

Flora and Fauna Assessment Upgrades to Cammeray Public School -Biodiversity

NSW Department of Education (DoE)

21 March 2025

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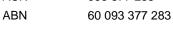


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ACKNOWLEDGEMENT OF COUNTRY

The Board and employees of Water Technology acknowledge and respect the Aboriginal and Torres Strait Islander Peoples as the Traditional Custodians of Country throughout Australia. We specifically acknowledge the Traditional Custodians of the land on which our offices reside and where we undertake our work.

We respect the knowledge, skills and lived experiences of Aboriginal and Torres Strait Islander Peoples, who we continue to learn from and collaborate with. We also extend our respect to all First Nations Peoples, their cultures and to their Elders, past and present.



Artwork by Maurice Goolagong 2023. This piece was commissioned by Water Technology and visualises the important connections we have to water, and the cultural significance of journeys taken by traditional custodians of our land to meeting places, where communities connect with each other around waterways.

The symbolism in the artwork includes:

- Seven circles representing each of the States and Territories in Australia where we do our work
- Blue dots between each circle representing the waterways that connect us
- The animals that rely on healthy waterways for their home
- Black and white dots representing all the different communities that we visit in our work
- Hands that are for the people we help on our journey

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ACRONYMS AND DEFINITIONS

Acronym	Definition	
BC Act	Biodiversity Conservation Act 2016	
BV	Biodiversity Values	
DCP	Development Control Plan	
DD	Due Diligence	
DoE	Department of Education	
EP&A Act	Environmental Planning and Assessment Act 1979	
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999	
FM Act	Fisheries Management Act 1994	
LEP	Local Environment Plan	
LGA	Local Government Area	
MNES	Matter of National Environmental Significance	
РСТ	Plant Community Type	
FFA	Flora and Fauna Assessment	
SEARS	Secretary's Environmental Assessment Requirements	
SSD	State Significant Development	
TEC	Threatened Ecological Community	
WM Act	Water Management Act 2000	

1 EXECUTIVE SUMMARY

This Flora and Fauna Assessment has been prepared to support a Review of Environmental Factors (REF) for the Department of Education (DoE) for the upgrade of the Cammeray Public School (CPS) (the activity). The purpose of the REF is to assess the potential environmental impacts of the activity prescribed by *State Environmental Planning Policy (Transport and Infrastructure) 2021* (T&I SEPP) as "development permitted without consent" on land carried out by or on behalf of a public authority under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The activity is to be undertaken pursuant to Chapter 3, Part 3.4, Section 3.37 of the T&I SEPP and in consideration of the stakeholder and community participation plan.

The proposed activity is for upgrades to the existing CPS at 68 Palmer Street, Cammeray NSW 2062 (the site).

The purpose of this Flora and Fauna Assessment is to identify potential constraints that may impede the future school infrastructure upgrades for the Cammeray Public School. This assessment aims to seek approval for a development without consent application under Part 5 of the EP&A Act, mitigating any risks during the delivery of the school upgrades. The report documents the findings of the biodiversity assessment, identifying potential biodiversity constraints relevant to the proposed development under the NSW Biodiversity Conservation Act 2016, Commonwealth Environment Protection and Biodiversity Conservation Act 1999, and the NSW Fisheries Management Act 1994.

The site currently comprises an existing co-education primary (K-6) public school with 6 permanent buildings, 3 demountable structures, covered walkways linked at multiple levels, play areas, on-grade parking, sports court, covered outdoor learning area (COLA) and vegetation/green spaces with mature trees. The existing school buildings are clustered towards the southern portion of the site and comprise both single and 2 storey buildings. The northern portion of the site contains the sports court, vegetable garden and play equipment. The north-western portion of the site is heavily vegetated with trees of high landscape significance that are protected with fencing.

There is also a natural spring area being managed with native plantings, as well as numerous large, scattered trees throughout the site (MetroMap 2025; NSW Sixmaps 2025). No significant biodiversity areas were mapped, and no Plant Community Types were found. The Grey-headed Flying-fox and the Powerful Owl had a moderate likelihood of occurrence, but no threatened species were found. There was potential habitat found in the form of a hollow found in a Spotted Gum tree. The site has no Key Fish habitat.

The Flora and Fauna Assessment concluded that there will be no significant impacts on matters of national environmental significance. As there were no threatened species found, a Test of Significance was not required. Consequently, no referral to the Australian Minister for the Environment under the Environment Protection and Biodiversity Conservation Act 1999 is required. The proposal would be unlikely to cause a significant impact on the environment. Therefore, it is not necessary for an Environmental Impact Statement to be prepared and approval to be sought from the Minister for Planning under the Environment Protection and Biodiversity Conservation Act 1999.

2 INTRODUCTION

Proponent:

The Department of Education (DoE) is the proponent and determining authority pursuant to Section 5.1 of the Environmental Planning and Assessment Act 1979 (the Act).

Landowner:

The Minister for Education and Early Learning is the Landowner.

2.1 Site Location and Background

CPS is located at 68 Palmer Street, Cammeray on the northern side of Palmer Road, bound by Palmer Street to the south, Bellevue Street to the east and Miller Street to the west. The site has an area of 1.36 ha and comprises 11 allotments, legally described as:

- Lot 11 DP 837836
- Lot 1 DP 316130
- Lot 1 DP 316706
- Lot 1 DP 123406
- Lot 2 DP 174370
- Lot 1 DP 174370
- Lot 4 Sec 35 DP 758790
- Lot 5 Sec 35 DP 758790
- Lot 66 DP 1049613
- Lot 3 DP 571310
- Lot 4 DP 571310

The site is identified as a locally listed heritage item (I0019) under Schedule 5 Environmental Heritage pursuant to the *North Sydney Local Environmental Plan 2013* (NSLEP). The school is also identified in the Plateau Heritage Conservation Area (HCA) (Part 2 Schedule 5 of the NSLEP). The school is listed on the Department of Education (DoE) Section 170 Heritage Conservation Register as 'Cammeray Public School'. The site is approximately 115m from a State heritage item (I0004) being the electricity substation at 143 Bellevue Street and in close proximity to locally heritage listed items.

Figure 2-1 below shows an aerial image of the site.

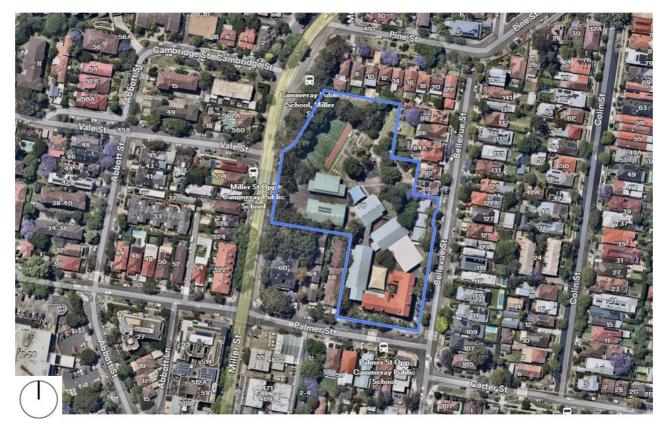


Figure 2-1 Aerial image of the site, outlined in blue (Source: NearMap, Taken 30 October 2024)

2.2 Proposed Activity

The proposed activity involves upgrades to the existing CPS, including the following:

- Construction of 4 new permanent teaching spaces in a two-storey building incorporating 2 general learning spaces and 2 practical activity areas
- New egress lift and stairs for access to all building levels
- External covered walkways connecting the new building to the existing school network
- Landscaping and external works including compensatory planting
- Upgrades to site infrastructure and services to support the new buildings
- Removal of 3 temporary (demountable) classrooms from the eastern side of the school
- 50 bicycle parking spaces

The intent of the activity is to provide 4 permanent teaching spaces (PTS) plus 2 practical activity areas (PAA) across a two-storey addition, adjoining Building E. This will result in CPS retaining the capacity of a 'large' school (553-1,000 students) under EFSG (SINSW Education Facilities Standards and Guidelines).

Figure 2-2 below shows the scope of works for the proposed activity.

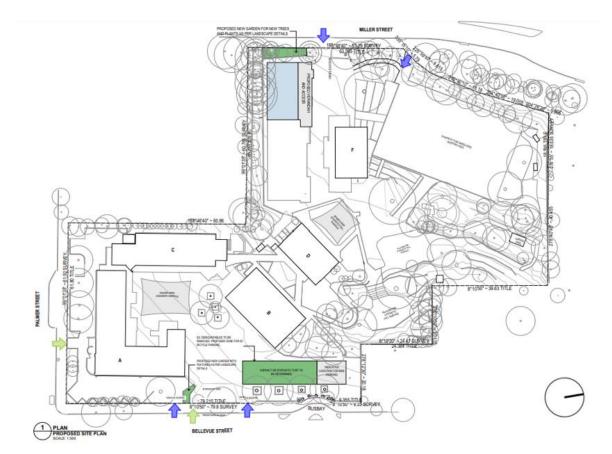


Figure 2-2 Proposed Scope of Works (Source: Fulton Trotter Architects, Proposed Site Plan (Rev P6))

2.3 Determination

- The proposed activity can proceed subject to mitigation measures and/or conditions relayed in this FFA.
- The activity is unlikely to be classed as a controlled action under the Commonwealth Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act), so no referral is required.

2.4 Statement of Significance

Based on the identification of potential issues, and an assessment of the nature and extent of the impacts of the proposed development, it was determined that:

- The extent and nature of potential impacts are low and will not have significant adverse effects on the locality, community and the environment.
- Potential impacts can be appropriately mitigated or managed to ensure that there is minimal effect on the locality, community.

3 DELIVERABLE

See below FFA deliverable requirement from NSW Department of Education (DOE) Table 3-1.

Table 3-1 FFA Deliverable

ltem	Requirement	Relevant Section of Report
1.0	Address all relevant legislation, environmental planning instruments (EPIs) (including drafts), plans, policies, guidelines and planning circulars.	See Section 5
2.0	Trees and Landscaping	See Section 6.2
	Assess the number, location, condition and significance of trees to be removed and retained and note any existing canopy coverage to be retained on-site.	See Section 6.2 See Appendix C
3.0	Ecologically Sustainable Development (ESD)	See Section 4
4.0	Biodiversity	See Section 6.2



4 ECOLOGICALLY SUSTAINABLE DEVELOPMENT

Consideration of Ecologically Sustainable Development

The proposal has been considered against the principles of ecologically sustainable development (ESD) (refer to Table 4-1).

 Table 4-1
 Consideration of principles of ecologically sustainable development (ESD)

ESD Principle	Consideration in FFA
Precautionary principle	The proposal will not result in serious or irreversible environmental damage and there is no scientific uncertainty relating to the proposal.
Intergenerational equity	The proposal will help to meet the needs of future generations by providing education facilities, which can be used for future generations.
Conservation of biological diversity and ecological integrity	The proposal will not significantly impact on biological diversity or impact ecological integrity.
Improved valuation, pricing and incentive mechanisms	The proposal will provide cost efficient use of resources and provide optimum outcomes for the community, environment and with respect to financial cost.



5 RELEVANT LEGISLATION

Legislation and policy relevant to the biodiversity component of works within the subject site are outlined below:

5.1 Environmental Planning, Assessment Act 1979 and Local Government Act 1993

Planning and development within NSW are regulated by the Environmental Planning & Assessment Act 1979 (EP&A Act).

The proposed works are permitted without consent under the State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP). Where works do not require development consent but require approval of a government organization under any legislation, then they are defined as an activity under Part 5 of the EP&A Act. Division 5.1 and Section 5.7 of the EP&A Act requires any such Government body to determine whether the impacts of the activity are likely to be significant. A FFA contributes to that determination.

A FFA is prepared, to inform a Review of Environmental Factors, to meet the requirements of Clause 171 of the *Environmental Planning and Assessment Regulation 2023*.

5.1.1 State Environmental Planning Policy (Transport and Infrastructure) 2021

The State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP) provides for the efficient provision of public infrastructure in NSW. The aim of this Policy is to facilitate the effective delivery of infrastructure across the State.

5.2 Water Management Act 2000

The Water Management Act 2000 (WM Act) provides for the sustainable and integrated management of the water sources of the State for the benefit of both present and future generations. The WM Act defines principles of water management, sets out water licensing laws and environmental water provisions.

Section 91 (2) states that: waterfront land means—...where the prescribed distance is 40 metres or (if the regulations prescribe a lesser distance, either generally or in relation to a particular location or class of locations) that lesser distance.

This project is being carried out further than 40 metres so is exempt from requiring a Controlled Activity Approval in accordance with the WM Act.

5.3 Biodiversity Conservation Act 2016

The Biodiversity Conservation Act 2016 (BC Act) includes the Biodiversity Offsets Scheme (BOS) that governs how biodiversity offsets will be used to ensure they offset the loss due to development and deliver conservation outcomes. The Act and Regulations also govern the Biodiversity Assessment Method (BAM) as a scientific method that assesses biodiversity losses from impacts at development sites and gains from conserving land at stewardship sites.

Public authorities seeking to undertake an activity under Part 5 of the EP&A Act can voluntarily opt-in to the BOS and BAM scheme or alternatively can elect to undertake an Assessment of Significance and proceed with a Part 5 approval. It will be required to:

- take serious and irreversible impacts into consideration
- determine if there are any additional and appropriate measures that will minimise the impact if the activity is to be carried out or approved

Page 12

The potential ecological impacts of the proposal are discussed in Section 8 of this FFA



5.4 Fisheries Management Act 1994

The provisions of the Fisheries Management Act 1994 relating to project development and approval processes operate similarly to the BC Act. The Act identifies threatened aquatic species, populations and ecological communities, as well as Key Fish Habitat.

Significant impacts trigger the need for a species impact statement for Part 4 and Part 5 projects. The potential ecological impacts of the proposal are discussed in Section 8 of this FFA report. It is concluded that the proposal is not likely to have a significant impact on any threatened aquatic species, populations or communities, or Key Fish Habitat.

5.5 Environment Protection and Biodiversity Conservation Act 1999

Under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), Commonwealth approval is required for certain actions. Actions which have or may have or are likely to have a significant impact on Matters of National Environmental Significance (MNES). MNES includes nationally threatened species or endangered ecological communities. Under the EPBC Act an assessment of the impact of a proposal on an MNES must be undertaken to determine whether there is likely to be a significant impact. If the assessment concludes there is a significant impact, then it will become a controlled action under the EPBC Act and the proposal must be referred to the Commonwealth. Approval from the relevant Federal Minister is also required for any actions that may have a significant impact on matters of National Environmental Significance, except in circumstances which are set out in the EPBC Act.

Approval from the Commonwealth is in addition to any approvals under NSW legislation.

The potential ecological impacts of the proposal are discussed in Section 8 of this FFA. It is concluded that the proposal is not likely to have a significant impact on any EPBC listed threatened species, populations or communities nor is it likely to impact on any MNES and so does not require referral to the Commonwealth under the EPBC Act.

