

BUSHFIRE PROTECTION ASSESSMENT

**FOR THE CONSTRUCTION OF THE PROPOSED
MASONRY PLANT & WAREHOUSES**

ON

PART LOT 1 in DP 843901

OLD WALLGROVE ROAD, HORSLEY PARK,

FOR GOODMAN PROPERTY SERVICES (AUST) PTY LTD

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Report Number	Document	Preparation Date	Issue Date	Directors Approval
B183246 - 1	Final Draft	08.10.2018	30.01.2019	<i>G.L. Swain</i>

EXECUTIVE SUMMARY

Australian Bushfire Protection Planners Pty Limited has been commissioned by *Goodman Property Services (Aust.) Pty Ltd* to prepare a Bushfire Protection Assessment that provides advice on the bushfire protection measures required for the construction of the proposed Masonry Plant and four warehouse buildings on Part Lot 1 in DP 843901, Old Wallgrove Road, Horsley Park.

Australian Bushfire Protection Planners Pty Limited [ABPP] was previously commissioned to provide a report to inform the Development Control Plan (DCP) on the bushfire protection measures for the future warehouse development on Lot 1 in DP 843901, Old Wallgrove Road, Horsley Park, identified under the State Environmental Planning Policy (Western Sydney Employment Area) 2009.

Figure 1 – Area Covered by the DCP



The Department of Planning & Environment sought advice from the NSW Rural Fire Service on the Secretary's Environmental Assessment Requirements (SEARs) for the Concrete Works and four Warehouses on 224 – 398 Burley Road Horsley Park and received the following response dated 28 September 2018 under Reference No. D18/6892:



NSW RURAL FIRE SERVICE



The Secretary
The Department of Planning and Environment
GPO Box 39
Sydney NSW 2001

Your reference: SEAR 1255
Our reference: D18/6892

28 September 2018

Attention: John Booth

Dear Sir/Madam,

Request for Secretary's Environmental Assessment Requirements (SEARs) - Concrete Works & Four Warehouses - 224-398 Burley Road, Hrsley Park

Reference is made to correspondence dated 16 August 2018 seeking input regarding the preparation of Secretary's environmental assessment requirements for the above State Significant Development in accordance with the *Environmental Planning and Assessment Act 1979*.

The New South Wales Rural Fire Service (NSW RFS) has reviewed the information provided and advises that a bush fire assessment report shall be prepared which identifies the extent to which the proposed development conforms with or deviates from the relevant provisions of Section 4.3.6 (f) of *Planning for Bush Fire Protection 2006* (or equivalent).

If you have any queries regarding this advice, please contact Emma Jensen, Development Assessment and Planning Officer, on 1300 NSW RFS.

Yours sincerely,

Kalpana Varghese
A/Team Leader, Development Assessment and Planning
Planning and Environment Services (East)

The SEARs for the development proposal was issued under SEAR 1255 on the 19.09.2018 and requires an assessment of the risk of bushfire, including addressing the requirements of *Planning for Bushfire Protection 2006*. Any proposed Asset Protection Zones must not adversely affect environmental objectives (e.g. buffers). Provision is to be made for their appropriate management into the future.

The SEARs also requires consultation with the NSW Rural Fire Service.

This report examines the development proposal and determines the extent to which the proposed development conforms with or deviates from the relevant provisions of Section 4.3.6(f) of *Planning for Bushfire Protection 2006*.



Graham Swain
Managing Director,
Australian Bushfire Protection Planners Pty Limited.

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SECTION 1

INTRODUCTION

1.1 Aim of this Report.

The aim of this report is to address the requirements of the SEARs, the NSW Rural Fire Service's advice to the Department of Planning & Environment for the Planning Proposal and the provisions of Section 4.14 of the *Environmental Planning & Assessment Act*.

This report undertakes an assessment to determine the following matters:

- (i) The provision of building setbacks (Defendable Space) from vegetated areas and the siting of buildings to minimize the impact of radiant heat and direct flame contact;
- (ii) Fire fighting water supplies;
- (iii) Access requirements for customers/staff and emergency service vehicles;
- (iv) Construction standards to be used for the future building within the proposed development to minimize the vulnerability of the building to ignition from radiation and ember attack;
- (v) Land management responsibilities; and
- (vi) Evacuation management.

1.2 Statutory Requirements.

This assessment has been prepared having regard to the following legislative and planning requirements:

1.3.1 Legislation.

(a) *Environmental Planning and Assessment Act (EPA Act)*

Planning and development within NSW is regulated by the *Environmental Planning & Assessment Act, 2017* (EPA Act).

In relation to bushfire planning for the construction of Class 6 developments in bushfire prone areas in NSW, Section 4.14 of the EPA Act applies.

Section 4.14(1) states that development consent cannot be granted, other than for the subdivision of land that could lawfully be used for residential or rural residential purposes or development for special protection purposes, on bushfire prone land unless the consent authority is satisfied that the development conforms to the specifications and requirements of *Planning for Bushfire Protection 2006*.

(b) Rural Fires Act 1997

The objectives of the *Rural Fires Act* are to provide:

- The prevention, mitigation and suppression of fires;
- Coordination of bushfire fighting and prevention;
- Protection of people and property from fires; and
- Protection of the environment.

In relation to the management of bushfire fuels on public and private lands within NSW Sections 63(1) and 63(2) require public authorities and owners / occupiers of land to take all practicable steps to prevent the occurrence of bushfires on, and to minimize the danger of the spread of bushfires.

1.3.2 Planning Policies.

Planning for Bushfire Protection – 2006. (NSW Rural Fire Service)

This document provides guidance on the planning and development control processes in relation to bushfire protection measures for rural residential and residential subdivision, “*Special Fire Protection*” and Class 5 – 8 and 10 buildings in bushfire prone areas [Industrial buildings are Class 7 as defined by the Building Code of Australia].

These measures include the provision of defensible space requirements and access/water supply provisions to Class 5 – 8 & 10 developments in bushfire prone areas.

Provision for the assessment of construction standards to buildings and management / maintenance of the Asset Protection Zones/defensible space to buildings is also provided.

1.4 Documentation Reviewed.

The following documents were reviewed in the preparation of this assessment:

- Report prepared by ABPP for the Oakdale East Planning Proposal – dated 25.09.2018;
- Aerial Photograph of the Development Site and adjoining lands;

- Oakdale East – SSDA Masterplan prepared by SBA Architects Project No. 18226 – Drawing OAK-E MPO2 (C) dated 24.01.2019;
- Oakdale East – Site Plan prepared by SBA Architects Project No. 18226 – Drawing OAK-E MPO3 (F) dated 24.01.2019;
- Oakdale East – Existing Zoning Plan prepared by SBA Architects Project No. 18226 – Drawing OAK-E MPO5 (D) dated 24.01.2019;
- Oakdale East – Fire Protection Plan prepared by SBA Architects Project No. 18226 – Drawing OAK-E MPO8 (E) dated 24.01.2019;
- Oakdale East – Biodiversity Management Plan prepared by SBA Architects Project No. 18226 – Drawing OAK-E MPO9 (F) dated 24.01.2019;
- Oakdale East – Warehouse 1 – Site/Floor Plan prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA10 (D) dated 24.01.2019;
- Oakdale East – Warehouse 1 – Roof Plan prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA11 (B) dated 24.01.2019;
- Oakdale East – Warehouse 1 Floor Plan prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA12 (E) dated 24.01.2019;
- Oakdale East – Warehouse 1 Elevations prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA13 (a) dated 24.01.2019;
- Oakdale East – Warehouse 1 Sections prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA14 (A) dated 24.01.2019;
- Oakdale East – Office 1 Elevations prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA15 (A) dated 24.01.2019;
- Oakdale East – Warehouse 2 Site Plan / Floor Plan prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA20 (B) dated 29.01.2019;
- Oakdale East – Warehouse 2 Roof Plan prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA21 (B) dated 29.01.2019;
- Oakdale East – Warehouse 2 Office Floor Plans prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA22 (B) dated 24.01.2019;
- Oakdale East – Warehouse 2 Elevations prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA23 (B) dated 24.01.2019;
- Oakdale East – Warehouse 2 Sections prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA24 (B) dated 24.01.2019;
- Oakdale East – Warehouse 2 Office Elevations prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA25 (B) dated 24.01.2019;
- Oakdale East – Warehouse 3A & 3B Site Plan / Floor Plan prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA30 (B) dated 24.01.2019;
- Oakdale East – Warehouse 3A & 3B Roof Plan prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA31 (B) dated 24.01.2019;
- Oakdale East – Warehouse 3A & 3B Office Floor Plans prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA32 (B) dated 24.01.2019;

