – no effective slope reasonably exceeding 5° within direct vicinity
	<i>minimum APZ of 20m is provided between the building and the hazard</i>	Complies – as per recommended APZ area ≥50m.
	<i>the APZ is wholly within the boundaries of the development site</i>	Complies – recommended APZ (≥50m) contained within subject property.
	<i>the APZ is maintained as a mown area with grass heights less than 100mm</i>	Complies – as per recommended APZ area to be managed as excluded / low threat vegetation.
Construction	<i>construction in accordance with BAL-12.5 of AS3959 and section 7.5 of PBP.</i>	N/A – BPM not required as deemed provision.
Access	<i>access comply with the property access provisions in Table 5.3b</i>	N/A – BPM not required as deemed provision.
Water supply	<i>Water supply comply with the water supply provisions in Table 7.4a</i>	Complies – as per recommendations for fire fighting water supplies & outlets / infrastructure.
Landscaping	<i>comply with the relevant provisions in Appendix 4, noting that other vegetation bush fire hazards cannot be present if these provisions are to apply</i>	Complies – as per recommended APZ area ≥50m.

Table 2 (Derived from PBP Table 7.4a)

Performance Criteria	Acceptable Solutions	Compliance / comment
<i>the integrity of the water supply is maintained.</i>	<i>all above-ground water service pipes external to the building are metal, including and up to any taps.</i>	Complies – as per listed recommendation.
<i>a static water supply is provided for firefighting purposes in areas where reticulated water is not available.</i>	<i>where no reticulated water supply is available, water for firefighting purposes is provided in accordance with Table 5.3d</i>	Complies – recommended water capacity >20,000 Litres.
	<i>a connection for firefighting purposes is located within the IPA or non-hazard side and away from the structure</i>	Complies – fire fighting water supply and connections all located within the APZ / IPA.
	<i>65mm Storz outlet with a ball valve is fitted to the outlet</i>	Complies – as per listed recommendation.
	<i>ball valve and pipes are adequate for water flow and are metal</i>	Complies – as per listed recommendation.
	<i>supply pipes from tank to ball valve have the same bore size to ensure flow volume</i>	Complies – as per listed recommendation.

	<i>underground tanks have an access hole of 200mm to allow tankers to refill direct from the tank</i>	Complies – as per listed recommendation.
	<i>a hardened ground surface for truck access is supplied within 4m</i>	Complies – as per listed recommendation.
	<i>above-ground tanks manufactured from concrete or metal</i>	Complies – as per listed recommendation.
	<i>raised tanks have their stands constructed from non-combustible material or bush fire-resisting timber (see Appendix F of AS3959)</i>	Complies – as per listed recommendation.
	<i>unobstructed access can be provided at all times</i>	Complies – as per listed recommendation.
	<i>underground tanks clearly marked</i>	Complies – as per listed recommendation.
	<i>tanks on the hazard side of a building are provided with adequate shielding for the protection of firefighters</i>	Complies – no hazard within reasonable vicinity.
	<i>all exposed water pipes external to the building are metal, including any fittings</i>	Complies – as per listed recommendation.
	<i>where pumps are provided, they are a minimum 5hp or 3kW petrol or diesel-powered pump, and are shielded against bush fire attack</i>	Complies – as per listed recommendation.
	<i>any hose and reel for firefighting connected to the pump shall be 19mm internal diameter</i>	Complies – as per listed recommendation.
	<i>fire hose reels are constructed in accordance with AS/NZS 1221:1997, and installed in accordance with the relevant clauses of AS 2441:2005</i>	Complies – as per listed recommendation.

**General Recommendations
for Bushfire Safety Compliance:**

- 1) All vegetated landscaping within 50m of the proposed development site shall be maintained as an APZ for the life of the proposed development.
- 2) Any landscaped plantings or vegetated areas incorporated or retained as part of the proposed development / subject property should be maintained as;
 - low threat vegetation or non-vegetated, as per Clause 2.2.3.2 of AS3959, or else
 - Inner Protection Area (IPA), specifically noting the requirements of section A4.1.1 of PBP (Appendix 4) and to facilitate defensible space around any building structures (i.e. low cut lawn or paving) and clear access for firefighting purposes.

This would primarily include maintenance of either native or exotic grassland area as short-cropped to a nominal height of <100mm.