5.6 North Sydney Local Environmental Plan 2013

Made under the Environmental Planning and Assessment Act 1979. This Plan aims to make local environmental planning provisions for land in the North Sydney LGA in accordance with the relevant standard environmental planning instrument.

The works to be conducted include replacing the demountable buildings with permanent teaching spaces to accommodate the rising demand and overutilisation of the school as per LEP zoned land. The objectives of this zone include:

- To provide for infrastructure and related uses.
- To prevent development that is not compatible with or that may detract from the provision of infrastructure.

5.7 North Sydney Development Control Plan 2013

The aim of the *North Sydney Control Plan 2013* (DCP) is to allow detailed provisions to be made to control and guide development and subdivision within the North Sydney LGA.



6 EXISTING ENVIRONMENT

6.1 Desktop search

Prior to undertaking the ecological field survey, desktop searches were conducted to provide a context of the surrounding environment.

6.1.1 Vegetation communities

A review of the vegetation mapping databases using the SEED portal- (NSW Government's central resource for Sharing and Enabling Environmental Data in NSW) was undertaken to identify Plant Community Types (PCTs) present within the area. As indicated in Figure 6-1, no PCTs were mapped as being present within the project site. The closest mapped PCTs are unlikely to be impacted by the proposed construction works.

Some mature canopy trees are established throughout the site, however, there is a lack of large, vegetated patches on the site as the undeveloped areas are mostly cleared sporting fields and lawn areas. Historic photographs from 1943 revealed the trees on site were planted and are not remnants of native vegetation (Figure 6-2).

6.1.2 Threatened Species

A search of the DCCEEW BioNet Atlas revealed 4,683 records of 101 species previously recorded within 10 km of the site. Analysis of the Protected Matters Search Tool indicated 14 listed threatened ecological communities, 123 listed threatened species, and 71 listed migratory species previously recorded within 10 km of the subject site. No World Heritage Properties, National Heritage Places, Protected Marine Areas, nor Wetlands of international importance occurred within 10 km of the site (Appendix A).

The DCCEEW BioNet Atlas mapping identified three threatened species near the site, including the Greyheaded Flying-fox (*Pteropus poliocephalus*) is listed as Vulnerable under both the BC Act and the EPBC Act. The Powerful Owl (*Ninox strenua*) is listed as Vulnerable under the BC Act, and the Black Bittern (*Ixobrychus flavicollis*) is listed as Vulnerable under the BC Act (Figure 6-3).

Additionally, the subject site was not mapped as containing any Key Fish Habitat, nor is it in proximity to significant waterways or waterfront land, thus no further provisions within the FM Act and WM Act are not required for the proposed development.

A Likelihood of Occurrence (Appendix B) was compiled using information obtained from the NSW BioNet database, NSW Threatened Species Profile Database, and the site characteristics have been assessed in the above desktop review. This informs which species have a high probability of occurring within the subject site and guides whether any targeted species surveys are required.

Due to the cryptic and nocturnal nature of many species, the fauna assessment primarily evaluated the site's potential as habitat. The precautionary principle was adopted, assuming the presence of threatened species if suitable habitat exists.

The assessment found that only the Grey-headed Flying-fox and the Powerful Owl have a moderate likelihood of being found on site based on the habitat present. However, it is likely these species would use the site for foraging rather than as a permanent breeding location based on the available habitat.



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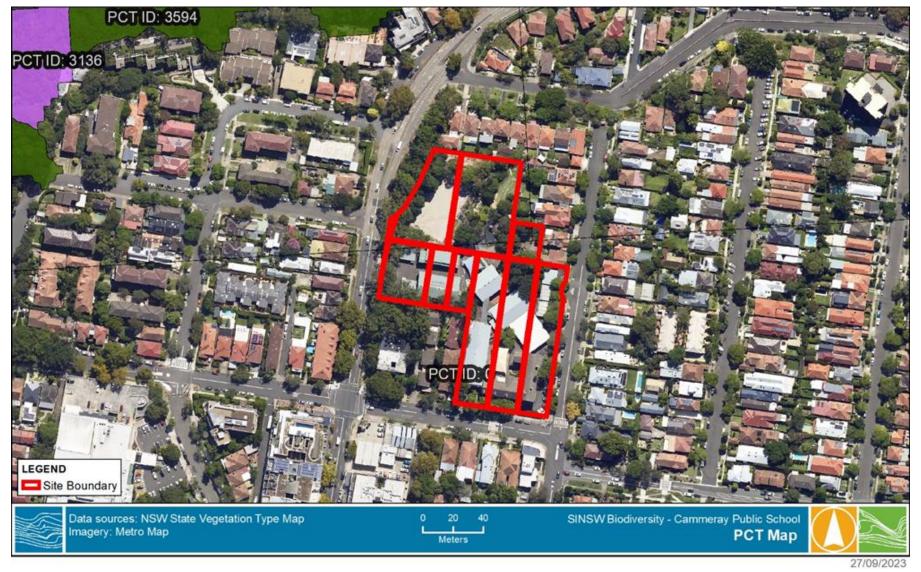










Figure 6-2 Historic Photograph 1943











6.2 Site Visit

An assessment of the site was undertaken on 8 January 2025 and 3 August 2023 by ecologist Caroline Weller. The survey comprised a walkthrough of all the accessible vegetated areas of the site. Flora species were surveyed by stratum and were identified and recorded. The vegetation communities observed were later cross checked with those already mapped surrounding the property.

Considering there was a mapped presence of the threatened species Powerful Owl and Grey-headed Flyingfox found within close proximity to the site, a dedicated survey targeting tree hollows was conducted. This was considered to be a habitat assessment.

The most recent site visit, on 8 January 2025 focused on Block E and stockpiles adjacent to Block E. Emphasis was placed on assessing the areas where the activity will take place, including the 3 demountables to be removed on the eastern side of the school. The 2 demountables in the south-western corner of the site have been removed, and do not form part of the activity.

A generalised fauna survey was also conducted to include searches for proxy evidence of fauna activity such as tree scratches, scat, and bird nests. As many faunal species likely to occur are cryptic and/or nocturnal, they are unlikely to be physically detected during a short daylight survey. The fauna assessment is, therefore, largely an assessment of the potential of the site as habitat for various fauna species. Apart from species recorded from the recent site survey, there is no certainty as to the presence or absence of the species discussed. Therefore, it is important to adopt the precautionary principle such that it is assumed that any threatened species are likely to occur at the site if suitable habitat exists.

6.2.1 Cammeray Public School

The site was largely dominated by scattered, planted canopy species including Brush Box (*Lophostemon confertus*) and Spotted Gum (*Corymbia maculata*) which are associated with the surrounding mapped PCTs (Figure 6-1). There was limited presence of midstorey and understorey species, with these generally found in the garden features along the outskirts of the site, indicating they are planted. It appears they have been planted for aesthetic values (following alignment to the boundary) rather than biodiversity reasons. A lot of the ground surface comprised of either artificial turf or concrete. A comprehensive floristics list can be found in Table 6-1 below.

The proposed plans provided by the client (Appendix D) assign a number or letter to the existing buildings and proposed extension at the site. These have been referred to in the section(s) below.

There were signs of native plantings behind and adjacent to the school buildings D15442 and Block E (Figure 6-1) and walkways were also predominately native species although not specifically related to the PCT found nearby. According to the Arboricultural Impact Assessment and Tree Protection Specification (L & Co v2.1, March 2025) which can be seen in Appendix C, the trees along the southwestern boundary fence line along Miller Street have been marked as a high landscape significance. Within this area there are predominantly high and medium landscape valued trees. Of the high and medium landscape valued trees, a high priority is placed on retaining the high value trees while medium valued trees should only be removed if necessary (Appendix C).

The site had exotic species dominated by Magnolia (*Magnolia grandiflora*), African Olive (*Olea europaea subsp. cuspidata*), Broad-leaved Privet (*Lingustrum lucidium*), Bamboo (*Bambusa* sp.) and other common annuals such as Purple-top (*Verbena bonariensis*) and Fleabane (*Conyza bonariensis*) It should be noted that there were signs of the African Olive and Bamboo were already being maintained with regrowth emerging from below the cut stumps. A comprehensive list of weeds found onsite can be found in Table 6-2.

The habitat survey conducted at Block E and its adjacent stockpiles on 8 January 2025 confirmed the presence of habitat previously identified during the 3 August 2023 field visit. Fresh scratch marks, likely caused by a possum species, were observed on tree bark, indicating recent activity. Notably, the number of nests behind



the building's air conditioning units had increased from two to four. Potential habitat sites were identified across the survey area, including four nests at the rear of Block E among the air conditioning units, a large, old nest observed among trees in the northeastern section of the site near the three demountable buildings along Bellevue Street, and scratch marks on the bark of a Spotted Gum (*Corymbia maculata*), most likely caused by possums.

The northwestern corner of the site featured a buildup of vegetative debris at the base of the fronds of a Phoenix Palm, providing potential habitat. Additionally, a large cut stump beneath the walkway, previously used as a refuge by a juvenile Tawny Frogmouth (*Podargus strigoides*), was identified as potential habitat. Historical records indicated the school rescued and rehabilitated the bird through Wildlife Rescue Service (WIRES). A natural spring was discovered on-site, with audible frog calls suggesting its use by unidentified frog species. A detailed inventory of fauna and potential habitat sites is provided in Table 6-3. The school community has expressed the high ecological value they place on these habitats.

No tree hollows were identified on-site, limiting nesting opportunities for the Powerful Owl. However, the owl may use the area for foraging small mammals, such as possums, known to inhabit the site. Dense vegetation suitable for roosting is located approximately 700 metres northeast in Flat Rock Gully. While the site offers foraging opportunities for the Grey-headed Flying-fox (*Pteropus poliocephalus*), it lacks waterways and other features preferred for roosting. The nearest roosting site is approximately 700 metres northeast in Flat Rock Gully. Gully.

No observations of the Black Bittern or any of its preferred habitat could be found during the site assessment.

NATIVE SPECIES		
Scientific Name	Common Name	
Canopy Species		
Acacia sp.	Wattle	
Angophora costata	Sydney Red Gum	
Casuarina glauca	Swamp She-oak	
Banksia integrifolia subsp. integrifolia	Coast Banksia	
Corymbia maculata	Spotted Gum	
Cyathea australis	Tree Fern	
Ficus rubiginosa	Port Jackson Fig	
Lophostemon confertus	Brush Box	
Eucalyptus botryoides	Bangalay	
Eucalyptus microcorys	Tallowwood	
Eucalyptus robusta	Swamp Mahogany	
Eucalyptus saligna	Sydney Blue Gum	
Livistona australis	Cabbage Palm	
Tristaniopsis sp.	Water Gum	
Midstorey species		
Acmena smithii	Lilly Pilly	
Banksia spinulosa	Hairpin Banksia	
Callistemon citrinus	Lemon Scented Bottlebrush	

Table 6-1Native Species list



NATIVE SPECIES	
Callistemon viminalis	Weeping Bottlebrush
Celtis australis	Hackberry
Homalanthus populifolius	Bleeding Heart
Leptospermum sp.	Tea Tree
Melaleuca quinquenervia	Broad-leaved Paperbark
Melaleuca stypheloides	Prickly-leaved Paperbark
Sigesbeckia orientalis	Indian Weed
Syzygium paniculatum	Lilly Pilly, Bush Cherry
Groundcover species	
Adiantum aethiopicum	Common Maidenhair Fern
Carex sp.	Sedge
Commelina cyanea	Scurvy Weed
Christella dentata	Binung
Dianella caerulea	Blue Flax-lily
Dichondra repens	Kidney Weed
Gahnia sp	Saw Sedge
Lomandra filiformis	Wattle Mat-rush
Lomandra longifolia	Spiny-headed Mat-rush
Oplismenus aemulus	Basket grass

Table 6-2Weed species list.

WEED SPECIES			
Scientific Name	Common Name	WONS WEED (*)	
Canopy Species			
Cinnamomum camphora	Camphor Laurel		
Jacaranda mimosifolia	Jacaranda		
Liquidambar styraciflua	Liquid Amber		
Lingustrum lucidium	Large-leaved Privet		
Magnolia grandiflora	Southern Magnolia		
Midstorey species			
Ageratina adenophora	Mexican Devil, Crofton		
Bambusa sp	Bamboo		
Murraya paniculata	Orange Jasmine		
Musa sp.	Banana		
Olea europaea subsp.cuspidata	African Olive		



WEED SPECIES		
Phoenix canariensis	Phoenix Palm	
Viburnum odoratissimum	Sweet Viburnum	
Groundcover species		
Bidens pilosa	Cobbler's Peg, Farmer's Fiend	
Conyza bonariensis	Fleabane	
Ehrharta calycina	Veldt Grass	
Parietaria judaica	Asthma Weed	
Pennisetum clandestinum	Kikuyu grass	
Persicaria capitata	Japanese Knotweed	
Plantago lanceolata	Ribwort	
Senecio madagascariensis	Fireweed	*
Solanum sp	Nightshade	
Verbena bonariensis	Purpletop	

 Table 6-3
 Fauna species list and potential habitat locations.

FAUNA SPECIES		
Scientific Name	Common Name	
Alectura lathami	Australian Brush-turkey	
Gymnorhina tibicen	Australian Magpie	
Lampropholis guichenoti	Common Garden Skink	
Manorina melanocephala	Noisy Minor	
Trichoglossus moluccanus	Rainbow Lorikeet	
Unknown	Frog (Heard Call)	
Potential habitat found		
Two nests on side of building	-33.820545, 151.211125	
Old nest in tree	-33.820421, 151.211882	
Potential habitat in base of Phoenix Palm	-33.820499, 151.210921	



7 ENVIRONMENTAL ASSESSMENT

No native fauna, including any threatened species, were identified during the site inspection. The terrestrial flora and fauna survey was limited to less than one hour. The field survey was restricted to the area of impact of the proposed works

As there were no threatened species found, a Test of Significance was not required. As many faunal species likely to occur within the project area are cryptic and/or nocturnal, or may only visit the site on occasion, they are unlikely to be detected even during seasonal surveys. The fauna assessment is, accordingly, largely an assessment of the potential of the project site as habitat for various fauna species. Therefore, it is important to adopt the precautionary principle such that it is assumed that threatened species may be at the site if suitable habitat exists.



8 POTENTIAL IMPACTS

8.1 Construction Impacts

The following is a summary of the direct and indirect impacts to the biodiversity potentially persisting onsite. The proposed activity requires the removal of three demountable buildings located on the eastern side of the school and will be replaced with turfing and bike parking. The new permanent teaching spaces will be positioned adjacent to Building E on the western side of the school.

8.1.1 Trees

A Final Arboricultural Report for Cammeray Public School was prepared for Department of Education by Laurence & Co to provide an overview of the quality and value of the trees at the school. The report aims to maximise tree retention in any future development of the site. A total of 25 trees and group trees were assessed and assigned to one of three zones based on their Landscape Significance Values and existing site structures (Appendix C).