- Oakdale East – Warehouse 3A & 3B Elevations prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA33 (B) dated 24.01.2019;
- Oakdale East – Warehouse 3A & 3B Sections prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA34 (B) dated 24.01.2019;
- Oakdale East – Warehouse 3A Office Elevations prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA35 (B) dated 24.01.2019;
- Oakdale East – Warehouse 3B Office Elevations prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA36 (B) dated 24.01.2019;
- Oakdale East – Masonry Plant – Site Plan / Floor Plan prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA40 (C) dated 24.01.2019;
- Oakdale East – Masonry Plant – Roof Plan prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA42 (C) dated 24.01.2019;
- Oakdale East – Masonry Plant Office Floor Plans prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA43 (A) dated 24.01.2019;
- Oakdale East – Masonry Plant Elevations prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA44 (A) dated 24.01.2019;
- Oakdale East – Masonry Plant Sections prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA45 (B) dated 24.01.2019;
- Oakdale East – Warehouse 4 Site Plan / Floor Plan prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA50 (C) dated 24.01.2019;
- Oakdale East – Warehouse 4 Roof Plan prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA51 (C) dated 24.01.2019;
- Oakdale East – Warehouse 4 Office Floor Plans prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA52 (B) dated 24.01.2019;
- Oakdale East – Warehouse 4 Elevations prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA53 (B) dated 24.01.2019;
- Oakdale East – Warehouse 4 Sections prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA54 (B) dated 24.01.2019;
- Oakdale East – Warehouse 4 Office Elevations prepared by SBA Architects Project No. 18226 – Drawing OAK-E DA55 (B) dated 24.01.2019;
- Penrith Council Bushfire Prone Land Map;
- *Planning for Bushfire Protection 2006* prepared by the NSW RFS.

1.5 Development Proposal.

This report has been prepared, at the request of *Goodman Property Services (Aust.) Pty Ltd*, for the construction of the Masonry Plant and Warehouse buildings on Oakdale East, Part Lot 1 in DP 843901 Old Wallgrove Road, Horsley Park. The development proposal includes the provision of a Defendable Space and perimeter driveway access to the hazard aspects of the estate - refer to Figure 2 – State Significant Development Application Master Plan on Page 10.

Figure 2 – State Significant Development Application Master Plan



[illegible]

Figure 4 – State Significant Development Application – Masonry Plant Site/Floor Plan

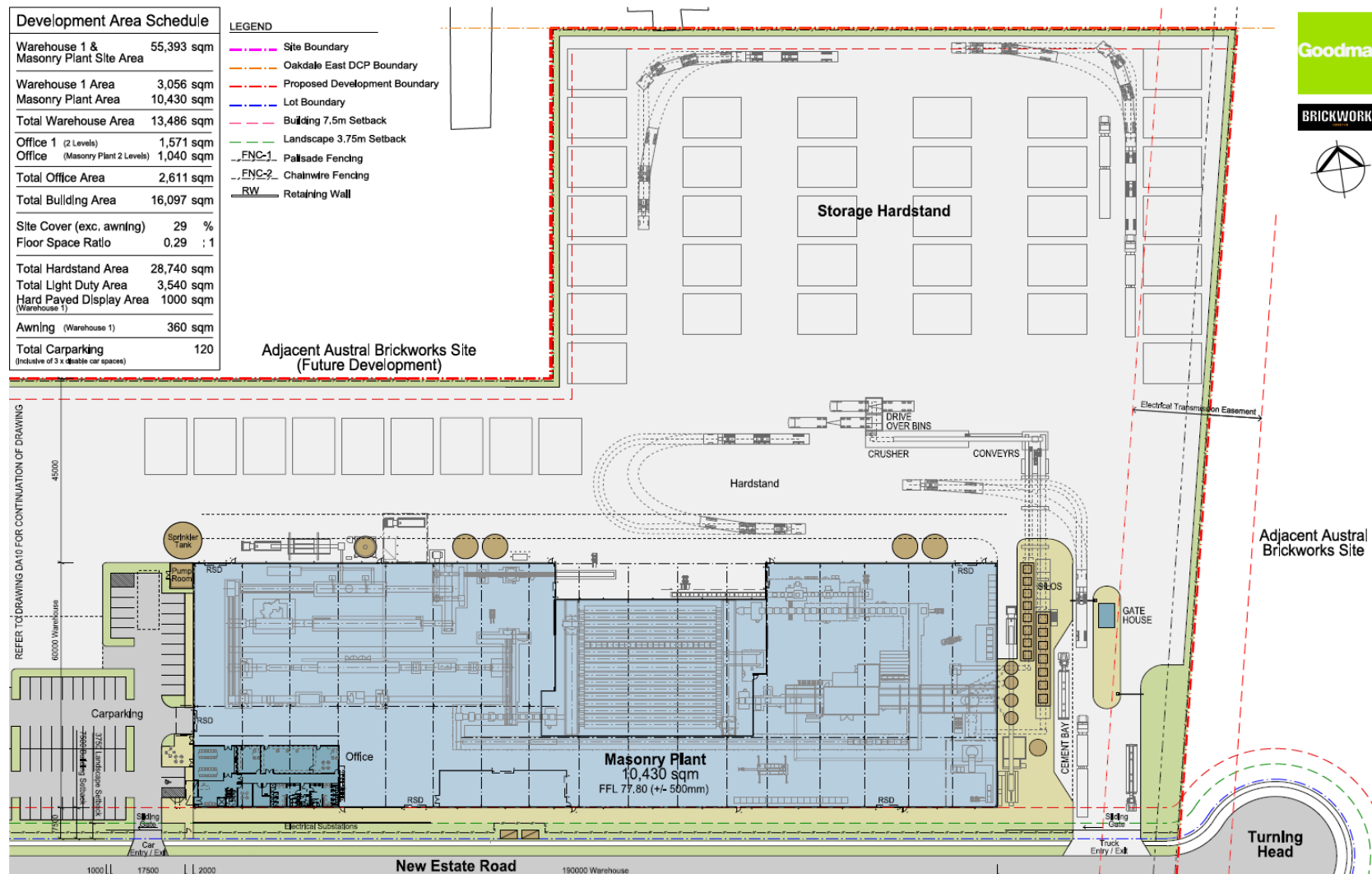


Figure 5 – State Significant Development Application – Warehouse 1 Site/Floor Plan

