BLACKASH
BUSHFIRE CONSULTING

Bushfire Risk Assessment

Proposed new telecommunications tower at Harris Road, Normanhurst, NSW 2076

Prepared for

CPS Global

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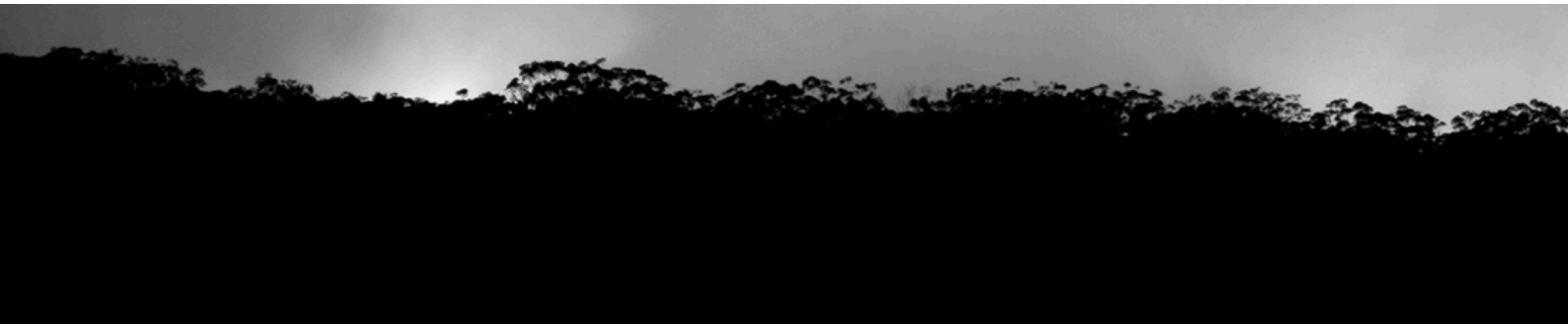
BPAD Bushfire Planning & Design Accredited Practitioner Level 3



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Project Name:	New telecommunications tower at Harris Road, Normanhurst Site S8687
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Contents

1. Summary

Blackash Bushfire Consulting (**Blackash**) has been engaged by CPS Global (CPS) to provide a bushfire report to determine the category of bushfire attack, construction standard and provision of a bushfire certificate for a proposed new Telecommunications Tower and Equipment Cabin at Normanhurst Park off Harris Road, Normanhurst (Figure 1).