The Arboricultural Impact Assessment identified three trees that required removal to accommodate the proposed upgrades at Cammeray Public School: Tree 26 (*Eucalyptus botryoides*), Tree 27 (*Eucalyptus saligna*), and Tree 28 (*Corymbia maculata*). The report indicated that the proposed building works would result in a Major Encroachment on these trees, significantly impacting their Tree Protection Zone (TPZ) and, in some cases, their Structural Root Zone (SRZ), making their long-term viability unlikely.

Other trees with a retention value of 'Consider for Removal' or 'Priority for Removal,' including Trees 29, 31, 74, and 175, Section 4 of the arborist report specifically outlined the removal of Trees 26, 27, and 28 due to the direct impact of the proposed works (Appendix C). Refer to Figure 8-1, Figure 8-2 & Figure 8-3 for the arborist plans.

The proposed works should avoid impacts within the Tree Protection Zone (TPZ) outlined within the preliminary Arboricultural Impact Assessment (SDG Pty Ltd, 2025) for the site.

It is considered unlikely that the works will require the removal of any native canopy vegetation or any significant works within the TPZ of native canopy trees.

8.1.2 Nests and Hollows

The site assessment found potential habitat features within the subject site, which may affect the development process. this is important for the activity and determining impacts. This includes four birds nest abutting the air conditioning units on Block E in the southwest section of the site; a nest in the base of the fronds in an exotic Phoenix Palm (*Phoenix canariensis*); an old nest in a native canopy tree; and a natural spring. Prior to the commencement of the construction, all trees and vegetation should be inspected for hollows and nests. If fauna is discovered inhabiting hollows or nests, an ecologist may be required to remove and relocate any fauna if the tree or vegetation is to be removed. This may only be relevant to the nest in the Phoenix Palm but the other nearby nest in the air conditioning unit against Block E may be temporarily affected by secondary effects such as noise and vibration during the construction period, but they will not need to be removed, and it is expected the birds will return to the nests post activity works.

8.1.3 Contractors and Staff Inductions

Induction of all contractors and staff outlining the ecological sensitivity of the site, no-go areas, the need to minimise ecological impact, and all other required mitigation measures is to be undertaken.





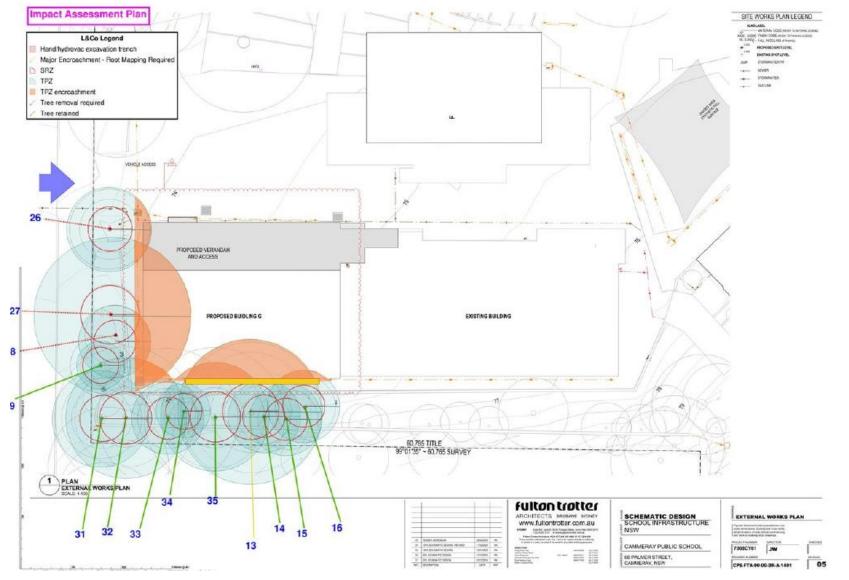


Figure 8-1 Plan courtesy of Fulton Trotter (page 1)



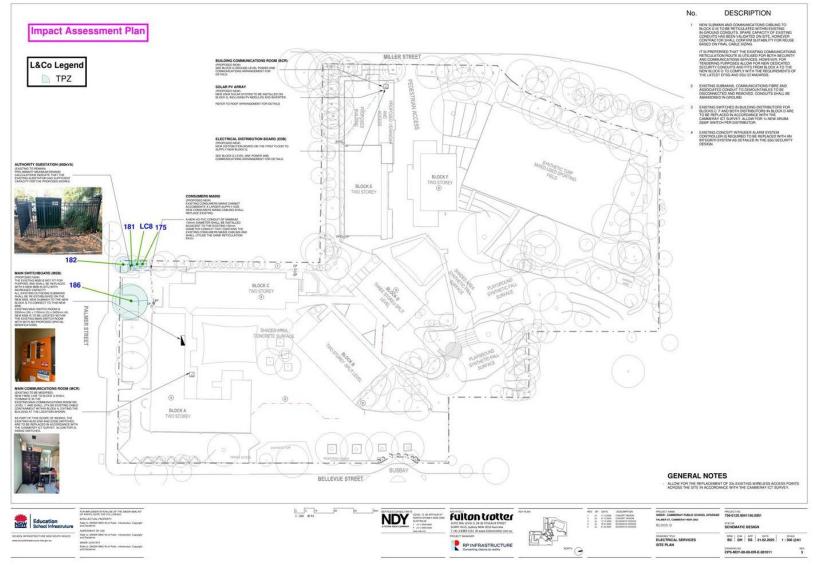


Figure 8-2 Plan courtesy of Fulton Trotter (Page 2)





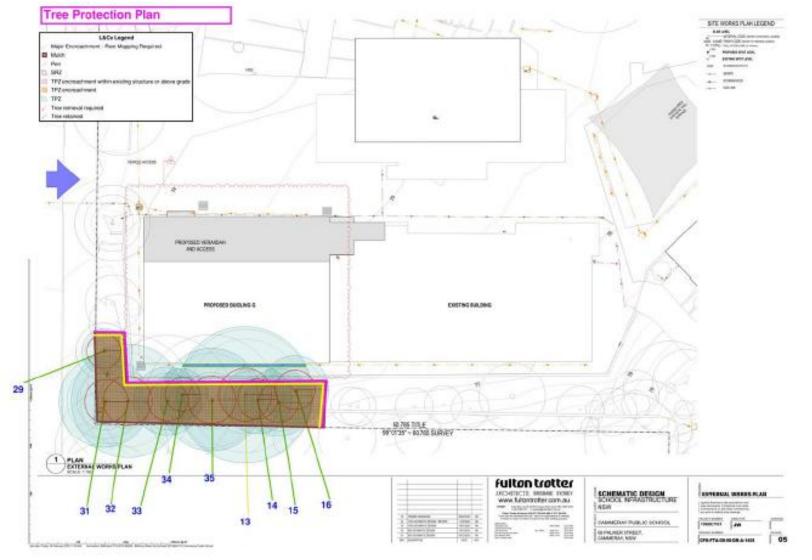


Figure 8-3 Plan courtesy of Fulton Trotter (Page 3)



8.1.4 Hygiene

Basic hygiene protocols would be implemented for construction personnel and machinery on site to reduce the potential for invasion by plant pathogens including *Phytopthora cinnamomi*, the fungus myrtle rust *Uredo rangelli* and amphibian chytrid fungus.

8.2 Operational Impacts

No operational impacts to fauna are anticipated as a result of the proposal.

8.2.1 Mitigation Measures

Measures that will be implemented to address potential pre-construction impacts are listed in Table 8-1 and construction impacts are listed in Table 8-2. Detailed tree mitigation measures during pre-construction and construction should be adhered to, as described in Arborist Report (Appendix C).

Table 8-1 Mitigation measures for pre-construction impacts (PI)

FFA	Mitigation Measure	Timing
PI1	Tree protection must be approved by a Consulting Arborist AQF Level 5. No materials, mixing, parking, disposal, repairs, refuelling, fires, stockpiling, or backfilling is allowed near remaining trees. Removal or lopping of trees needs written permission from the Superintendent.	Pre-construction
Pl2	All trees to be protected shall be clearly identified and all TPZs surveyed.	Pre-construction
PI3	Protective fencing around existing trees and within TPZs must be installed before any site work begins. The fence must be 1800mm high chain wire mesh fixed to Galvanised steel posts, enclosing an area to prevent damage as defined in the Tree Protection Plan. No storage inside fenced area.	Pre-construction
PI4	Use AS 4454 leaf mulch with 90% recycled content for tree protection fencing. Chip trees marked for removal and use mulch 100mm deep. Avoid soil, weeds, sticks, and stones. Comply with AS 4454 (1999) and AS 4419 (1998).	Pre-construction
PI5	Tree protection signage must be attached to tree protection zones before works begin. Signs should be displayed prominently and repeated at 10m intervals or closer when the fence changes direction. Signs must include information about the tree protection zone, access restrictions, developer's contact details, and Site Arborist information.	Pre-construction
Pl6	Inspect all trees for hollows and nests, check on nests which may be located in air conditioning unit at Block E. If fauna is discovered an ecologist may be required to remove and relocate any fauna if the tree or vegetation is to be removed.	Pre-construction
PI7	Potential disruption of habitat sites identified for possums, including dreys and scratching marks on trees, may impact species activity.	Pre-construction
PI8	The natural spring and associated frog species should be inspected for frog species.	Pre-construction
PI9	Induction of all contractors and staff outlining the ecological sensitivity of the site, no-go areas, the need to minimise ecological impact, and all other required mitigation measures is to be undertaken.	Pre-construction



Table 8-2 Mitigation measures for construction impacts (CI)

FFA	Mitigation Measure	Timing
CI1	Tree Protection Zones (TPZs) will be maintained around vegetation to be retained. TPZs will be maintained in accordance with Australian Standard 4970 (2009) Protection of Trees on Development Sites (AS-4970). No activities are to take place within the Structural Root Zones (SRZs) of mature trees. No works, stockpiling of materials, excavation, parking or any other potentially harmful activities will be undertaken within TPZs unless a Level 5 Arborist has provided confirmation that the works will not impact the tree (Appendix C).	Construction
CI2	No pedestrian or plant access is permissible to the TPZ.	Construction
CI3	Avoid storing bulk or harmful materials near trees. Keep spoil from excavations away from TPZs. Ensure wind-blown materials like cement don't harm trees. Contaminants stored properly with spill measures.	Construction
CI4	Protect trees from harm. Avoid tying ropes, cables, or similar items to trees. No staff members. No plant, machinery, or materials can enter the tree protection fencing.	Construction
CI5	Do not fill or compact soil above tree roots enclosed by protection fencing during construction near trees. Guidelines must be followed to prevent soil compaction in these areas. Protection includes using elevated planks attached to scaffolding to prevent ground compression.	Construction
CI6	Trenching is not allowed in TPZs or tree protection fencing. Approval needed for trenching, must be done by hand with arborist supervision.	Construction
CI7	Contractors are to maintain plants are watered. Apply water at an appropriate rate suitable for the plant species during periods of little or no rainfall.	Construction
CI8	All site facilities must be located outside of TPZ. Chemicals and contaminants must be stored properly in an enclosed area with a spill bund to prevent runoff in case of accidents.	Construction
C19	Basic hygiene protocols would be implemented for construction personnel and machinery on site to reduce the potential for invasion by plant pathogens including <i>Phytopthora cinnamomi</i> , the fungus myrtle rust <i>Uredo rangelli</i> and amphibian chytrid fungus.	Construction



9 CONCLUSION AND RECOMMENDATIONS

Activities within the Tree Protection Zone (TPZ) will require precautions to avoid damage, with a qualified arborist overseeing the process and providing a Tree Protection Plan. Trees and vegetation will be inspected for hollows and nests, with an ecologist relocating any fauna found. Contractors and staff will be inducted on the site's ecological sensitivity, and basic hygiene protocols will be implemented to prevent plant pathogens and fungi.

No operational impacts to fauna are anticipated, and mitigation measures will include maintaining TPZs, inspecting trees for fauna, and implementing hygiene protocols. If these mitigation measures are followed, the ecological impact of the construction can be minimised, ensuring the protection of the remaining trees and local wildlife.

This FFA for the Cammeray Public School, conducted by Water Technology, found no significant biodiversity areas or threatened species on the site. Consequently, the project will not cause significant environmental impacts, and no further referral or Environmental Impact Statement is required.

This conclusion supports the progression of the redevelopment project under the current planning and environmental regulations, ensuring that the school infrastructure upgrades can proceed with minimal biodiversity disruption.

The activity will not have a significant impact on the environment. Any potential impact can be:

- 1. can be adequately mitigated through recommended measures, and;
- 2. is not considered to be a significant impact.

Please refer below to the mitigation measures, Table 9-1.

Mitigation Number/Name	Aspect/Section	Mitigation Measure	Reason for Mitigation Measure
Copies of Approved Plans and Conditions/Mitigation Measures To Be Kept On-site	Section 8.2.1 Table 8-1	Tree protection must be approved by a Consulting Arborist (AQF Level 5). Activities such as mixing, parking, disposal, repairs, refuelling, fires, stockpiling, or backfilling are not allowed near trees. Any tree removal or lopping requires written permission from the Superintendent.	To ensure tree protection and prevent damage during site activities.
Copies of Approved Plans and Conditions/Mitigation Measures To Be Kept On-site	Section 8.2.1 Table 8-1	All trees to be protected must be clearly identified, and Tree Protection Zones (TPZs) surveyed.	To ensure trees are properly accounted for and safeguarded.

Table 9-1 Mitigation Measures



Mitigation Number/Name	Aspect/Section	Mitigation Measure	Reason for Mitigation Measure
Copies of Approved Plans and Conditions/Mitigation Measures To Be Kept On-site	Section 8.2.1 Table 8-1	Protective fencing, 1800mm high chain wire mesh fixed to galvanised steel posts, must be installed around all existing trees and within TPZs before any site work begins. No storage or activities should occur within the fenced area.	To prevent accidental damage and intrusion into TPZs.
Copies of Approved Plans and Conditions/Mitigation Measures To Be Kept On-site	Section 8.2.1 Table 8-2	Use AS 4454 leaf mulch with 90% recycled content for tree protection fencing. Chip trees marked for removal and spread mulch to a depth of 100mm, ensuring no soil, weeds, sticks, or stones. Comply with AS 4454 (1999) and AS 4419 (1998).	To provide adequate ground cover and maintain soil health within TPZs.
Copies of Approved Plans and Conditions/Mitigation Measures To Be Kept On-site	Section 8.2.1 Table 8-2	Tree protection signage must be displayed at the TPZs before work commences, at intervals of no more than 10m. Signs must include details of the tree protection zone, access restrictions, the developer's contact information, and Site Arborist details.	To clearly communicate tree protection measures to all site personnel.
Copies of Approved Plans and Conditions/Mitigation Measures To Be Kept On-site	Section 8.2.1 Table 8-2	Conduct an inspection of all trees for hollows, nests, and dreys. If fauna is found, an ecologist may need to remove and relocate any fauna before tree removal or vegetation clearance.	To minimise harm to wildlife during tree removal and site works.
Copies of Approved Plans and Conditions/Mitigation Measures To Be Kept On-site	Section 8.2.1 Table 8-2	All contractors and staff must undergo induction on the ecological sensitivity of the site, including no- go areas, minimisation of ecological impacts, and tree protection measures.	To raise awareness and ensure compliance with ecological protection measures.
Copies of Approved Plans and Conditions/Mitigation Measures To Be Kept On-site	Section 8.2.1 Table 8-2	Tree Protection Zones (TPZs) should be maintained in accordance with AS 4970 (2009) and ensure no activities take place within the Structural Root Zones (SRZs) of mature trees. Any works within TPZs must be approved by a Level 5 Arborist.	To prevent disturbance and damage to critical tree roots.
Copies of Approved Plans and Conditions/Mitigation Measures To Be Kept On-site	Section 8.2.1 Table 8-2	No pedestrian or plant access is permitted within the TPZ.	To protect tree roots from compaction and damage.



