



# Bushfire Hazard Assessment - Addendum #7

## Amended Staging Plan

4 Dalma Street, Ormeau Hills

Formerly Lot 4 on RP883725

Gold Coast City Council, Qld

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Amendment Details: Amended BAL Ratings due to adjacent clearing.

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Prepared for:

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## Proviso

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It should be noted that the recommendations within this advice have been formulated based on site conditions at the time of assessment and utilising current best-practise hazard and impact assessment methodologies, and have been developed to reduce the potential severity of impacts on the development in the event of a bushfire emergency rather than prevent impacts altogether. No guarantee is provided or assumed that the area will not be affected by bushfire at some time.



## Introduction

Wollemi Eco-Logical has been engaged to prepare an addendum to the Bushfire Hazard Assessment for the subject site, prepared by Wollemi Eco-Logical (dated 20<sup>th</sup> January 2016), and subsequently approved by Council. This addendum (#7) is required due to an amended Staging Plan for the existing approved layout for the subject site.

## Subject Site

The subject site is located at 4 Dalma Street, Ormeau Hills and is formally described as Lot 4 on RP883725. The subject site is represented in **Figure 1**.



**Figure 1: Subject Site**

## Approved Development

It is understood a Reconfiguration of a Lot (1 into 102 + 2 drainage Lots) for the purpose of residential subdivision has been approved on the subject site. The approved subdivision layout plan is provided in **Figure 2**.

