Prepared for
Logos Property

Bushfire Risk Assessment

Proposed Industrial Masterplan at:

Lots 23 & 24 Hollinsworth Road, Marsden Park

11th October 2017
## Document Tracking:

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Lots 23 &amp; 24 Hollinsworth Road, Marsden Park</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Number</td>
<td>170517</td>
</tr>
<tr>
<td>Prepared by</td>
<td>Lew Short</td>
</tr>
<tr>
<td>Client Details:</td>
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</tr>
<tr>
<td></td>
<td>Development Manager</td>
</tr>
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<td></td>
<td>Suite 2, Level 29, Aurora Place, 88 Phillip Street, Sydney, NSW 2000</td>
</tr>
</tbody>
</table>

## BlackAsh Contact Details

<table>
<thead>
<tr>
<th>Lew Short</th>
<th>Principal</th>
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<tbody>
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</table>

## Document Control

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1. Summary

Table 1 is a summary of compliance with relevant documents and approaches to limit bushfire attack and meet the requirements of the NSW planning framework for new development in Bushfire Prone Areas.

| Can this proposal comply with AS3959, 2009 + addendum to Appendix 3 of Planning for Bushfire Protection 2006? | AS3959, 2009 does not apply as a DTS Provision |
| Does this development comply with the requirements of Planning for Bushfire Protection 2006? | YES |
| Does this development comply with the Aims and objectives of Planning for Bushfire Protection 2006? | YES |
| Is referral to the NSW RFS required? | NO |
2. Introduction

Logos Property has engaged Blackash Bushfire Consulting to complete a Bushfire Assessment Report for a proposed Industrial Masterplan at Lots 23 & 24 Hollinsworth Road, Marsden Park (see Figure 1). The proposed Industrial Masterplan is shown in Figure 2 and the proposed Estate Development Plan is at Figure 3.

Industrial development is designated as “other” development by the NSW Rural Fire Service (RFS) Planning for Bush Fire Protection 2006 (PBP).

All development on bushfire prone land must consider and comply with PBP. However, industrial development has considerable flexibility and the nature of the development often results in the structures providing a higher degree of bushfire resistance than required by the RFS.

The site is identified as ‘bushfire prone land’ for the purposes of Section 146 of the Environmental Planning and Assessment Act 1979 (EPA Act) and the legislative requirements for building on bushfire prone lands are applicable.

Industrial and commercial subdivisions that permit a residential house (caretaker’s residence) to be constructed are considered as residential development by PBP and require a Bushfire Safety Authority. A Bushfire Safety Authority is an approval required for subdivision from the Rural Fire Service (RFS) Commissioner as identified in Section 100B of the Rural Fires Act 1997 (RF Act). Where no residential provision is intended, these requirements do not apply.

As “other” development (Warehouse: Class 7B and Office: Class 5), the proposed industrial Masterplan and future development is addressed through demonstrating compliance with the aim and objectives of PBP.

On 9 September 2015, Blacktown City Council approved (determination number 15-275 at Appendix 2) the development application for:

Subdivision to create 4 Torrens title industrial lots, 1 lot for half road width road construction of Hollinsworth Road, 1 lot for future bus-only link road and associated bulk earth works and drainage infrastructure.

A proposed consolidation of the approved 4 lots into 3 is shown in Figure 4.

Where a development expectation arises from the zoning of the land to build, rebuild, alter or add to a development(s) in pre-existing subdivisions (as approved by Blacktown City Council 9 September 2015), attempts should be made to find a solution considering the level of risk present. PBP notes that the expectation of development is recognised even though the ability to provide for APZs or access requirements required for development may not be possible (PBP p.42).

Future road development is proposed to the south of the site. We understand that the Outer Sydney Orbital’ road is likely to have a lengthy environmental assessment period and the development of the road is 5 to 10 years away. As such, the assessment has been undertaken based on vegetation surrounding the site remaining.

This assessment includes an analysis of the hazard, threat and subsequent risk to the proposal and provides recommendations that satisfy the Aims and Objectives of PBP.
3. Revision of Planning for Bushfire Protection 2006

The RFS is in the process of reviewing PBP. Public Consultation is now underway on the draft planning for bush fire protection 2017. The Draft Planning for Bush Fire Protection 2017 will be available for public exhibition from 15 May 2017 until COB 14 July 2017. The RFS has indicated that they will have the review finalised before the end of 2017 with Gazettal in April 2018.

The review has been flagged as significant and will seek to consolidate RFS Fast Facts and Practice Notes developed over the last ten years and to reflect the current planning considerations, such as exempt and complying development within the document. It is not expected that the review will change legislative provisions or technical requirements. Some fuel levels may come down which should reduce setback distances.

