

**BUSHFIRE PROTECTION ASSESSMENT
FOR THE CONSTRUCTION OF THE
PROPOSED DICKER DATA WAREHOUSE**

**ON LOT 1 in DP 225973
&
LOT 2 in DP 1088703**

**No. 238 - 258 CAPTAIN COOK DRIVE,
KURNELL**



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B172990 - 3	Final	9.10.2017	08.05.2018	<i>G.L.Swain</i>

EXECUTIVE SUMMARY

Australian Bushfire Protection Planners Pty Limited has been commissioned by *DCI NSW Pty Ltd*, on behalf of *Dicker Data*, to prepare a report to provide advice on the bushfire protection measures required for the construction of the proposed Dicker Data Warehouse on Lot 1 in DP 225973 and Lot 2 in DP 1088703, No. 238 - 258 Captain Cook Drive, Kurnell.

The project is being lodged with the Department of Planning as a State Significant Development. The Secretaries Environmental Assessment Requirements [SEARs] issued under Reference SSD 8662 and dated 11.9.2017, requires under Key Issues – Bushfire Management the preparation of a 'Bushfire Assessment Report'.

The site on which it is proposed to construct the new warehouse comprises approximately 17.25 hectares of land which is located on the south-eastern side of Captain Cook Drive.

The site was formerly occupied by Abbott Pharmaceuticals and the existing buildings will be demolished. The proposed warehouse will be located in the area of the site occupied by the former development.

Access to the building is off Captain Cook Drive via the existing driveway access and the proposed internal road network.

The Sutherland Council Bushfire Prone Land Map indicates that the site contains Category 1 Bushfire Prone Vegetation and the buffer zone to the Category 1 Bushfire Prone Vegetation located on the adjoining land to the southeast, southwest and within the Towra Point Nature Reserve, to the northwest of Captain Cook Drive.

Based on the above, Section 4.14 of the *EP&A Act 1979* would ordinarily apply to any development which is to occur on the site. However, by virtue of clause 1B of Section 4.14, this section does not apply to State Significant Development.

Notwithstanding, in accordance with good environmental impact assessment practice, this report has considered the provisions of Section 4.14 of the EP& A Act.

Therefore, this report undertakes an assessment to examine the measures required to minimise bushfire risk on the proposed development and determines the deemed-to-satisfy bushfire protection requirements in accordance with the provisions of *Planning for Bushfire Protection 2006* and provides recommendations on the provision of Asset Protection Zones [Defendable Spaces] to the proposed building.

This report also assesses the adequacy of fire-fighting access and water supplies; construction standards of the building, the management of the Asset Protection Zones [Defendable Spaces] and evacuation protocols necessary to address the bushfire risk to the proposed development and to address the aim and objectives of *Planning for Bushfire Protection 2006*.



The report has found that no modifications are required to the development proposal in order to address the provision of defensible spaces [Asset Protection Zone] to the building; the provision of access and water supplies for fire-fighting operations.

A handwritten signature in black ink, which appears to read 'Graham Swain', is positioned above the typed name.

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

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SECTION 1

INTRODUCTION

1.1 Aim of this Assessment.

The aim of this Bushfire Protection Assessment is to address the requirements of the Secretary's Environment Assessment Requirements [SEARs] issued on the 11th September 2017 and amended 18th January 2018, including the preparation of a Bushfire Assessment Report.

To achieve the specific bushfire requirement of the SEARs the following will be examined:

- Determine the classification of the vegetation on and surrounding the site in accordance with the vegetation classification system contained in *Planning for Bushfire Protection 2006*;
- Undertake an assessment to determine the slope of the land on and surrounding the development site;
- Undertake a Bushfire Protection Assessment to determine bushfire protection strategies for the proposed development that address the following matters:
 - (i) The provision of building setbacks (Defendable Space) from vegetated areas and the siting of building to minimize the impact of radiant heat and direct flame contact;
 - (ii) Fire fighting water supplies;
 - (iii) Access requirements for emergency service vehicles;
 - (iv) Construction standards to be used for the proposed building to minimize the vulnerability of 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:

1.2.1 Legislation.

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

Part 4, Division 4.1 State significant development of the EP&A Act requires the Minister to determine a development application in respect of State significant development.

(b) Section 4.14 of the EP&A Act

Section 4.14(1)(a) of the *EP&A Act* requires that the proposed development comply with the requirements of *Planning for Bushfire Protection 2006* with respect to the protection of persons, property and the environment from the danger that may arise from a bushfire.

(c) 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.

1.2.2 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.

1.3 Documentation Reviewed.

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

- Site Plan of the proposed Dicker Data Warehouse prepared by WMK Architecture – Project No. 16202, Drawing No. DA-001B, dated 03.05.2018;
- Sutherland Council Certified Bushfire Prone Land Map;
- *Planning for Bushfire Protection 2006* prepared by the NSW Rural Fire Service.

1.4 Site Inspection.

Graham Swain of *Australian Bushfire Protection Planners Pty. Limited* inspected the development property on the 30th of July 2013 to assess the topography, slopes, vegetation classification and land use within and adjoining the development site. Visual assessment was undertaken to determine likely fire runs, influence of terrain on wind patterns within the bushfire prone vegetation and an assessment of access and egress to the development site.

