

Bush Fire Assessment

Farm Stay Accommodation

Special Fire Protection
Development

for

Northern Beaches Bee Farm

at

13 Bungendore St
Ingleside

Lot 166 DP 752046

October 2019

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EXECUTIVE SUMMARY

The applicant proposes to operate a Farm Stay accommodation facility on a rural property on land within the buffer to fire-prone vegetation. This use is deemed under the proposed new PBP 2018 to be a particular category (BAL-29) of Special Fire Protection Purpose (SFPP) development, and requiring a Bush Fire Safety Authority (BFSA).

Vegetation:	Forest	
Slope:	Upslope	Downslope 4°
Required setback (BAL-29) PBP	24m	29m
Required setback (BAL-29) AS 3959	25m	32m
Actual setback:	40m	89m

S100B checklist

Significant environmental features	Nil
Threatened species, population or community	Nil
Aboriginal objects or places	No
Setbacks and APZs comply?	Yes
Water supplies adequate?	Yes
Public roads handle fire emergency traffic?	Yes
Public road/fire trail network 2-way access?	N/A
Emergency access/egress adequate?	Yes
Maintenance plans & emergency procedures?	Yes
Construction standards comply with AS 3959?	Yes
Sprinkler systems etc comply?	N/A
Complies with Deemed to Satisfy 6.3 PBP 2018?	Yes

The proposed use of the site for Farm Stay accommodation complies with the requirement for a radiant heat load of less than 29kWm^{-2} . The facility meets the deemed to satisfy criteria for a s100B BFSA as specified in 6.3.1 of draft PBP-2018. Approval is recommended.

BUSHFIRE ATTACK LEVEL RISK ASSESSMENT

CERTIFICATE

I certify the assessment within this report complies with the relevant bushfire legislation and related codes.



Roger Fenwick
B Sc (For)
Grad. Cert. Design for Bushfire Prone Areas

INTRODUCTION

A summary of my *curriculum vitae* is attached as Annexure 1.

I have been asked to report on proposed use of an existing farm building on a farm within the buffer to bush fire prone vegetation for the purpose of Farm Stay accommodation. This requires a BSFA under s4.46 of the *Environmental Protection & Assessment Act 1979* (EP&A Act) and s100B of the *Rural Fires Act 1997*. The site was assessed against the provisions of section 6.3 of 'Planning for bush fire protection 2018' NSW RFS and AS 3959 - 2009, *Construction of buildings in bushfire-prone areas*.

LOCATION

The site is defined as Lot 166 DP 752046 in the Northern Beaches (ex Pittwater) Local Government Area. The address is 13 Bungendore St. This is in the Greater Sydney Fire Weather Area, for which FDI 100 conditions apply.

The aerial image at Annexure 3 shows the site and its surrounds.