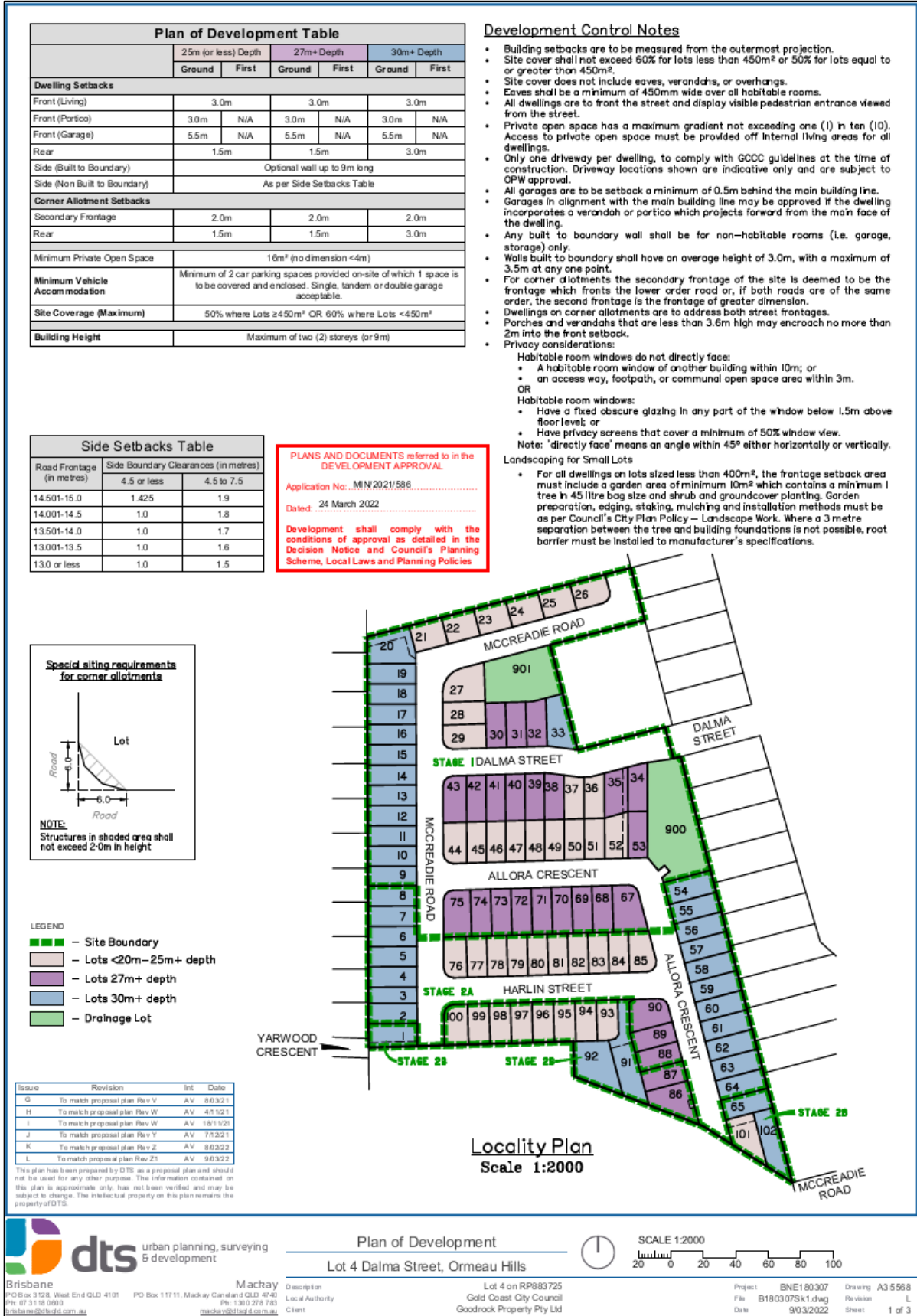


Figure 2: Approved Development



## Current Bushfire Hazard Mapping

A review of Gold Coast City Councils (GCCC) Bushfire Hazard Overlay Mapping, revealed the site is mapped as containing patches of High and Medium Potential Bushfire Hazard, and Potential Impact Buffer areas (**Figure 3**).



**Figure 3: Bushfire Hazard Overlay Mapping**

## Bushfire Attack Level Assessment

Australian Standard 3959 (2009) Construction of buildings in bushfire-prone areas provides minimum construction standards for new dwellings in designated Bushfire Prone Areas. The construction standards are intended to improve the performance of buildings subjected to burning debris, radiant heat or flame contact. The AS3959- 2018 methodology prescribes Bushfire Attack Levels (BAL's) to the



facades of proposed buildings to which corresponding construction safety standards are applied. AS3959-2018 defines Bushfire Attack Levels as:

*‘A means of measuring the severity of a building’s potential exposure to ember attack, radiant heat and direct flame contact, using increments of radiant heat expressed in kilowatts per metre squared, which is the basis for establishing the requirements for construction to improve protection of building elements from attack by bushfire.’*

In accordance with the Australian Standard – *Construction of Buildings in Bushfire-prone Areas* (AS 3959, 2018), an assessment of the required construction standards for the approved development has been undertaken based on the potential Bushfire Hazard to the south of the approved development.

It is noted that the vegetation to the northwest has been classified as Low Threat as per the Exclusions for Low Threat Vegetation in the AS-3959, being *‘less than 1ha and not within 100m of other areas of vegetation being classified’*. Potentially hazardous vegetation to the south is approximately 2ha in area, and is consequently assessed in **Table 1** below.

This assessment has been based on the following assumptions:

- A Fire Danger Index (FDI) of 53 (QFES 2021);
- Approved development will be located in the layout as represented in **Figure 2**.
- Adjacent assessable vegetation community to the south has been classified as Woodland as per the AS 3959 – 2018;
- Fuel load calculations (Method 2 BAL) for potentially hazardous vegetation to the south of the development has been determined as reflective of *‘Class 9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges’* with fuel load of 17.2t/ha.
- Effective slope under potentially hazardous vegetation is downslope at up to 10 degrees to the south of the development.
- For the purpose of this assessment, setback of the approved development to potentially hazardous vegetation to the south has been observed at >100m, due to a recent adjacent subdivision.
- Additional parameters applied are detailed in the following table.