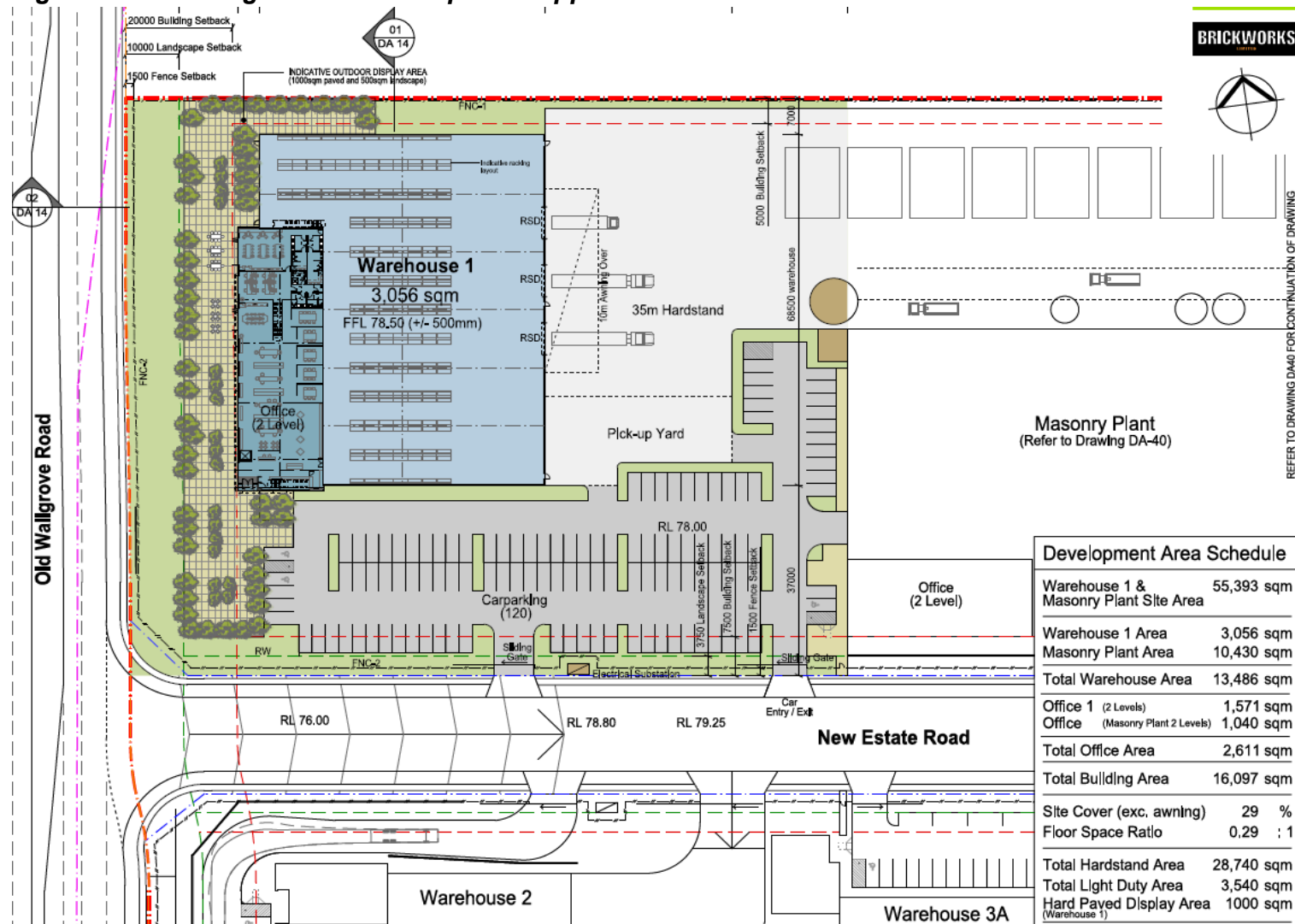
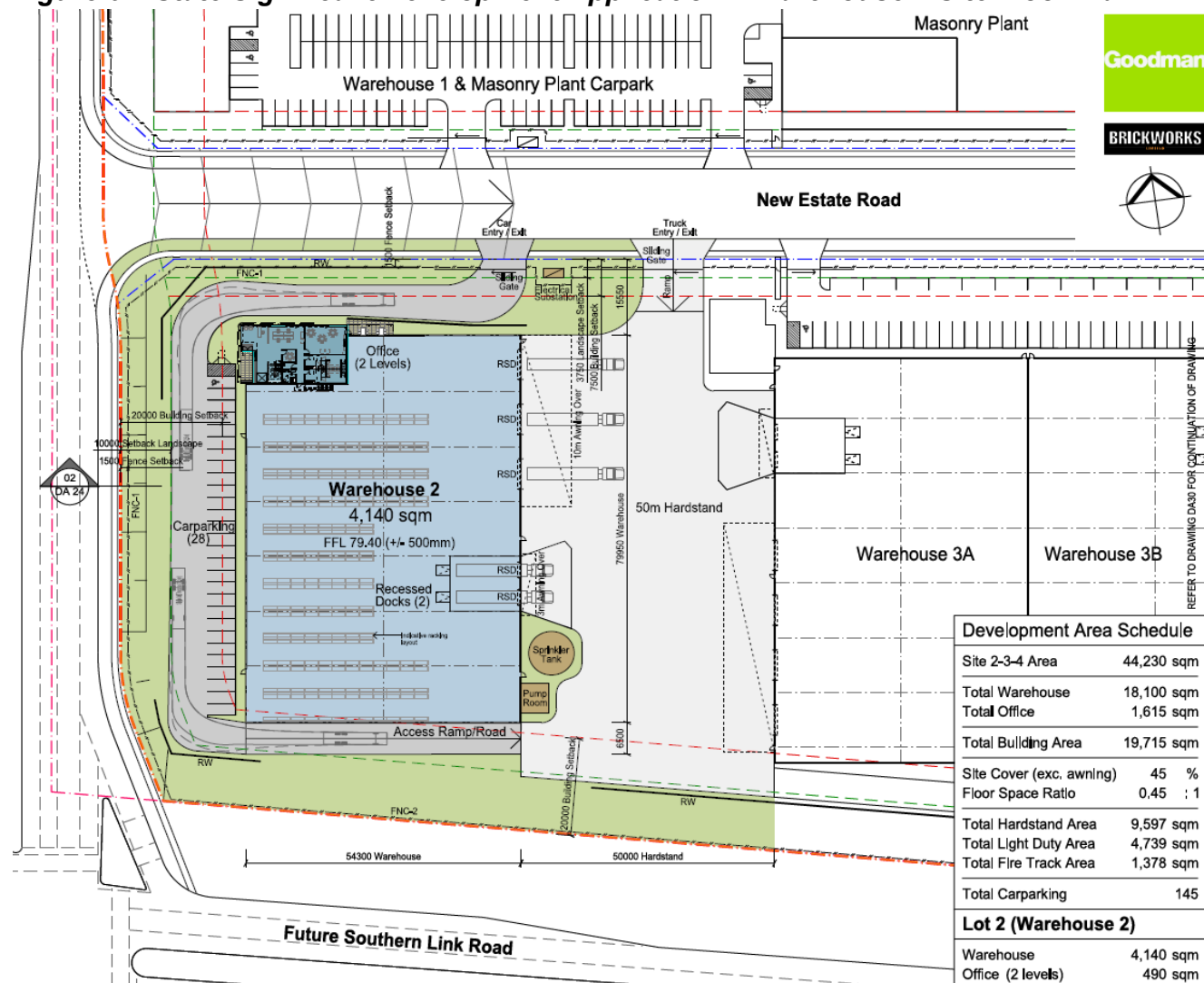


Figure 6 – State Significant Development Application – Warehouse 2 Site/Floor Plan



The site plan illustrates the layout of the proposed development. Key features include:

- Warehouse 1 & Masonry Plant Carpark:** Located at the top left of the plan.
- Warehouse 2:** A large warehouse unit on the left side.
- Warehouse 3A and 3B:** Two large warehouse units in the center, each measuring 4,180 sqm with a FFL of 79.10 (+/- 500mm).
- Warehouse 4:** A large warehouse unit on the right side.
- Access Roads:** New Estate Road to the north, Future Southern Link Road to the south, and an internal Access Road.
- Hardstands:** Various parking and loading areas, including a 50m Hardstand and a 50000 Hardstand.
- Other Features:** Office 3A and 3B (2 Levels), RSD (Recessed Docks), Recessed Docks (2), and a 10m Awaiting Over area.