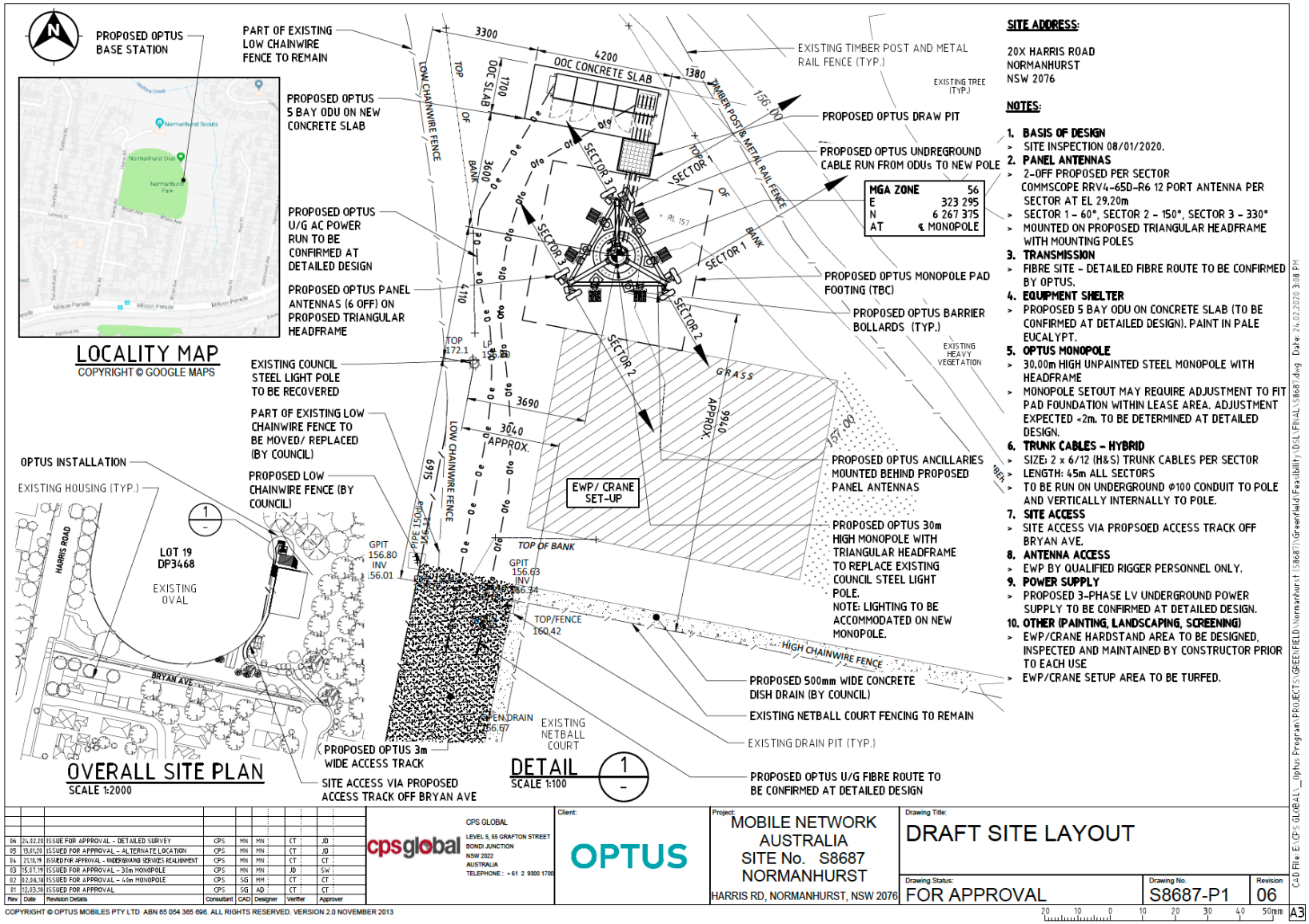
NSW Rural Fire Service (**RFS**) *Practice Note 1/11 Telecommunication Towers in Bushfire Prone Areas Version 2 February 2012* (**Practice Note**) identifies towers in bushfire prone areas are critical infrastructure for firefighting communications and for providing warnings, information and communication channels for people during bushfire emergencies. The RFS require that owner/operators should take actions to reduce the risk of impact of such infrastructure from bushfire attack.

Table 1 is a summary of compliance with relevant documents and approaches to limit bushfire attack.

Table 1 Summary

Can this proposal comply with AS3959, 2009 + addendum to Appendix 3 of PBP?	AS3959, 2009 does not apply as a DTS Provision
Does the proposal comply with Practice Note 1/11 Telecommunication Towers in Bushfire Prone Areas Version 2 February 2012	**Yes**
Does this development comply with the requirements of PBP?	**YES**
Does this development comply with the Aims and objectives of PBP?	**YES**
Is referral to the NSW RFS required?	**NO**
Architectural Plans	Provided by: CPS Global Refer to Appendix 3 for Site Elevation

Figure 1 Figure 1 Site Location & Layout



2. Introduction

The proposal is to construct a telecommunications tower and equipment cabin. The purpose of this report is to determine the category of bushfire attack and subsequent construction standard and provide a complying development certificate for the proposed development of a new telecommunications facility at Harris Road, Normanhurst, NSW (**the site**). See Figure1 for site location.

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.