Adjoining properties were also inspected to determine the surrounding land use / land management.

1.5 Development Proposal.

This Bushfire Protection Assessment has been prepared for the construction of the proposed Dicker Data Warehouse on Lot 1 in DP 225973 and Lot 2 in DP 1088703, No. 238 - 258 Captain Cook Drive, Kurnell.

The site was formerly occupied by Abbott Pharmaceuticals and the existing buildings and associated infrastructure will be demolished.

The proposed warehouse will be located in the area of the site occupied by the former Pharmaceuticals development.

Access to the warehouse building is off Captain Cook Drive via the existing driveway access and the proposed internal road network which provides a loop road along the south-eastern boundary to the carpark located on the south-western side of the warehouse building with an exit from the carpark is provided onto Captain Cook Drive.

The existing carpark located in the northern corner of the development site will be retained.

An office building is located to the northwest [in front] of the warehouse building.

The proposed development includes the retention of vegetation [which has been identified as an Endangered Ecological Community] in two Vegetation Zones.

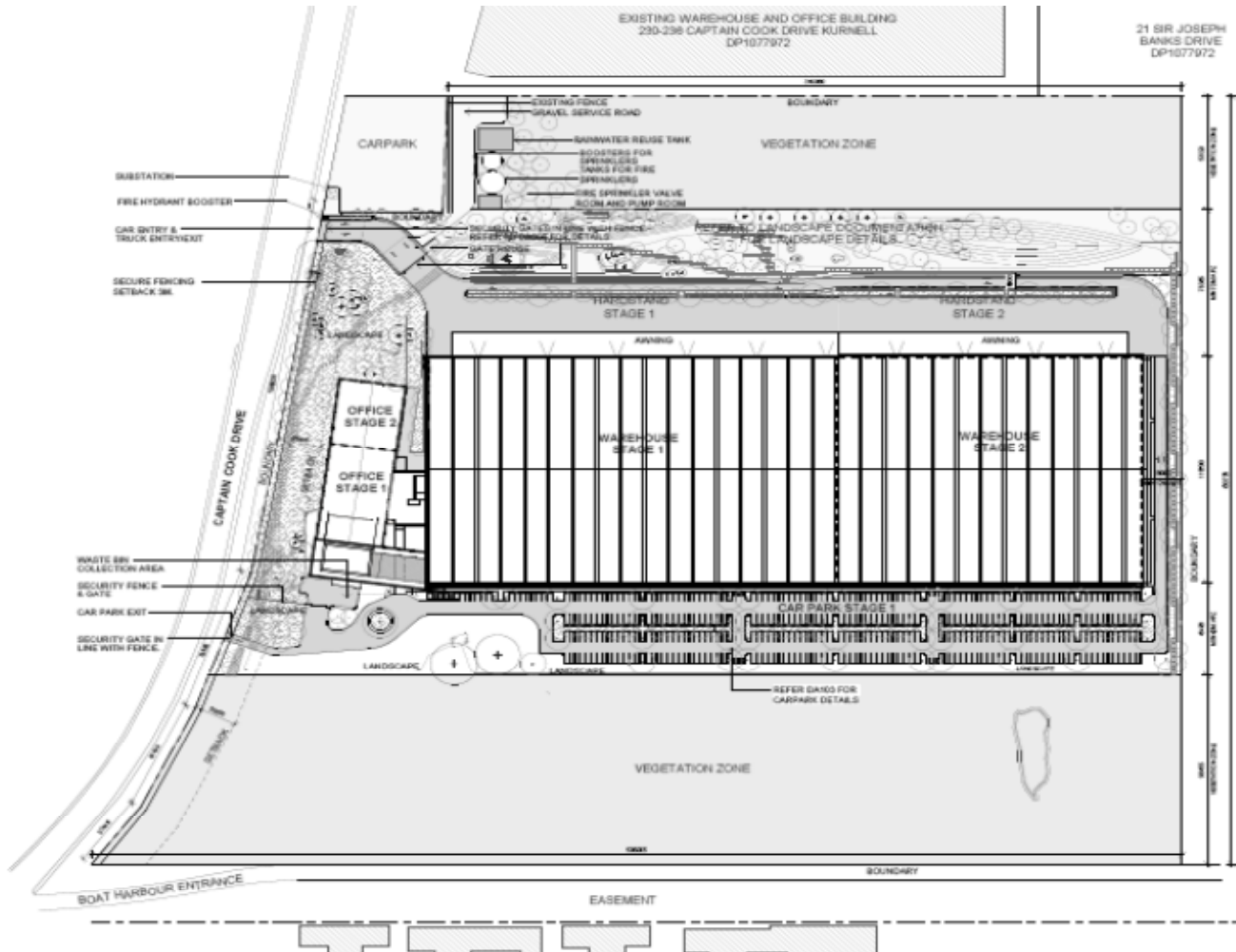
The first area is located adjacent to the north-eastern boundary and to the southeast of the existing carpark.

The second, larger parcel, occupies the land to the southwest of the new carpark, extending to the south-western boundary of the development site.

[Refer to Figure 1 – Site Plan of proposed Data Warehouse on page 10].