The site plan shows Warehouse 4, a large rectangular building with a blue roof, measuring 5,600 sqm with a finished floor level (FFL) of 78.80 (+/- 500mm). The building has two levels of office space and two recessed docks. To the left of the warehouse is a 50m hardstand area with a truck entry/exit and a car entry/exit. A 20000 Building Setback is indicated. To the right is a parking area with 69 spaces. The plan also shows Warehouse 3B to the left and Future Southern Link Road at the bottom. Various setbacks and easements are marked, including a 50000 Warehouse setback, a 1800 setback, a 17500 setback, and an Electrical Transmission Easement. A 103800 Warehouse setback is also shown on the right side.

1.6 Site Inspection.

Graham Swain of ***Australian Bushfire Protection Planners Pty Limited*** inspected the development site on the 29th of August 2018 to assess the topography, gradients of the land within and external to the site and vegetation classification within and adjoining the development property, existing bushfire mitigation measures and a visual assessment of bushfire threat.

The land adjoining the development site was also inspected to determine the surrounding land use / land management practices and extent of bushfire prone vegetation.

1.7 Consultation with NSW Rural Fire Service.

Email correspondence, including Architectural Plans, was sent to the NSW Rural Fire Service on the 30th October requesting a review of the documents.

No response has been received.

SECTION 2

DESCRIPTION OF DEVELOPMENT SITE

2.1 Location & Description.

The land within the development site consists of Part Lot 1 in DP 843901, Old Wallgrove Road, Horsley Park.

Figure 9 – Location of Development Site.

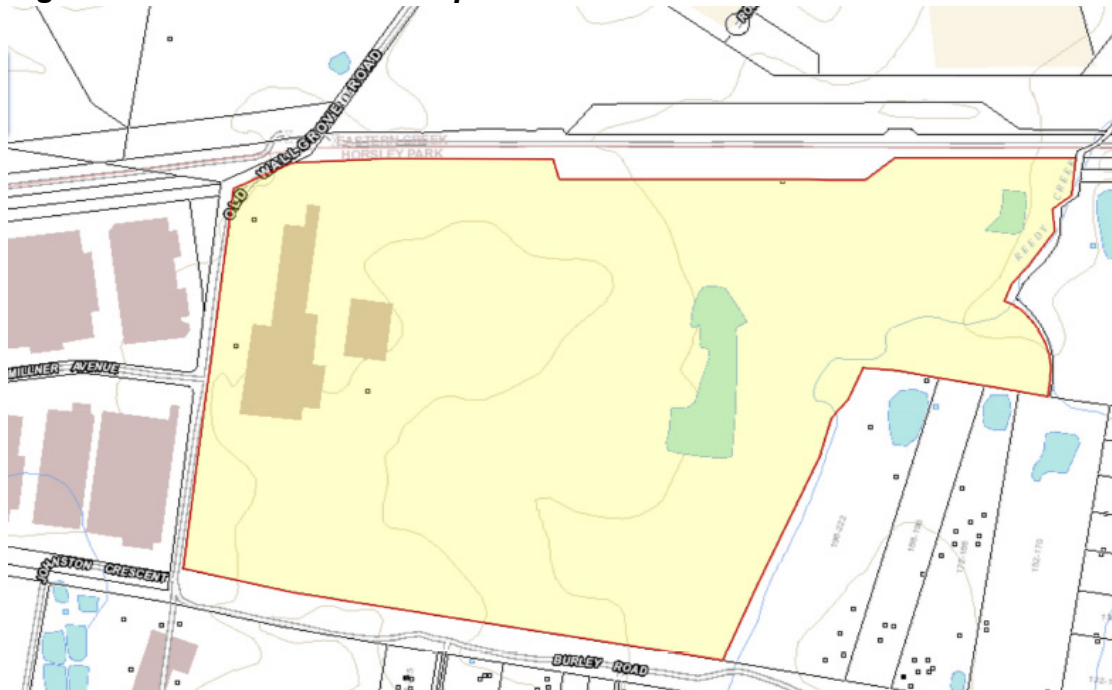


Figure 10 – Location of Development Precinct.



2.2 Existing Land Use.

The development site contains the Austral Brickworks. The development precinct occupies the southern portion of the development site which contains existing workings of the brickworks including stock piles, access roads and detention ponds.

2.3 Surrounding Land Use.

The landuse adjoining the development precinct are:

(a) **North**

The land to the north of the development precinct contains the brickworks plant and external workings.

(b) **South**

The land adjoining the southern boundary of the development precinct forms the unmade section of Burley Road beyond which is the PGH Brickworks complex and rural landuses.

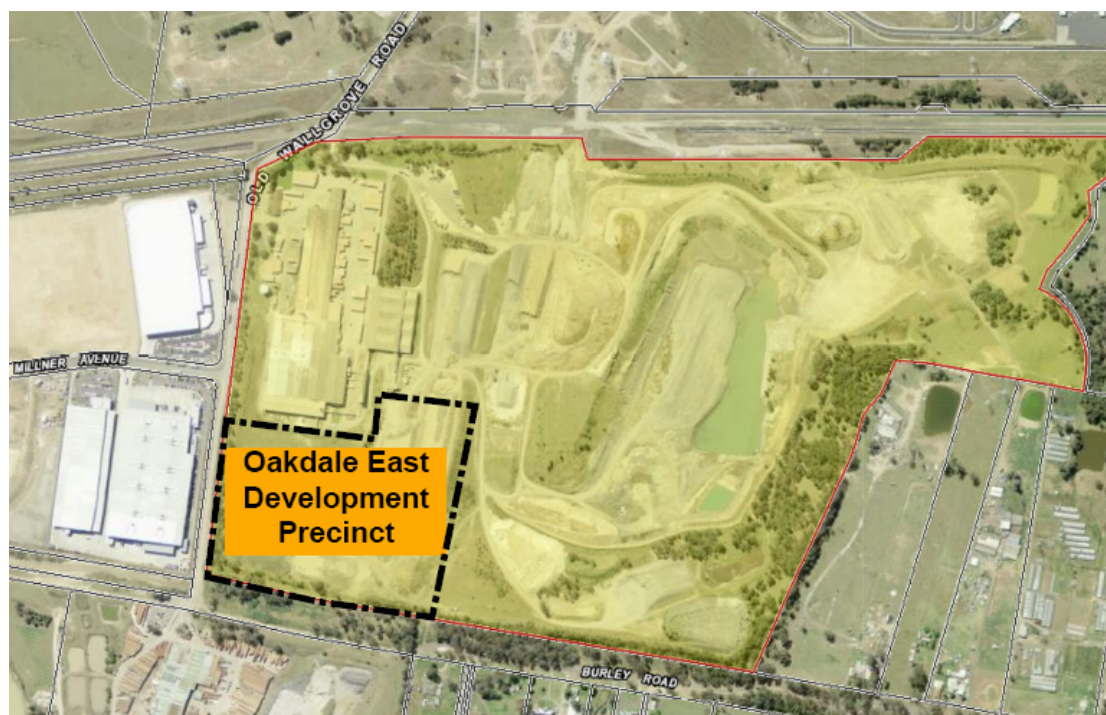
(c) **West**

The land to the west of the development precinct forms the Old Wallgrove Road reserve beyond which is industrial development.

(d) **East**

The land to the east of the development precinct forms part of the external works to the brickworks and rural landuse.

Figure 11 – Aerial Photograph of the Development Site showing adjoining landuse.