The proposed development is "other" development as defined within Chapter 4.3.5 of *Planning for Bushfire Protection 2006* (**PBP**) and this report has been prepared in accordance with the requirements of section 4.14 of the EPA Act.

SEPP Infrastructure 2007, Division 21 Telecommunications and other Communication Facilities do not provide bushfire specific requirements for complying development for the proposed telecommunication tower and facilities.

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. PBP accepts the general fire safety construction provisions of the BCA are taken as acceptable solutions; however, the aims and objectives of PBP must be considered.

The Practise Note from the NSW Rural Fire Service (**RFS**) provides direction on the application of bushfire protection measures for telecommunication towers. It discusses the importance of protecting the infrastructure required to support these towers. In particular, Asset Protection Zones should be established and maintained for a distance of at least 10m from the infrastructure associated with the tower. Additionally, the RFS advises, regardless of the bushfire attack level calculated, a construction standard of BAL 40 is needed for the associated infrastructure.

This assessment includes an analysis of the hazard, threat and subsequent risk to the development proposal and provides recommendations that satisfy the Aims and Objectives of Planning for Bushfire Protection 2006 [PBP] and considers the advice provided by the NSW Rural Fire Service.

This assessment has been prepared by Lew Short, Principal Bushfire & Emergency Management (FPAA BPAD Level 3 Certified Practitioner No. BPD-L3-28853) who is recognised by the RFS as qualified in bushfire risk assessment and have been accredited by the Fire Protection Association of Australia as a suitably qualified consultant to undertake alternative solution proposals.

A site inspection was completed on 19 July 2019.

3. Revision of *Planning for Bushfire Protection 2006*

The RFS have reviewed PBP 2006. It is anticipated that PBP 2019 will become legislated in March 2020.

Until PBP 2018 becomes legislated, PBP 2006 will remain the legally referenced document and PBP 2019 can be used on a performance basis in consultation with NSW RFS only. This assessment has been completed against PBP 2006 as the in-force document that is called up by NSW legislation.

4. The Site Location

The proposed site is located on land to the east of Normanhurst Park off Harris Road, Normanhurst which is legally known as Lot 19 DP 3468 (see Figure 1).

The proposal is for a new 30m high mono pole and associated infrastructure.