Figure 1 – Site Plan of the proposed Data Warehouse.



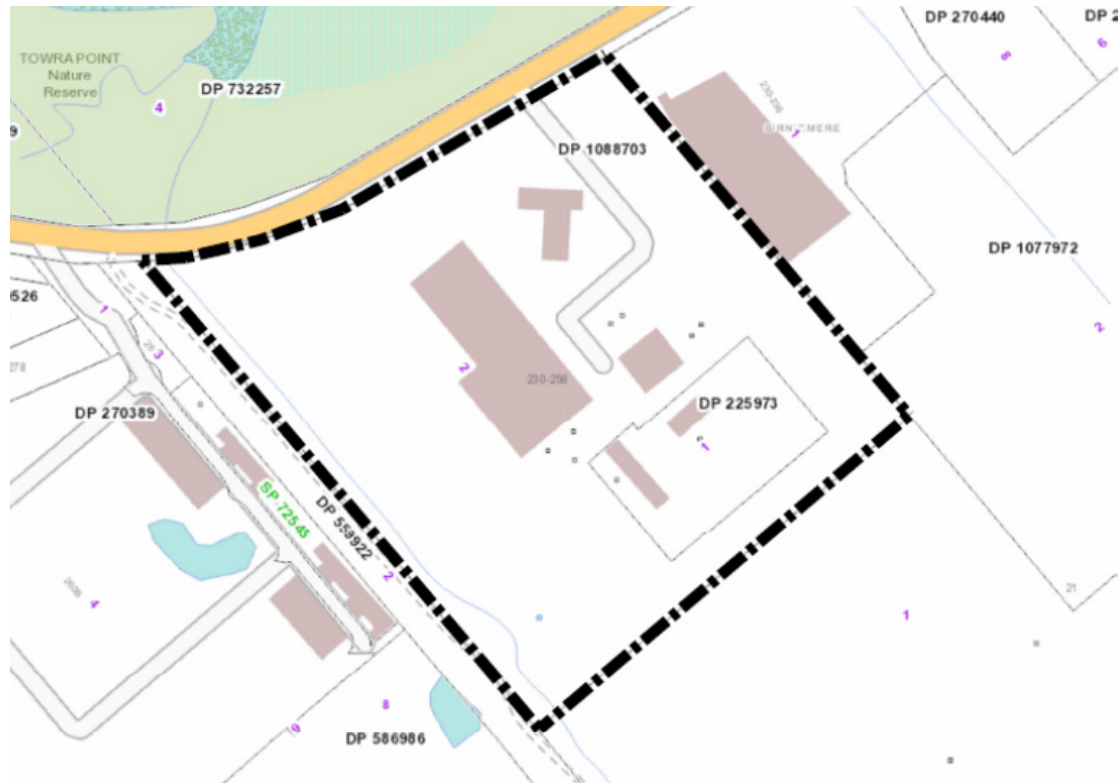
SECTION 2

DESCRIPTION OF DEVELOPMENT SITE

2.1 Location & Description.

The development site consists of Lot 1 in DP 225973 and Lot 2 in DP 1088703, No. 238 - 258 Captain Cook Drive, Kurnell.

Figure 2 – Location of the Development Site.



2.2 Existing Land Use.

The development site contains the former Abbott Pharmaceuticals complex.

2.3 Adjoining Land Use.

The landuse adjoining the boundaries of the development site is as follows:

(a) Northeast

The land to the northeast of the development site contains an existing industrial complex.

(b) Southeast

The land adjoining the south-eastern boundary of the development site is vacant. The Sydney Water Desalination Plant occupies the land further to the southeast.

(c) Southwest

The land adjoining the south-western boundary of the development site consists of the access road to Boat Harbour and existing industrial development.

(d) Northwest

The land to the northwest of the development site, beyond Captain Cook Drive, consists of vacant land within the Towra Nature Reserve.

Figure 3 – Aerial Photograph of the Development Site showing adjoining landuse



2.4 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.