2.4 Vegetation Communities on the land within the Development Site.

Appendix A2.3 of *Planning for Bushfire Protection 2006* provides a methodology for determining the predominant bushfire prone vegetation for at least 140 metres in all directions from the proposed building.

Vegetation is classified using Table A2.1 of *Planning for Bushfire Protection 2006*, which classifies vegetation types into the following groups:

- (a) *Forests [wet & dry sclerophyll forests];*
- (b) *Woodlands;*
- (c) *Plantations – being pine plantations not native plantations;*
- (d) *Forested Wetlands;*
- (e) *Tall Heaths;*
- (f) *Freshwater Heaths;*
- (g) *Short Heaths;*
- (h) *Alpine Complex;*
- (i) *Semi – arid Woodlands;*
- (j) *Arid Woodlands; and*
- (k) *Rainforests.*

A narrow corridor of Forest Red Gum – Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain is recorded within the eastern portion of the development site. The development precinct does not extend into this vegetation.

Pockets of Grey Box – Forest Red Gum grassy woodland on flats of the Cumberland Plain extend to the west from the corridor of Forest Red Gum – Rough-barked Apple with two separate pockets located adjacent to the southern boundary. The development precinct does not extend into this vegetation.

Grey Box – Forest Red Gum grassy woodland on flats of the Cumberland Plain forms a narrow corridor of unmanaged vegetation within the Burley Road reserve to the south of the development precinct.




The PGH brickworks complex and the development located to the south of Burley Road contain no vegetation or unmanaged vegetation.

Refer to Figure 12 – Plan of Vegetation Communities on Page 22.

Figure 12 – Plan of Vegetation Communities within the DCP Study Area.



Source: Ecologique

-  Lot 1 DP843901
-  Forest Red Gum - Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain
-  Grey Box - Forest Red Gum grassy woodland on flats of the Cumberland Plain

2.5 Topography.

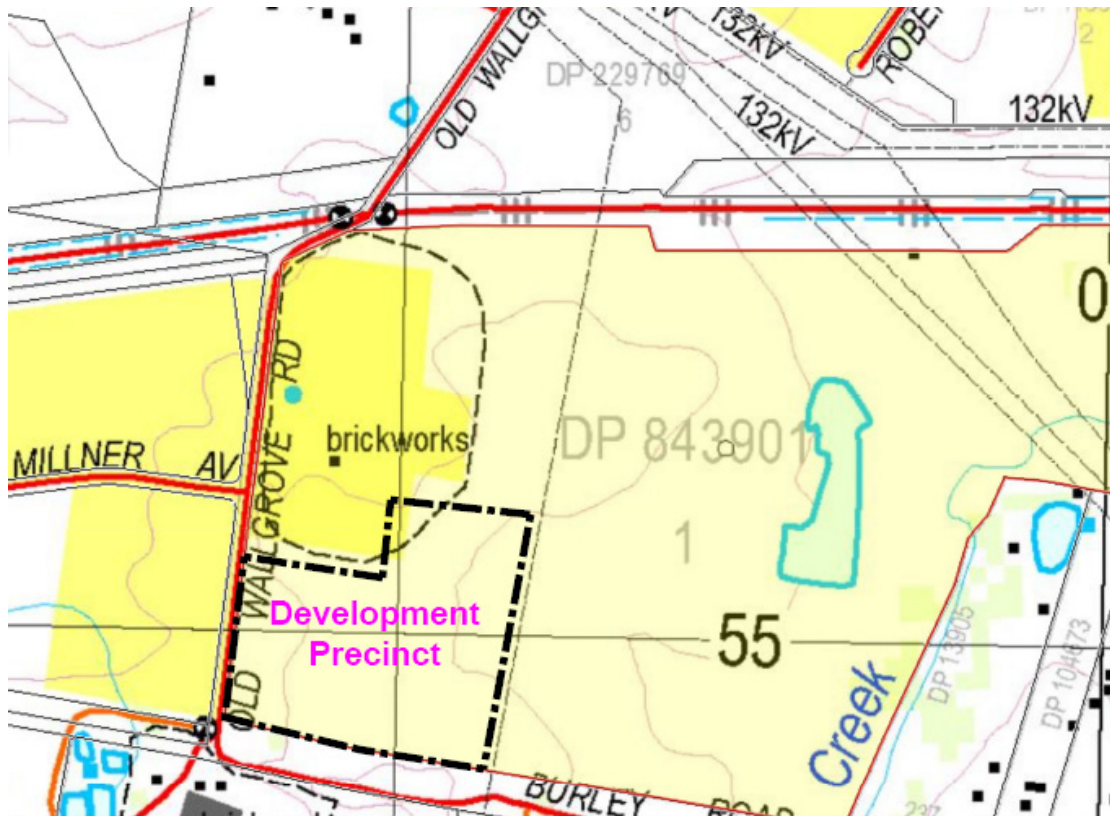
Appendix 2 of *Planning for Bushfire Protection 2006* states that slopes should be assessed, over a distance of at least 100m from a development site and that the gradient of the land should be determined which will most significantly influence the fire behaviour on the site.

The landform within the development precinct is undulating, sloping to the east towards Reedy Creek.

The land within the Burley Road corridor to the south of the development precinct falls to the east whilst displaying a level aspect across the road reserve.

The land within the development site, to the east of the development precinct falls to the east towards Reedy Creek at a gradient of 0 – 5 degrees.

Figure 13 – Topographic Map showing the location of the Development Precinct.



2.6 Significant Environmental Features within the Development Precinct.

The development precinct does not contain significant environmental features such as SEPP 44 Koala Habitat; SEPP 14 Wetlands; SEPP 26 Littoral Rainforests; land slip areas or National Parks Estate, areas of geological interest or riparian zones.

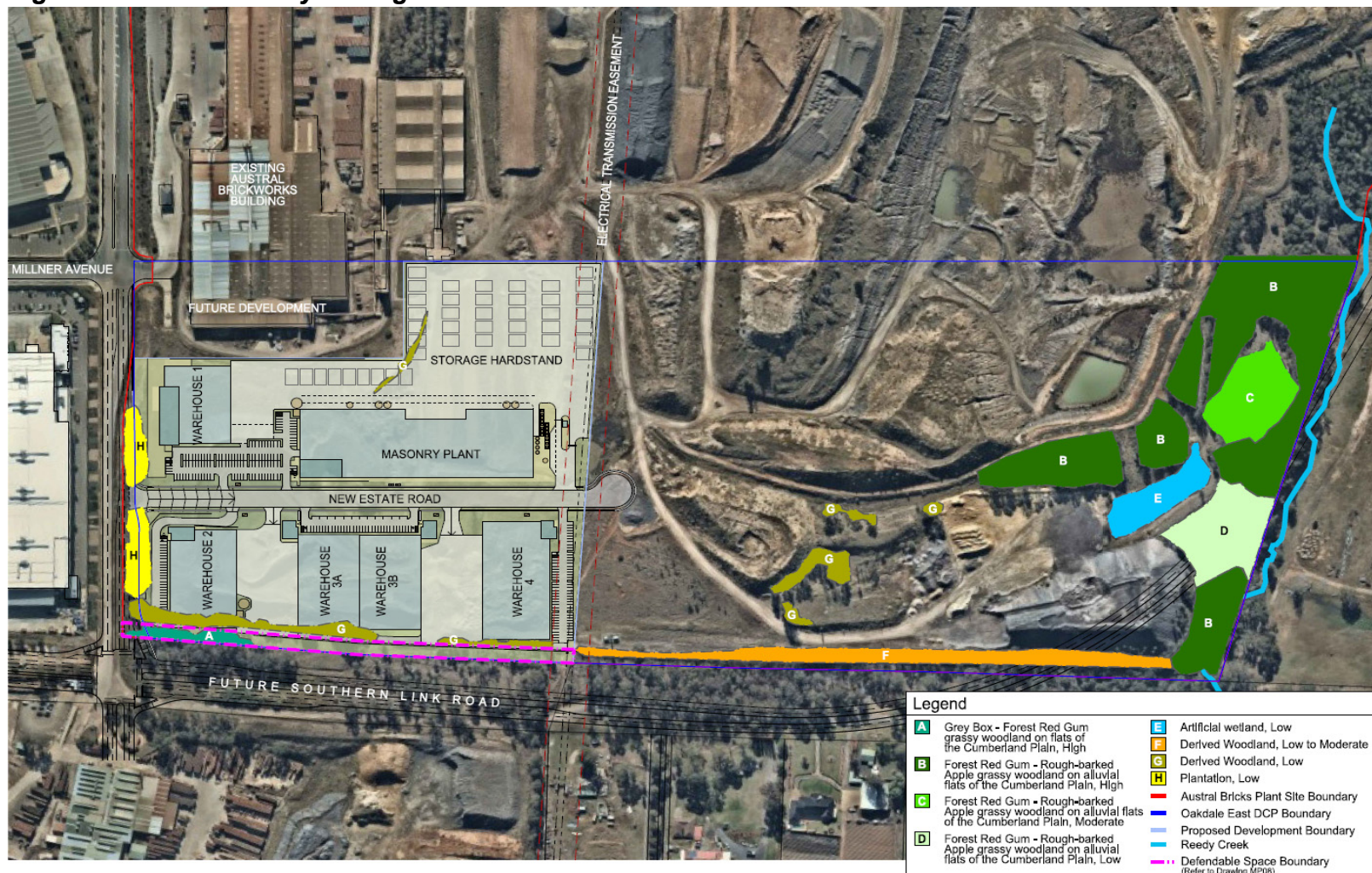
2.7 Known Threatened Species, Population or Ecological Community on the Development Precinct.