5. Bushfire Prone Land

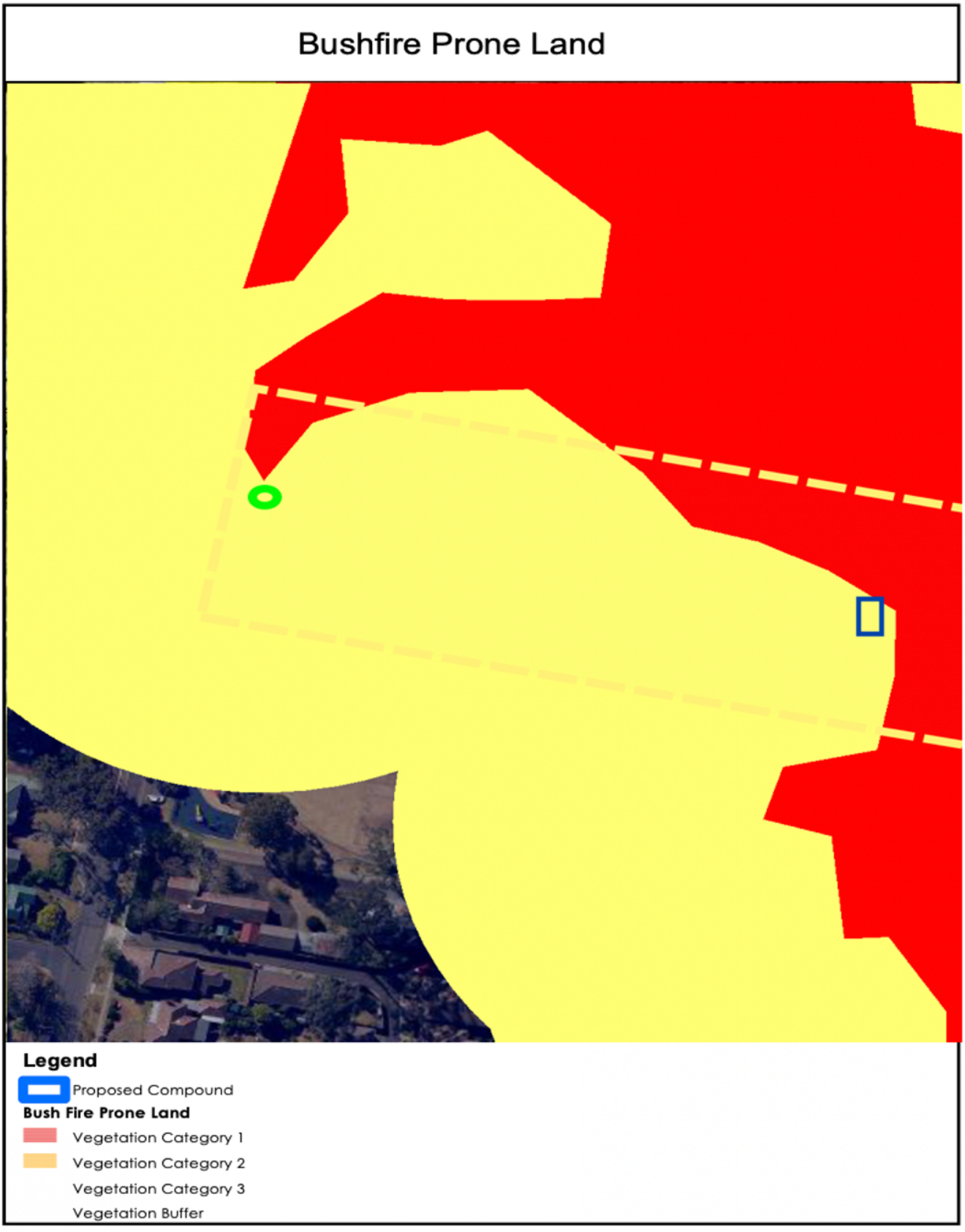
Bushfire prone land maps provide a trigger for the development assessment provisions and consideration of sites that are bushfire prone. Bushfire prone land (**BFPL**) is land that has been identified by council, which can support a bushfire or is subject to bushfire attack. Bushfire prone land maps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

The bushfire prone land map shows that the development site is within the 100m buffer from Category 1 vegetation.

The bushfire prone vegetation within 100m of the site is highly fragmented and heavily effected by weeds on the edges of the Normanhurst Park. The area between the proposed pole and infrastructure hut is cleared.

The vegetation to the east of the site is narrow and fragmented and does not present a risk of a fully developed bushfire impacting the site.

Figure 2 Bushfire Prone Land Map



6. Site Assessment Methodology

This bushfire feasibility is based on both a desktop assessment of the site utilising the following resources:

- *Planning for Bushfire Protection* (NSW RFS, 2006)
- *Practice Note 1/11 Telecommunication Towers in Bushfire Prone Areas*
- Aerial mapping.
- On site assessment by Lew Short.

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 site. This is due to the fact that PBP assesses bushfire protection based 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.

6.1. 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 and the RFS Practice Note.

6.2. 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 to the east of the proposed tower is forest consisting of highly fragmented and weedy understory.

6.3. 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 predominant slopes affecting the site are downslope to the east from the proposed telecommunications tower and are steep. The fill from the establishment of the oval is weedy and unconsolidated.

6.4. 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.

7. Bushfire Attack Levels

The equipment cabin should be built to comply with BAL 40, including ember protection to openings.