- 3) Any vegetated or combustible landscaping to be retained or re-introduced as part of the proposed development should ensure any readily combustible dry garden mulching and/or plantings are minimised within direct vicinity ($\geq 2\text{m}$) of the proposed development site, or else should be entirely excluded.
- 4) Any vegetated or combustible landscaping to be retained or re-introduced as part of the proposed development shall ensure any readily combustible dry garden mulching and/or plantings are separated away from the proposed building lines (particularly if glazed or combustible) by at least 2m.
- 5) Any future tree management or modified landscaping within the subject property should ensure (as far as reasonably practicable);
 - an averaged tree canopy cover <15% at maturity;
 - trees do not touch or overhang any building structures;
 - tree canopies are separated by >2 to 5m; and
 - preference should be given to smooth barked and evergreen trees only.
- 6) All internal landscaping within the subject property shall ensure trees planted directly adjacent to the internal roadway sections do not significantly overhang or obstruct the access of larger vehicle's entering the subject property. Any overhanging vegetation shall be maintained to ensure a minimum height of 4m above the road at all times.
- 7) All new electrical line supply and connections (including communication lines) to service the proposed development should be located underground where practicable.
- 8) All external / exposed water and gas supply pipes supplying the proposed development should be metal, including any fittings and up to any taps.
- 9) Any required gas supply and associated storage facilities to be incorporated as part of the proposed development shall be installed and maintained in accordance with AS1596 and requirements of the relevant authority.
- 10) Any proposed or identified water storage facilities within the subject property should ensure a guaranteed static water supply of at least 20,000 Litres is available within vicinity of the proposed development and existing structures at all times.
- 11) Fixed firefighting hose and reels should be installed externally on the proposed development and be of reasonable length (so as to reach all the immediate areas, $\approx 36\text{m}$ nominal length) surrounding the proposed development and associated curtilage. The internal diameter of firefighting hose shall be 19mm.
- 12) Fixed fire hose reels shall be manufactured in accordance with the Australian/New Zealand Standard AS/NZS 1221:1997 'Fire hose reels' and installed in accordance with AS2441-2005 'Installation of fire hose reels'.

- 13) Any static water supply identified for bushfire / firefighting protection purposes shall be designed and installed (where considered applicable and reasonably practicable to do so) in accordance with Table 5.3b PBP, or otherwise to ensure;
- a connection for firefighting purposes is located within the IPA or non-hazard side and away from the structure,
 - 65mm Storz outlet with a ball valve is fitted to the outlet,
 - ball valve and pipes are adequate for water flow and are metal,
 - supply pipes from tank to ball valve have the same bore size to ensure flow volume,
 - underground tanks have an access hole of 200mm to allow tankers to refill direct from the tank,
 - a hardened ground surface for truck access is supplied within 4m,
 - above-ground tanks manufactured from concrete or metal,
 - raised tanks have their stands constructed from non-combustible material or bush fire-resisting timber (see Appendix F of AS3959),
 - unobstructed access can be provided at all times,
 - underground tanks clearly marked,
 - tanks on the hazard side of a building are provided with adequate shielding for the protection of firefighters,
 - where pumps are provided, they are a minimum 5hp or 3kW petrol or diesel-powered pump, and are shielded against bush fire attack.
- 14) The subject property shall be clearly sign posted at Hillview Drive to identify;
- street number or property address / name,
 - available Static Water Supplies (SWS) on site for firefighting purposes as required, &
 - distance to SWS from Hillview Drive.

The above BAL assessment & General Statement of Compliance has been prepared by:

Matt Jones

BAppSc Environmental Health
Grad. Dip Design for Bushfire Prone Areas
BPAD-L3-14598 Accredited Practitioner

(I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level stated above in accordance with the requirements of NSW Planning for Bushfire Protection Guidelines 2019 or AS3959 where applicable)

BUSHFIRE PLANNING AND DESIGN ACCREDITATION SCHEME ACCREDITED PRACTITIONER	
Name	Matthew Jones
Accreditation No.	BPAD14598
Valid to	February 2022
Jurisdiction	Level 3 - NSW



BPAD
Bushfire
Planning & Design
Accredited Practitioner

The holder of this card is accredited in accordance with the FPA Australia Bushfire Planning and Design Accreditation Scheme to perform the services listed on the reverse of this card.