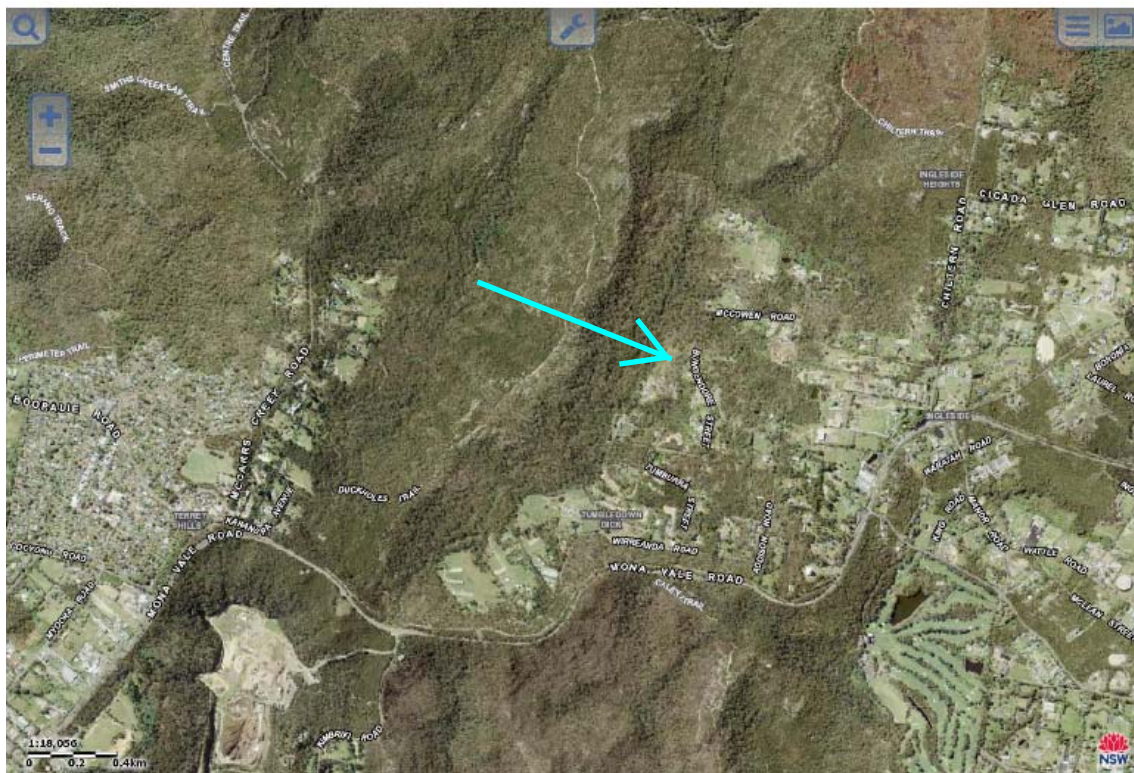


Photo 1 General site location. Sixmaps, printed 28 August 2019

VEGETATION

Vegetation on the property is now all managed, as part of development associated with the primary dwelling (CDC 2019/0574) located on a lower tier of land to the west of the proposed Farm Stay site and with a secondary dwelling proposed (DA 2019/0885) to be established on an upper tier in the SE corner of the lot.

Retained vegetation to the south on the other side of the 10m wide access handle and roadway to the adjacent property is Dry sclerophyll forest (Keith 2004) equivalent to Forest vegetation (Specht 1970, in Auslig 1990, in AS 3959), commencing 62m from the proposed new works. Vegetation generally to the east on the other side of Bungendore St is the same, and is located 40m from the site.

Vegetation on the large block of land adjoining the bulk of the site to the SW is all managed to IPA standards. Unmanaged vegetation on the lot to the north of the site (and the host lot) is 72m away. All other vegetation is more than 100m distant.

TOPOGRAPHY

All slopes and distances were determined by me during an on-site inspection on 24 April 2018, using a Suunto clinometer and Bushnell 450 laser rangefinder. Some distance observations were verified by reference to Sixmap images.

The general slope of the host lot is downwards to a creek more or less along the western side of the lot. Vegetation to the south is on level ground relative to the subject site, and to the north or NW, a marginal downslope. Vegetation on the other (Eastern) side of Bungendore Rd is on an upslope.

	Slope	Setback	BAL (PBP)
North	Down 1°	72m	12.5
NW	Down 4°	89m	12.5
West	Upslope	>100m	LOW
SW	Level	>100m	LOW
South	Level	62m	12.5
SE	Upslope	74m	12.5
East	Upslope	40m	19
NE	Upslope	55m	12.5

SIGNIFICANT ENVIRONMENTAL FEATURES

None are known or considered to be likely. No clearing associated with this development or construction of APZs is proposed.

CURRENT DEVELOPMENT

There is a large farm building in the SW corner of the lot, an approved primary dwelling (CDC 2019/0574) being built near the southern boundary, and the existing farm building to be converted to use as Farm Stay accommodation which is located on the eastern side of the property. An application has been lodged for a secondary dwelling on the site (DA 2019/0885), near the SE corner and adjacent to an unrelated dwelling on an inset lot.

PROPOSED DEVELOPMENT

The applicant wishes to convert an all-metal farm building located near the road on the eastern boundary of the lot, to Farm Stay accommodation. The property owner/proprietor will live on the site, and the resident in the secondary dwelling will act as a backup caretaker.

POTENTIAL FIRE EXPOSURE

Within this report, references to guidelines or PBP means the '*Planning for bush fire protection 2018*' publication by the NSW Rural Fire Service (RFS).

