

Our Ref: 20EMKC02 / 18AWE02:NvD/JT
DoP ref: SSD 9741
NSW RFS ref: D18/9741-Mod-1



17 September 2020

Airtrunk C/- EMKC
Level 1, 140 Bourke Street
MELBOURNE VIC 3000

Attention: Mr M Brehaut

Dear Matthew

**Re: Lane Cove Data Centre – summary of changes for resubmission /
Addendum Bushfire Protection Assessment
1 Sirius Road, Lane Cove West**

Travers bushfire & ecology has been requested to provide a revised bushfire assessment to address the latest modifications to the State Significant Development (SSD) approval for the Lane Cove Data Centre.

By way of background *Travers bushfire & ecology* prepared the original bushfire protection assessment for the construction of the data centre in February 2019, followed by an addendum report in August 2019 and a response to the NSW Rural Fire Service (RFS) request for additional information (regarding generator and diesel fuel tank locations) in October 2019. Most recently this firm prepared an addendum bushfire protection assessment report on 4th February 2020 to address further amendments to the Lane Cove Data Centre.

Travers bushfire & ecology have undertaken a further review of the most recent conditions listed in the development consent (SSD-9741-Mod-1) as outlined in Table 2 of this report.

This revised assessment is based on the follow proposed changes to the scheme (as depicted in Figure 1);

- Modified extent of fire trail (as depicted in red in Figure 1). This increases the road width in two (2) locations;
- Reconfigured substation (slight amendment to footprint);
- Plant and equipment gantries have been extended (Generator Platform 2 & 3) to provide sufficient clearance around plant equipment; and
- Addition of 2 Apollo Place (office building) and the addition of a link bridge between the office building and the data centre; and
- Minor changes to landscaping to reflect modified extent of roadways.

The data centre building maintains the same footprint and the same height.