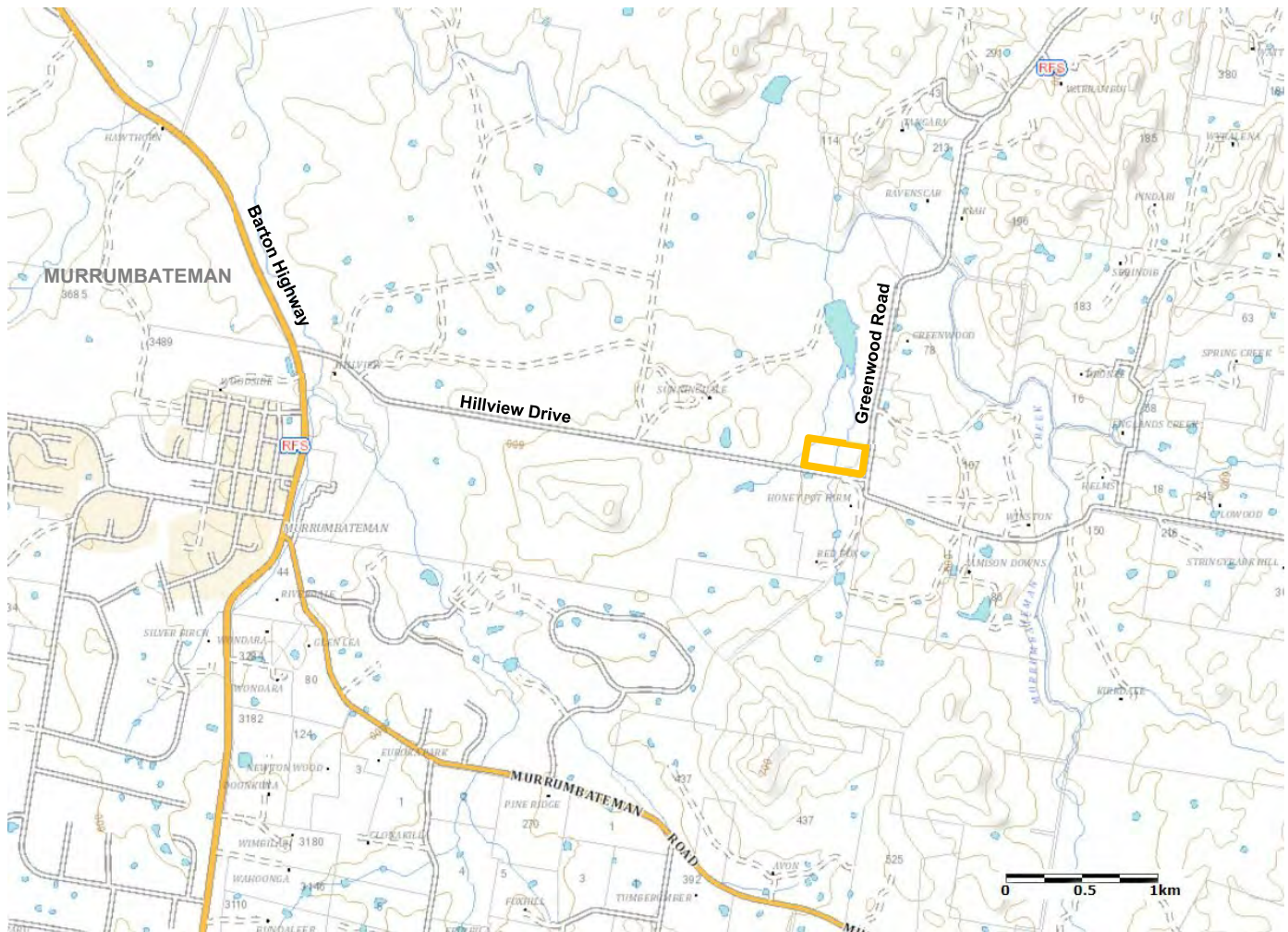
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TERM OF VALIDITY: Opinions and statements made by this report are based on information at hand as at the date of the report. Should the following report require re-examination, please apply to Bushfire Protection Planning & Assessment Services. Bushfire Protection Planning & Assessment Services reserves the right at any time, subsequent to any date after this report, to vary it or make new recommendations based on any new environmental or any requirements at law.