References to Standards are to AS 3959 - 2009, *Construction of buildings in bushfire-prone areas*. References to Bushfire Attack Level (BAL)-xx construction standards are derived from AS 3959-2009, where xx refers to the radiant heat load in kWm^{-2} .

Asset protection zones – Farm Stay variation of SFPP

Asset Protection Zones (APZs) for Farm Stay accommodation are defined in 6.3.1 and Table 6.4a of PBP as needing to comply with 29kWm^{-2} (1090°K) specifications. Near Forest vegetation on a $0-5^{\circ}$ downslope, a setback of 29m is prescribed. Near Forest on level ground or an upslope, a 24m setback is required.

The existing structure is at least 72m from the closest part of the Forest vegetation on a 1° downslope (to the N), at least 89m from a downslope of 4° (to the NW) and at least 40m from Forest on an upslope or level ground. These widths well exceed the minima necessary to ensure exposure not exceeding 29kWm^{-2} .

Construction standards

The required specification is BAL-19, which the structure will meet when metal mesh screens are fitted to opening windows.

Water

Reticulated town water is not connected. There will be a minimum 10kl capacity dedicated fire-fighting water storage tank located at the side of the shed. Over 250kl of stored water is available on the site. Above-ground water storage and plumbing components are all metal, and ball or gate valves and 65mm Storz fittings comply with 6.4c of PBP.

Access

Access to the site is directly off Bungendore St, and satisfies the provisions of 6.4b of PBP.

Services

Mains electricity is supplied within the site via underground cables fed by overhead streetside wires, suitably clear of vegetation. Reticulated gas is not connected, and bottled gas will be correctly sited, shielded and oriented. Services will satisfy the provisions of 6.4c of PBP.

Maintenance

The grounds within 35m of the sides of the shed must continue to be maintained to suburban garden standards.

Emergency and Evacuation Planning

An Emergency and Evacuation Plan must be prepared prior to use of the building as Farm Stay accommodation.

CONCLUSION

The proposal will meet the construction requirements of AS 3959 at BAL-29. The existing structure will meet the siting requirements for a s100B BFSA once all openings are properly meshed.

RECOMMENDATION

Issuing a s100B BFSA and approval for the proposed use is recommended, with the following conditions:

1. The grounds of the property within 35m of the structure shall in perpetuity be managed as an Inner Protection Area as outlined in S 4.1.3 and Appendix 5 of PBP and the RFS document 'Standards for asset protection zones'.
2. All opening windows shall be fitted with metal mesh screens with not more than 2mm apertures.
3. Preparation of an Emergency and Evacuation Plan.

REFERENCES

Keith D. (2004) *Ocean Shores to Desert Dunes*. Department of Environment and Conservation, Sydney

Rural Fire Service NSW (2005) *Standards for Asset Protection Zones*

Rural Fire Service NSW (2018) *Planning for bush fire protection*

Standards Australia (2009) AS 3959 *Construction of buildings in bushfire-prone areas*.

Annexure 1 – *cv*

Curriculum vitae

Roger Fenwick

CURRICULUM VITAE

Name: **Roger FENWICK**

Born: 1946

Qualifications: B Sc (For), Australian National University, Canberra, 1969. Member, Institute of Foresters of Australia. Member, Fire Protection Association of Australia.

Language: English

Positions Held:

1988-Present	Consultant
1986-87	Chief Fire Control Officer, (CFCO) ACT Bush Fire Council
1985	Secretary, ACT Bush Fire Council
1982-1984	Experimental Officer, CSIRO, Project Aquarius
1979-1981	Field Service Representative for Chemonics Industries, USA
1976-1978	CFCO of the ACT Bush Fire Council
1972-1975	Deputy CFCO, including one year of acting CFCO, ACT Bush Fire Council
1971	Assistant Forester at Pierces Creek Forest, and assistant to the CFCO
1970	Assessment Section, ACT Forests, and assistant to the CFCO of the ACT Bush Fire Council

Fields of Special Competence:

Fire risk assessment and control measures to minimise fire risk, fire control and organisation and management of rural fire fighting services, fire forensic investigations, training in bush fire fighting, fire fighting equipment selection and maintenance, and chemical fire retardant use.