Transition arrangements and savings provisions from PBP 2006 to the new document are not known by the RFS at this stage.

The draft document does not alter the provisions for industrial development.
Proposal

Legend

Subject Land

Coordinate System: GDA 1994 MGA Zone 56
Imagery: © Nearmap
Figure 3 Proposed Subdivision
4. Bushfire Prone Land

Bushfire prone land maps provide a trigger for the development assessment provisions and consideration of sites that are bushfire prone. Bushfire prone land (BFPL) is land that has been identified by council, which can support a bushfire or is subject to bushfire attack. Bushfire prone land maps are prepared by local council and certified by the Commissioner of the NSW RFS.

Figure 4 shows the Blacktown City Council Bushfire Prone Land Map for the site. The extract from the Bushfire Prone Map shows that the land is partially affected by adjoining bushfire prone land to the southwest and southeast of the site.

Figure 4 Bushfire Prone Land Map (source: Blacktown City Council)
5. Site Assessment Methodology

The Bushfire Assessment Report is based on both a site inspection (Wednesday 31 March 2017) and desktop assessment of the site utilising the following resources:

- Planning for Bushfire Protection (NSW RFS, 2006);
- Aerial mapping.

This assessment is based on mapping of vegetation formations and slope assessment in accordance with PBP.

Bushfire risk as influenced by fire history and future mitigation strategies (e.g. hazard reduction burning) has no bearing on the determination of bushfire protection strategies for future development at the sites. This is due to the fact that PBP assesses bushfire protection based purely on vegetation and slope (i.e. hazard and not risk), making the assumption that a fire may occur at a near worst-case scenario.

The methodology used in this assessment is in accordance with PBP and is outlined in the following sections.

5.1. Bushfire Hazard

An assessment of the bushfire hazard is necessary to determine the application of bushfire protection measures such as Asset Protection Zone (APZ) locations and dimensions and future building levels.

The vegetation formations (bushfire fuels) and the topography (effective slope) combine to create the bushfire threat that may affect bushfire behaviour at the site and which determine the planning and building response of PBP.

5.2. Vegetation

Predominant Vegetation is classified by structure or formation using the system adopted by Keith (2004) and by the general description using PBP. Vegetation types give rise to radiant heat and fire behaviour characteristics.

The predominant vegetation is determined over a distance of at least 140 metres in all directions from the proposed site boundary or building footprint on the development site. Where a mix of vegetation types exist the type providing the greater hazard is said to predominate.

The vegetation within site and surrounds is fragmented and modified. All vegetation including trees will be removed from within the site. Table 2 provides vegetation types. Figure 5 shows the vegetation and slope for the site and surrounds.

<table>
<thead>
<tr>
<th>Vegetation</th>
<th>Aspect</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>North</td>
</tr>
<tr>
<td>NA. Managed, mobile home park.</td>
<td>Grassland transitioning to woodland in the south eastern corner.</td>
</tr>
</tbody>
</table>
5.3. **Slopes Influencing Bushfire Behavior**

The ‘effective slope’ influencing fire behaviour approaching the sites has been assessed in accordance with the methodology specified within PBP. This is conducted by measuring the worst-case scenario slope where the vegetation occurs over a 100 m transect measured outwards from the development boundary or the existing/proposed buildings.

The slope within the site is 0-5 degrees downslope per PBP. See Figure 5.

5.4. **Fire Weather**

The fire weather is dictated by PBP and assumes a credible worst-case scenario and an absence of any other mitigating factors relating to aspect or prevailing winds. The sites have a Fire Danger Index (FDI) of 100 as per PBP.

5.5. **Distance from Vegetation**

Separation distances are shown in Table 3.
### Table 3 Separation of the proposed site from vegetation

<table>
<thead>
<tr>
<th></th>
<th>North</th>
<th>East</th>
<th>South</th>
<th>West</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Building 1A</strong></td>
<td>Managed, Not Applicable (NA)</td>
<td>Managed, NA</td>
<td>Managed, NA</td>
<td>29.7 at closest point</td>
</tr>
<tr>
<td><strong>Building 1B</strong></td>
<td>Managed, NA</td>
<td>Managed, NA</td>
<td>Managed, NA</td>
<td>Managed, NA</td>
</tr>
<tr>
<td><strong>Building 2A</strong></td>
<td>Managed, NA</td>
<td>Managed, NA</td>
<td>Managed, NA</td>
<td>17 at closest point</td>
</tr>
<tr>
<td><strong>Building 2B</strong></td>
<td>Managed, NA</td>
<td>Managed, NA</td>
<td>9.7m at closest point</td>
<td>Managed, NA</td>
</tr>
<tr>
<td><strong>Building 3</strong></td>
<td>Managed, NA</td>
<td>Managed, NA</td>
<td>17 at closest point</td>
<td>Managed, NA</td>
</tr>
<tr>
<td><strong>Building 4</strong></td>
<td>Managed, NA</td>
<td>Minimum of 7.5 at the closest point</td>
<td>8.9m at closest point</td>
<td>Managed, NA</td>
</tr>
</tbody>
</table>