Mitigation Number/Name	Aspect/Section	Mitigation Measure	Reason for Mitigation Measure
Copies of Approved Plans and Conditions/Mitigation Measures To Be Kept On-site	Section 8.2.1 Table 8-2	Do not store bulk materials or harmful substances near trees. Ensure that spoil from excavation work is kept away from TPZs and wind-blown materials such as cement are managed appropriately.	To prevent contamination and soil degradation around trees.
Copies of Approved Plans and Conditions/Mitigation Measures To Be Kept On-site	Section 8.2.1 Table 8-2	Trees must be protected from damage, including not allowing ropes, cables, or other materials to be tied to it. No plant, machinery, or staff should enter the tree protection fencing.	To avoid physical damage to trees during construction.
Copies of Approved Plans and Conditions/Mitigation Measures To Be Kept On-site	Section 8.2.1 Table 8-2	Avoid soil compaction in TPZs by not filling or compacting soil above tree roots. Use elevated planks attached to scaffolding to prevent ground compression during construction.	To maintain soil aeration and tree root health.
Copies of Approved Plans and Conditions/Mitigation Measures To Be Kept On-site	Section 8.2.1 Table 8-2	Trenching within TPZs is prohibited unless approved and supervised by an Arborist. Trenching must be done by hand.	To minimise root disturbance and ensure safe excavation practices.
Copies of Approved Plans and Conditions/Mitigation Measures To Be Kept On-site	Section 8.2.1 Table 8-2	Maintain appropriate watering of plants, especially during periods of little or no rainfall, to ensure plant health.	To sustain tree health and prevent stress due to site activities.
Copies of Approved Plans and Conditions/Mitigation Measures To Be Kept On-site	Section 8.2.1 Table 8-2	Site facilities must be located outside TPZs. Chemicals and contaminants should be stored in an enclosed area with a spill bund to prevent runoff in case of accidents.	To protect trees from chemical exposure and soil contamination.



10 REFERENCES

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APPENDIX A PROTECTED MATTERS SEARCH

NSW Department of Education (DoE) | 13 March 2025 Cammeray Public School



Australian Government

Department of Climate Change, Energy, the Environment and Water

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 16-Dec-2024

Summary Details Matters of NES Other Matters Protected by the EPBC Act Extra Information Caveat Acknowledgements

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	3
National Heritage Places:	11
Wetlands of International Importance (Ramsar	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	14
Listed Threatened Species:	123
Listed Migratory Species:	71

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A <u>permit</u> may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	417
Commonwealth Heritage Places:	71
Listed Marine Species:	100
Whales and Other Cetaceans:	13
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	11
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	80
Key Ecological Features (Marine):	None
Biologically Important Areas:	3
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

World Heritage Properties [Resource Information]			
Name	State	Legal Status	Buffer Status
Australian Convict Sites (Cockatoo Island Convict Site)	NSW	Declared property	In buffer area only
Australian Convict Sites (Hyde Park Barracks)	NSW	Declared property	In buffer area only
<u>Sydney Opera House</u>	NSW	Declared property	In buffer area only
National Heritage Places		[Res	source Information]
Name	State	Legal Status	Buffer Status
Historic Bardi Basah		Listed place	la buffer erec enbr
Bondi Beach	NSW	Listed place	In buffer area only
Bondi Surf Pavilion	NSW	Within listed place	In buffer area only
Centennial Park	NSW	Listed place	In buffer area only
Cockatoo Island	NSW	Listed place	In buffer area only
First Government House Site	NSW	Listed place	In buffer area only
Governors' Domain and Civic Precinct	NSW	Listed place	In buffer area only
Hyde Park Barracks	NSW	Listed place	In buffer area only
North Head - Sydney	NSW	Listed place	In buffer area only
Sydney Harbour Bridge	NSW	Listed place	In buffer area only
<u>Sydney Opera House</u>	NSW	Listed place	In buffer area only
Indigenous			
Cyprus Hellene Club - Australian Hall	NSW	Listed place	In buffer area only

Wetlands of International Importance (Ramsar Wetlands)		[Resource Information]
Ramsar Site Name	Proximity	Buffer Status
Towra point nature reserve	Within 10km of Ramsar site	In buffer area only

Listed Threatened Ecological Communities

[Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Blue Gum High Forest of the Sydney Basin Bioregion	Critically Endangered	Community likely to occur within area	In buffer area only
Castlereagh Scribbly Gum and Agnes Banks Woodlands of the Sydney Basin Bioregion	Endangered	Community may occu within area	urIn buffer area only
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area	In feature area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community likely to occur within area	In feature area
Coastal Upland Swamps in the Sydney Basin Bioregion	Endangered	Community likely to occur within area	In feature area
Cooks River/Castlereagh Ironbark Forest of the Sydney Basin Bioregion	Critically Endangered	Community may occu within area	urIn buffer area only
Eastern Suburbs Banksia Scrub of the Sydney Region	Critically Endangered	Community likely to occur within area	In feature area
Littoral Rainforest and Coastal Vine Thickets of Eastern Australia	Critically Endangered	Community likely to occur within area	In buffer area only
Posidonia australis seagrass meadows of the Manning-Hawkesbury ecoregion	Endangered	Community likely to occur within area	In buffer area only
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	Critically Endangered	Community likely to occur within area	In feature area
Shale Sandstone Transition Forest of the Sydney Basin Bioregion	Critically Endangered	Community may occu within area	urIn buffer area only

Turpentine-Ironbark Forest of the Sydney Basin Bioregion

Saltmarsh

Subtropical and Temperate Coastal

Vulnerable

Community likely to In buffer area only occur within area

Critically Endangered

Community likely to I occur within area

In buffer area only

Western Sydney Dry Rainforest and Moist Woodland on Shale Critically Endangered Community likely to In feature area occur within area

Listed Threatened Species		[Res	source Information]
Status of Conservation Dependent and E Number is the current name ID.	xtinct are not MNES unde	er the EPBC Act.	
Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area	In feature area
<u>Ardenna grisea</u> Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	
<u>Calidris canutus</u> Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
<u>Calidris ferruginea</u> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
<u>Calidris tenuirostris</u> Great Knot [862]	Vulnerable	Foraging, feeding or related behaviour	In buffer area only

known to occur within area

Callocephalon fimbriatum

Gang-gang Cockatoo [768]

Endangered

Species or species In feature area habitat known to occur within area

Calyptorhynchus lathami lathami

South-eastern Glossy Black-Cockatoo Vulnerable [67036]

Scientific Name	Threatened Category	Presence Text	Buffer Status
<u>Charadrius leschenaultii</u> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
<u>Charadrius mongolus</u> Lesser Sand Plover, Mongolian Plover [879]	Endangered	Foraging, feeding or related behaviour known to occur within area	
<u>Climacteris picumnus victoriae</u> Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat known to occur within area	In feature area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat may occur within area	In feature area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Diomedea sanfordi

Northern Royal Albatross [64456]

Endangered

Species or species In feature area habitat may occur within area

Erythrotriorchis radiatus Red Goshawk [942]

Endangered

Scientific Name	Threatened Category	Presence Text	Buffer Status
<u>Falco hypoleucos</u> Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat known to occur within area	In feature area
Limosa limosa Black-tailed Godwit [845]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only

Macronectes halli

Northern Giant Petrel [1061]

Vulnerable

Foraging, feeding or In buffer area only related behaviour likely to occur within area

Melanodryas cucullata cucullata

South-eastern Hooded Robin, Hooded Endangered Robin (south-eastern) [67093]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area	In feature area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area	In buffer area only
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area	•
Pycnoptilus floccosus Pilotbird [525]	Vulnerable	Species or species habitat may occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area

Stagonopleura guttata
Diamond Firetail [59398]

Vulnerable

Species or species In feature area habitat likely to occur within area

<u>Sternula nereis nereis</u> Australian Fairy Tern [82950]

Vulnerable

Scientific Name	Threatened Category	Presence Text	Buffer Status
<u>Thalassarche bulleri</u> Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In buffer area only
<u>Thalassarche bulleri platei</u> Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour ma occur within area	In feature area y
<u>Thalassarche impavida</u> Campbell Albatross, Campbell Black- browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
<u>Thalassarche salvini</u> Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area

Thalassarche steadi

White-capped Albatross [64462]

Vulnerable

Foraging, feeding or In feature area related behaviour known to occur within area

Tringa nebularia

Common Greenshank, Greenshank [832]

Endangered



Scientific Name	Threatened Category	Presence Text	Buffer Status
Epinephelus daemelii Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
<u>Hippocampus whitei</u> White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat known to occur within area	In buffer area only
Macquaria australasica Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area	In feature area
Prototroctes maraena Australian Grayling [26179]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
<u>Seriolella brama</u> Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area	In buffer area only
FROG			
Heleioporus australiacus Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat known to occur within area	In feature area
<u>Litoria aurea</u> Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat likely to occur within area	In feature area
<u>Mixophyes balbus</u> Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat likely to occur within area	In feature area
MAMMAL			
<u>Balaenoptera musculus</u> Blue Whale [36]	Endangered	Species or species habitat may occur	In buffer area only

within area

Chalinolobus dwyeri

Large-eared Pied Bat, Large Pied Bat Endangered [183]

Species or species In feature area habitat known to occur within area

Dasyurus maculatus maculatus (SE mainland population)

Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184] Endangered

Scientific Name	Threatened Category	Presence Text	Buffer Status
Eubalaena australis		- · · ·	
Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area	In buffer area only
Isoodon obesulus obesulus Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south- eastern) [68050]	Endangered	Species or species habitat known to occur within area	In feature area
Notamacropus parma Parma Wallaby [89289]	Vulnerable	Species or species habitat may occur within area	In feature area
Petauroides volans			
Greater Glider (southern and central) [254]	Endangered	Species or species habitat known to occur within area	In feature area
Petaurus australis australis			
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Petrogale penicillata			
Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Phascolarctos cinereus (combined popul	ations of Qld, NSW and th	ne ACT)	
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area
Pseudomys novaehollandiae			
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pteropus poliocephalus			
Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area	In feature area

OTHER

Dendronephthya australis

Cauliflower Soft Coral [90325]

Endangered

Species or species In buffer area only habitat known to occur within area

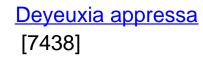
PLANT

Acacia bynoeana

Bynoe's Wattle, Tiny Wattle [8575]

Vulnerable

Scientific Name	Threatened Category	Presence Text	Buffer Status
Acacia pubescens Downy Wattle, Hairy Stemmed Wattle [18800]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Acacia terminalis subsp. Eastern Sydney	(G.P.Phillips 126) listed a	as Acacia terminalis sul	
Sunshine Wattle (Sydney region) [91564]	Endangered	Species or species habitat known to occur within area	In feature area
<u>Allocasuarina glareicola</u> [21932]	Endangered	Species or species habitat may occur within area	In buffer area only
<u>Allocasuarina portuensis</u> Nielsen Park She-oak [21937]	Endangered	Species or species habitat known to occur within area	In buffer area only
Asterolasia elegans [56780]	Endangered	Species or species habitat may occur within area	In feature area
Caladenia tessellata Thick-lipped Spider-orchid, Daddy Long- legs [2119]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Cynanchum elegans White-flowered Wax Plant [12533]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Darwinia biflora [14619]	Vulnerable	Species or species habitat known to occur within area	In buffer area only



Endangered

Species or species In buffer area only habitat likely to occur within area

Epacris sparsa [16450]

Endangered

Species or species In buffer area only habitat may occur within area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Eucalyptus camfieldii Camfield's Stringybark [15460]	Vulnerable	Species or species habitat known to occur within area	In feature area
<u>Genoplesium baueri</u> Yellow Gnat-orchid, Bauer's Midge Orchid, Brittle Midge Orchid [7528]	Endangered	Species or species habitat known to occur within area	In feature area
<u>Grevillea caleyi</u> Caley's Grevillea [9683]	Critically Endangered	Species or species habitat known to occur within area	In buffer area only
<u>Haloragodendron lucasii</u> Hal [6480]	Endangered	Species or species habitat known to occur within area	In feature area
<u>Kunzea rupestris</u> [8798]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Lasiopetalum joyceae [20311]	Vulnerable	Species or species habitat known to occur within area	In feature area
<u>Leptospermum deanei</u> Deane's Tea-tree [21777]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Leucopogon exolasius Woronora Beard-heath [14251]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Melaleuca biconvexa Biconvex Paperbark [5583]	Vulnerable	Species or species habitat may occur within area	In feature area

Melaleuca deanei

Deane's Melaleuca [5818]

Vulnerable

Species or species habitat known to occur within area

In feature area

Micromyrtus blakelyi [6870]

Vulnerable

Species or species In buffer area only habitat may occur within area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<u>Microtis angusii</u> Angus's Onion Orchid [64530]	Endangered	Species or species	In buffer area only
	Lindangorod	habitat may occur within area	in bandr aroa only
Persicaria elatior			
Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Persoonia hirsuta			
Hairy Geebung, Hairy Persoonia [19006]	Endangered	Species or species habitat known to occur within area	In feature area
<u>Persoonia mollis subsp. maxima</u>			
[56075]	Endangered	Species or species habitat may occur within area	In buffer area only
Pimelea curviflora var. curviflora			
[4182]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pimelea spicata			
Spiked Rice-flower [20834]	Endangered	Species or species habitat may occur within area	In buffer area only
Prostanthera densa			
Villous Mintbush [12233]	Vulnerable	Species or species habitat may occur within area	In feature area
Prostanthera junonis			
Somersby Mintbush [64960]	Endangered	Species or species habitat known to occur within area	In buffer area only
Prostanthera marifolia			
Seaforth Mintbush [7555]	Critically Endangered	Species or species habitat known to occur within area	In buffer area only

Rhizanthella slateri

Eastern Underground Orchid [11768]