Annexure 2

Extract of PBP

&

AS 3959

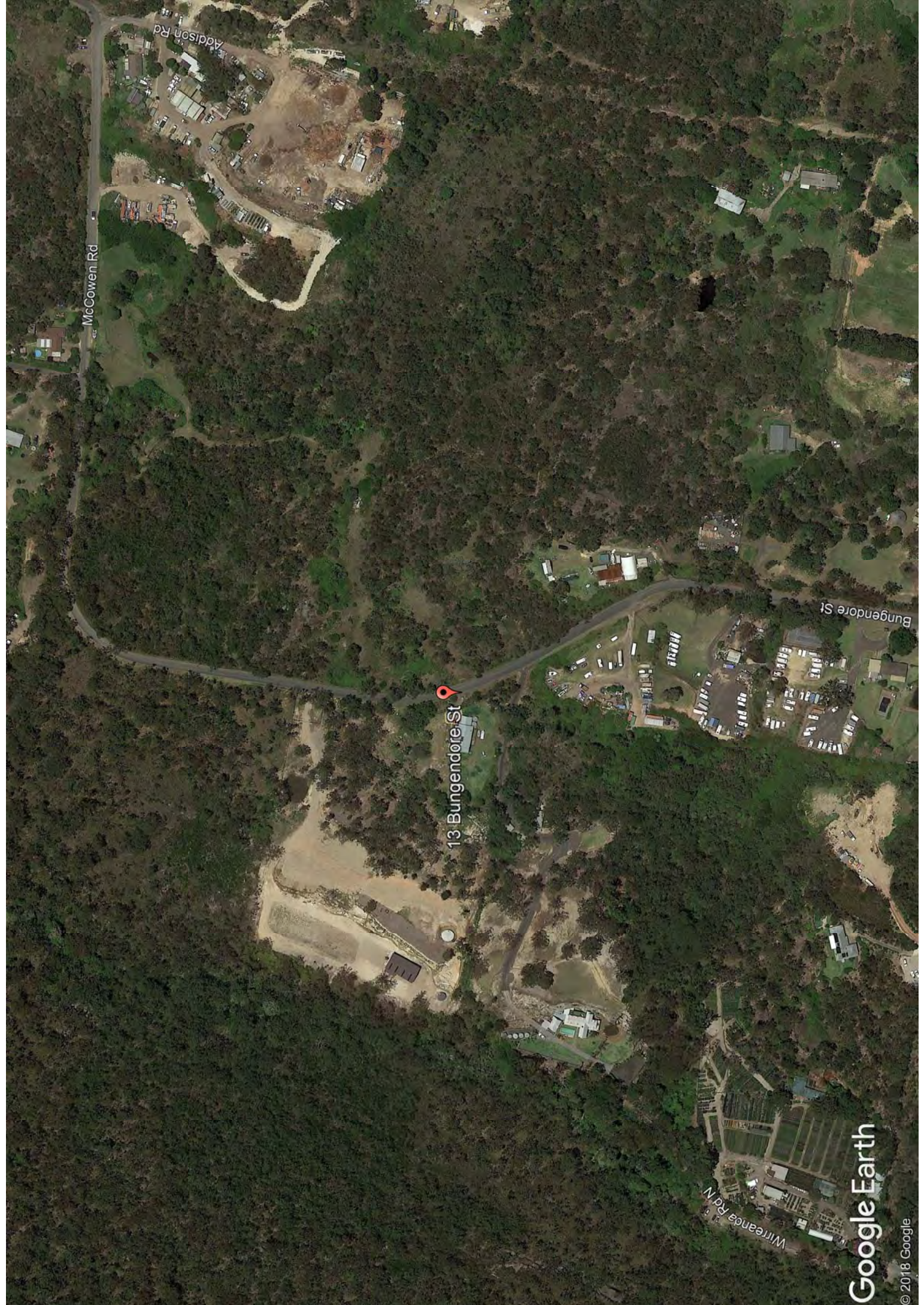
This is a **summary** of the **minimum** specifications in 'Planning for Bushfire Protection 2006' as amended in 2010 and 'AS 3959 2009 – Construction of buildings in bushfire-prone areas' which are recommended in this report. It is included as a courtesy, is a guide only, and may not be complete. In addition, the contents of the documents from which this information was extracted may have changed between the dates of preparation of this report, and its use or application. Specifications in other documents such as the Building Code of Australia (BCA) may apply. It is the user's responsibility to comply with all statutory conditions as well as those specified by the approving authority with particular reference to this report. The appropriate source documents should be consulted to determine the full specifications abbreviated in this table.