### 5.6. Bushfire Attack Levels

The Bushfire Attack Levels are shown in Figure 6.
Figure 6 Bushfire Attack Levels

Legend
- Subject Land
- Contour - 2m
- Woodland
- BAL 12.5
- BAL 19
- BAL 29
- BAL 40
- BAL FZ

Bushfire Attack Level (BAL)

© DK GIS 2017
Date: 11/10/2017
Coordinate System: GDA 1994 MGA Zone 56
Imagery: © Nearmap
6. **Assessment Against the Aim and Objective of PBP**

All development in Bushfire Prone Areas needs to comply with the aim and objectives of PBP. Table 2 shows the compliance with PBP.

### Table 4 Compliance with Aim & Objectives of PBP

<table>
<thead>
<tr>
<th>Aim</th>
<th>Meets Criteria</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>The aim of PBP is to use the NSW development assessment system to provide for the protection of human life (including fire fighters) and to minimise impacts on property from the threat of bushfire, while having due regard to development potential, onsite amenity and the protection of the environment.</td>
<td>Yes</td>
<td>Landscaping, defendable space, access and egress, emergency risk management and construction standards are in accordance with the requirements of PBP and the aims of PBP have been achieved.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Meets Criteria</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afford occupants of any building adequate protection from exposure to a bushfire.</td>
<td>Yes</td>
<td>The industrial masterplan provides opportunity for all occupants to be shielded from any external bushfire. The external cladding will be:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Precast concrete dado panels to 2,400mm with Colorbond metal wall cladding above precast concrete panels.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Insulation: effective concrete wall thickness to be determined. 80mm achieves a 60 minute FRP and a solid 150mm thick panel achieves a 180 minute FRP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The proposed construction materials are above the requirements of AS3959. Ember protection will provided to prevent ember penetration into the structures.</td>
</tr>
<tr>
<td>Provide for defendable space to be located around buildings.</td>
<td>Yes</td>
<td>Defendable space is provided on all sides of the proposed development.</td>
</tr>
<tr>
<td>Provide appropriate separation between a hazard and buildings, which, in combination with other measures, prevent direct flame contact and material ignition.</td>
<td>Yes</td>
<td>The precast concrete dado panels to 2,400mm with Colorbond metal wall cladding above precast concrete panels eliminates combustible elements.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The construction requirement for the warehouse exceeds the minimum requirement for AS3959.</td>
</tr>
<tr>
<td>Ensure that safe operational access and egress for emergency service personnel and occupants is available.</td>
<td>Yes</td>
<td>The site has direct access to public roads, and access and egress for emergency vehicles and evacuation is adequate. The warehouse development provides for the movement of heavy articulated trucks about the site with passing areas provided for fire trucks if needed.</td>
</tr>
<tr>
<td>Provide for ongoing management and maintenance of bushfire protection measures, including</td>
<td>Yes</td>
<td>The site will be managed as an APZ.</td>
</tr>
<tr>
<td>Ensure that utility services are adequate to meet the needs of firefighters (and others assisting in bushfire fighting).</td>
<td>Yes</td>
<td>Utility services are adequate to meet the needs of firefighters (and others assisting in bushfire fighting).</td>
</tr>
</tbody>
</table>

7. Recommendations

The following recommendations are made for a proposed Industrial Masterplan at Lots 23 & 24 Hollinsworth Road, Marsden Park:

1. **Construction Standard:** The proposed development shall be constructed in accordance with the Bushfire Attack Levels identified in Figure 6.

2. **Asset Protection Zones:** At the commencement of building works and in perpetuity, an Asset Protection Zone shall be established and maintained to the site boundaries from the buildings from the south. The APZ shall be established and maintained as an inner protection area as outlined within PBP and the NSW RFS document ‘Standards for Asset Protection Zones’.
8. Conclusion

This report consists of a bushfire risk assessment for the proposed industrial masterplan and future development at Lots 23 and 24 Hollinsworth Road, Marsden Park NSW.

The sites have been approved for subdivision by Blacktown City Council on 9 September 2015. This approval grants subdivision to create 4 Torrens title industrial lots, 1 lot for half road width road construction of Hollinsworth Road, 1 lot for future bus-only link road and associated bulk earth works and drainage infrastructure. As such, a Bushfire Safety Authority is not required from the NSW Rural Fire Service.