➤ **Within the Development Site.**

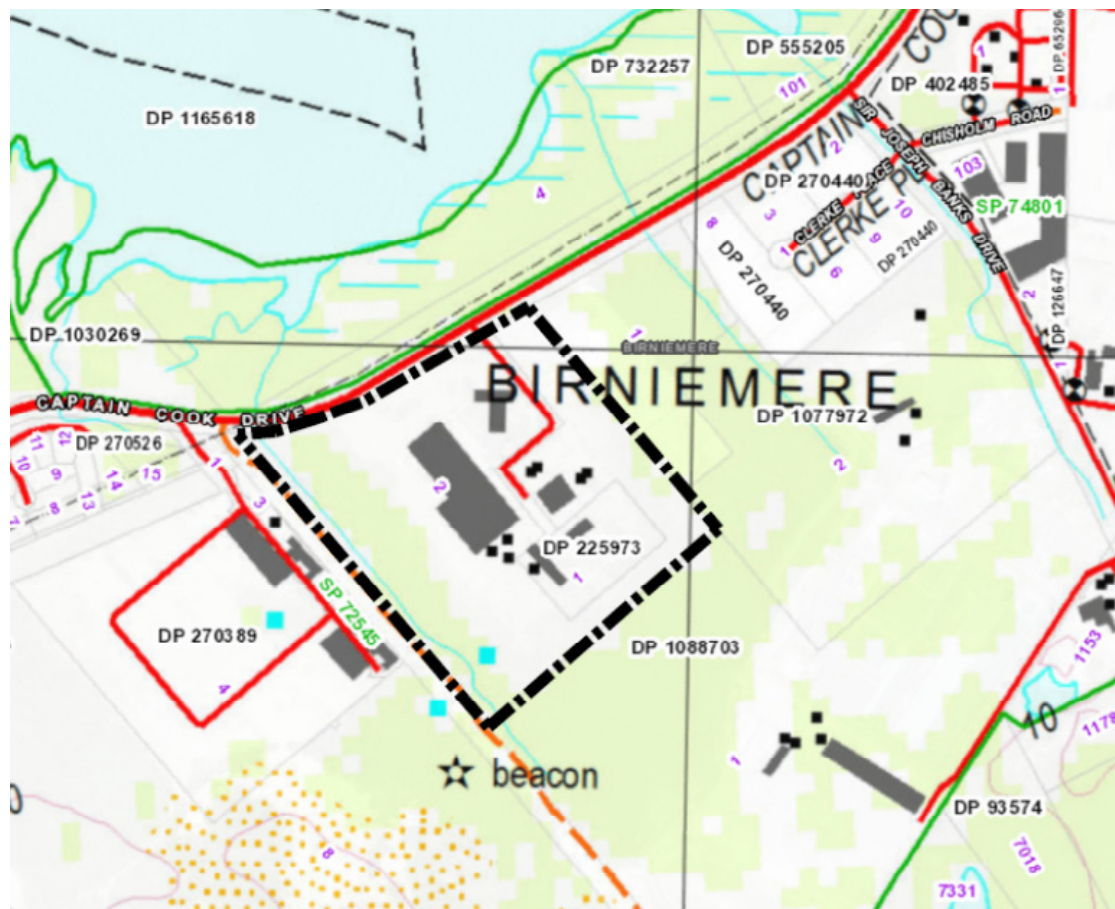
The land within the development site is level.

➤ **Beyond the Development Site.**

The land adjoining the development site is level to the northeast, southwest and northwest.

The land to the southeast rises across the former coastal sand dunes.

Figure 4 – Topographic Map of development site and adjoining lands.



2.5 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.

An ecological study undertaken by Biosis identified that the development site contains two Endangered Ecological Communities [EEC] – Bangalay Sand Forest in the south-eastern corner and Swamp Oak Floodplain Forest and Freshwater Wetland on Coastal plains at the south-western boundary.

The remainder of the site contains grass and landscaped gardens.

2.6 Vegetation within 140 metres of the Development Site.

(a) Northeast.

The land to the northeast contains managed vegetation within the existing industrial complex. The proposed Vegetation Zone contains a narrow band of Coastal Banksia Heath.

(b) Southeast.

The adjoining land to the southeast contains Bangalay Sand Forest/ Swamp Oak Floodplain Forest and Coastal Banksia Scrub.

(c) Southwest.

The adjoining industrial land has been cleared of native vegetation.

The proposed Conservation Area contains Floodplain Forest.

(d) Northwest.

The Towra Nature Reserve to the northwest of Captain Cook Drive contains Swamp Oak Floodplain Forest extending into Mangroves and Salt Marsh on the foreshore to Botany Bay.

2.7 Significant Environmental Features within the Development Site.

The development site does not contain significant environmental features such as SEPP 44 Koala Habitat; SEPP 14 Wetlands; SEPP 26 Littoral Rainforests; land slip areas, National Parks Estate or areas of geological interest. A watercourse is located adjacent to the south-western boundary of the development site, within the Conservation Area – Vegetation Zone.

2.8 Known Threatened Species, Population or Ecological Community on the Development Site.

Swamp Oak Floodplain Forest, Bangalay Sand Forest and Freshwater Wetland on Coastal plains occur within the development site.

This vegetation is retained in the proposed Conservation Areas – Vegetation Zones.

2.9 Details and location of Aboriginal Relics or Aboriginal Place.

An area of moderate Archaeological potential is located adjacent to the Captain Cook Drive frontage to the development site.

SECTION 3

FIRE MANAGEMENT RESPONSIBILITIES

Fire management within the development site is the responsibility of:

3.1 Sutherland Council.

The Sutherland Council has responsibility, under Section 66 of the *Rural Fires Act*, to issue a notice in writing requiring an owner / occupier of any land within the Sutherland Local Government Area [LGA] to carry out bushfire hazard reduction works on that land. Section 100E of the *Rural Fires Act* requires Council to issue bushfire hazard reduction certificates for hazard reduction to be undertaken on private lands.

3.2 New South Wales Rural Fire Service.

The NSW Rural Fire Service (RFS) has the responsibility for undertaking fire suppression activities, hazard management activities and other functions relative to emergency management, within its areas of operation. *Section 73* of the *Rural Fires Act (1997)* enables the Commissioner to carry out bush fire hazard reduction works on any land as required by a bush fire risk management plan if the work has not been carried out satisfactorily. Incurred costs can be recovered as a debt owed to the Crown.