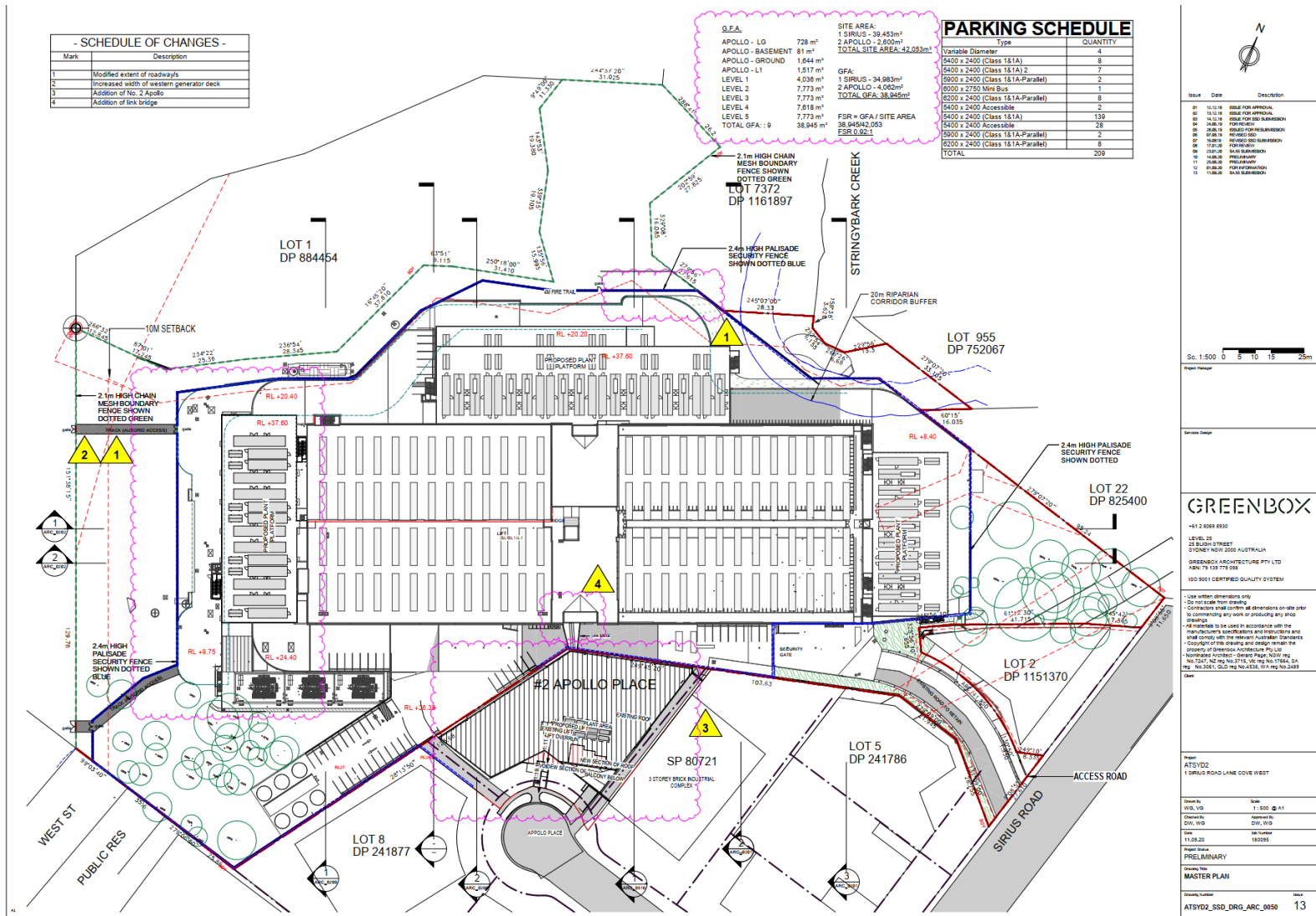


Figure 1 –Masterplan (schedule of changes)

The changes to the bushfire protection measures as a result of this amended design are provided as follows:

Asset protection zones

The revised scheme maintains the same data centre building footprint and height. However, the external generator platforms have been amended and the footprint area has increased slightly (i.e. Generator Platforms 2 & 3 – the plant and equipment gantries have been extended closer to the northern & eastern site boundary). In addition the existing building at 2 Apollo Place has been incorporated into the scheme for use as an office building. This building is afforded adequate separation from the bushfire hazard to avoid significant radiant heat attack.

As a result of the revised scheme, the APZ dimension has been amended (as depicted in bold) to reflect the new platform locations / extent as depicted in Schedule 1 – Bushfire Protection Measures attached and as follows.

Table 1 – Bushfire attack assessment

Aspect	Vegetation formation within 140m of development	Effective slope of land	Minimum APZ to avoid flame zone	Setback provided previously (metres)	Revised APZ dimensions (metres)
Substation					
South	Forest	0-5 ^{0D}	22	27	25
West	Forested wetland	5-10 ^{0D}	28	36	34
North & east	Managed land / industrial development	N/A	N/A	>100	>100
Generator Platform 1					
West	Forested wetland	5-10 ^{0D}	28	36	34
North	Forest	5-10 ^{0D}	28	18 – 23	18 – 23
Generator Platform 2					
North	Forest	5-10 ^{0D}	28	16	15
	Short heath	0-5 ^{0D}	8	15	14
East	Remnant / exotic vegetation	4.5 ^{0D}	11	4	7
Generator Platform 3					
North	Remnant / exotic vegetation	4.5 ^{0D}	11	7-14	5-12
East	Forest	0-5 ^{0D} Cross slope	22	25	24

Aspect	Vegetation formation within 140m of development	Effective slope of land	Minimum APZ to avoid flame zone	Setback provided previously (metres)	Revised APZ dimensions (metres)
Office building (2 Apollo Place)					
West	Forest	5-10 ^{0D}	28	N/A	51
North & north-east	Forest	5-10 ^{0D}	28	N/A	>100

Whilst the platform locations have been amended and are located closer to the site boundaries (in some cases) the APZ footprint remains the same, as per the previous design, and will not impact on any bushland areas proposed to be retained on site.

Water, electricity and gas

The revised scheme will maintain compliance with the requirements for water, electricity and gas. No substantial changes to these aspects of the design have been made.

Property access

The revised scheme will maintain compliance with the requirements for property access. No substantial changes to this aspect of the design has been made.

Fire trails

The changes to the fire trail design is provided in Figure 1. As depicted in red the proposal will increase the road width in two (2) locations.

Emergency and evacuation

The revised scheme will maintain compliance with the requirements for emergency evacuation. As outlined in the bushfire protection assessment report, a bushfire evacuation plan will be prepared prior to occupation.

Building construction standards

Data centre

The data centre maintains the same building footprint as per the previous scheme. The roof and northern, western and eastern building facades of the data centre are to comply with BAL FZ. The remaining southern facade can step down to BAL 40. This is consistent with previous recommendations from the NSW RFS.

Generator platforms

The location of the platforms has been amended in the new scheme. These platforms will be constructed using non-combustible materials with the generators housed within a non-combustible structure. As per the previous scheme the diesel storage fuel tanks are no longer stored on the platforms. The diesel store is now located within the data centre building (level 1) within a four hour fire rated room. The entire platform and machinery will be enclosed in non-combustible structures and therefore the provision of additional radiant heat shields is not required.