The development precinct occupies land which does not contain the Forest Red Gum-Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain or Grey Box-Forest Red Gum grassy woodland on flats of the Cumberland Plain. Refer to Figure 14 – Biodiversity Management Plan on Page 24.

2.8 Details and location of Aboriginal Relics or Aboriginal Place.

There are no known Aboriginal relics or Aboriginal places on the development precinct.

Figure 14 – Biodiversity Management Plan.



2.10 Bushfire Hazard Management within the Development Site.

The management of the landscaped gardens and the vegetation within the development precinct will remain the responsibility of the property owner.

A Positive Covenant, created under the provisions of the *Conveyancing Act of 1919*, shall be placed on the title of the land to ensure compliance with the management prescriptions for the Defendable Spaces detailed in this report [Refer to Section 4.2].

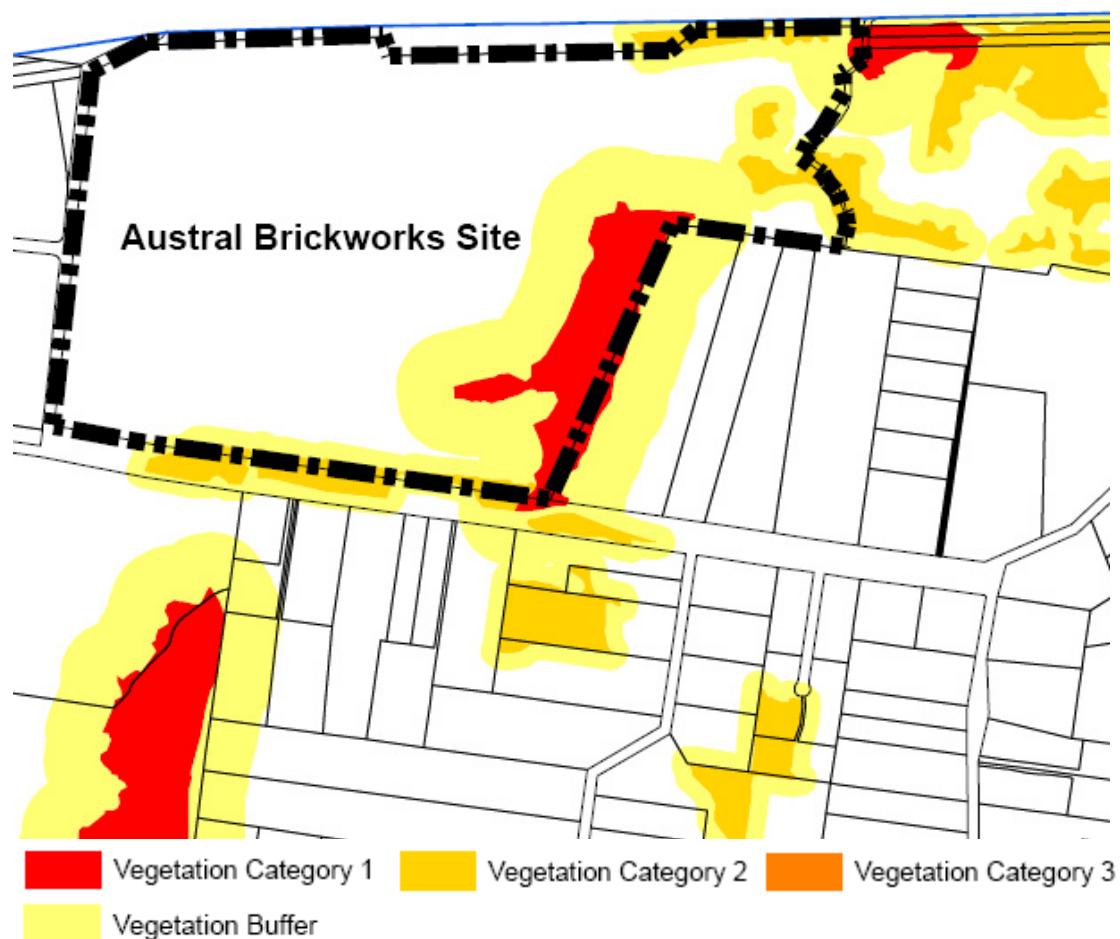
SECTION 3

PRECINCT LEVEL ASSESSMENT

3.1 Certified Bushfire Prone Land Map.

Section 10.3 of the *Environmental Planning & Assessment Act 1979* requires councils, where a Bushfire Risk Management Plan applies, to prepare a Bushfire Prone Land Map in consultation with the Commissioner of the NSW Rural Fire Service. The Commissioner will designate lands to be Bushfire Prone within an area and, when satisfied that the lands have been recorded on a map, will certify the map as a Bushfire Prone Land Map for the purposes of this or any other Act.

Figure 15 – Extract from the Fairfield Bushfire Prone Land Map



The Fairfield Bushfire Prone Land identifies the vegetation within the eastern portion of the development site and along the Burley Road corridor as being bushfire prone.

SECTION 4

BUSHFIRE HAZARD ASSESSMENT

4.1 Introduction.

Chapter 1 of *Planning for Bushfire Protection 2006* states that the aim of the document is to use the NSW development assessment system to provide for protection of human life [including firefighters] and to minimize impacts on property from the threat of bushfire, while having due regard to development potential, onsite amenity and protection of the environment.

The objectives of the document are:

- Afford occupants of any building adequate protection from exposure to the impacts of a bushfire;
- Provide for a defensible space to be located around buildings;
- Provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent direct flame contact and material ignition;
- Ensure that safe operational access/egress for emergency service personnel and occupants relocating is provided and/or available;
- Provide for ongoing management and maintenance of bushfire protection measures, including fuel loads within the Asset Protection Zone/s; and
- Ensure that utility services are adequate to meet the needs of firefighters [and others assisting in bushfire fighting operations].