		BAL-12.5	BAL-19	BAL-29	BAL-40
Floor	Slab	OK			
	Timber <400mm ag Timber >400mm ag	FRT or lined or enclosed OK			Non-combustible or FRT or enclosed
Floor posts		FRT or enclosed			Enclosed or non-combustible
External walls Windows	Frame	400mm FRT or non-combustible	FRT or non-combustible		Non-combustible
	Screens	Al, Fe or Br mesh on all openable	FRT or metal		Metal
External doors	Sliding	Safety glass	5mm toughened glass	Fe or Br mesh on all openable, 5mm toughened glass, or shutters 6mm toughened glass or full mesh	Fe or Br mesh on all, 6mm toughened glass, or shutters 6mm toughened glass plus full mesh or shutter
	Screens		Al, Fe or Br, if fitted		Fe or Br
	Timber frames		FRT		Metal only
	Garage	Lower 400mm FRT or non-combustible	FRT or non-combustible		Non-combustible
Vents etc	Mesh		Al, Fe or Br mesh 2mm		Fe or Br mesh 2mm
Roofs	Tiled		Fully sarked (Flammability Index <5)		
	Sheeted		Non-combustible, fully sarked (Flammability Index <5)		
	Rooflights	Non-combustible sleeve/lining, 4mm safety glass			FRL -/30/-
Verandahs, decks etc	Enclosed	Any supports, <3mm spaced deck, FRT or non-combustible			Any supports, unspaced deck, non-combustible
	Unenclosed	FRT or non-combustible, <3mm spaced deck			All non-combustible, unspaced deck
	<300mm to glass	300mm wide FRT or non-combustible	FRT or non-combustible		Non-combustible
Services			Exposed water & gas pipes to metal		
Ag	Above ground	FRT	Fire Resistant	Timber	Al
			Aluminium	Fe	Stainless steel
					Br
					Bronze

Annexure 3 – maps

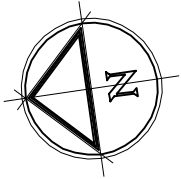
Maps & Plans

Aerial images, Sixmaps printed 27 February 2018
Fire prone land map printed 27 February 2018





BUILDING DESIGNERS
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Membership No. 1064-09



approximate
true north

survey notes:

- 1) CAUTION: SHOULD ANY DEVELOPMENT OR CONSTRUCTION BE PLANNED ON OR NEAR THE BOUNDARIES, THE BOUNDARIES SHOULD BE CLEARLY MARKED ON SITE.
- 2) ALL AREAS AND DIMENSIONS HAVE BEEN COMPILED FROM PLANS MADE AVAILABLE AT THE LAND TITLES OFFICE.
- 3) ORIGIN OF LEVELS ON A.H.D. IS TAKEN FROM G.P.S. (SMARTNET).
- 4) CONTOUR INTERVALS 0.5 METRE.
- 5) CONTOURS ARE INDICATIVE OF GROUND FORM ONLY. ONLY SPOT LEVELS SHOULD BE USED FOR CALCULATIONS OF QUANTITIES WITH CAUTION.
- 6) TREE SPREADS ARE DIAGRAMMATIC ONLY AND ARE NOT SYMMETRICAL.
- 7) NO UNDERGROUND TOL BEFORE YOU DIG - SERVICES RECORDED IN THIS VICINITY.
- 8) SPOT LEVELS ARE ACCURATE.
- 9) BEARINGS SHOWN ARE ON M.G.A. - MAP GRID of AUSTRALIA.

