

# Rob Friend & Associates Pty Ltd

Environmental Land Management Consultants



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ABN 83 097 068 114  
ACN 097 068 114

Your reference: --  
Our reference: -- RF18-047-3  
Date: - 17 July 2019

Anna Havill  
Principal – Town Planning  
Saunders Havill Group  
9 Thompson Road,  
Bowen Hills, Qld 4006

Dear Anna,

Re: - Other Change Application – Lots 9111 and 9112 (Peet), Lot 89  
“other change applications” – Fire Management Plan

Further to our recent email correspondence with regard to the above other change application for the Peet no. 119 Pty Ltd development over the above lots, please find our review of the bushfire hazards as of December 2018 and suggested amendments to the existing approved fire management plan over the site detailed below.

#### Current other change application

The application seeks to change the current approval with a change in the layout and alignment of internal roadways as well as the shape and size of an area of open space within the northern portion of the layout (see Figure 1, attached).

With respect to bushfire we note apart from a realignment to the internal roadway and therefore lot alignment, there is very little change with respect to setbacks and road widths that abut the area of potential hazardous vegetation to the west.

The approved plan entailed a 14 metre wide roadway along the western boundary of the development and the Other change application layout also has a 14 metre wide roadway.

Additionally, the approved fire management plan also specified a 20 metre setback from the western boundary.

With respect to the land to the west which was and still is mapped by the State Planning Policy, natural Hazards, Risk and Resilience Bushfire hazard mapping as hazardous vegetation with areas of high and medium potential fireline intensity covering the area. We further note that the areas mapped within the subject site is still incorrect as this area is or was a modified plantation area with limited groundcover.

Therefore, while the comments with regard to the local area have now been overtaken by events such as the additional development of residential lands to the north, north-east and east, the main direction of bushfire risk to the development was the vegetation within the

lands to the immediate west, and as such in essence the recommendations contained in the Fire Management Plan (Rob Friend & Associates Pty Ltd, July 2015) are still relevant.

#### Updated risk assessment

It was noticed that the vegetation within the properties to the west has not received any significant clearing since 2012 and as such can be considered as regrowth dominated at present by Acacia species, Acacia disparrima and A. leiocalyx with Allocasuarina littoralis and some recruitment of the dominant canopy specie such as Corymbia citriodora, Eucalyptus crebra and E. siderophloia, E. carnea and E tereticornis.

While the vegetation currently within the western lands is in a regrowth phase and is in our view presents a lesser bushfire risk than a fully mature spotted gum woodland to open forest, an assumption must be made that no further vegetation management or clearing will be undertaken with those lands and as such a review of the suitability of a 20 metre setback should be undertaken to determine if the level of risk is sufficient to be classed as an "Acceptable Risk" as defined under the State Planning Policy – Natural Hazards, Risk and Resilience.

Acceptable risk - is a risk that, following an understanding of the likelihood and consequences, is sufficiently low to require no new treatments or actions to reduce risk further. Individuals and society can live with this level of risk without feeling it is necessary to further reduce the risk of a natural hazard

The draft SPP Natural hazards, Risk and Resilience – Planning for Bushfire Resilient Communities has defined acceptable risk as a setback necessary to achieve a radiant heat flux of 29kW/m<sup>2</sup> at the property boundary or building envelope.

Therefore, using the values provided by the State Governments Public Safety Agency, a section of Queensland Fire and Emergency Service Department, which has been charged with the responsibility to identify the State Government's interests with regard to natural hazards within the State, an assessment of the minimal setback necessary to achieve a radiant heat flux has been undertaken.

Using the FPA Flamsol™ (V4.8) application which incorporates Method 2 as provided by AS3959 the following input and outputs are derived.

Radiant Heat Flux minimal setback distances - calculated December 14, 2018, 6:13 pm (MDc v.4.8)

Eden's Landing, Redbank Plains - Minimum Distance Calculator - AS3959-2009 (Method 2)

Inputs			Outputs	
Fire Index	Danger	57	Rate of spread	1.15 km/h
Vegetation classification		Woodland	Flame length	9.59 m
Surface fuel load		12 t/ha	Flame angle	56 °, 67 °, 76 °, 82 °, 84 ° & 89 °
Overall fuel load		17.2 t/ha	Elevation of receiver	3.31 m, 3.5 m, 3.3 m, 2.79 m, 2.4 m & 0 m
Vegetation height		n/a	Fire intensity	10,299 kW/m
Effective slope		5 °	Transmissivity	0.864, 0.849, 0.826, 0.801, 0.787 & 0.711
Site slope		5 °	Viewfactor	0.6054, 0.4454, 0.3018, 0.205, 0.1666 & 0.046