Substation

The substation will be open with blast walls between each transformer. The blast walls, suspended roadway deck and APZ will provide the required shielding to prevent flame zone contact and reduce radiant heat impact to the non-enclosed substation elements.

The GIS switch gear will be within a roofed enclosure, the APZ remains the same and it can therefore comply with a BAL 40 construction standard.

Office building (2 Apollo Place) & Link bridge

This existing building is located over 50m from the bushfire hazard which is equivalent to a BAL 19 construction standard. Whilst this building is not required to consider AS3959, it is recommended that the building is upgraded for ember protection to provide safe refuge for occupants in a bushfire event (if required) as follows:

- Openable windows, vents and weepholes shall be externally screened with corrosion resistant steel, bronze or aluminium mesh screens having a maximum aperture size of 2mm.
- The base of external side hung doors are fitted with weather strips, drought excluders or drought seals where the doors do not close on a rebated edge.

The proposed link bridge is to comply with BAL 19.

Table 2 provides a summary of the proposed revised scheme's compliance with the Terms of Approval, including APZ setbacks, BAL ratings for the building, access, water supply and utilities.

Table 2 – Revised scheme's compliance with the terms of approval (no. 23)

Terms of approval	Response
Condition B20 – At the commencement of construction, and in perpetuity, the Applicant must manage the area around the data centre building and its associated infrastructure as an asset protection zone as outlined in section 4.1.3 and Appendix 5 of <i>Planning for Bushfire Protection</i> (RFS, 2006) and <i>Standards for asset protection zones</i> (RFS, 2005). This is to be performed as outlined in the addendum bushfire protection assessment for the development prepared by TBE Environmental Pty Ltd (dated 4 February 2020, Ref: 18AWE02.5:NvD/JT).	<p>The APZ dimensions have been amended to reflect the new platform locations / extent as depicted in Schedule 1 – Bushfire Protection Measures attached. As outlined above the proposed data center maintains the same footprint as per the previous proposal, with the generator platforms extending closer to the northern & eastern boundary of the site.</p> <p>It is recommended that this condition is amended to reflect the updated Schedule 1 – Bushfire Protection Measures (20EMKC02_BF001, dated 28/8/2020) as follows:</p> <ul style="list-style-type: none">• North-east: IPA for a distance of 24m (residue of site located towards the north-east to the vegetated riparian corridor)• South-west: IPA for a distance of 25-34m• South: IPA for a distance of 25m• North: IPA for a distance of 7 – 23
Condition B21 – The Applicant must ensure construction of the following aspects of the development complies with sections 3 and 8 (BAL 40) of AS 3959-2009: <i>Construction of buildings in bush fire-prone areas</i> (Standards Australia, 2009)	<p>The revised scheme will maintain compliance with this condition.</p> <p>However it is recommended that construction complies with the updated version of AS3959 to</p>