The Masonry Plant and Warehouse buildings are classified as Class 7 buildings, as defined by the Building Code of Australia [BCA].

Chapter 1, Section 1.3 of *Planning for Bushfire Protection 2006* states that the construction of Class 5 – 10 buildings on bushfire prone land, or land impacted by bushfire prone vegetation, must meet the aim and objectives of the document.

Chapter 4, Section 4.3.6(f) discusses the bushfire protection to buildings of Class 5 to 8 and 10b of the Building Code of Australia and states:

“The Building Code of Australia does not provide for any bushfire specific performance requirements and as such AS 3959 -1999 does not apply as a set of “deemed-to-satisfy” provisions.

The general fire safety construction provisions [of the BCA] are taken as acceptable solutions, but the aim and objectives of Planning for Bushfire Protection 2006 apply in relation to other matters such as access, water and services, emergency planning and landscaping/vegetation management”.

“Where the aim and objectives of PfPFP [Section 1.1] are not met, then the construction requirements for bushfire protection will need to be considered on a case-by-case basis”.

“In many cases, these types of developments will require on-site parking and loading areas. In such cases, it is prudent to place these facilities in the most appropriate location in order to establish defensible space for fire-fighting purpose”.

The objectives of *Planning for Bushfire Protection 2006* are:

- (i) Afford occupants of any building adequate protection from exposure to a bushfire;
- (ii) Provide for a defensible space to be located around buildings;
- (iii) Provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent direct flame contact and material ignition;
- (iv) Ensure that safe operational access and egress for emergency service personnel and residents is available;
- (v) Provide for ongoing management and maintenance of bushfire protection measures, including fuel loads in the asset protection zones;
and
- (vi) Ensure that utility services are adequate to meet the needs of fire-fighters and others assisting in bushfire fighting.

The document identifies six core bushfire protection requirements. These are:

- Provision of Asset Protection Zones / Defensible Spaces in accordance with the specific landuse, the predominant bushfire prone vegetation type within 140 metres of the development and the topography of the land containing the bushfire prone vegetation;
- Access for fire-fighting operations;
- Water Supplies for fire-fighting operations;

- Construction standards of buildings located within 100 metres of the bushfire hazard interface, dependant on specification landuse, the predominant bushfire prone vegetation type within 140 metres of the development and the topography of the land containing the bushfire prone vegetation;
- Emergency Planning;
- Landscape Management – in particular the management of the Asset Protection Zones / Defendable Spaces and residual bushfire prone vegetation.

Planning for Bushfire Protection 2006 does not provide deemed to satisfy solutions for Class 5 – 8 buildings constructed in bushfire prone areas but states that where the aim and objectives of the document are not met, then the construction requirements for bushfire protection will need to be considered on a case by case basis.

The document also recommends that Class 5 – 8 and Class 10 buildings should be located to provide a defendable space setback which prevents flame contact with the structure.

Sections 4.2 and 4.3 of this report examine the layout in relation to the provision of a suitable “defendable space” between the bushfire hazard and the industrial buildings and the protection against the potential impacts of a future fire occurrence in the bushfire prone vegetation to the east of the development precinct and to the south, within the Burley Road reserve.

The provision of access and water supplies for fire-fighting operations’ management of the defendable space [Asset Protection Zone] and evacuation planning are examined in Sections 4.4 – 4.9 of this report.

4.2 The provision of Defendable Space/s [Asset Protection Zones].

Asset Protection Zones [APZs] have been assessed for the future industrial development in accordance with *Planning for Bushfire Protection 2006* and Australian Standard A.S. 3959 – 2009 (using effective slope and predominant vegetation communities).

The assessment is based on the predominant vegetation being the Grey Box – Forest Red Gum grassy woodland within the Burley Road corridor, to the south of the development site. The vegetation on the land to the east of the development site is managed grassland.

Keith (2004) provides a listing of vegetation communities and their inferred relationships to vegetation classes. The Grey Box – Forest Red Gum grassy woodland falls within the Cumberland Dry Sclerophyll class.

The width of the vegetation in the Burley Road corridor is less than 50 metres. *Planning for Bushfire Protection 2006* identifies areas of bushfire prone vegetation which provide a potential fire run directly toward buildings not exceeding 50 metres as low hazard and APZs and building construction standards for these will be the same as for rainforests.

[It is also noted that the road corridor will undergo development as part of the future Southern Link Road. This development is likely to remove vegetation within the road corridor].

The NSW Rural Fire Service's requirement for industrial buildings is to provide a setback from the bushfire prone vegetation which will minimise flame contact on a building.

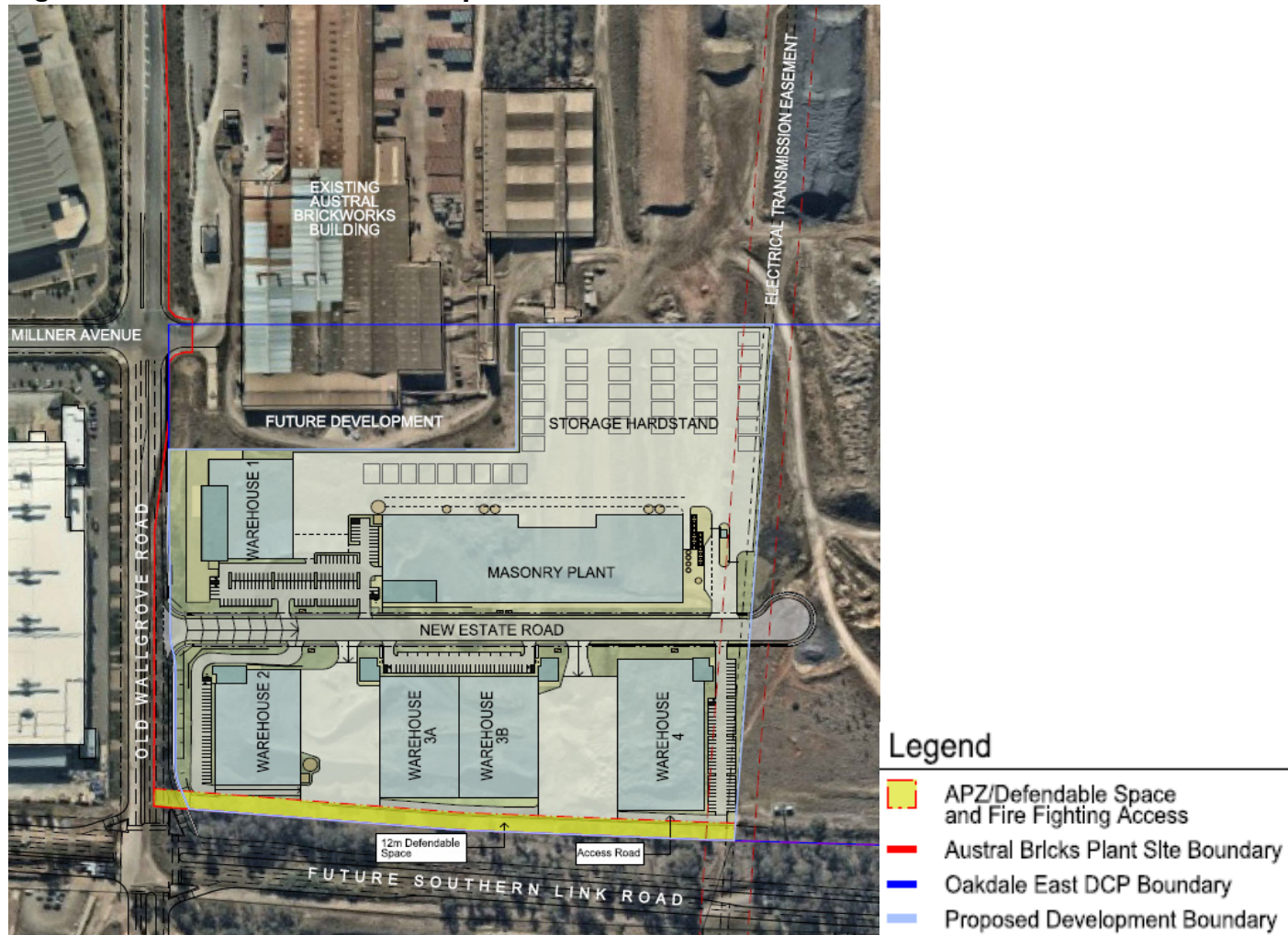
Table 2.4.2 of A.S. 3959 – 2009 – '*Construction of Buildings in Bushfire Prone Areas*' identifies that a defendable space width of 12 metres is required to the south of the industrial building/s located adjacent to Burley Road.