Where a development expectation arises from the zoning of the land to build, rebuild, alter or add to a development(s) in pre-existing subdivisions (as approved by Blacktown City Council 9 September 2015), attempts should be made to find a solution considering the level of risk present. PBP notes that the expectation of development is recognised even though the ability to provide for APZs or access requirements required for development may not be possible (PBP p.42).

The proposed development is designated as “other” development in Planning for Bushfire Protection 2006 and only should comply with the aim and objectives of that document. Section 7 of this document demonstrates such compliance.

The site could be impacted by embers from adjoining lands to the south and a precautionary approach has been taken to provide for basic ember protection to the facility. As such, it is recommended that the proposed development will be constructed to the minimum standards required in accordance with the guidelines of Planning for Bushfire Protection 2006.

The Building Code of Australia (BCA) does not provide for any bushfire specific performance requirements for the proposed development and as such AS3959, 2009 does not apply as a deemed to satisfy provision.

This report has considered all elements of bushfire attack and provided the proposed development is constructed in accordance with the recommendations included in section 8 of this report, it is my considered opinion that the development satisfies the Aims and Objectives of Planning for Bushfire Protection 2006.

This Report is a Bush Fire Hazard Assessment that provides the required information to assist Council in determining compliance in accordance with the aims and objectives of Planning for Bushfire Protection 2006.

Lew Short | Principal
BlackAsh Bushfire Consulting
B.A., Grad. Dip. (Design for Bushfires), Grad. Cert. of Management (Macq), Grad. Cert. (Applied Management)
Fire Protection Association of Australia BPAD Level 3 BPD-PA 16373
1. Appendix 1 References

Australian Building Codes Board Building Code of Australia Volumes 1&2
Councils of Standards Australia AS3959 (2009) - Australian Standard Construction of buildings in bushfire-prone areas

Keith, David (2004) – Ocean Shores to Desert Dunes - The Native Vegetation of New South Wales and the ACT. The Department of Environment and Climate Change


NSW Government (1979) Environmental Planning and Assessment Act 1979. NSW Government Printer
2. Appendix 2 Notice of Determination from Blacktown City Council

Blacktown City Council

NOTICE OF DETERMINATION OF A DEVELOPMENT APPLICATION
Environmental Planning and Assessment Act, 1979 (Section 81)

Applicant: EJC CORPORATE SERVICES PTY LTD
642 GREAT WESTERN HIGHWAY
PENDLE HILL 2145

Determination Number: 15-275

Property Description: LOT 23 DP262886, HOLLINSWORTH ROAD, MARSDEN PARK
LOT 24 DP262886, HOLLINSWORTH ROAD, MARSDEN PARK

Development: Subdivision to create 4 Torrens title industrial lots, 1 lot for half width road construction of Hollinsworth Road, 1 lot for future bus-only link road and associated bulk earthworks and drainage infrastructure.

Determination: Under Section 80 of the Act Council advises that the Development Application has been determined by:

- GRANTING OF CONSENT SUBJECT TO CONDITIONS ATTACHED ON THE FOLLOWING PAGE(S)
- BY DELEGATED AUTHORITY – DIRECTOR DESIGN AND DEVELOPMENT

Right of Appeal
Section 57 of the Act confers on an applicant who is dissatisfied with the determination of the consent authority a right of appeal to the Land and Environment Court. Section 97 does not apply to State significant development or development that has been subject to a Commission of Inquiry.

Review of Determination
Section 82A of the Act provides that an applicant may request the Council to review the determination. Section 82A does not apply to complying development, designated development, integrated development, or a determination made by Council under Division 4 of the Act in respect of Crown applications.

Note: This Consent is generally valid for a period of five years effective from the date of this Notice, unless specified otherwise by Sections 83 and 85 of the Act, or by conditions of this Consent.

Kerry Robinson
GENERAL MANAGER

Per Alan Mobbs

Date 9 September 2015

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3. Appendix 3 APZ Maintenance

The APZs and future landscaping of the subject land will achieve the following principles:

- No tree or tree canopy is to occur within 2 m of rooflines;
- The presence of a few shrubs or trees in the APZ is acceptable provided that they:
  - are well spread out and do not form a continuous canopy;
  - are not species that retain dead material or deposit excessive quantities of ground fuel in a short period or in a danger period; and
  - are located far enough away from future buildings so that they will not ignite the buildings by direct flame contact or radiant heat emission.
- Any landscaping or plantings should preferably be local endemic mesic species or other low flammability species; and
- A minimal ground fuel is to be maintained to include less than 4 tonnes per hectare of fine fuel (fine fuel means ANY dead or living vegetation of <6 mm in diameter e.g. twigs less than a pencil in thickness. 4 t/ha is equivalent to a 1 cm thick layer of leaf litter).