Terms of approval	Response
<p>or the <i>NASH Standard (1.7.14 updated) - Steel Framed Construction in Bushfire Areas</i> (NASH, 2014) as appropriate and section A3.7, Addendum Appendix 3 of <i>Planning for Bushfire Protection</i> (RFS, 2010):</p> <p>(a) south-eastern elevation of the data centre; and</p> <p>(b) the on-site substation.</p>	<p>state as follows:</p> <p>Sections 3 & 8 (BAL 40) of AS 3959-2018: <i>Construction of buildings in bush fire-prone areas</i> (Standards Australia, 2018) or the <i>NASH Standard (1.7.14 updated) - Steel Framed Construction in Bushfire Areas</i> (NASH, 2014) as appropriate and section 7.5 of <i>Planning for Bushfire Protection</i> (RFS, 2019).</p>
<p>Condition B22 – The Applicant must ensure construction of the following aspects of the development complies with sections 3 and 9 (BAL FZ) of AS 3959-2009: <i>Construction of buildings in bush fire-prone areas</i> (Standards Australia, 2009) or the <i>NASH Standard (1.7.14 updated) - Steel Framed Construction in Bushfire Areas</i> (NASH, 2014) as appropriate:</p> <p>Except for windows, flaming of the specimen is not permitted and the must be no exposed timber.</p> <p>(c) north-eastern elevation of the data centre;</p> <p>(d) north-western elevation of the data centre;</p> <p>(e) south-western elevation of the data centre; and</p> <p>(f) roof of the data centre.</p>	<p>The revised scheme will maintain compliance with this condition.</p> <p>However it is recommended that construction complies with the updated version of AS3959 to state as follows:</p> <p>Sections 3 & 9 (BAL FZ) of AS 3959-2018: <i>Construction of buildings in bush fire-prone areas</i> (Standards Australia, 2018) or the <i>NASH Standard (1.7.14 updated) - Steel Framed Construction in Bushfire Areas</i> (NASH, 2014) as appropriate and section 7.5 of <i>Planning for Bushfire Protection</i> (RFS, 2019).</p>
<p>Condition B23 - The Applicant must ensure construction of the external plant platforms complies with sections 3 and 9 (BAL FZ) of AS 3959-2009: <i>Construction of buildings in bush fire-prone areas</i> (Standards Australia, 2009) or the <i>NASH Standard (1.7.14 updated) - Steel Framed Construction in Bushfire Areas</i> (NASH, 2014) as appropriate.</p> <p>Except for windows, materials that would flame and/or combust are not permitted and there must be no exposed timber.</p>	<p>The revised scheme will maintain compliance with this condition.</p> <p>However it is recommended that construction complies with the updated version of AS3959 to state as follows:</p> <p>Sections 3 & 9 (BAL FZ) of AS 3959-2018: <i>Construction of buildings in bush fire-prone areas</i> (Standards Australia, 2018) or the <i>NASH Standard (1.7.14 updated) - Steel Framed Construction in Bushfire Areas</i> (NASH, 2014) as appropriate and section 7.5 of <i>Planning for Bushfire Protection</i> (RFS, 2019).</p>
<p>Condition B24 (g) – The provision of water, electricity and gas shall comply with Section 4.1.3 of <i>PBP 2006</i>.</p>	<p>The revised scheme will maintain compliance with this condition.</p>
<p>Condition B24 (h) – Internal access roads comply with Section 4.1.3 (2) of <i>PBP 2006</i>.</p>	<p>The revised scheme is to maintain compliance with this condition.</p>
<p>Condition B24 (i) – onsite fire trails shall comply with the performance criteria outlined in section 4.1.3 (3) of <i>PBP 2006</i>.</p>	<p>The revised scheme is to maintain compliance with this condition.</p>
<p>Condition B24 (j) – Arrangements for emergency and evacuation are to comply with Section 4.2.7 of <i>PBP (RFS, 2006)</i></p>	<p>The revised scheme will maintain compliance with this condition.</p>
<p>Condition B25 – Prior to the commencement of operation, the Applicant must prepare and implement a Bush Fire Emergency Management and Evacuation Plan which is consistent with the requirements of <i>Development Planning – A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan</i> (RFS, 2014).</p>	<p>The revised scheme will maintain compliance with this condition.</p>

In addition to the conditions listed above it is recommended that the following condition is included;

Condition B26 – The existing office building (2 Apollo Place) is to be upgraded for ember protection as follows:

- Openable windows, vents and weepholes shall be externally screened with corrosion resistant steel, bronze or aluminium mesh screens having a maximum aperture size of 2mm.
- The base of external side hung doors are fitted with weather strips, drought excluders or drought seals where the doors do not close on a rebated edge.

The proposed link bridge and any building additions / refurbishments at 2 Apollo Place to is to comply with sections 3 and 6 (BAL 19) of *AS 3959-2018: Construction of buildings in bush fire-prone areas* (Standards Australia, 2018) or the *NASH Standard (1.7.14 updated) - Steel Framed Construction in Bushfire Areas* (NASH, 2014).

Should you require further assistance please contact the undersigned on 02 4340 5331 or at info@traverseecology.com.au.