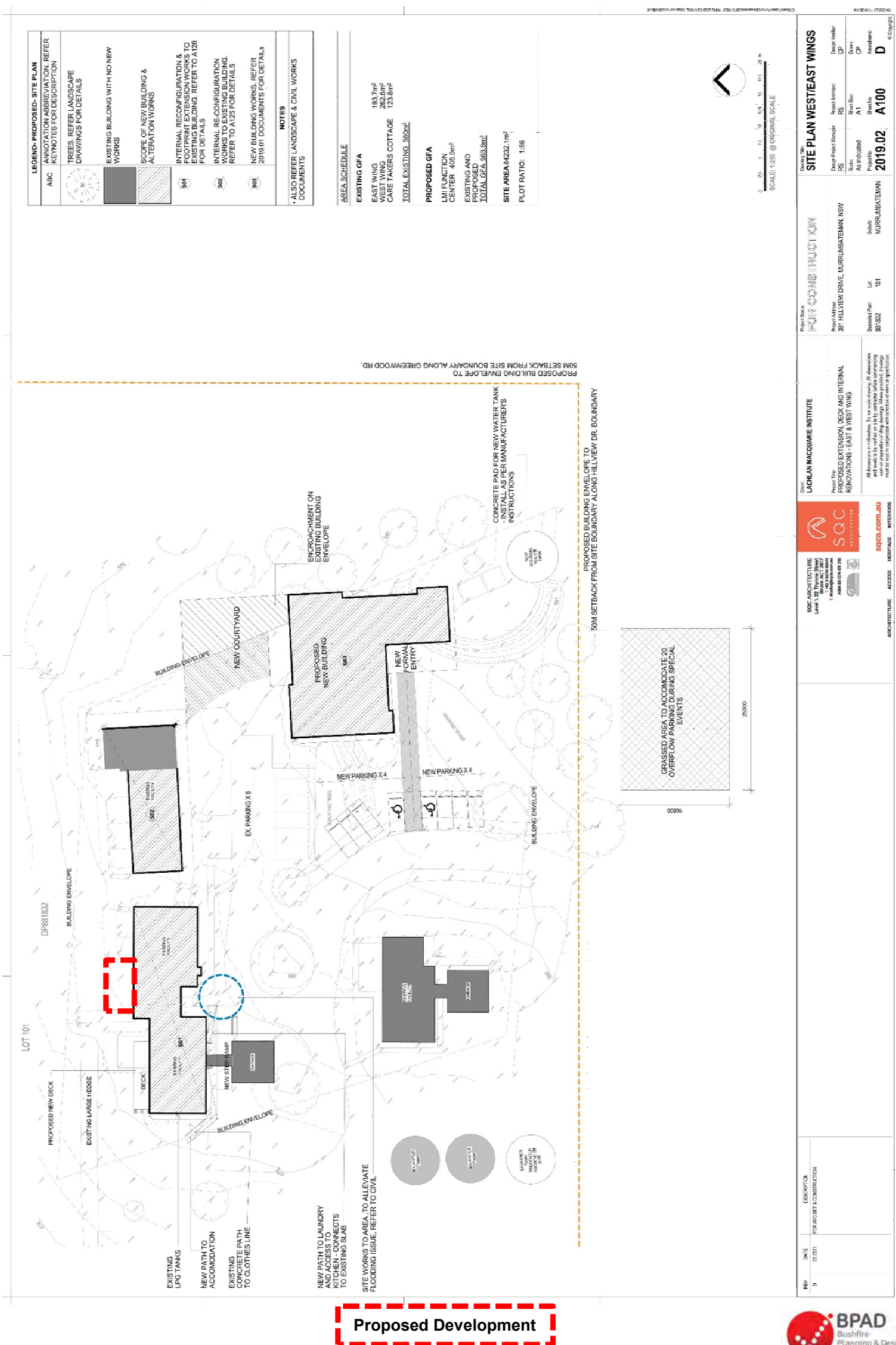
DISCLAIMER (1): Bushfire mitigation or protection measures as identified, recommended or purported by this report may not guarantee that the identified or proposed development will survive or remain unaffected from a bushfire event on every occasion. This is substantially due to the unpredictable nature and behaviour of fire and extreme weather conditions, and the behaviour of building occupants or fire fighters defending the building when exposed to severe or greater bushfire attack conditions.