Endangered

Species or species In feature area habitat may occur within area

In feature area

Rhodamnia rubescens

Scrub Turpentine, Brown Malletwood [15763]

Critically Endangered Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<u>Rhodomyrtus psidioides</u> Native Guava [19162]	Critically Endangered	Species or species habitat may occur within area	In feature area
Syzygium paniculatum Magenta Lilly Pilly, Magenta Cherry, Daguba, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307]	Vulnerable	Species or species habitat known to occur within area	In feature area
<u>Thesium australe</u> Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area	In feature area
REPTILE			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Hoplocephalus bungaroides Broad-headed Snake [1182]	Endangered	Species or species habitat may occur within area	In feature area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or	In buffer area only

related behaviour known to occur within area

SHARK

Carcharias taurus (east coast population)

Grey Nurse Shark (east coast population) [68751]

Critically Endangered Congregation or In buffer area only aggregation known to occur within area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
<u>Galeorhinus galeus</u> School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat may occur within area	In buffer area only
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In buffer area only
<u>Sphyrna lewini</u> Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only
SNAIL			
<u>Meridolum maryae</u> Maroubra Woodland Snail, Maroubra Land Snail [89884]	Endangered	Species or species habitat known to occur within area	In buffer area only
Pommerhelix duralensis Dural Land Snail [85268]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Listed Migratory Species		[Res	source Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Anous stolidus			
Common Noddy [825]		Species or species habitat likely to occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area

Ardenna carneipes

Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]

Foraging, feeding or related behaviour In buffer area only likely to occur within area

Ardenna grisea

Sooty Shearwater [82651]

Vulnerable

Species or species In buffer area only habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In feature area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In buffer area only
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
<u>Macronectes halli</u> Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or	In buffer area only

related behaviour likely to occur within area

Phaethon lepturus White-tailed Tropicbird [1014]

Species or species In buffer area only habitat known to occur within area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<u>Phoebetria fusca</u> Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
<u>Sternula albifrons</u> Little Tern [82849]		Species or species habitat may occur within area	In buffer area only
<u>Thalassarche bulleri</u> Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour ma occur within area	
Thalassarche impavida Campbell Albatross, Campbell Black- browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
<u>Thalassarche salvini</u> Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or	In feature area

related behaviour likely to occur within area

Thalassarche steadi

White-capped Albatross [64462]

Vulnerable

Foraging, feeding or In feature area related behaviour known to occur within area

Migratory Marine Species

Scientific Name	Threatened Category	Presence Text	Buffer Status
<u>Balaenoptera edeni</u> Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
<u>Balaenoptera musculus</u> Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area	
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area	In buffer area only
<u>Carcharias taurus</u> Grey Nurse Shark [64469]		Congregation or aggregation known to occur within area	In buffer area only
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
<u>Chelonia mydas</u> Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	·
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour	In buffer area only

known to occur within area

Eretmochelys imbricata Hawksbill Turtle [1766]

Vulnerable

Species or species habitat known to occur within area In buffer area only

Eubalaena australis as Balaena glacialis australisSouthern Right Whale [40]Endangered

Species or species habitat known to occur within area

In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area	In buffer area only
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area	•
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In buffer area only
<u>Mobula alfredi as Manta alfredi</u> Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat known to occur within area	In buffer area only
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat may occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	
<u>Orcinus orca</u> Killer Whale, Orca [46]		Species or species habitat likely to occur within area	In buffer area only
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Migratory Terrestrial Species			
<u>Cuculus optatus</u> Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat known to	In feature area



occur within area

Hirundapus caudacutus White-throated Needletail [682]

Vulnerable

Species or species In feature area habitat known to occur within area

<u>Motacilla flava</u> Yellow Wagtail [644]

Species or species In feature area habitat known to occur within area

Migratory Wetlands Species

Scientific Name	Threatened Category	Presence Text	Buffer Status
<u>Actitis hypoleucos</u> Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	
<u>Calidris canutus</u> Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
<u>Calidris ferruginea</u> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area	In feature area
Calidris pugnax as Philomachus pugnax Ruff [91256]		Foraging, feeding or related behaviour known to occur within area	
Calidris ruficollis Red-necked Stint [860]		Foraging, feeding or related behaviour known to occur within area	

Calidris tenuirostris

Great Knot [862]

Vulnerable

Foraging, feeding or In buffer area only related behaviour known to occur within area

Foraging, feeding or In buffer area only related behaviour known to occur within area

<u>Charadrius bicinctus</u> Double-banded Plover [895]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
<u>Charadrius mongolus</u> Lesser Sand Plover, Mongolian Plover [879]	Endangered	Foraging, feeding or related behaviour known to occur within area	
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area
<u>Gallinago megala</u> Swinhoe's Snipe [864]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Gallinago stenura Pin-tailed Snipe [841]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Limosa limosa Black-tailed Godwit [845]	Endangered	Foraging, feeding or related behaviour known to occur within area	
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Numenius minutus			

Numenius minutus

Little Curlew, Little Whimbrel [848]

Numenius phaeopus Whimbrel [849] Foraging, feeding or In buffer area only related behaviour likely to occur within area

Foraging, feeding or In buffer area only related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pandion haliaetus	Inicatened Gategory		Duiler Olalus
Osprey [952]		Species or species habitat known to occur within area	In feature area
Pluvialis fulva			
Pacific Golden Plover [25545]		Foraging, feeding or related behaviour known to occur within area	
Tringa brevipes			
Grey-tailed Tattler [851]		Foraging, feeding or related behaviour known to occur within area	·
Tringa nebularia			
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area	In feature area
Tringa stagnatilis			
Marsh Sandpiper, Little Greenshank [833]		Foraging, feeding or related behaviour known to occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Commonwealth Lands	[<u>R</u> e	esource Information]		
The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.				
Commonwealth Land Name	State	Buffer Status		
Australian National University				
Commonwealth Land - Australian National University [13156]	NSW	In buffer area only		
Commonwealth Bank of Australia				
Commonwealth Land - Commonwealth Bank of Australia [14331]	NSW	In buffer area only		
Commonwealth Land - Commonwealth Bank of Australia [13158]	NSW	In buffer area only		
Commonwealth Land - Commonwealth Bank of Australia [13909]	NSW	In buffer area only		
Commonwealth Trading Bank of Australia				
Commonwealth Land - Commonwealth Trading Bank of Australia [14337]	NSW	In buffer area only		
Commonwealth Land - Commonwealth Trading Bank of Australia [13043]	NSW	In buffer area only		

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Commonwealth Trading Bank of Australia [13209]	NSW	In buffer area only

Communications, Information Technology and the Arts - Australian Broa	dcasting Corp	oration
Commonwealth Land - Australian Broadcasting Commission [15605]	NSW	In buffer area only
Commonwealth Land - Australian Broadcasting Commission [13113]	NSW	In buffer area only
Commonwealth Land - Australian Broadcasting Commission [13116]	NSW	In buffer area only
Commonwealth Land - Australian Broadcasting Commission [13112]	NSW	In buffer area only
Commonwealth Land - Australian Broadcasting Corporation [13107]	NSW	In buffer area only
Commonwealth Land - Australian Broadcasting Corporation [13109]	NSW	In buffer area only
Commonwealth Land - Australian Broadcasting Corporation [13106]	NSW	In buffer area only
Commonwealth Land - Australian Broadcasting Corporation [13108]	NSW	In buffer area only
Commonwealth Land - Australian Broadcasting Corporation [15511]	NSW	In buffer area only
Commonwealth Land - Australian Broadcasting Corporation [15607]	NSW	In buffer area only
Commonwealth Land - Australian Broadcasting Corporation [15606]	NSW	In buffer area only
Commonwealth Land - Australian Broadcasting Corporation [13111]	NSW	In buffer area only
Commonwealth Land - Australian Broadcasting Corporation [13115]	NSW	In buffer area only
Commonwealth Land - Australian Broadcasting Corporation [13117]	NSW	In buffer area only
Commonwealth Land - Australian Broadcasting Corporation [13114]	NSW	In buffer area only
Commonwealth Land - Australian Broadcasting Corporation [13110]	NSW	In buffer area only
Communications, Information Technology and the Arts - Australian Post	al Corporation	I Contraction of the second
Commonwealth Land - Australian Postal Commission [14280]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [14338]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [13153]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [13094]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [14284]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [13099]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [14384]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [13121]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Australian Postal Commission [13047]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [14348]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [13193]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [13192]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [13195]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [13215]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [13104]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [13164]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [13118]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [13134]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [13137]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [13291]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [13290]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [13131]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [13055]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [14328]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [14329]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [13091]	NSW	In buffer area only
Commonwealth Land - Australian Postal Corporation [16009]	NSW	In buffer area only
Commonwealth Land - Australian Postal Corporation [13152]	NSW	In buffer area only
Commonwealth Land - Australian Postal Corporation [14343]	NSW	In buffer area only

Commonwealth Land - Australian Postal Corporation [14342]	NSW	In buffer area only
Commonwealth Land - Australian Postal Corporation [13214]	NSW	In buffer area only
Commonwealth Land - Australian Postal Corporation [16021]	NSW	In buffer area only
Commonwealth Land - Australian Postal Corporation [15603]	NSW	In buffer area only
Commonwealth Land - Australian Postal Corporation [16174]	NSW	In buffer area only
Commonwealth Land - Australian Postal Corporation [15898]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Australian Postal Corporation [16164]	NSW	In buffer area only
Communications, Information Technology and the Arts - Telstra Corporation	on Limited	
Commonwealth Land - Australian & Overseas Telecommunications Corporation [13155]	NSW	In buffer area only
Commonwealth Land - Australian & Overseas Telecommunications Corporation [16072]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [1312	28]NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [1309	95]NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [1309	97]NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [1309	93]NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [1309	92]NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [1428	31]NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [1315	57]NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [1315	54]NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [1428	85]NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [1438	33]NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [1438	88]NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [1427	9]NSW	In buffer area only

Commonwealth Land - Australian Telecommunications Commission [13216]NSW In buffer area only

Commonwealth Land - Australian Telecommunications Commission [13194]NSW In buffer area only

Commonwealth Land - Australian Telecommunications Commission [13162] NSW In buffer area only

Commonwealth Land - Australian Telecommunications Commission [13132]NSW In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Australian Telecommunications Commission [1312	9]NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [1313	6]NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [1329	3]NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [1305	7]NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [1311	9]NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [1440	5]NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Corporation [14286	6] NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Corporation [13130	0] NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Corporation [13292	2] NSW	In buffer area only
Commonwealth Land - Telstra Corporation Limited [14339]	NSW	In buffer area only
Commonwealth Land - Telstra Corporation Limited [14333]	NSW	In buffer area only
Commonwealth Land - Telstra Corporation Limited [14332]	NSW	In buffer area only
Commonwealth Land - Telstra Corporation Limited [14340]	NSW	In buffer area only
Commonwealth Land - Telstra Corporation Limited [14349]	NSW	In buffer area only
Commonwealth Land - Telstra Corporation Limited [14341]	NSW	In buffer area only
Commonwealth Land - Telstra Corporation Limited [14283]	NSW	In buffer area only
Commonwealth Land - Telstra Corporation Limited [14282]	NSW	In buffer area only
Commonwealth Land - Telstra Corporation Limited [13894]	NSW	In buffer area only

Commonwealth Land - Telstra Corporation Limited [14385]

Commonwealth Land - Telstra Corporation Limited [16424]

Commonwealth Land - Telstra Corporation Limited [13100]

Commonwealth Land - Telstra Corporation Limited [13213]

Commonwealth Land - Telstra Corporation Limited [14287]

NSW In buffer area only NSW In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Telstra Corporation Limited [13911]	NSW	In buffer area only
Commonwealth Land - Telstra Corporation Limited [16422]	NSW	In buffer area only
Commonwealth Land - Telstra Corporation Limited [16423]	NSW	In buffer area only
Commonwealth Land - Telstra Corporation Limited [16426]	NSW	In buffer area only
Commonwealth Land - Telstra Corporation Limited [13187]	NSW	In buffer area only
Commonwealth Land - Telstra Corporation Limited [13893]	NSW	In buffer area only
Commonwealth Land - Telstra Corporation Limited [13891]	NSW	In buffer area only
Commonwealth Land - Telstra Corporation Limited [13892]	NSW	In buffer area only
Defence		
Commonwealth Land - Defence Service Homes Corporation [13041]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [13064]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [13067]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [13065]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [13068]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [13066]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [13211]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [13210]	NSW	In buffer area only
Commonwealth Land - Director of Defence Service Homes [13208]	NSW	In buffer area only
Defence - 21 CONST REGT - HABERFIELD DEPOT [11098]	NSW	In buffer area only
Defence - 21 CONST REGT - HABERFIELD DEPOT [11099]	NSW	In buffer area only
Defence - 21 CONST REGT - HABERFIELD DEPOT [11105]	NSW	In buffer area only
Defence - 21 CONST REGT - HABERFIELD DEPOT [11107]	NSW	In buffer area only
Defence - 21 CONST REGT - HABERFIELD DEPOT [11106]	NSW	In buffer area only
Defence - 21 CONST REGT - HABERFIELD DEPOT [11100]	NSW	In buffer area only
Defence - 21 CONST REGT - HABERFIELD DEPOT [11108]	NSW	In buffer area only
Defence - 21 CONST REGT - HABERFIELD DEPOT [11104]	NSW	In buffer area only
Defence - 21 CONST REGT - HABERFIELD DEPOT [11103]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Defence - 21 CONST REGT - HABERFIELD DEPOT [11102]	NSW	In buffer area only
Defence - 21 CONST REGT - HABERFIELD DEPOT [11101]	NSW	In buffer area only
Defence - COCKATOO ISLAND DOCKYARD [10018]	NSW	In buffer area only
Defence - DEFENCE PLAZA SYDNEY [11179]	NSW	In buffer area only
Defence - DEGAUSSING RANGE [10039]	NSW	In buffer area only
Defence - DSTO PYRMONT - (SEE SITE 1177) [10017]	NSW	In buffer area only
Defence - DSTO PYRMONT - (SEE SITE 1177) [10016]	NSW	In buffer area only
Defence - DSTO PYRMONT - (SEE SITE 1177) [10015]	NSW	In buffer area only
Defence - FLEET BASE WHARVES [10021]	NSW	In buffer area only
Defence - FLEET BASE WHARVES [10022]	NSW	In buffer area only
Defence - FLEET BASE WHARVES [10024]	NSW	In buffer area only
Defence - FLEET BASE WHARVES [10023]	NSW	In buffer area only
Defence - FOREST LODGE (SYDNEY) TRG DEP [10071]	NSW	In buffer area only
Defence - GARDEN ISLAND [10014]	NSW	In buffer area only
Defence - GLADESVILLE TRAINING DEPOT [10012]	NSW	In buffer area only
Defence - HMAS KUTTABUL (AC 30/5 Lot4 DP218946) [11074]	NSW	In buffer area only
Defence - HMAS PENGUIN [11071]	NSW	In buffer area only
Defence - HMAS PLATYPUS - SPDU FOR DISPOSAL [10041]	NSW	In buffer area only
Defence - HMAS PLATYPUS - SPDU FOR DISPOSAL [10042]	NSW	In buffer area only
Defence - HMAS PLATYPUS - SPDU FOR DISPOSAL [10040]	NSW	In buffer area only
Defence - HMAS WATERHEN [10025]	NSW	In buffer area only