Yours faithfully

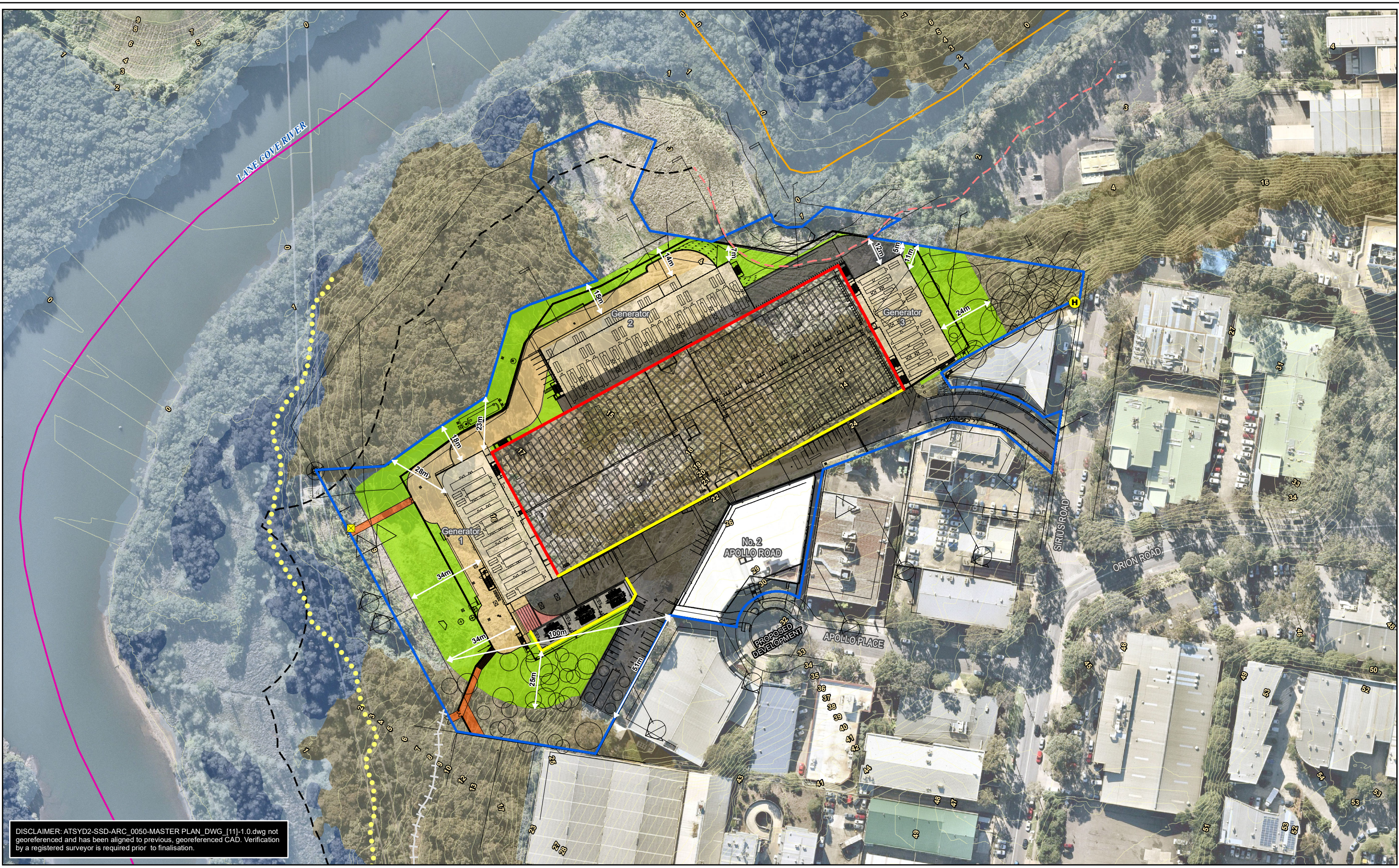


John Travers

Principal bushfire consultant - ***Travers bushfire & ecology***

Travers bushfire & ecology employs
Bushfire Planning and Design (BPAD) Accredited
Practitioners

Travers bushfire & ecology employs
Accredited BioBanking and Biodiversity Assessors



Legend

- Subject site (source: CAD)
- Contour (1m) (source: LiDAR)
- Gate (existing)
- Hydrant (existing)
- Unformed road/ access to easement
- Walking track

Proposed Infrastructure

- Data hall
- Generator platform
- Substation
- GIS
- Firetrail
- Track (AUSGRID access)
- Driveway

Vegetation Formation

- Forest
- Forested Wetland
- Saline Wetland (not bushfire prone)

Riparian corridor

- 20m buffer
- 40m buffer

Asset Protection Zone (APZ)

- Bushfire Construction Standards AS3959 (2018)*
- Flame zone (FZ)
- BAL 40

* Please refer to additional construction requirements for BAL levels which are contained in 'Planning for Bushfire Protection' (2019).

Aerial source: Nearmap

Disclaimer: The mapping is indicative of available space and location of features which may prove critical in assessing the viability of the proposed works. Mapping has been produced on a map base with an inherent level of inaccuracy, the location of all mapped features are to be confirmed by a registered surveyor.

PROJECT & MXD REFERENCE

1 Sirius Road, Lane Cove West
20EMKC02_BF001

DATE & ISSUE NUMBER

4/09/2020
Issue 1

AH

SCALE & COORDINATE SYSTEM

1:1,500 @A3
GDA 1994 MGA Zone 56

TITLE

Schedule 1 - Bushfire Protection Measures

Document Path: N:\GIS STORAGE\N Drive\18AWE02 SiriusRd LaneCoveWest\MXDs\20EMKC02_BF001.mxd