Inputs		Outputs	
Flame width	100 m	Minimum distance to < 40 kW/m <sup>2</sup>	7.6m
Windspeed	n/a	Minimum distance to < 29 kW/m <sup>2</sup>	10.4m
Heat of combustion	18,600 kJ/kg	Minimum distance to < 19 kW/m <sup>2</sup>	15.4m
Flame temperature	1,090 K	Minimum distance to < 12.5 kW/m <sup>2</sup>	22.4 m
		Minimum distance to < 10 kW/m <sup>2</sup>	27.1m

) Rate of Spread - Mearthur, 1973 & Noble et al., 1980

) Flame length - NSW Rural Fire Service, 2001 & Noble et al., 1980

) Elevation of receiver - Douglas & Tan, 2005

) Flame angle - Douglas & Tan, 2005

) Radiant heat flux - Drysdale, 1999, Sullivan et al., 2003, Douglas & Tan, 2005

Other input values: -

➤ Relative humidity – 50%

➤ Ambient temperature 35.6 degrees (90 percentile of maximum)

Based on the above and the use of a Radiant heat flux of 29kW/m<sup>2</sup> as the extent of an acceptable level of risk, any structure located between 10.4 metres and 15.4 metres would be at an acceptable level of risk.

With regard to the setback provided by the roadway i.e. 14 metres and a potential front of lot setback of at least 1.5 metres resulting in a total setback of 15.5 metres, this would be sufficient for a structure to be well within an acceptable level of risk.

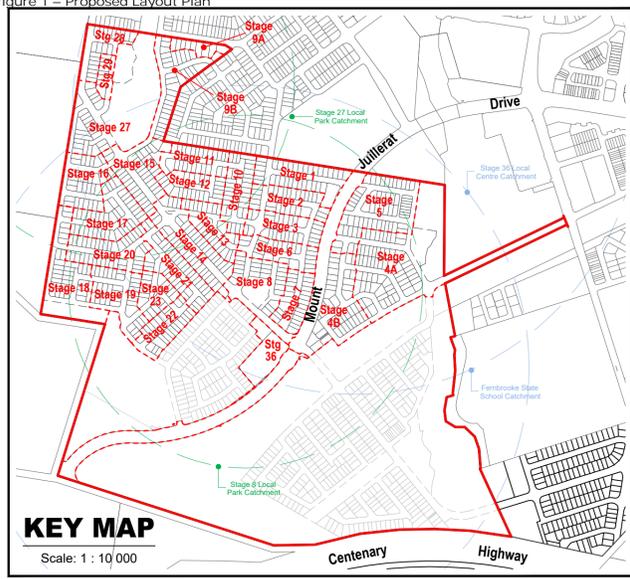
Should you wish to discuss this advice, please feel free to contact me on one of the above numbers at your convenience.

Yours faithfully,



Rob Friend  
 Director  
 Rob Friend & Associates Pty Ltd

Figure 1 – Proposed Layout Plan



**KEY MAP**  
Scale: 1 : 10 000

**Legend**

- Site Boundary
- - - Proposed Stage Boundary
- Pedestrian Linkage
- Active Park
- Drainage / Bio Retention
- Linear Open Space
- ICC Zoning Boundary
- - - Preliminary Approval Zoning Boundary
- - - 15.5m Bushfire Setback
- 500m Park Catchment
- 800m Commercial / Community Catchment
- Indicative Bus Stop Location

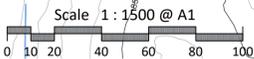
**Note:**  
All Lot Numbers, Dimensions and Areas are approximate only, and are subject to survey and Council approval.

Dimensions have been rounded to the nearest 0.1 metres.