Table 2.4.2 of A.S. 3959 – 2009 – '*Construction of Buildings in Bushfire Prone Areas*' also identifies that a defendable space width of 7 - 9 metres is required to the east of the industrial buildings located adjacent to unmanaged grassland vegetation on the land to the east of the development site.

The widths provided by the SSDA Master Plan satisfy the NSW Rural Fire Service's requirement that the buildings should be located beyond the flame zone length.

Refer to Figure 16 – Plan of Defendable Spaces on Page 31.

Figure 17 – Plan of Defendable Spaces.



4.3 Construction Measures to Buildings.

Table 2.4.2 of A.S. 3959 – 2009 – ‘*Construction of Buildings in Bushfire Prone Areas*’ identifies that the elevations of the industrial buildings exposed to the bushfire hazard within the Burley Road corridor need to be constructed to comply with BAL 40 construction standards.

The remaining, non-exposed elevations of the industrial buildings located adjacent to the bushfire hazard shall be constructed to comply with BAL 29 standards.

The following additional measures shall be implemented:

- The downpipe/stormwater system to the internal box gutters shall be sized to provide a self flushing of combustible materials from the roof/gutter. This shall include increased fall in the box gutters to the sumps;
- Any operable windows shall be fitted with aluminium/stainless steel mesh flyscreens having a maximum mesh aperture size of 2mm;
- Access doors [PA and Vehicle] to the buildings shall be fitted with seals that seal the bottom, stiles and head of the door against the opening/frame to prevent the entry of embers into the building. Particular attention shall be given to the gap at the head of the curtain of the roller doors, where mohair type seals can be used;
- External timber doors shall be fitted with a stainless steel/Colorbond kick plate of 400mm high on the outside of the door;
- External glazed doors and windows shall comply with the requirements for glazing less than 400mm above finished ground level; paths/pavement and elevated roofs;
- Any external vents, grilles and ventilation louvres shall have stainless steel mesh with a maximum aperture of 2mm square fitted to prevent the entry of embers into the building or be fitted with a louvre system which can be closed in order to maintain a maximum aperture or gap of no more than 2mm;
- Roof ventilators shall be fitted with stainless steel flymesh [2mm aperture] to prevent the entry of embers into the building or be fitted with a louvre system which can be closed in order to maintain a maximum aperture or gap of no more than 2mm;

- Roof lights and skylights shall have an FRL of -/30/-;

4.4 Access Standards for Firefighting Operations.

Chapter 4, Section 4.2 “Access” of *Planning for Bushfire Protection 2006* provides specifications on the access provisions for fire-fighting operations within developments which are subject to bushfire attack.

The proposed layout provides for perimeter access between Warehouse 2, Warehouse 3A/3B and Warehouse 4 and the bushfire hazard in Burley Road, constructed to provide heavy rigid and articulated vehicle access suitable for fire-fighting appliances similar to NSW Rural Fire Service Category 1 Tankers and Fire & Rescue NSW Composite and Aerial Appliances.

4.5 Water Supplies for Firefighting Operations.

A reticulated water supply for potable water supply and fire hydrants is to be extended into the site.

There shall be provided a ring-main to the southern side of Warehouse 2, Warehouse 3A/3B and Warehouse 4 and to the eastern side of the Masonry Plant building and Warehouse 4, complete with Millcock Valves fitted with Stortz Coupling and Blanking Cap.

The fire-fighting water supply to the buildings shall comply with the Building Code of Australia [BCA] and A.S. 2419.1 – 2005.

4.6 Emergency Management for Fire Protection / Evacuation.

Warehouse Building No. 2, 3A/3B and Warehouse 4 may be subject to a low level risk from a fire event in the Burley Road corridor that may necessitate temporary relocation of equipment and staff. Therefore, it is recommended that the evacuation planning process for these sites shall also include protocols for bushfire emergencies.

4.7 Bushfire Hazard Management.

The intention of bushfire hazard management is to prevent flame contact with a structure, reduce radiant heat to below the ignition thresholds for various elements of a building, to minimize the potential for wind driven embers to cause ignition and to reduce the effects of smoke on occupants and fire-fighters.

The management of the Defendable Space and the individual sites shall comply with the recommendations of Appendix A5.4 & Appendix A5.5 of *Planning for Bushfire Protection 2006* and *Standards for Asset Protection Zones*.

Management of the Defendable Space shall comply with the following:

- Maintain a clear area of low cut lawn or pavement adjacent to the buildings; Utilise non-flammable materials such as Scoria, pebbles and recycled crushed bricks as ground cover to landscaped gardens in close proximity to building;
- Keep areas under shrubs and trees raked and clear of combustible fuels;
- Trees and shrubs should be maintained in such a manner that tree canopies are separated by 2 metres and understorey vegetation is not continuous [retained as clumps].

SECTION 5

CONCLUSION

The Development Application examined in this report seeks approval for the construction of a Masonry Plant and Warehouse complexes on Part Lot 1 in DP 843901 Old Wallgrove Road, Horsley Park.

The development precinct occupies the southern portion of the existing Austral Brickworks with the narrow corridor of vegetation in Burley Road, to the south and the vegetation along Reedy Creek, to the east presenting the only bushfire hazard to the proposed industrial development.

The separation between the development precinct and the Reedy Creek corridor removes any threat to the proposed Masonry Plant and Warehouse 4 buildings from the bushfire hazard in the creek.

The external works include the provision of a Defendable Space to the southern aspect of Warehouse 2, Warehouse 3A/3B and Warehouse 4 buildings and fire-fighting access between the bushfire hazard within Burley Road and these buildings.

This report has examined the proposed development against the aim and objectives of *Planning for Bushfire Protection 2006* and concludes that the development provides a defendable space to the buildings which will mitigate flame contact, provides access and water supply for fire-fighting operations, construction standards to the future buildings and fuel management protocols and concludes that the proposed development mitigates any potential bushfire threat to persons, property and the environment from the danger that may arise from a bushfire within the vegetation within the Burley Road and Reedy Creek corridors.

The report has found that the proposed development satisfies the aim and objectives of *Planning for Bushfire Protection 2006* and the SEARs.



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REFERENCES:

- N.S.W Rural Fire Service – *Planning for Bushfire Protection 2006*;
- N.S.W Rural Fire Service –Threatened Species Hazard Reduction List for the Bushfire Environmental Code (2006);
- *Environmental Planning & Assessment Act – 1979*;
- *Rural Fires Act – 1997*;
- *Rural Fires and Environmental Assessment Legislation Amendment Act 2002*;
- *Rural Fires Regulation 2013*;
- NSW Rural Fire Service – *Guideline for Bushfire Prone Land Mapping 2006*;
- *Bushfire Environmental Assessment Code 2006*;
- Building Code of Australia;
- Australian Standard A.S 3959-2009 “*Construction of Buildings in Bushfire Prone Areas*”;
- Fairfield Bushfire Prone Land Map.