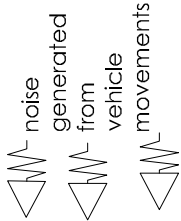
legend:

- (6) TREE POINT NUMBER (SEE TABLE)
- GUTTER DENOTES TOP OF GUTTER
- DRAINAGE PIT
- ⊕ POWER POLE
- INSPECTION CAP
- ⊠ ELECTRICITY PILLAR
- PEG - UNLESS NOTED OTHERWISE

- CENTRE OF UTILITY TRENCH
- /HEAD ELECTRIC LINES
- TOP OF BANK
- BOTTOM OF BANK
- ROCK OUTCROP

general notes:

1. ALL DIMENSIONS AND FLOOR AREAS ARE TO BE VERIFIED BY BUILDER
2. LEVELS SHOWN ARE APPROXIMATE UNLESS ACCOMPANIED BY REDUCED LEVELS BY A REGISTERED SURVEYOR.
3. FIGURED DIMENSIONS ARE TO BE TAKEN IN PREFERENCE TO SCALING.
4. ALL BOUNDARY CLEARANCES MUST BE VERIFIED BY THE SURVEYOR PRIOR TO THE COMMENCEMENT OF ANY BUILDING WORK.
5. WHERE ENGINEERING OR HYDRAULIC DRAWINGS ARE REQUIRED, SUCH MUST TAKE PREFERENCE TO THIS DRAWING.
6. STORMWATER TO BE CONNECTED AND DISCHARGED TO COUNCIL'S REQUIREMENTS AND TO AS 3500.3-1990.
7. ALL SERVICES TO BE LOCATED AND VERIFIED BY THE BUILDER WITH THE RELEVANT AUTHORITIES PRIOR TO THE COMMENCEMENT OF ANY BUILDING WORKS.



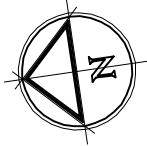
site/analysis layout plan

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			Drawn: AJP		Job No.
			Scale: 1:1000		20412



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Proposed Farm Stay



approximate
true north

legend:

contours

spot levels

FEL 117.70 finished floor levels

trees to be retained

trees to be removed (n/a)

existing neighbouring buildings

proposed buildings

proposed secondary dwelling (separate applications)



site layout plan

Note:

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Project:

PROPOSED FARM STAY (FORMER FARM BUILDING)

13 BUNGENDORE STREET, INGLESIDE.

For: MR J HOLMAN

C 14/10/19 DA ISSUE

B 11/10/19 REVISED SKETCH

A 23/9/19 INITIAL SKETCH

ISSUE DATE COMMENT



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Sheet: 2

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Job No.