Table 1 - Determination of Site BAL – Potentially Hazardous Vegetation to the South

Calculated January 27, 2022, 8:23 am (MDC v.4.9)

4 Dalma Street, Ormeau Hills

Minimum Distance Calculator - AS3959-2018 (Method 2)

Inputs		Outputs	
Fire Danger Index	53	Rate of spread	1.88 km/h
Vegetation classification	Woodland	Flame length	14.34 m
Understorey fuel load	14.9 t/ha	Flame angle	53 °, 63 °, 71 °, 75 °, 77 ° & 82 °
Total fuel load	17.2 t/ha	Elevation of receiver	5.72 m, 6.39 m, 6.78 m, 6.92 m, 6.98 m & 7.1 m
Vegetation height	n/a	Fire intensity	16,789 kW/m
Effective slope	10 °	Transmissivity	0.873, 0.854, 0.828, 0.802, 0.789 & 0.727
Site slope	0 °	Viewfactor	0.6016, 0.445, 0.3008, 0.204, 0.1661 & 0.045
Flame width	100 m	Minimum distance to < 40 kW/m <sup>2</sup>	11.8 m
Windspeed	n/a	Minimum distance to < 29 kW/m <sup>2</sup>	15.9 m
Heat of combustion	18,600 kJ/kg	Minimum distance to < 19 kW/m <sup>2</sup>	23.2 m
Flame temperature	1,090 K	Minimum distance to < 12.5 kW/m <sup>2</sup>	32.7 m

In accordance with AS 3959 (2018), the required Bushfire Attack Level for the proposed development on the subject site has been determined. Based on this assessment, the approved development is potentially subject to a Maximum Bushfire Attack Level (BAL) of **BAL-12.5** due to vegetation adjacent the site to the south.

Subsequently, the required BAL’s for construction within individual Lots of the approved development have been determined, and are summarised as follows:

- **BAL-12.5:** Lots 65, 86, 87, 91, 92, 101, 102 (refer Sections 3 & 6 in the AS3959-2018);
- **BAL-Low:** Lots 1-8, 54-64, 76-85, 88-90, 93-100 (refer Section 4 in the AS3959-2018).

The nominated construction standards should be reviewed by an experienced consultant/designer at the time of detailed building design. Should the approved site layout or vegetation setbacks identified above change, this may alter the determination of the required BAL.

### Conclusion

An addendum to the approved Bushfire Hazard Assessment for the approved development has been undertaken based on adjacent clearing to the south. This has resulted in an amendment to the BAL ratings, some specific Lots being downgraded to BAL Low, specifically Lots 1-4, 62-64, 88-90, and 93-100.



## Important Note:

It should be noted that this Bushfire Attack Level Assessment (BAL) has been determined based on site conditions at the time of writing, the identified setbacks being achieved, and utilising current best-practice assessment methodologies as detailed. These methodologies are not able to factor in and predict catastrophic bushfire events. Bushfires are intrinsically unpredictable, and no guarantee is able to be provided or should be assumed that the area will not be affected by bushfire at some time.

Bushfires are an intrinsic part of Australia's environment, are often unpredictable, and have potentially extremely serious consequences. Regardless of the results of this assessment, owners should be aware of the unpredictability of Bushfire in the landscape, and the need to be bushfire aware and prepared for extreme events.

All Queenslanders should be familiar with the official Bushfire Warnings system and have a completed Bushfire Survival Plan. Print ready guides for preparing a Bushfire Survival Plan and to assist in the interpretation of the official Bushfire Warnings system are available for download from the Rural Fire Service Queensland website – <https://ruralfire.qld.gov.au/bushfires/>.

There are three formal Bushfire Warning levels:



**Advice**

Monitor conditions and review your bushfire survival plan.



**Watch and act**

Conditions are changing. Start taking action and follow your bushfire survival plan.



**Emergency Warnings**

You are in danger. Act on your bushfire survival plan now.