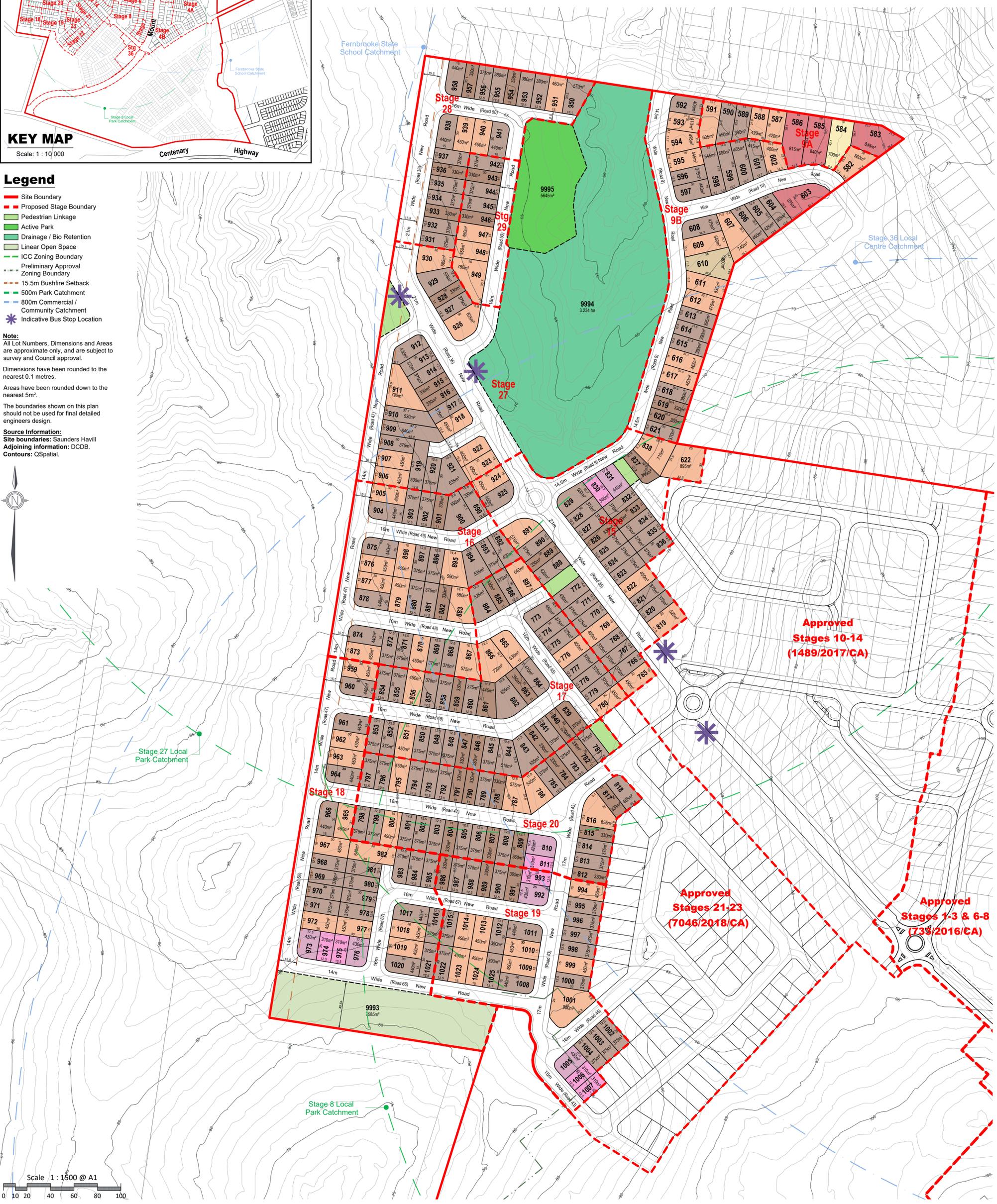
Areas have been rounded down to the nearest 5m<sup>2</sup>.

The boundaries shown on this plan should not be used for final detailed engineers design.

**Source Information:**  
Site boundaries: Saunders Havill  
Adjoining information: DCDB.  
Contours: QSpatial.



			Yield Breakdown												
Residential Allotments			Stage 9A	Stage 9B	Stage 15	Stage 16	Stage 17	Stage 18	Stage 19	Stage 20	Stage 27	Stage 28	Stage 29	Overall	
Allotment Type	Typical Size	Typical Area	Lots	Lots	Lots	Lots	Lots	Lots	Lots	Lots	Lots	Lots	Lots	Overall	Overall
Premium Villa Allotment	12.5 x 25m	312.5m <sup>2</sup>	—	—	1	—	—	2	3	1	—	—	—	7	2.3%
Premium Courtyard	14 x 25m	375m <sup>2</sup>	—	1	—	—	2	2	1	—	—	—	—	6	2.0%
Villa Allotment	11 x 30m	330m <sup>2</sup>	—	2	4	2	9	—	3	11	3	4	2	40	13.2%
Premium Villa Allotment	12.5 x 30m	375m <sup>2</sup>	2	16	21	19	24	19	17	20	12	13	3	166	55.0%
Courtyard Allotment	15 x 30m	420m <sup>2</sup>	3	11	8	10	7	10	9	5	8	3	3	77	25.5%
Traditional Allotment	18 x 30m	540m <sup>2</sup>	1	1	—	—	—	—	—	—	—	—	—	2	0.7%
Duplex Allotment	>800m <sup>2</sup>		3	1	—	—	—	—	—	—	—	—	—	4	1.3%
<b>Total Residential Allotments</b>			<b>9</b>	<b>31</b>	<b>35</b>	<b>31</b>	<b>40</b>	<b>33</b>	<b>34</b>	<b>38</b>	<b>23</b>	<b>20</b>	<b>8</b>	<b>302</b>	<b>100.0%</b>