Defence - HMAS WATSON [10029]

Defence - JENNER BUILDING [10034]

Defence - KENSINGTON DEPOT [11110]

Defence - KISMET/HMAS KUTTABUL-POTTS PT [11173]

Defence - LADY GOWRIE HOUSE [10045]

Defence - LADY GOWRIE HOUSE [10047]

NSW In buffer area only

Commonwealth Land Name	State	Buffer Status
Defence - LADY GOWRIE HOUSE [10046]	NSW	In buffer area only
Defence - LEICHHARDT STORES DEPOT [11112]	NSW	In buffer area only
Defence - MARITIME COMD CTRE-POTTS POINT ; BOMERAH/TARANA [10032]	NSW	In buffer area only
Defence - MARITIME COMD CTRE-POTTS POINT ; BOMERAH/TARANA [10033]	NSW	In buffer area only
Defence - MARITIME HEADQUARTERS [11178]	NSW	In buffer area only
Defence - MATERIAL RESEARCH LAB [10013]	NSW	In buffer area only
Defence - MILLER'S POINT TRAINING DEPOT [11118]	NSW	In buffer area only
Defence - NFI CHOWDER BAY (fuel depot) [10043]	NSW	In buffer area only
Defence - NORTH SYDNEY - HYDRO OFFICE [11161]	NSW	In buffer area only
Defence - OXFORD ST SYDNEY [11169]	NSW	In buffer area only
Defence - OXFORD ST SYDNEY [11168]	NSW	In buffer area only
Defence - OXFORD ST SYDNEY [11166]	NSW	In buffer area only
Defence - OXFORD ST SYDNEY [11164]	NSW	In buffer area only
Defence - OXFORD ST SYDNEY [11167]	NSW	In buffer area only
Defence - OXFORD ST SYDNEY [11165]	NSW	In buffer area only
Defence - PARKVIEW BUILDING - SYDNEY [11170]	NSW	In buffer area only
Defence - PYMBLE MULTI-USER DEPOT [11123]	NSW	In buffer area only
Defence - RANDWICK (CARRINGTON RD) [11134]	NSW	In buffer area only
Defence - RANDWICK (CARRINGTON RD) [11135]	NSW	In buffer area only
Defence - RANDWICK (CARRINGTON RD) [11133]	NSW	In buffer area only

Defence - RANDWICK (CARRINGTON RD) [11132]

Defence - RANDWICK FRENCHMANS TRG [11162]

Defence - RANDWICK FRENCHMANS TRG [11163]

Defence - SPECTACLE ISLAND [10036]

Defence - SPECTACLE ISLAND [10037]

Defence - SPECTACLE ISLAND [10038]

NSW In buffer area only

Commonwealth Land Name	State	Buffer Status
Defence - SPECTACLE ISLAND [10035]	NSW	In buffer area only
Defence - SYDNEY UNIVERSITY REGIMENT - DARLINGTON [11094]	NSW	In buffer area only
Defence - TRAINING SHIP CONDAMINE [11073]	NSW	In buffer area only
Defence - TRAINING SHIP CONDAMINE [11072]	NSW	In buffer area only
Defence - TRESCO [10044]	NSW	In buffer area only
Defence - VAUCLUSE TRAINING DEPOT [11137]	NSW	In buffer area only
Defence - VICTORIA BARRACKS - PADDINGTON [11119]	NSW	In buffer area only
Defence - VICTORIA BARRACKS - PADDINGTON [11121]	NSW	In buffer area only
Defence - VICTORIA BARRACKS - PADDINGTON [11120]	NSW	In buffer area only
Defence - WILLOUGHBY TRG DEP [11138]	NSW	In buffer area only
Defence - WILLOUGHBY TRG DEP [11139]	NSW	In buffer area only
Defence - WILLOUGHBY TRG DEP [11148]	NSW	In buffer area only
Defence - WILLOUGHBY TRG DEP [11149]	NSW	In buffer area only
Defence - WILLOUGHBY TRG DEP [11143]	NSW	In buffer area only
Defence - WILLOUGHBY TRG DEP [11142]	NSW	In buffer area only
Defence - WILLOUGHBY TRG DEP [11141]	NSW	In buffer area only
Defence - WILLOUGHBY TRG DEP [11140]	NSW	In buffer area only
Defence - WILLOUGHBY TRG DEP [11146]	NSW	In buffer area only
Defence - WILLOUGHBY TRG DEP [11147]	NSW	In buffer area only
Defence - WILLOUGHBY TRG DEP [11144]	NSW	In buffer area only
Defence - WILLOUGHBY TRG DEP [11145]	NSW	In buffer area only

In buffer area only Defence - WILLOUGHBY TRG DEP [11154] NSW Defence - WILLOUGHBY TRG DEP [11153] NSW In buffer area only NSW In buffer area only Defence - WILLOUGHBY TRG DEP [11152] Defence - WILLOUGHBY TRG DEP [11151] NSW In buffer area only NSW In buffer area only Defence - WILLOUGHBY TRG DEP [11156] In buffer area only Defence - WILLOUGHBY TRG DEP [11155] NSW

Commonwealth Land Name	State	Buffer Status
Defence - WILLOUGHBY TRG DEP [11159]	NSW	In buffer area only
Defence - WILLOUGHBY TRG DEP [11150]	NSW	In buffer area only
Defence - WILLOUGHBY TRG DEP [11158]	NSW	In buffer area only
Defence - WILLOUGHBY TRG DEP [11157]	NSW	In buffer area only
Defence - WOOLLOOMOOLOO CARPARK [11175]	NSW	In buffer area only
Defence - WOOLLOOMOOLOO CARPARK [11174]	NSW	In buffer area only
Defence - WOOLLOOMOOLOO CARPARK [11177]	NSW	In buffer area only
Defence - WOOLLOOMOOLOO CARPARK [11176]	NSW	In buffer area only
Defence - ZETLAND NAVY SUPPLY CENTRE [11078]	NSW	In buffer area only
Defence - ZETLAND NAVY SUPPLY CENTRE [11075]	NSW	In buffer area only
Defence - ZETLAND NAVY SUPPLY CENTRE [11076]	NSW	In buffer area only
Defence - ZETLAND NAVY SUPPLY CENTRE [11077]	NSW	In buffer area only
Defence - ZETLAND NAVY SUPPLY CENTRE [11092]	NSW	In buffer area only
Defence - ZETLAND NAVY SUPPLY CENTRE [11090]	NSW	In buffer area only
Defence - ZETLAND NAVY SUPPLY CENTRE [11091]	NSW	In buffer area only
Defence - ZETLAND NAVY SUPPLY CENTRE [11079]	NSW	In buffer area only
Defence - ZETLAND NAVY SUPPLY CENTRE [11089]	NSW	In buffer area only
Defence - ZETLAND NAVY SUPPLY CENTRE [11088]	NSW	In buffer area only
Defence - ZETLAND NAVY SUPPLY CENTRE [11080]	NSW	In buffer area only
Defence - ZETLAND NAVY SUPPLY CENTRE [11083]	NSW	In buffer area only
Defence - ZETLAND NAVY SUPPLY CENTRE [11082]	NSW	In buffer area only

Defence - ZETLAND NAVY SUPPLY CENTRE [11085]	NSW	In buffer area only
Defence - ZETLAND NAVY SUPPLY CENTRE [11084]	NSW	In buffer area only
Defence - ZETLAND NAVY SUPPLY CENTRE [11087]	NSW	In buffer area only
Defence - ZETLAND NAVY SUPPLY CENTRE [11086]	NSW	In buffer area only
Defence - ZETLAND NAVY SUPPLY CENTRE [11081]	NSW	In buffer area only

Defence - Defence Housing Authority

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Defence Housing Authority [13105]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [15683]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [15956]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [15718]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13235]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13236]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14330]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13234]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13044]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13233]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13046]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13045]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13096]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14345]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14344]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14347]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [14346]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [15973]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [15976]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [15972]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [15975]	NSW	In buffer area only

Commonwealth Land - Defence Housing Authority [15977]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [15974]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16062]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13900]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16061]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13901]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Defence Housing Authority [15671]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [15672]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13903]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13902]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13905]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13904]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13907]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13906]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13124]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13126]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13125]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16135]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16134]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [15590]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16056]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13212]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13198]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13197]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13196]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13190]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13191]	NSW	In buffer area only

Commonwealth Land - Defence Housing Authority [15417]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16029]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16357]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13166]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13167]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16356]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Defence Housing Authority [13199]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13133]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13135]	NSW	In feature area
Commonwealth Land - Defence Housing Authority [13084]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13169]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [15711]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13168]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13127]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [15608]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13174]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13175]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13176]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13177]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16133]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16132]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13053]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13052]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13089]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13204]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13205]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13202]	NSW	In buffer area only

Commonwealth Land - Defence Housing Authority [13203]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13200]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13201]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13206]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13207]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13051]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Defence Housing Authority [13186]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13184]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13185]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [15441]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16163]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13183]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13182]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13181]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13180]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13178]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13179]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13189]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13188]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13170]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13171]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13172]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13898]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13899]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16046]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16045]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16048]	NSW	In buffer area only

Commonwealth Land - Defence Housing Authority [13897]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13896]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13895]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16047]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13237]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13048]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Director of War Service Homes [13072]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13073]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13076]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13071]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13077]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13061]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13060]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13063]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13062]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13082]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13081]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13080]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13086]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13085]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13083]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13088]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13087]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13056]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13059]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13058]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13074]	NSW	In buffer area only

Commonwealth Land - Director of War Service Homes [13079]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13090]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13075]	NSW	In buffer area only
Education, Science and Training - CSIRO		
Commonwealth Land - Commonwealth Scientific & Industrial Research Organisation [15954]	NSW	In buffer area only
Commonwealth Land - Commonwealth Scientific & Industrial Research Organisation [16154]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Commonwealth Scientific & Industrial Research Organisation [13070]	NSW	In buffer area only
Commonwealth Land - Commonwealth Scientific & Industrial Research Organisation [13069]	NSW	In buffer area only
Commonwealth Land - Commonwealth Scientific & Industrial Research Organisation [16155]	NSW	In buffer area only
Commonwealth Land - Commonwealth Scientific & Industrial Research Organisation [16156]	NSW	In buffer area only
Commonwealth Land - Commonwealth Scientific & Industrial Research Organisation [16152]	NSW	In buffer area only
Commonwealth Land - Commonwealth Scientific & Industrial Research Organisation [16153]	NSW	In buffer area only
Commonwealth Land - Commonwealth Scientific & Industrial Research Organisation [16536]	NSW	In buffer area only
Commonwealth Land - Commonwealth Scientific & Industrial Research Organisation [16535]	NSW	In buffer area only
Transport and Regional Services - Airservices Australia		
Commonwealth Land - Airservices Australia [13098]	NSW	In buffer area only
Commonwealth Land - Airservices Australia [14389]	NSW	In buffer area only
Treasury - Reserve Bank of Australia		
Commonwealth Land - Reserve Bank of Australia [13159]	NSW	In buffer area only
Commonwealth Land - Reserve Bank of Australia [13151]	NSW	In buffer area only
Commonwealth Land - Reserve Bank of Australia [13138]	NSW	In buffer area only
Commonwealth Land - Reserve Bank of Australia [13149]	NSW	In buffer area only
Commonwealth Land - Reserve Bank of Australia [13160]	NSW	In buffer area only
Commonwealth Land - Reserve Bank of Australia [13148]	NSW	In buffer area only
Commonwealth Land - Reserve Bank of Australia [16499]	NSW	In buffer area only

Commonwealth Land - Reserve Bank of Australia [13150]	NSW	In buffer area only
Unknown		
Commonwealth Land - [13219]	NSW	In buffer area only
Commonwealth Land - [15410]	NSW	In buffer area only
Commonwealth Land - [14336]	NSW	In buffer area only
Commonwealth Land - [14335]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - [14334]	NSW	In buffer area only
Commonwealth Land - [13123]	NSW	In buffer area only
Commonwealth Land - [15670]	NSW	In buffer area only
Commonwealth Land - [15673]	NSW	In buffer area only
Commonwealth Land - [15674]	NSW	In buffer area only
Commonwealth Land - [14387]	NSW	In buffer area only
Commonwealth Land - [14386]	NSW	In buffer area only
Commonwealth Land - [13120]	NSW	In buffer area only
Commonwealth Land - [13122]	NSW	In buffer area only
Commonwealth Land - [16425]	NSW	In buffer area only
Commonwealth Land - [13217]	NSW	In buffer area only
Commonwealth Land - [13218]	NSW	In buffer area only
Commonwealth Land - [13101]	NSW	In buffer area only
Commonwealth Land - [13161]	NSW	In buffer area only
Commonwealth Land - [13163]	NSW	In buffer area only
Commonwealth Land - [13165]	NSW	In buffer area only
Commonwealth Land - [13139]	NSW	In buffer area only
Commonwealth Land - [13145]	NSW	In buffer area only
Commonwealth Land - [13143]	NSW	In buffer area only
Commonwealth Land - [13142]	NSW	In buffer area only
Commonwealth Land - [13141]	NSW	In buffer area only

Commonwealth Land - [13140]

Commonwealth Land - [13147]

Commonwealth Land - [13146]

Commonwealth Land - [13144]

Commonwealth Land - [13987]

Commonwealth Land - [14390]

NSW In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - [13173]	NSW	In buffer area only
Commonwealth Land - [13078]	NSW	In buffer area only

Commonwealth Heritage Places			[Resource Information]
Name	State	Status	Buffer Status
Historic			
Admiralty House and Lodge	NSW	Listed place	In buffer area only
Admiralty House Garden and Fortifications	NSW	Listed place	In buffer area only
Army Cottage with return verandah	NSW	Listed place	In buffer area only
Barracks Block	NSW	Listed place	In buffer area only
Barracks Group HMAS Watson	NSW	Listed place	In buffer area only
Batteries A83 and C9A	NSW	Listed place	In buffer area only
Battery B42	NSW	Listed place	In buffer area only
Battery for Five Guns	NSW	Listed place	In buffer area only
Biloela Group	NSW	Listed place	In buffer area only
Bondi Beach Post Office	NSW	Listed place	In buffer area only
Buildings 31 and 32	NSW	Listed place	In buffer area only
Buildings MQVB16 and VB56	NSW	Listed place	In buffer area only
<u>Buildings VB13, 15, 16 & 17</u>	NSW	Listed place	In buffer area only
Buildings VB41, 45 & 53	NSW	Listed place	In buffer area only
Buildings VB60 and VB62	NSW	Listed place	In buffer area only
Buildings VB69, 75 & 76 including Garden	NSW	Listed place	In buffer area only
<u>Buildings VB83, 84, 85, 87 & 89</u>	NSW	Listed place	In buffer area only