3.3 Fire & Rescue New South Wales.

Fire & Rescue NSW has the responsibility for undertaking fire suppression activities, and other functions relative to emergency management, within its area of operation and through Mutual Aid Agreements, provide assistance to the NSW Rural Fire Service, particularly for structural fire operations within the NSW Rural Fire Brigade Districts. Hazmat management within New South Wales is the responsibility of Fire 7 Rescue NSW.

3.4 Public Authorities & owners/occupiers of land.

The Rural Fires Act, 1997 provides several legislative opportunities to require Public Authorities, land owners and occupiers to manage hazardous fuels. These are listed below:

- **Section 63(1)** states that it is the duty of a public authority to take any practicable steps to prevent the occurrence of bushfires on, and to minimise the danger of the spread of a bushfire on or from:

(a) *any land vested in or under its control or management, or*

(b) *any highway, road, street, land or thoroughfare, the maintenance of which is charged on the authority.*

- **Section 63(2)** states that *'it is the duty of the owner or occupier of land to take the notified steps (if any) and any other practicable steps to prevent the occurrence of fires on, and to minimise the danger of the spread of fires on or from that land'*.
- **Section 65A** states that the *'Commissioner may nominate a member of the Service as a hazard management officer'*.
- **Section 65(2)** states that *'an authorised person may, with the permission of the fire fighting authority or other authority responsible for unoccupied Crown land or managed land or a person nominated by the authority to give such permission, enter the land and carry out bushfire hazard reduction work with the assistance of such other persons as the authorised person considers to be necessary for the purpose'*.
- **Section 65(3)** states that *'the authority responsible for unoccupied Crown land or managed land is to be taken to have given the permission under this section to the extent necessary to give effect to a bushfire risk management plan'*.
- **Section 65(4)** states that *'if permission under this section is given subject to conditions, the conditions must be complied with'*.
- **Section 66(1)** states that *'a hazard management officer may, by notice in writing, require the owner or occupier [not being a public authority] of any land to carry out bushfire hazard reduction work specified in the notice on the land'*.
- **Section 66(2)** states that *'a hazard management officer must serve a notice under this section if required to do so by a bushfire risk management plan applicable to the land that is in force'*.
- **Section 66(3)** states that *'a hazard management officer must issue a bushfire hazard reduction certificate in respect of any bushfire hazard reduction work required by a notice issued in accordance within section (2)'*.
- **Section 66(6)** states that *'the requirements and conditions so specified must include any requirements in a bushfire risk management plan that is applicable to the land and is in force and may include a requirement or condition that the burning of fire breaks or of combustible material:*
 - (a) *must in fire district constituted under the Fire Brigades Act 1989 be carried out by or under the supervision of the fire brigade or an officer in charge of the fire brigade;*

(b) *must outside a fire district, be carried out by or under the supervision of the rural fire brigade specified in the notice or an appropriate officer of the rural fire brigade or any hazard management officer.*

- **Section 66(7)** states that *‘a notice requiring the establishment of a firebreak cannot require an occupier or owner to kill or remove any trees that are reasonably necessary for shade, shelter, windbreak or fodder purposes or the protection of threatened species, populations, ecological communities or critical habitats within the meaning of the ‘Threatened Species Conservation Act 1995’.*
- **Section 66(8)** states that *‘an occupier or owner to whom a bushfire hazard reduction notice is given must, despite the fact that a fire permit has not been granted under Division 5, comply with the requirements specified in the notice’.*
- **Section 70(2)** states that *‘if within the time specified in the relevant notice the owner or occupier to whom it is given fails to comply with any requirement of the notice, the Commissioner may, without prejudice to liability of the owner or occupier, enter on the land and carry out the bushfire hazard reduction work the owner or occupier was required to do under the notice’.*
- **Section 70(3)** states that *‘any costs incurred by the Commissioner in carrying out such work may be recovered from the owner or occupier of the land as a debt due to the Crown in a court of competent jurisdiction’.*
- **Section 87** allows the removal of hazards in the bush fire danger period by the provision of a permit system. The permits are valid for 21 days, excluding TOBAN [Total Fire Ban] days.

Section 10 permits are not required to adhere to *Part V* provisions of the EPA Act 1979 in the assessment of impact, except for public authorities. An owner/occupier of private land must obtain from the NSW Rural Fire Service, a bushfire hazard reduction certificate before undertaking hazard reduction works on that land (Section 100E of the *Rural Fires Act 1997*).

3.5 Management of the Defendable Spaces [Asset Protection Zones] to the Development.

The management of the landscaped gardens and the vegetation within the development site 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 5.2].

SECTION 4

PRECINCT LEVEL ASSESSMENT

4.1 Certified Bushfire Prone Land Map.

The Sutherland Bushfire Prone Land Map shows that the site is impacted by Category 1 Bushfire Prone Vegetation and the buffer zone to bushfire prone vegetation.

The site inspection confirmed the potential fire hazard recorded on the Sutherland Bushfire Prone Land Map.

Figure 5 – Extract from the Sutherland Bushfire Prone Land Map



SECTION 5

BUSHFIRE PROTECTION ASSESSMENT

5.1 Introduction.

The development proposal is for the construction of the Dicker Data Warehouse on Lot 1 in DP 225973 and Lot 2 in DP 1088703, No. 238 - 258 Captain Cook Drive, Kurnell.