8. 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 2 Compliance with Aim & Objectives of PBP

Aim	Meets Criteria	Comment
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.	Yes	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. A Bushfire Attack Level of BAL 40 can be achieved, meeting the deemed to satisfy requirements for the NSW RFS.
Objectives	**Meets Criteria**	**Comment**
Afford occupants of any building adequate protection from exposure to a bushfire.	Yes	The maximum exposure to a bushfire for the area where the development is proposed is BAL 40.
Provide for defendable space to be located around buildings.	Yes	Defendable space is provided on all sides of the proposed development.
Provide appropriate separation between a hazard and buildings, which, in combination with other measures, prevent direct flame contact and material ignition.	Yes	An asset protection zone in accordance with advice provided by the Community Resilience Practise Note 1/11 has been recommended and can be provided around the site.
Ensure that safe operational access and egress for emergency service personnel and occupants is available.	Yes	The site has direct access to public roads, and access and egress for emergency vehicles and evacuation is adequate.
Provide for ongoing management and maintenance of bushfire protection measures, including fuel loads, in the asset protection zone.	Yes	The area within and surrounding the compound is managed.
Ensure that utility services are adequate to meet the needs of firefighters (and others assisting in bushfire fighting).	Yes	

9. Recommendations

The following recommendations are made for the bushfire protection measures for a new Telecommunications Facility at Anglers Reach, NSW and are based upon the relevant provisions of the NSW Rural Fire Service guideline entitled *Planning for Bushfire Protection 2006* and the community Resilience Practise Note 1/11 from the RFS.

1. Construction Standard: The proposed development shall be constructed to a minimum standard of Section 3 (construction general) and Section 8 (BAL 40) of AS3959, 2009 'Construction of Buildings in Bushfire Prone Areas' and Section A3.7 of the NSW Rural Fire Service Addendum to Appendix 3 of 'Planning for Bushfire Protection 2006'.

2. Asset Protection Zones: At the commencement of building works and in perpetuity, the area within the equipment cabin should be managed as an asset protection zone. Guidance is provided at Appendix 2.

10. Conclusion

This report consists of a bushfire risk assessment for the proposed development of a new Telecommunications Facility at Harris Road, Normanhurst.

The report concludes that the proposed development is on designated bushfire prone land and the legislative requirements for development in bushfire prone areas are applicable. 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 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. PBP accepts the general fire safety construction provisions of the BCA are taken as acceptable solutions. The community Resilience Practise Note 1/11 from the RFS provides direction on the application of bushfire protection measures for these towers and the RFS advises a construction standard of BAL 40 for the associated infrastructure.

This report has considered all elements of bushfire attack and provided the proposed development is constructed in accordance with the recommendations included in section 9 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

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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 Rural Fire Service (2015) *Guide for Bushfire Prone Land Mapping*

NSW Rural Fire Service (Version 2– February 2012) Practice Note 1/11 Telecommunication Towers in Bushfire Prone Areas