<u>Buildings VB90, 91, 91A & 92</u>	NSW	Listed place	In buffer area only
Building VB1 and Parade Ground	NSW	Listed place	In buffer area only
Building VB2 Guard House	NSW	Listed place	In buffer area only
Chain and Anchor Store (former)	NSW	Listed place	In buffer area only
Chowder Bay Barracks Group	NSW	Listed place	In buffer area only
<u>Cliff House</u>	NSW	Listed place	In buffer area only

Name	State	Status	Buffer Status
Cockatoo Island Industrial Conservation Area	NSW	Listed place	In buffer area only
Commonwealth Avenue Defence Housing	NSW	Listed place	In buffer area only
Cottage at Macquarie Lighthouse	NSW	Listed place	In buffer area only
Customs Marine Centre	NSW	Listed place	In buffer area only
Defence site - Georges Heights and Middle Head	NSW	Listed place	In buffer area only
<u>Factory</u>	NSW	Listed place	In buffer area only
Fitzroy Dock	NSW	Listed place	In buffer area only
Garden Island Precinct	NSW	Listed place	In buffer area only
Gazebo	NSW	Listed place	In buffer area only
General Post Office	NSW	Listed place	In buffer area only
Golf Clubhouse (former)	NSW	Listed place	In buffer area only
Headquarters 8th Brigade Precinct	NSW	Listed place	In buffer area only
Headquarters Training Command Precinct	NSW	Listed place	In buffer area only
HMAS Penguin	NSW	Listed place	In buffer area only
Kirribilli House	NSW	Listed place	In buffer area only
Kirribilli House Garden & Grounds	NSW	Listed place	In buffer area only
Macquarie Lighthouse	NSW	Listed place	In buffer area only
Macquarie Lighthouse Group	NSW	Listed place	In buffer area only
Macquarie Lighthouse Surrounding Wall	NSW	Listed place	In buffer area only
Marine Biological Station (former)	NSW	Listed place	In buffer area only
<u>Mess Hall (former)</u>	NSW	Listed place	In buffer area only
Military Guard Room	NSW	Listed place	In buffer area only
Military Road Framework - Defence Land	NSW	Listed place	In buffer area only
Naval Store	NSW	Listed place	In buffer area only
Navy Refuelling Depot and Caretakers House	NSW	Listed place	In buffer area only
North Head Artillery Barracks	NSW	Listed place	In buffer area only

Name	State	Status	Buffer Status
North Sydney Post Office	NSW	Listed place	In buffer area only
Office Building	NSW	Listed place	In buffer area only
Officers Mess, HQ Training Command	NSW	Listed place	In buffer area only
Paddington Post Office	NSW	Listed place	In buffer area only
Power House / Pump House	NSW	Listed place	In buffer area only
Prison Barracks Precinct	NSW	Listed place	In buffer area only
Pyrmont Post Office	NSW	Listed place	In buffer area only
Reserve Bank	NSW	Listed place	In buffer area only
Residences Group	NSW	Listed place	In buffer area only
Rigging Shed and Chapel	NSW	Listed place	In buffer area only
Shark Point Battery	NSW	Listed place	In buffer area only
Snapper Island	NSW	Listed place	In buffer area only
Spectacle Island Explosives Complex	NSW	Listed place	In buffer area only
Sutherland Dock	NSW	Listed place	In buffer area only
Sydney Customs House (former)	NSW	Listed place	In buffer area only
Ten Terminal Regiment Headquarters and AusAid Training Centre	d NSW	Listed place	In buffer area only
Thirty Terminal Squadron Precinct	NSW	Listed place	In buffer area only
Underground Grain Silos	NSW	Listed place	In buffer area only
Victoria Barracks Perimeter Wall and Gates	NSW	Listed place	In buffer area only
Victoria Barracks Precinct	NSW	Listed place	In buffer area only
Victoria Barracks Squash Courts	NSW	Listed place	In buffer area only
Woolwich Dock	NSW	Listed place	In buffer area only
Listed Marine Species		[<u>R</u> e	source Information]
Scientific Name Threat	ened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<u>Anous stolidus</u> Common Noddy [825]		Species or species habitat likely to occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]	5	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
<u>Calidris canutus</u> Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area

Calidris ferruginea Curlew Sandpiper [856]

Critically Endangered

ngered Species or species In feature area habitat known to occur within area overfly marine area

Calidris melanotos

Pectoral Sandpiper [858]

Species or species In feature area habitat known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris pugnax as Philomachus pugnax Ruff [91256]		Foraging, feeding or related behaviour known to occur within area overfly marine area	In buffer area only
Calidris ruficollis			
Red-necked Stint [860]		Foraging, feeding or related behaviour known to occur within area overfly marine area	·
Calidris tenuirostris			
Great Knot [862]	Vulnerable	Foraging, feeding or related behaviour known to occur within area overfly marine area	·
Calonectris leucomelas			
Streaked Shearwater [1077]		Species or species habitat known to occur within area	In buffer area only
Charadrius bicinctus			
Double-banded Plover [895]		Foraging, feeding or related behaviour known to occur within area overfly marine area	In buffer area only
Charadrius leschenaultii			
Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius mongolus			
Lesser Sand Plover, Mongolian Plover [879]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only

Charadrius ruficapillus

Red-capped Plover [881]

Foraging, feeding or In buffer area only related behaviour known to occur within area overfly marine area

Diomedea antipodensis Antipodean Albatross [64458]

Vulnerable

Foraging, feeding or In buffer area only related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea antipodensis gibsoni as Diom	<u>edea gibsoni</u>		
Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea epomophora			
Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans			
Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea sanfordi			
Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In feature area
Fregata ariel			
Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In buffer area only
Fregata minor			
Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area	In buffer area only
Gallinago hardwickii			
Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Gallinago megala			
Swinhoe's Snipe [864]		Foraging, feeding or related behaviour likely to occur within area overfly marine area	In buffer area only

Gallinago stenura Pin-tailed Snipe [841]

Haliaeetus leucogaster White-bellied Sea-Eagle [943] Foraging, feeding or In buffer area only related behaviour likely to occur within area overfly marine area

Species or species In feature area habitat known to occur within area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Foraging, feeding or related behaviour known to occur within area overfly marine area	In buffer area only
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Limosa Iapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Limosa limosa Black-tailed Godwit [845]	Endangered	Foraging, feeding or related behaviour known to occur within area overfly marine area	,
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
<u>Merops ornatus</u> Rainbow Bee-eater [670]		Species or species habitat may occur	In feature area

within area overfly marine area

Monarcha melanopsis

Black-faced Monarch [609]

Species or species In feature area habitat known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<u>Motacilla flava</u> Yellow Wagtail [644]		Species or species habitat known to occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In buffer area only
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
<u>Numenius madagascariensis</u> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Numenius minutus Little Curlew, Little Whimbrel [848]		Foraging, feeding or related behaviour likely to occur within area overfly marine area	In buffer area only
Numenius phaeopus Whimbrel [849]		Foraging, feeding or related behaviour known to occur withir area	In buffer area only
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to	In feature area

occur within area

Pandion haliaetus

Osprey [952]

Species or species In feature area habitat known to occur within area

Phaethon lepturus

White-tailed Tropicbird [1014]

Species or species In habitat known to occur within area

In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Phoebetria fusca		.	
Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Pluvialis fulva			
Pacific Golden Plover [25545]		Foraging, feeding or related behaviour known to occur within area	
Pterodroma cervicalis			
White-necked Petrel [59642]		Species or species habitat may occur within area	In feature area
Recurvirostra novaehollandiae			
Red-necked Avocet [871]		Foraging, feeding or related behaviour known to occur within area overfly marine area	
Rhipidura rufifrons			
Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula bengh	alensis (sensu lato)		
Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Stercorarius antarcticus as Catharacta s	kua		
Brown Skua [85039]		Species or species habitat may occur within area	In buffer area only
Sterna striata			
White-fronted Tern [799]		Foraging, feeding or related behaviour likely to occur within area	In feature area

Sternula albifrons as Sterna albifrons

Little Tern [82849]

<u>Symposiachrus trivirgatus as Monarcha trivirgatus</u> Spectacled Monarch [83946]

Species or species In buffer area only habitat may occur within area

Species or species In feature area habitat known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<u>Thalassarche bulleri</u> Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche bulleri platei as Thalassard Northern Buller's Albatross, Pacific Albatross [82273]	<u>che sp. nov.</u> Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour ma occur within area	In feature area y
Thalassarche impavida Campbell Albatross, Campbell Black- browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
<u>Thalassarche salvini</u> Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area

Thalassarche steadi

White-capped Albatross [64462]

Vulnerable

Foraging, feeding or In feature area related behaviour known to occur within area

Tringa brevipes as Heteroscelus brevipes Grey-tailed Tattler [851]

Foraging, feeding or In buffer area only related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Tringa nebularia			
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
<u>Tringa stagnatilis</u> Marsh Sandpiper, Little Greenshank [833]		Foraging, feeding or related behaviour known to occur within area overfly marine area	
Fish			
Acentronura tentaculata			
Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area	In buffer area only
Festucalex cinctus			
Girdled Pipefish [66214]		Species or species habitat may occur within area	In buffer area only
Filicampus tigris			
Tiger Pipefish [66217]		Species or species habitat may occur within area	In buffer area only
Heraldia nocturna			
Upside-down Pipefish, Eastern Upside- down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area	In buffer area only
Hippichthys penicillus			
Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area	In buffer area only
Hippocampus abdominalis			
Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]		Species or species habitat may occur within area	In buffer area only
1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.			

Hippocampus whitei

White's Seahorse, Crowned Seahorse, Endangered Sydney Seahorse [66240]

Histiogamphelus briggsii Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242] Species or species In buffer area only habitat known to occur within area

Species or species In buffer area only habitat may occur within area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<u>Lissocampus runa</u> Javelin Pipefish [66251]		Species or species habitat may occur within area	In buffer area only
<u>Maroubra perserrata</u> Sawtooth Pipefish [66252]		Species or species habitat may occur within area	In buffer area only
<u>Notiocampus ruber</u> Red Pipefish [66265]		Species or species habitat may occur within area	In buffer area only
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadrago [66268]	n	Species or species habitat may occur within area	In buffer area only
<u>Solegnathus spinosissimus</u> Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area	In buffer area only
<u>Solenostomus cyanopterus</u> Robust Ghostpipefish, Blue-finned Ghos Pipefish, [66183]	st	Species or species habitat may occur within area	In buffer area only
<u>Solenostomus paradoxus</u> Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		Species or species habitat may occur within area	In buffer area only
<u>Stigmatopora argus</u> Spotted Pipefish, Gulf Pipefish, Peacoc Pipefish [66276]	k	Species or species habitat may occur within area	In buffer area only
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area	In buffer area only

Syngnathoides biaculeatus

Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]

Trachyrhamphus bicoarctatus

Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280] Species or species In buffer area only habitat may occur within area

Species or species In buffer area only habitat may occur within area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Urocampus carinirostris Hairy Pipefish [66282]		Species or species	In buffer area only
		habitat may occur within area	In buller area only
Vanacampus margaritifer			
Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area	In buffer area only
Mammal			
Arctocephalus forsteri			
Long-nosed Fur-seal, New Zealand Fur- seal [20]		Species or species habitat may occur within area	In buffer area only
Arctocephalus pusillus			
Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat may occur within area	In buffer area only
Reptile			
Reptile <u>Caretta caretta</u>			
	Endangered	Species or species habitat known to occur within area	In buffer area only
Caretta caretta	Endangered	habitat known to	In buffer area only
Caretta caretta Loggerhead Turtle [1763]	Endangered Vulnerable	habitat known to	In buffer area only
Caretta caretta Loggerhead Turtle [1763] Chelonia mydas		habitat known to occur within area Foraging, feeding or related behaviour known to occur within	In buffer area only
Caretta caretta Loggerhead Turtle [1763] Chelonia mydas Green Turtle [1765]	Vulnerable	habitat known to occur within area Foraging, feeding or related behaviour known to occur within	In buffer area only In buffer area only
Caretta caretta Loggerhead Turtle [1763] Chelonia mydas Green Turtle [1765] Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth	Vulnerable	habitat known to occur within area Foraging, feeding or related behaviour known to occur within area Foraging, feeding or related behaviour known to occur within	In buffer area only In buffer area only

Hydrophis platura as Pelamis platurus

Yellow-bellied Sea Snake [93746]

Species or species In buffer area only habitat may occur within area

Natator depressus Flatback Turtle [59257]

Vulnerable

Foraging, feeding or In buffer area only related behaviour known to occur within area



Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			
<u>Balaenoptera acutorostrata</u> Minke Whale [33]		Species or species habitat may occur within area	In buffer area only
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour ma occur within area	-
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In buffer area only
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area	In buffer area only
<u>Grampus griseus</u> Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area	In buffer area only
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area	In buffer area only
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to	In buffer area only

nabitat known to occur within area

Orcinus orca Killer Whale, Orca [46]

Stenella attenuata

Spotted Dolphin, Pantropical Spotted Dolphin [51]

Species or species In buffer area only habitat likely to occur within area

Species or species In buffer area only habitat may occur within area

Status	Type of Presence	Buffer Status
	Species or species	In buffer area only
	habitat likely to occur within area	
	Species or species habitat may occur within area	In buffer area only
	Status	Species or species habitat likely to occur within area Species or species habitat may occur

Extra Information

State and Territory Reserves		[<u>R</u>	esource Information]
Protected Area Name	Reserve Type	State	Buffer Status
102 Rosedale Road	NRS Addition - Gazettal in Progress	NSW	In buffer area only
Bronte-Coogee	Aquatic Reserve	NSW	In buffer area only
Cabbage Tree Bay	Aquatic Reserve	NSW	In buffer area only
Dalrymple-Hay	Nature Reserve	NSW	In buffer area only
Garigal	National Park	NSW	In buffer area only
Lane Cove	National Park	NSW	In buffer area only
North Head	Private Nature Reserve	NSW	In buffer area only
North Sydney Harbour	Aquatic Reserve	NSW	In buffer area only
Parramatta River	Regional Park	NSW	In buffer area only
Sydney Harbour	National Park	NSW	In buffer area only
Wallumatta	Nature Reserve	NSW	In buffer area only

EPBC Act Referrals			[Resou	rce Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status

Circular Quay Renewal	2023/09727	Assessment	In buffer area only
Development of a Residential Care Facility, Middle Head, NSW	2014/7194	Post-Approval	In buffer area only
Greenway Wall - Macquarie Lightstation Conservation	2023/09650	Completed	In buffer area only

