



Newcastle Office

Ground Floor, 241 Denison Street, Broadmeadow, NSW Australia 2292
PO Box 428, Hamilton, NSW Australia 2303
T +61 2 4940 4200 F +61 2 4961 6794 E newcastle@rpsgroup.com.au W rpsgroup.com.au

Our Ref: 17029-24:SJ
Date: 12 October 2010

Attn: James Goode
North Lakes Pty Ltd
PO Box 2214
Dangar NSW 2309

Dear James,

RE: BUSHFIRE ATTACK LEVELS FOR STAGE 24 NORTHLAKES, CAMERON PARK

The following has been prepared to provide the key information relating to the construction requirements for future dwellings within lots in Stage 24, Northlakes Estate, Cameron Park.

The site assessment methodology used for determining the construction requirements for dwellings has been undertaken in accordance with the Building Code of Australia (BCA) and Appendix 3 Addendum of PBP. BCA formally adopted AS3959-2009 as the national standard on 1 May 2010.

The determinations of the appropriate Bushfire Attack Levels (BAL) in accordance with AS3959-2009 are based upon parameters such as weather modelling, fire-line intensity, flame length calculations, as well as vegetation and fuel load analysis. The determination of the construction level is derived by assessing the:

- Relevant FDI = 100
- Flame temperature
- Slope
- Vegetation classification; and
- Building location.

Assessment of the site – Stage 24 and the surrounding land for a distance of 140m has shown that after development of the site and surrounding land the following vegetation and slope this vegetation occurs on is as follows:

- To the north a linear patch of vegetation occurs within the creekline, this patch of vegetation has been assessed as Rainforest vegetation.
- To the east Open Forest occurs. This Open Forest occurs upslope from Stage 24.

It is noted that the effective slope for vegetation contained within the creek-lines has been used in this assessment. Therefore, the Rainforest vegetation within the creeklines occurs cross-slope from Stage 24.

Using a Forest Danger Index (FDI) of 100, the information relating to vegetation, slope and according to Table 2.4.2 of AS3959-2009, Table 1 and Figure 1 illustrates the required BAL in accordance with AS3959-2009 for future dwellings within Stages 24 Any lessening of the BAL would require a Performance Based Assessment to be undertaken.

Table 1: Deemed to Satisfy Bushfire Attack Levels (BAL) for Future Dwellings in Stage 24.

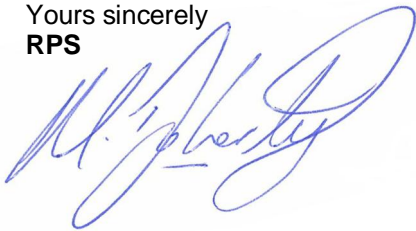
Vegetation Type and direction	Average Slope of Land (degrees)	Separation Distance from Vegetation	Bushfire Attack Level (BAL)	Heat Flux Exposure Thresholds	Construction Section
Rainforest to the north	Cross-slope	<8m	Bal - FZ	>40kW/m ²	The Deemed to Satisfy construction does not apply. Applicants need to consider the Performance Requirements of the BCA and the specific objectives of PBP)
		8 -<11m	BAL -40	>29kW/m ² <40W/m ²	Sect 3 & 8 of AS3959 and Sect A3.7 of PBP Addendum Appendix 3
		11-<16m	BAL-29	> 19kW/m ² < 29kW/m ²	Sect 3 & 7 of AS3959 and Sect A3.7 of PBP Addendum Appendix 3
		16-<23m	BAL-19	12.5kW/m ² <19 kW/m ²	Sect 3 & 6 of AS3959 and Sect A3.7 of PBP Addendum Appendix 3
		23-<100m	BAL-12.5	<12.5 kW/m ² and dwelling is less than 100m from source of bushfire attack	Sect 3 & 5 of AS3959 and Sect A3.7 of PBP Addendum Appendix 3
		>100m	No BAL	<12.5 kW/m ²	N/A

Vegetation Type and direction	Average Slope of Land (degrees)	Separation Distance from Vegetation	Bushfire Attack Level (BAL)	Heat Flux Exposure Thresholds	Construction Section
Open Forest to the east	Upslope	30-<35m	BAL-29	$> 19\text{kW/m}^2 < 29\text{kW/m}^2$	Sect 3 & 7 of AS3959 and Sect A3.7 of PBP Addendum Appendix 3
		35-<48m	BAL-19	$12.5\text{kW/m}^2 < 19\text{kW/m}^2$	Sect 3 & 6 of AS3959 and Sect A3.7 of PBP Addendum Appendix 3
		48-<100m	BAL – 12.5	$<12.5\text{ kW/m}^2$ and dwelling is less than 100m from source of bushfire attack	Sect 3 & 5 of AS3959 and Sect A3.7 of PBP Addendum Appendix 3
		>100m	No BAL	$<12.5\text{ kW/m}^2$	N/A

***To Note:** The construction requirements for the next lower BAL than that determined for the lot may be applied to an elevation of the building where the elevation is not exposed to the source of bushfire attack. An elevation is deemed to be not exposed to the source of bushfire attack if all straight lines between that elevation and the source of bushfire attack are obstructed by another part of the building.

We trust this information is sufficient for your purposes, however should you require any further details or clarification, please do not hesitate to contact the writer.

Yours sincerely
RPS



Matthew Doherty
Manager – Ecology and GIS

Figure 1 – Bushfire Attack Level Map

WARNING
 No part of this plan should be used for critical design dimensions.
 Confirmation of critical positions should be obtained from RPS Newcastle.
 Note that this Vegetation Community Map depicts clearly defined boundaries between vegetation communities that are the product of individual interpretation and are not distinguished by clearly defined boundaries 'on the ground'.
 Therefore, this map should only be treated as an indication of approximate peripheries between delineated vegetation communities.
 Caution should therefore be exercised when using this data for purposes requiring high levels of accuracy. Furthermore, no account for intergrading areas between delineated vegetation communities has been made.

Legend

- Lot Boundary
- Stage 24

Bushfire Attack Levels

- Flame Zone
- BAL - 40
- BAL - 29
- BAL - 19
- BAL - 12.5