The Building Code of Australia defines the proposed building as a Class 5 building.

Chapter 4, Section 4.3.6(f) of *Planning for Bushfire Protection 2006* discusses the bushfire protection to buildings of Class 5 to 8 and 10b of the Building Code of Australia and states:

“The BCA does not provide for any bushfire specific performance requirements and as such A.S.3959 – 1999 does not apply as a set of ‘deemed to satisfy provisions’.

The general fire safety construction provisions for this class of building are taken as acceptable solutions, but the aim and objective of Planning for Bushfire Protection 2006 apply in relation to access and water supply for fire-fighting operations, emergency planning [evacuation] and landscaping / vegetation management.

In circumstances where the aim and objectives of Planning for Bushfire Protection 2006 are not met, then the construction requirements for bushfire protection will need to be considered on a case-by-case basis”.

Chapter 1, Section 1.1 of *Planning for Bushfire Protection 2006* states that for the construction of Class 5 – 8 buildings on bushfire prone land, or land impacted by bushfire prone vegetation, the aim and objectives of the document apply.

The stated aim of the document is to use the NSW development assessment system to provide for protection of human life [including fire-fighters] and to minimize impacts on property from the threat of bushfire, while having due regard to development potential, on-site amenity and protection of the environment.

The objectives of the document are:

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

The following sections of this report examine the proposed development's compliance with the objectives of *Planning for Bushfire Protection 2006*.

5.2 Bushfire Protection Assessment for the proposed Data Warehouse building:

Objective (i):

Afford occupants of any building adequate protection from exposure to the impacts of a bushfire:

The bushfire hazard to the proposed warehouse building is from:

1. The narrow corridor of Coastal Banksia Scrub within the Conservation Area to the northeast of the warehouse building;
2. The Coastal Banksia Scrub/Bangalay Sand Forest/Swamp Oak Forest on the land to the southeast of the development site;
3. The Swamp Oak Forest in the Vegetation Zone to the southwest of the building; and
4. The Swamp Oak Forest in the Towra Point Nature Reserve to the northwest of Captain Cook Drive.

The location of the proposed building provides the following separation to unmanaged, bushfire prone vegetation:

1. More than 75 metres from the Coastal Scrub [Heath] within the Vegetation Zone located to the northeast of the warehouse building;
2. More than 12 metres to the Coastal Scrub [Heath] located on the adjacent land to the southeast of the development site;
3. More than 48 metres from the Swamp Oak Forest within the Vegetation Zone to the southwest of the warehouse building;
4. More than 50 metres to the Swamp Oak Forest within Towra Nature Reserve, to the northwest of the office building.

These separation widths provide adequate protection from the impact of bushfire.

Objective (ii):

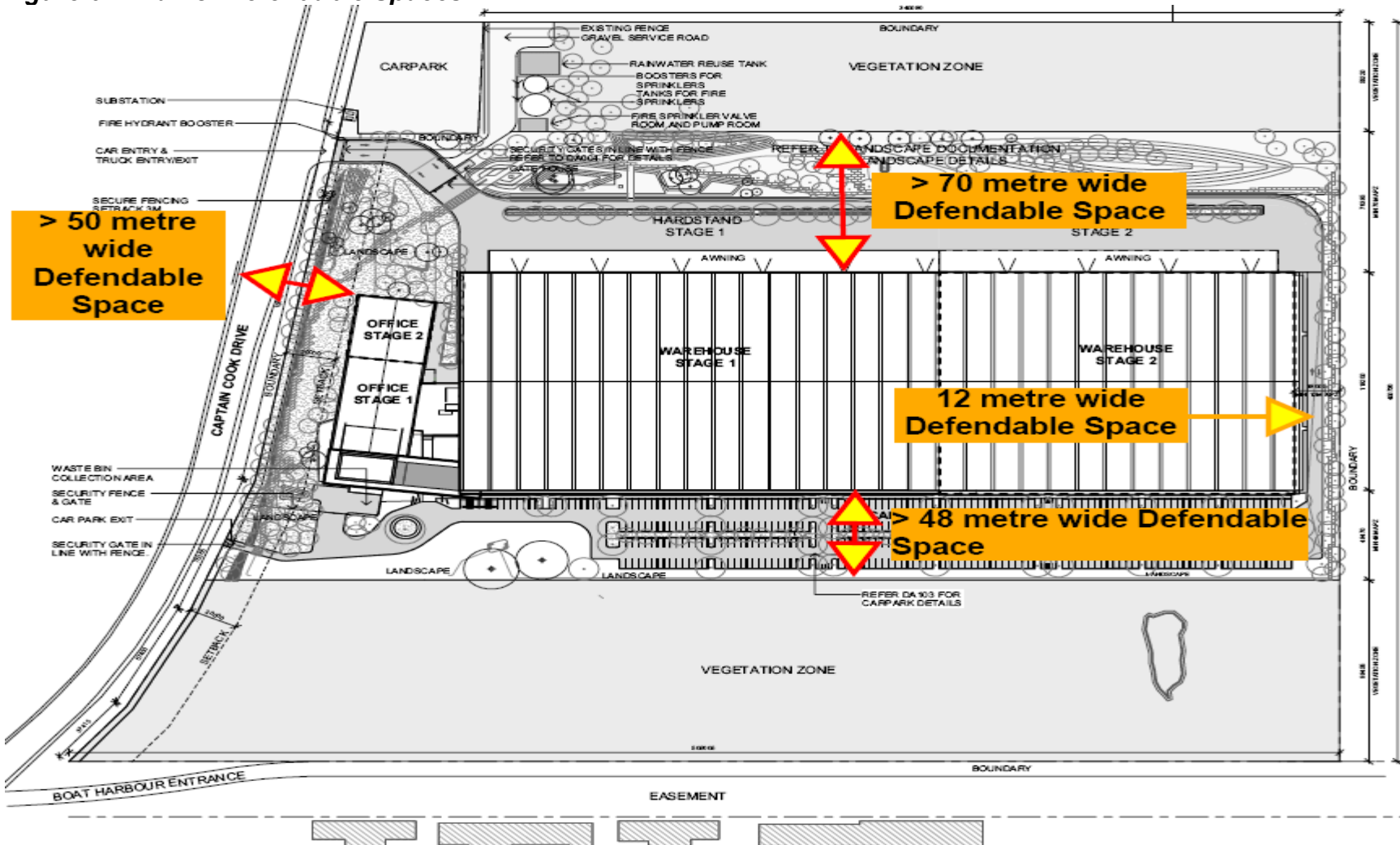
Provide for a defensible space located around the proposed building:

The siting of the proposed Dicker Data Warehouse building provides for a minimum defensible space width of 75 metres to the northeast; minimum 12 metres to the southeast, minimum 48 metres to the southwest and minimum 50 metres to the northwest of the proposed building.

Refer to Figure 6 – Plan of Defendable Spaces on Page 22.



Figure 6 – Plan of Defendable Spaces



Objective (iii):

Provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent direct flame contact and material ignition:

The NSW Rural Fire Service's Addendum to Appendix 3 of *Planning for Bushfire Protection 2006* identifies that, for the purpose of determining the level of radiant heat exposure on a building, Bangalay Sand Forest/Swamp Oak Forest is deemed to be 'Forest' and Coastal Scrub [Tall Heath] as 'Scrub'.

A.S 3959 – 2009 - '*Construction of Buildings in Bushfire Prone Areas*' identifies the following radiant heat levels on the proposed building:

Table 1. Determination of Radiant Heat exposure on the building.

Aspect	Vegetation within 140m of development	Predominant Vegetation Formation Class 2010 Addendum Planning for Bushfire Protection 2006]	Effective Slope of Land	Width of Defendable Space provided to fixed assets	Radiant Heat level
<i>Northeast of Warehouse</i>	Coastal Heath	Scrub	Level	Minimum 70 metres	Less than 12.5 kW/m ²
<i>Southeast of Warehouse</i>	Coastal Heath	Scrub	Upslope	Minimum 12 metres.	40 kW/m ²
<i>Northeast of Warehouse</i>	Swamp Oak Forest	Forest	Level	Minimum 48 metres	Less than 12.5 kW/m ²
<i>Northwest of Warehouse</i>	Swamp Oak Forest	Forest	Level	Minimum 50 metres	Less than 12.5 kW/m ²

The separation widths [Defendable Spaces] provided to the perimeter of the warehouse and office mitigate the chance of direct flame contact on the building.

With the exception of the south-eastern elevation of the warehouse building, the required level of bushfire construction is BAL 12.5, pursuant to Section 3 and Section 5 of A.S. 3959 – 2009 - '*Construction of Buildings in Bushfire Prone Areas*'.

The south-eastern elevation of the warehouse building shall be constructed to comply with Section 3 and Section 8 [BAL 40] A.S. 3959 – 2009 - '*Construction of Buildings in Bushfire Prone Areas*'.

Whilst the type of construction recommended addresses the potential radiant heat levels from a future bushfire in the vegetation within and external to the development site, the following additional construction standards shall be implemented to safeguard the building against possible burning ember attack:

- Any external vents, ventilation louvres or grilles shall have stainless steel mesh [or perforated metal] 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;
- Access doors [PA/Fire Exit] to the south-eastern elevation of the building 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;
- 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.

Objective (iv):

Ensure that safe operational access/egress for emergency service personnel and occupants relocating is provided and/or available:

❖ ***Public Roads:***

The development site has direct access/egress to Captain Cook Drive via the existing driveway. Secondary egress to Captain Cook Drive is provided via the proposed driveway from the carpark.

Captain Cook Drive and the internal access driveways provide access for heavy rigid and articulated vehicles and therefore provide complying access for fire-fighting appliances.

❖ ***Fire Trail Access.***

There are no fire-trails provided or required within the development proposal as a perimeter loop road is provided to the building.

❖ ***Emergency Response Access / Egress.***

The proposed development provides an entry/exit off Captain Cook and an exit from the proposed carpark, onto Captain Cook Drive.

The internal driveway extends along the north-eastern aspect of the building, between the warehouse and the south-eastern boundary and through the carpark to the southwest of the warehouse/office building, exiting onto Captain Cook Drive.