<b>REVISION</b>	
A: 08/03/19 Information Request Amendments	
B: 10/07/19 Layout Amendments	

<b>PROJECT</b>		
Job Ref. 132030	Date. 10 JULY 2019	
Comp By. LZ	DWG Name. 132030-LOT 89 OVERALL	
Chk'd By. MD	Locality. IPSWICH CITY COUNCIL	
Local Authority. REDBANK PLAINS		

**CLIENT**

**OVERALL PLAN OF SUBDIVISION**  
**STAGES 9, 15-20 & 27-29**  
**OVERALL ALLOTMENT LAYOUT**

RPS Australia East Pty Ltd  
ACN 140 292 762  
ABN 44 140 292 762

Urban Design  
Level 4 HQ South  
520 Wickham Street  
PO Box 1559  
Fortitude Valley QLD 4006

Scale: 1:1000 | Sheet: A1 | Plan Ref: 132030-109 | Rev: B

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ABN 83 097 068 114  
ACN 097 068 114

Your reference: --  
Our reference: -- RF18-047 -4  
Date: - 17 July 2019

Chief Executive Officer  
C/- Assessment Manager  
Development Planning Branch  
Ipswich City Council  
PO Box 191  
Ipswich, Qld 4305

Dear Sir/Madam,

**Re: - Other Change Application – Lots 9111 and 9112 (Peet), Lot 89  
"other change applications" – Application no. 2098/2015/MAOC/A  
Response to Assessment Manager Information Request**

Further to the issuing of the Information Request dated 14 February 2019 please find our response to Item 7 below.

**Item 7 – Bushfire**

- |  |
|--|
| <p>a) The Fire Management Plan RF18-0473, prepared by Rob Friend &amp; Associates and dated 10 January 2019 indicates that a minimum 15.5m buffer from the western property boundary is required. The applicant is requested to amend the proposed plans to clearly identify the extent of the buffer, including impacts on proposed lots 873-875 and 904-912.</p> <p>b) The applicant is requested to provide information as to why the minimum building setback from the western property boundary has been reduced in the amended report.</p> |
|--|

With respect to Item 7, a) the 15.5 metre setback will be provided in an updated layout plan.

With respect to Item 7 b): -

- At the time of the original report for Aria, the concept of Acceptable Risk was referred in the State Planning Policy of 1/03 – Mitigating the Adverse Impacts of Flood, Bushfire and Landslide, however it was not quantified in terms of a setback distance.
- Therefore, a minimal setback under SPP1/03 was 20 metres with the maximum being 1.5 times the height of the predominant canopy tree height of the adjacent trees in an area of hazardous vegetation (my use of words).
- The adjacent area was not mapped on either the Ipswich Planning Scheme Bushfire risk areas mapping nor the then State Planning Policy Mapping as hazardous

vegetation. This was presumable that the area within the lands to the west were being managed by clearing and understorey management, albeit irregularly.

- However, the current State Planning Policy – Natural Hazards, Risk and Resilience has now mapped the area as containing hazardous vegetation and the area has some regrowth within 100 metres of the subject sites, western boundary.
- Additionally, the current SPP Natural Hazards, Risk and Resilience has developed the terms of Acceptable risk and Tolerable risk and quantified it by indicating that a structure is at an Acceptable risk or Tolerable risk if it is exposed to a maximum Radiant heat flux of  $29\text{kW/m}^2$ .
- Using Method 2 in AS3959-2009 and now in the 2018 version, (there has been no change in the formulas used to derive Radiant heat flux levels and as such Bushfire Attack levels between the 2009 and now the 2018 standards), the minimal setback which achieves a Radiant heat flux of  $29\text{kW/m}^2$  was determined and this was provided in our advice of 14 December 2018.
- Therefore, by way of updating the bushfire hazard reporting, the setbacks has also been updated using more current information adopted by the State Government.

Should you wish to discuss this response, please feel free to contact me on one of the above numbers at your convenience.

Yours faithfully,

A handwritten signature in blue ink, appearing to be 'Rob Friend', with a long horizontal flourish extending to the right.

Rob Friend  
Director  
Rob Friend & Associates Pty Ltd