DISCLAIMER (2): Any failure to maintain bushfire mitigation or protection measures as identified, recommended, or purported by this report may compromise an insurance policy currently covering any assets, or those of any third party that may be consequentially affected, within the proposed development due to such failure. If not insured, and if seeking insurance, this report may not influence the decision of any insurer not to offer cover.

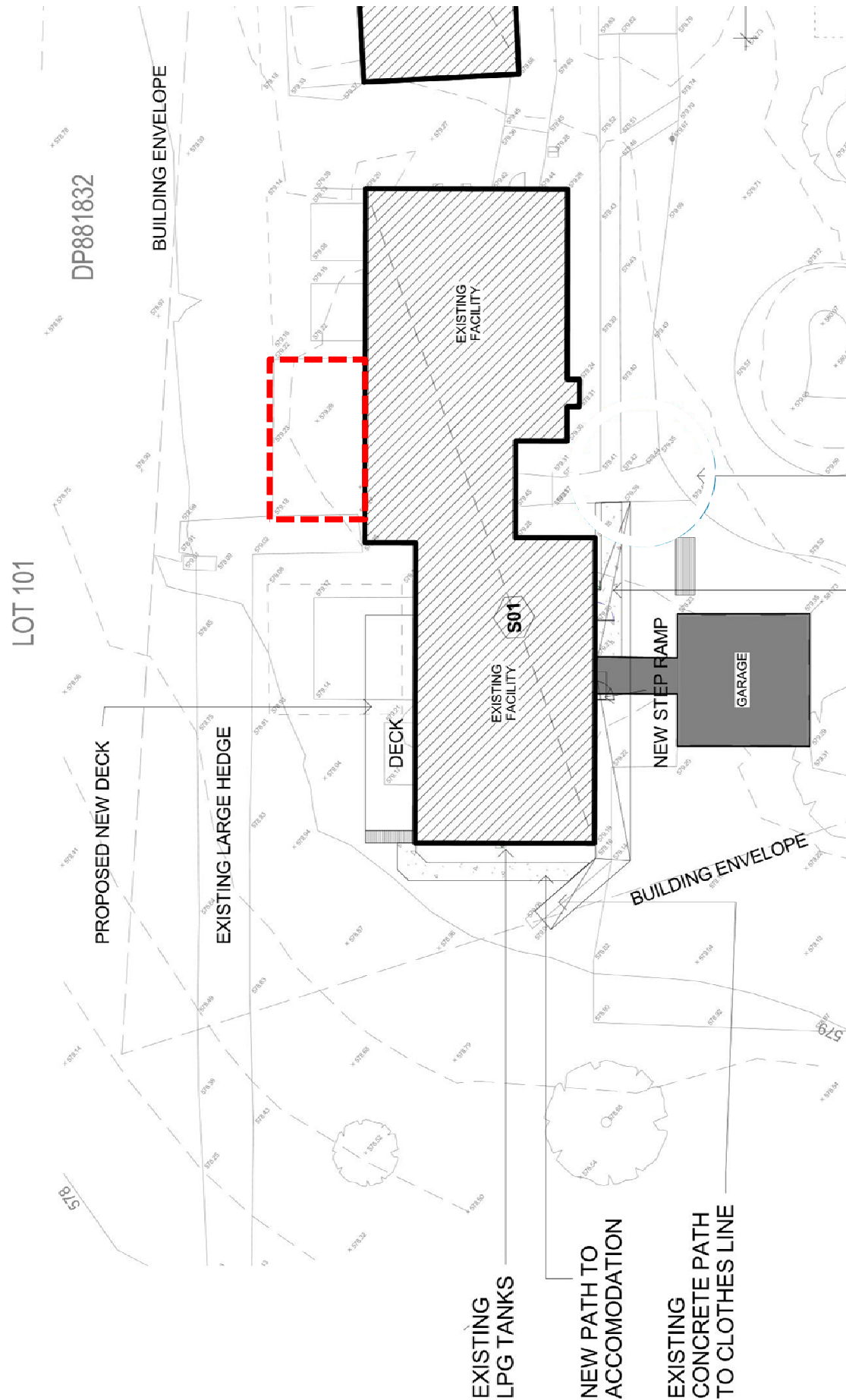


Courtesy: [SIX Maps \(nsw.gov.au\)](http://sixmaps.nsw.gov.au)