Objective (v):***Provide for ongoing management and maintenance of bushfire protection measures, including fuel loads within the Asset Protection Zones / Defendable Space:***

The design and maintenance of the landscaped gardens within the defendable space shall comply with the prescriptions of an Inner Protection Area [IPA] pursuant to the specifications of Appendix 5 of *Planning for Bushfire Protection 2006* and the NSW Rural Fire Services document '*Specifications for Asset Protection Zones*'.

The management of the landscaped gardens [defendable space] shall be maintained under the terms of a positive covenant, pursuant to Section 88B of the *Conveyancing Act of 1909*, on the title of the land.

Objective (vi):***Ensure that utility services are adequate to meet the needs of fire-fighters [and others] assisting in bushfire fighting operations]:***

A reticulated water supply is provided from the existing Sydney Water Main in Captain Cook Drive, with on-site hydrants and fire hose reels provided to the building in accordance with the Building Code of Australia [BCA] and A.S. 2419.1 – 2005.

5.3 Emergency Management for Fire Protection / Evacuation:

The management of evacuation of the staff/visitors will be addressed in the preparation of a site specific Evacuation Plan for the facility.

The Evacuation Plan shall address the protocols for the timely relocation of staff/visitors in the event that an emergency occurs, both within the site or within the local area.

A copy of the Evacuation Plan shall be provided to the Local Emergency Management Committee/Police, Fire & Rescue NSW and NSW Rural Fire Service.

The Evacuation Plan shall comply with AS 3745 - 2002 "*Emergency Control Organisation and Procedures for Buildings, Structures and Workplaces*".

SECTION 6

BUSHFIRE MANAGEMENT STRATEGIES

Strategies to address the aim and objectives of *Planning for Bushfire Protection 2006* are as follows:

Strategy 1 – Defendable Space:

The Defendable Spaces between the unmanaged vegetation and the building shall be maintained as an Inner Protection Area (IPA) - Asset Protection Zone.

Strategy 2 – Landscape Management:

The design and maintenance of the landscaped gardens within the site shall comply with the prescriptions of an Inner Protection Area [IPA] pursuant to the specifications of Appendix 5 of *Planning for Bushfire Protection 2006* and the NSW Rural Fire Services document '*Specifications for Asset Protection Zones*'.

The management of the landscaped gardens [defendable space] shall be maintained under the terms of a positive covenant, pursuant to Section 88B of the *Conveyancing Act of 1909*, on the title of the land.

Strategy 3 – Bushfire Construction Standards:

Except for the south-eastern elevation, the entire building shall be constructed to comply with Section 3 and Section 5 [BAL 12.5] specifications pursuant to A.S. 3959 – 2009 – *Construction of Buildings in Bushfire Prone Areas*'.

The south-eastern elevation shall be constructed to comply with Section 3 and Section 8 [BAL 40] specifications pursuant to A.S. 3959 – 2009 – *Construction of Buildings in Bushfire Prone Areas*'.

The following additional construction standards shall be implemented to safeguard the building against burning ember attack:

- Any external vents, ventilation louvres or grilles shall have stainless steel mesh [or perforated metal] 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;
- Access doors [PA/Fire Exit] to the south-eastern elevation of the building 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;

- 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;

Strategy 4 – Evacuation Plan:

The management of evacuation of the staff/visitors will be addressed in the preparation of a site specific Evacuation Plan for the facility.

The Evacuation Plan shall address the protocols for the timely relocation of staff/visitors in the event that an emergency occurs, both within the site or within the local area. A copy of the Evacuation Plan shall be provided to the Local Emergency Management Committee/Police, Fire & Rescue NSW and NSW Rural Fire Service.

The Evacuation Plan shall comply with AS 3745 -2002 *“Emergency Control Organisation and Procedures for Buildings, Structures and Workplaces”*.

SECTION 7

CONCLUSION

The Key Issues - Bushfire Management of the Secretary's Environmental Assessment Requirements (SEARs) requires that an assessment be undertaken against '*Planning for Bushfire Protection 2006*'.

This report undertakes an assessment of the bushfire protection measures required to address the objectives of *Planning for Bushfire Protection 2006*, and examines the standards regarding setbacks [defendable space], provision of water supply, fuel management protocols and other matters considered necessary to mitigate any potential bushfire threat to persons, property and the environment from the danger that may arise from a bushfire within the vegetation on and adjoining the development site.

The report has found that the aim and objectives of *Planning for Bushfire Protection 2006* have been satisfactorily addressed and the characteristics of the proposed development, including provision of a defendable space and construction standards [which address the likely levels of radiant heat on the building] provide that the site is suitable in terms of its intended use.



Graham Swain
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REFERENCES:

- N.S.W Rural Fire Service – *Planning for Bushfire Protection 2006*;
- *Environmental Planning & Assessment Act – 1979*;
- *Rural Fires Act – 1997*;
- *Rural Fires and Environmental Assessment Legislation Amendment Act 2002*;
- Building Code of Australia;
- Australian Standard A.S. 3959-2009 “*Construction of Buildings in Bushfire Prone Areas*”;
- *Sutherland Bushfire Prone Land Map*;
- Secretaries Environmental Assessment Requirements [SEARs].