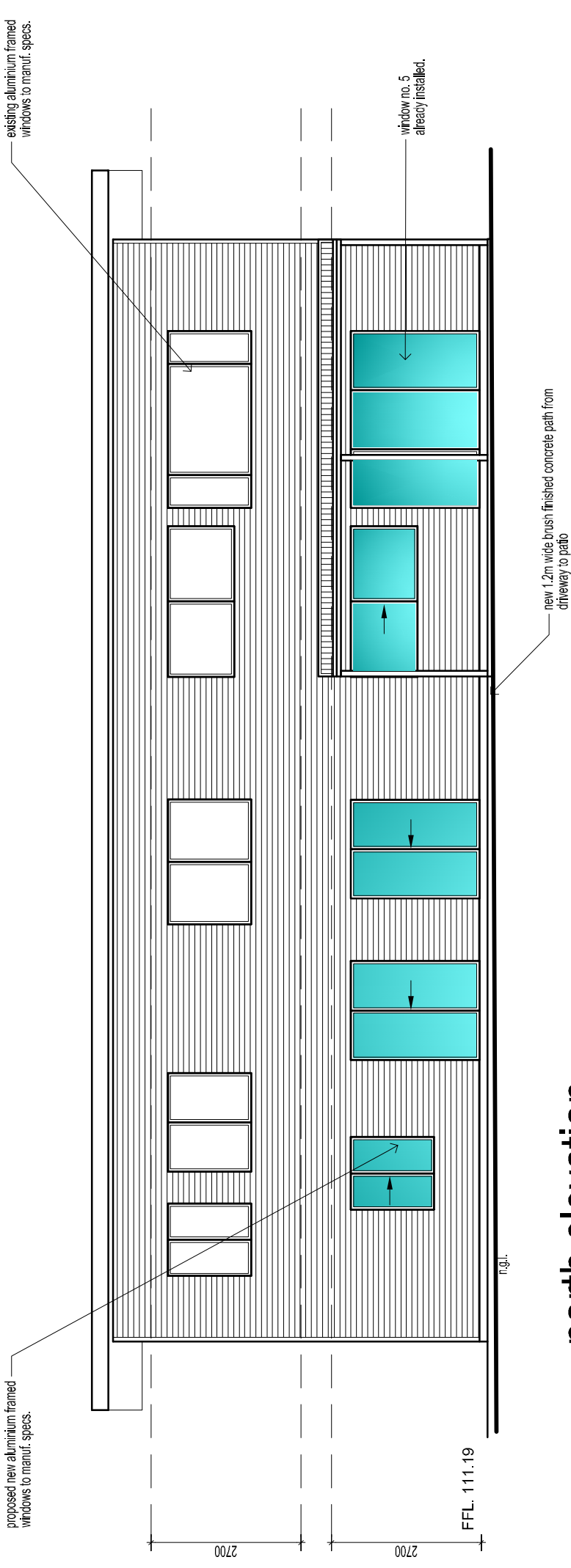
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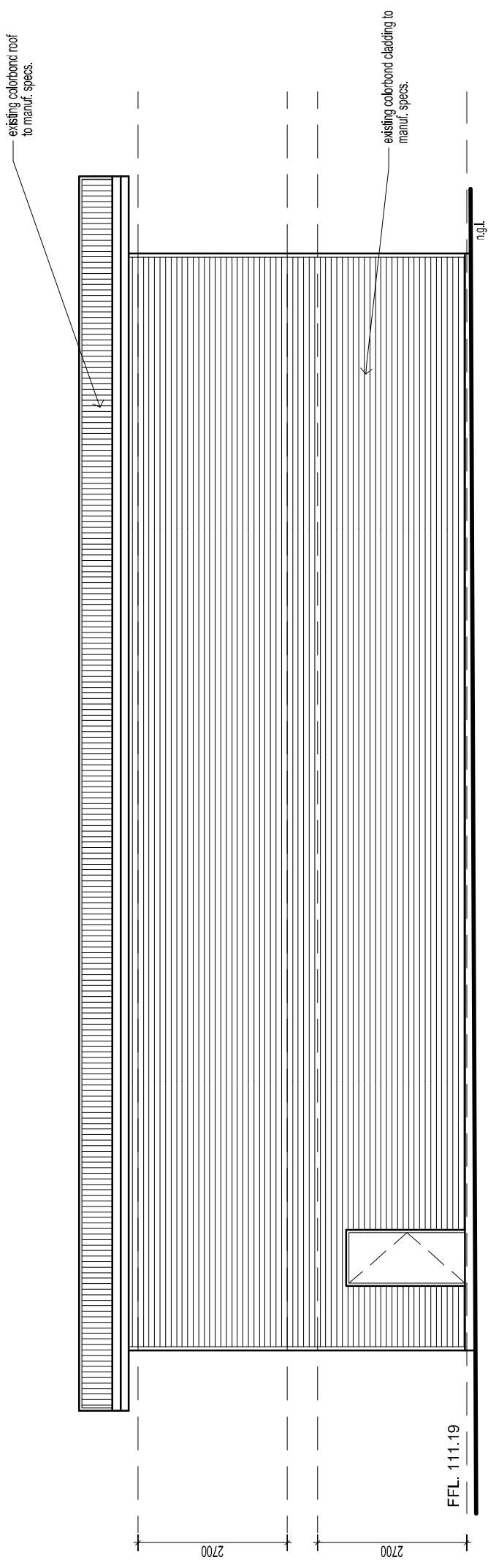
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north elevation



South elevation

- legend:

- | | |
|---|--|
|  | new brickwork (elevation) |
|  | new tiled roof (elevation) |
|  | new metal work (elevation) |
|  | new glass (elevation + plan) |
|  | new fc sheeting/conc. (elevation + plan) |
|  | new timber (elevation + plan) |
|  | new timber (section) |
|  | new brickwork (plan) |
|  | tiled wet areas |
|  | existing walls |
|  | walls to be removed/demolished |

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		C	14/10/19	DA ISSUE		
		B	11/10/19	REVISED SKETCH		
		A	23/9/19	INITIAL SKETCH		
		ISSUE	DATE	COMMENT		

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