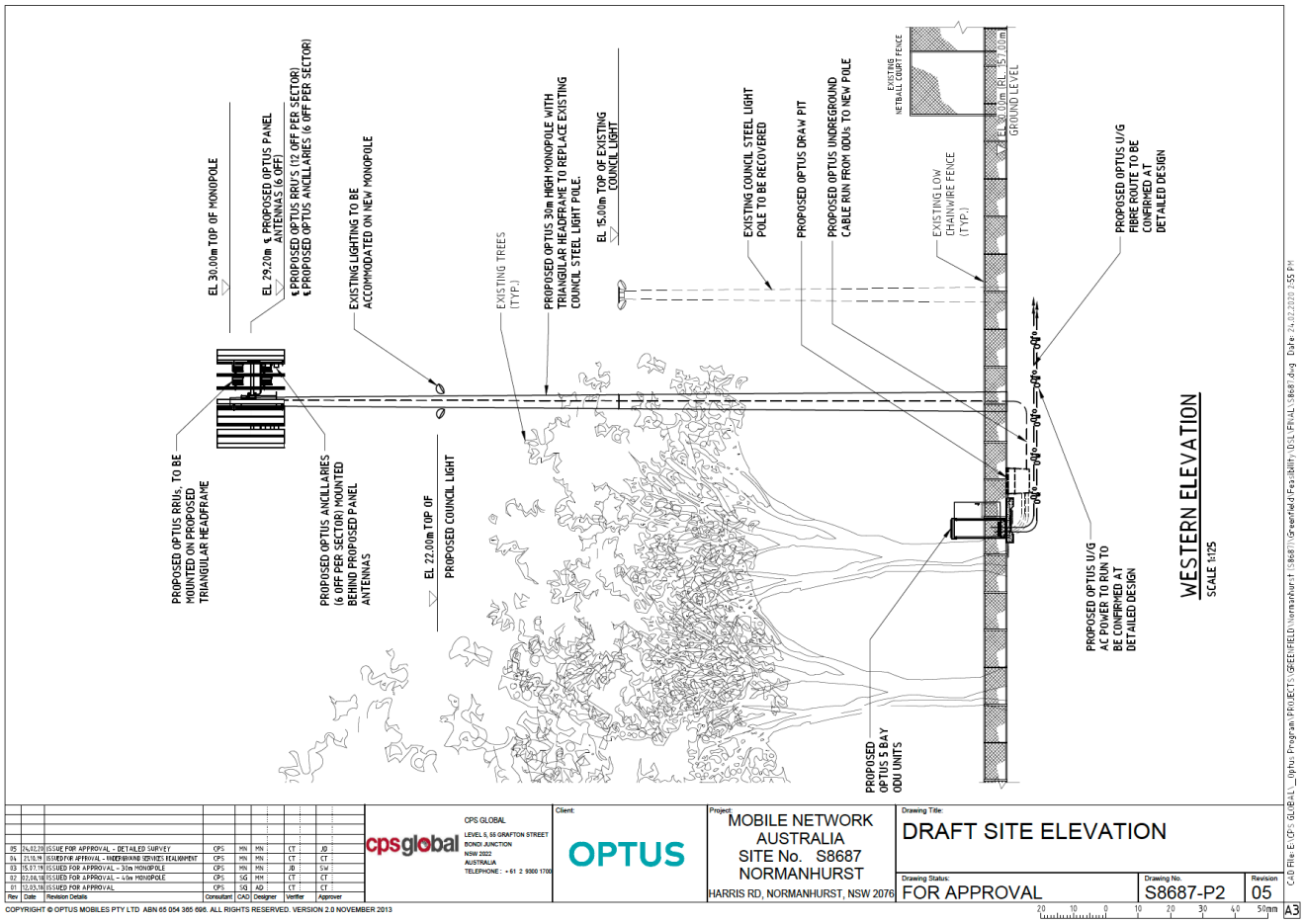
NSW Rural Fire Service (RFS). 2006. *Planning for Bushfire Protection: A Guide for Councils, Planners, Fire Authorities, Developers and Home Owners.* Australian Government Publishing Service, Canberra

Appendix 2 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 existing rooftop gardens will be managed as APZs to reduce fuel and remove deadwood.
- 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).

Appendix 3 Site Elevation



Rev	Date	Revision Details	Consultant	CAD	Designer	Verifier	Approver
05	24.02.20	ISSUE FOR APPROVAL - DETAILED SURVEY	CPS	MN	MN	CT	JD
04	21.10.19	ISSUED FOR APPROVAL - UNDERGROUND SERVICES REALIGNMENT	CPS	MN	MN	CT	CT
03	15.07.19	ISSUED FOR APPROVAL - 30m MONOPOLE	CPS	MN	MN	JD	SW
02	02.06.18	ISSUED FOR APPROVAL - 40m MONOPOLE	CPS	SG	MN	CT	CT
01	12.03.18	ISSUED FOR APPROVAL	CPS	SG	AD	CT	CT

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Drawing Title: DRAFT SITE ELEVATION

Drawing Status: FOR APPROVAL
Drawing No.: S8687-P2
Revision: 05

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