Appendix 2 – Site Plan



Appendix 3 – Site Plan

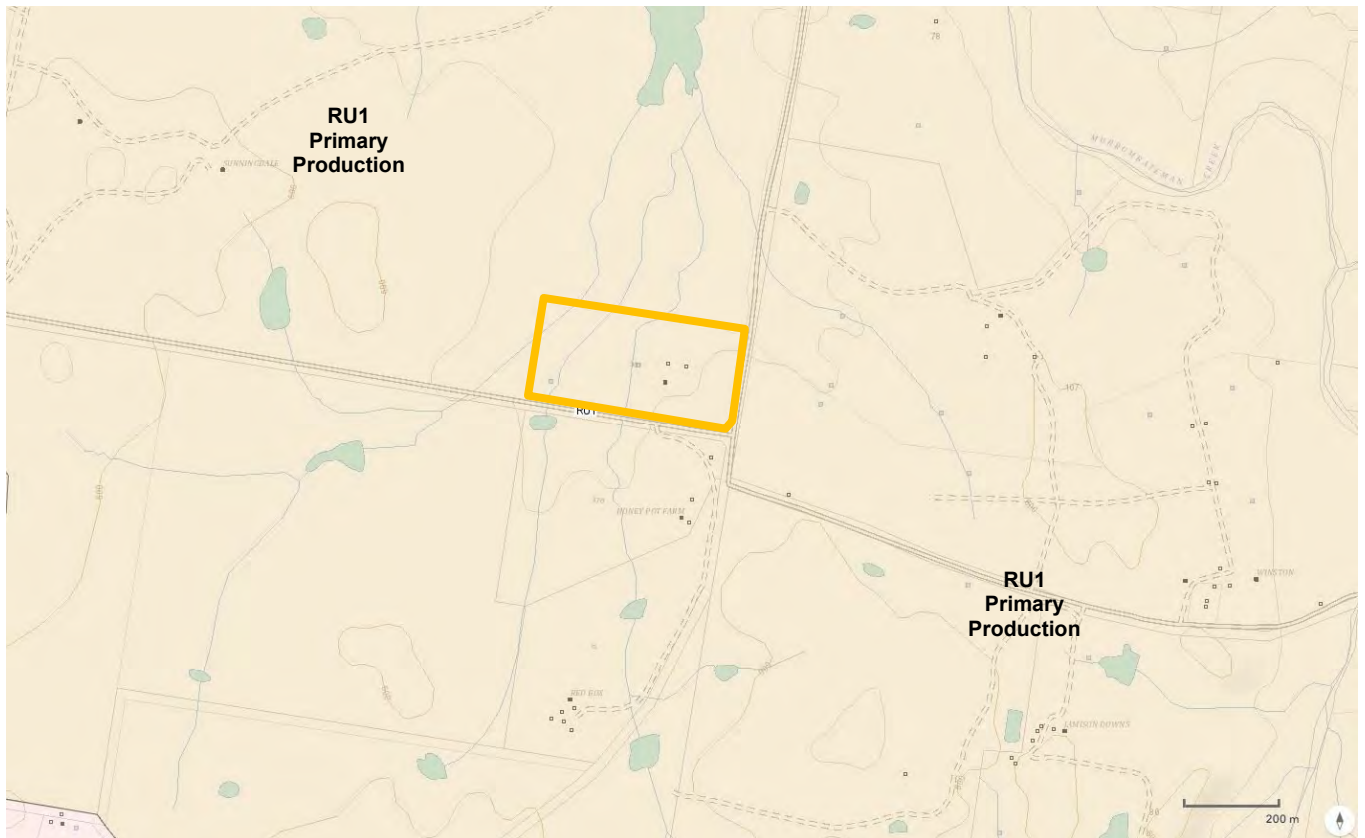


Proposed Development

Appendix 4 –Site Plan & Boundary Setbacks



Appendix 5 – Zoning & Bushfire Prone Land Mapping



Courtesy: [ePlanning Spatial Viewer \(nsw.gov.au\)](https://www.nsw.gov.au/ePlanning/spatial-viewer)