Controlled action

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action <u>Australian Institute of Police</u> <u>Management Facilities Upgrade</u>	2006/2746	Controlled Action	Post-Approval	In buffer area only
Concept Plan Proposal for residential and commercial development of UTS Kuring-	2008/4083	Controlled Action	Post-Approval	In buffer area only
Construction and operation of the Westconnex New M5, Sydney, NSW	2015/7520	Controlled Action	Post-Approval	In buffer area only
<u>Garden Island Hammerhead Crane</u> Proposed Removal, NSW	2012/6430	Controlled Action	Post-Approval	In buffer area only
Moriah War Memorial College expansion	2002/575	Controlled Action	Post-Approval	In buffer area only
Pilot Offshore Artificial Reefs	2008/4176	Controlled Action	Post-Approval	In buffer area only
Proposed Residential Development and Demolition of Existing Dwelling	2008/4155	Controlled Action	Completed	In buffer area only
Relocation of Grey-Headed Flying- Fox Colony	2008/4646	Controlled Action	Post-Approval	In buffer area only
<u>Residential development of Lot 12,</u> <u>DP 17431</u>	2007/3455	Controlled Action	Completed	In buffer area only
Sand Reclamation to Towra Beach	2003/1085	Controlled Action	Post-Approval	In buffer area only
<u>Sydney Opera House Building</u> <u>Renewal Program, NSW</u>	2016/7825	Controlled Action	Post-Approval	In buffer area only
Sydney Opera House Building Renewal Program - Concert Hall and associated works	2017/7955	Controlled Action	Post-Approval	In buffer area only
Upgrade of Floodlighting for Night Sports Training	2009/4798	Controlled Action	Completed	In buffer area only
Not controlled action				
ABC Gore Hill, Lanceley Place Site Redevelopment	2002/908	Not Controlled Action	Completed	In buffer area only
ABC Proposed Sale of Property Commonwealth Land	2020/8855	Not Controlled Action	Completed	In buffer area only
<u>Admiralty House, Kirribilli, foreshore</u> <u>works, NSW</u>	2014/7357	Not Controlled Action	Completed	In buffer area only
APX-East sub-sea telecommunications & data cable system	2014/7139	Not Controlled Action	Completed	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Artarmon Helipad Relocation	2001/186	Not Controlled Action	Completed	In buffer area only
Australia-USA Southern Cross NEXT fibre optic cable installation	2019/8405	Not Controlled Action	Completed	In buffer area only
Change of use of existing room in research laboratory	2002/665	Not Controlled Action	Completed	In buffer area only
Conservation and Adaptive Use of Quarantine Station	2002/556	Not Controlled Action	Completed	In buffer area only
Construct and operate an aerial adventure park	2012/6239	Not Controlled Action	Completed	In buffer area only
Construction and Operation of the Parramatta Rail Link - between Parramatta and	2002/673	Not Controlled Action	Completed	In buffer area only
Construction of a high-capacity fibre optic submarine cable	2006/2914	Not Controlled Action	Completed	In buffer area only
construction of four dwellings and associated facilities	2005/2396	Not Controlled Action	Completed	In buffer area only
Decommissioning of Army Depot, Haberfield	2001/217	Not Controlled Action	Completed	In buffer area only
Decommissioning of NMC and Camperdown Facility	2010/5645	Not Controlled Action	Completed	In buffer area only
Demolition and Removal of Two Naval Cottages	2008/4373	Not Controlled Action	Completed	In buffer area only
Demolition of Ablutions Block, Snapper Island, NSW	2018/8303	Not Controlled Action	Completed	In buffer area only
Demolition of the existing club house and construction of a new club house	2009/4932	Not Controlled Action	Completed	In buffer area only
<u>Fitout works, 4th Floor, Sydney</u> Customs House, 31 Alfred Street	2004/1449	Not Controlled Action	Completed	In buffer area only

Fuel Reduction Proposal Redfield Road, East Killara	2003/1238	Not Controlled Action	Completed	In feature area
Garden Island ADI Warehouse	2000/69	Not Controlled Action	Completed	In buffer area only
Georges River Program 2	2003/999	Not Controlled Action	Completed	In buffer area only
Gore Hill Conservation Management	2000/109	Not Controlled Action	Completed	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In buffer area only
Installation of Sydney-Guam Submarine Cable	2007/3848	Not Controlled Action	Completed	In buffer area only
Internal Modifications to Reserve Bank of Australia	2008/4431	Not Controlled Action	Completed	In buffer area only
Ivanhoe Estate Redevelopment, Macquarie Park, NSW	2019/8455	Not Controlled Action	Completed	In buffer area only
M2 Motorway Upgrade	2010/5329	Not Controlled Action	Completed	In buffer area only
Noxious weed removal and controlled burn	2003/1272	Not Controlled Action	Completed	In buffer area only
Rabbit Control Anzac Rifle Range	2005/1940	Not Controlled Action	Completed	In buffer area only
RBA HOWP 65 Martin Place, NSW	2020/8870	Not Controlled Action	Completed	In buffer area only
<u>Redevelopment 60 Martin Place,</u> Sydney, NSW	2015/7490	Not Controlled Action	Completed	In buffer area only
Rehabilitation works of the Coogee Sewer Diversion Submain - Maxwell Avenue, Mar	2004/1683	Not Controlled Action	Completed	In feature area
Remediation of contaminated aesbestos site	2002/608	Not Controlled Action	Completed	In buffer area only
Remediation of Contaminated Buildings	2005/1983	Not Controlled Action	Completed	In buffer area only
Remediation of Contaminated Soil	2005/1985	Not Controlled Action	Completed	In buffer area only

Remediation of contaminated soil around the Macquarie Lighthouse	2004/1836	Not Controlled Action	Completed	In buffer area only
Residential subdivision and stormwater management facilities	2003/1141	Not Controlled Action	Completed	In buffer area only
Sale of New South Head Road, Edgecliff	2001/302	Not Controlled Action	Completed	In buffer area only
sewage treatmemt plant process and reliability renewals project	2005/2186	Not Controlled Action	Completed	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
<u>Shipment of Spent Nuclear Fuel to</u> <u>USA</u>	2007/3672	Not Controlled Action	Completed	In buffer area only
subdivision and development on the Rhodes Peninsula for residential and commerci	2003/1249	Not Controlled Action	Completed	In buffer area only
Subdivision and sale of Commonwealth land in Pymble to Ku- ring-gai City Council	2004/1368	Not Controlled Action	Completed	In feature area
Subdivision of Precincts 3 and 12, St Patricks Estate	2004/1925	Not Controlled Action	Completed	In buffer area only
Supply of a gigabit ethernet connection with associated trenching, boring and ha	2007/3637	Not Controlled Action	Completed	In buffer area only
Sydney Desalination Plant	2005/2331	Not Controlled Action	Completed	In buffer area only
Sydney Metro Network Stage 2	2010/5307	Not Controlled Action	Completed	In buffer area only
Torpedo Factory Renewal Project	2020/8847	Not Controlled Action	Completed	In buffer area only
Undertake a controlled burn of the Eastern Suburbs Banksia Scrub at Byrne Cresce	2004/1728	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manne	ar)			
Construction works on SE corner of the grounds of Admiralty House	2012/6278	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
<u>Hyde Park Barracks Proposed New</u> Passenger Lift	2017/7933	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular	Post-Approval	In buffer area only

Manner)

International fibre optic submarine cable installation, between Sydney and Honiara, Solomon Islands

2015/7502 Not Controlled Post-Approval In buffer area Action (Particular only Manner)

Moriah Primary School, Centennial Park, Sydney

2004/1676 Not Controlled Post-Approval In buffer area Action (Particular only Manner)

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action (particular manne	er)			
Southern Cross Australia-New Zealand-America marine acoustic survey of the seabed	2017/7863	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Walking Track connecting Middle Head Rd & Balmoral Park	2002/572	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Referral decision				
Alterations and Additions	2006/3081	Referral Decision	Completed	In buffer area only
<u>Breeding program for Grey Nurse</u> <u>Sharks</u>	2007/3245	Referral Decision	Completed	In buffer area only
Demolition and Removal of Five Naval Cottages	2008/4322	Referral Decision	Completed	In buffer area only
Demolition of Naval Cottages & Revegetation as Part of SHFT's Headland Park	2005/2128	Referral Decision	Completed	In buffer area only
<u>Ivanhoe Estate Redevelopment,</u> Macquarie Park, NSW	2018/8184	Referral Decision	Completed	In buffer area only
Relocation of Grey-Headed Flying- Fox Colony	2008/4568	Referral Decision	Completed	In buffer area only
Renovation and Landscape Rehabilitation of the Championship Course at Royal Sydney Golf Club	2022/9167	Referral Decision	Referral Publication	In buffer area only
Summer Hill Flour Mills Residential & Commercial development	2011/5859	Referral Decision	Completed	In buffer area only
Biologically Important Areas			[Resour	<u>ce Information]</u>
Scientific Name		Behaviour	Presence But	ffer Status
Dolphins				
Tursiops aduncus				

Indo-Pacific/Spotted Bottlenose Dolphin [68418] Breeding Likely to occur In buffer area only

Humpback Whale [38]

Sharks <u>Carcharias taurus</u> Grey Nurse Shark [64469]	Foraging	Known to occur In buffer area only
Whales		
Megaptera novaeangliae		

Migration (north and south)

Known to occur In buffer area only

Bioregional Assessments			[Resource Information]
SubRegion	BioRegion	Website	Buffer Status
Sydney	Sydney Basin	BA website	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

• listed migratory and/or listed marine seabirds, which are not listed as threatened,

have only been mapped for recorded breeding sites; and

• seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales -Department of Environment and Primary Industries, Victoria -Department of Primary Industries, Parks, Water and Environment, Tasmania -Department of Environment, Water and Natural Resources, South Australia -Department of Land and Resource Management, Northern Territory -Department of Environmental and Heritage Protection, Queensland -Department of Parks and Wildlife, Western Australia -Environment and Planning Directorate, ACT -Birdlife Australia -Australian Bird and Bat Banding Scheme -Australian National Wildlife Collection -Natural history museums of Australia -Museum Victoria -Australian Museum -South Australian Museum -Queensland Museum -Online Zoological Collections of Australian Museums -Queensland Herbarium -National Herbarium of NSW -Royal Botanic Gardens and National Herbarium of Victoria -Tasmanian Herbarium -State Herbarium of South Australia -Northern Territory Herbarium -Western Australian Herbarium -Australian National Herbarium, Canberra -University of New England -Ocean Biogeographic Information System -Australian Government, Department of Defence Forestry Corporation, NSW -Geoscience Australia -CSIRO -Australian Tropical Herbarium, Cairns -eBird Australia -Australian Government – Australian Antarctic Data Centre -Museum and Art Gallery of the Northern Territory -Australian Government National Environmental Science Program

-Australian Institute of Marine Science

-Reef Life Survey Australia

-American Museum of Natural History

-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania

-Tasmanian Museum and Art Gallery, Hobart, Tasmania

-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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APPENDIX B LIKELIHOOD OF OCCURRENCE





Recorded	The species was observed in the study area during the current survey.
High	It is highly likely that a species inhabits the study area and is dependent on identified suitable habitat (i.e., for breeding or important life cycle periods such as winter flowering resources), has been recorded recently in the locality (10km) and is known or likely to maintain resident populations in the study area. Also includes species known or likely to visit the study area during regular seasonal movements or migration.
Moderate	Potential habitat is present in the study area. Species unlikely to maintain sedentary populations, however, may seasonally use resources within the study area opportunistically or during migration. The species is unlikely to be dependent (i.e., on breeding or important life cycle periods such as winter flowering resources) on habitat within the study area, or habitat is in a modified or degraded state. Includes cryptic flowering flora species that were not seasonally targeted by surveys and that have not been recorded.
Low	It is unlikely that the species inhabits the study area and has not been recorded recently in the locality (10km). It may be an occasional visitor, but habitats similar to the study area are widely distributed in the local area, meaning that the species is not dependent (i.e., on breeding or important life cycle periods such as winter flowering resources) on available habitat. Specific habitat is not present in the study area, or the species are a non-cryptic perennial flora species that were specifically targeted by surveys and not recorded.
None	Suitable habitat is absent from the study area.

Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Comment	Likelihood
Fauna							



Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Comment	Likelihood
Myobatrachida	Pseudophryne australis	Red-crowned Toadlet	V,P		174	Occurs in open forests, mostly on Hawkesbury and Narrabeen Sandstones. Inhabits periodically wet drainage lines below sandstone ridges that often have shale lenses or capping. Shelters under rocks and amongst masses of dense vegetation or thick piles of leaf litter. Breeding congregations occur in dense vegetation and debris beside ephemeral creeks and gutters. Red-crowned Toadlets have not been recorded breeding in waters that are even mildly polluted or with a pH outside the range 5.5 to 6.5.	Low
Cheloniidae	Caretta caretta	Loggerhead Turtle	E1,P	E	5	Loggerhead Turtles are found in tropical and temperate waters off the Australian coast. In NSW they are seen as far south as Jervis Bay and have been recorded nesting on the NSW north coast and feeding around Sydney.	Low
Cheloniidae	Chelonia mydas	Green Turtle	V,P	V	1	Widely distributed in tropical and sub-tropical seas. Usually found in tropical waters around Australia but also occurs in coastal waters of NSW, where it is generally seen on the north or central coast, with occasional records from the south coast.	Low
Dermochelyidae	Dermochelys coriacea	Leatherback Turtle	E1,P	E	1	Throughout the world's tropical and temperate seas and in all coastal waters of Australia. Most sightings are in temperate waters. Large numbers of Leatherback Turtles feed in coastal waters from southern Queensland to the central coast of NSW.	Low



Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Comment	Likelihood
Varanidae	Varanus rosenbergi	Rosenberg's Goanna	V,P		5	Rosenberg's Goanna occurs on the Sydney Sandstone in Wollemi National Park to the north-west of Sydney, in the Goulburn and ACT regions and near Cooma in the south. There are records from the Southwest Slopes near Khancoban and Tooma River. Also occurs in South Australia and Western Australia.	Low
Apodidae	Hirundapus caudacutus	White- throated Needletail	Ρ	V,C,J,K	2	In eastern Australia, it is recorded in all coastal regions of Queensland and NSW, extending inland to the western slopes of the Great Divide and occasionally onto the adjacent inland plains.	Low
Procellariidae	Ardenna pacifica	Wedge-tailed Shearwater	Ρ	J	3	In tropical zones the species may feed over cool nutrient-rich waters. The species has been recorded in offshore waters of eastern Victoria and southern NSW, mostly over continental slope with sea-surface temperatures of 13.9–24.4 °C	Low
Procellariidae	Ardenna tenuirostris	Short-tailed Shearwater	Р	C,J,K	2	The Short-tailed Shearwater is found in coastal waters. In summer months, the Short-tailed Shearwater is the most common shearwater along the south and south- east coasts of Australia.	Low
Ardeidae	Botaurus poiciloptilus	Australasian Bittern	E1,P	E	1	Australasian Bitterns are widespread but uncommon over south-eastern Australia. In NSW they may be found over most of the state except for the far north- west. Favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes (<i>Typha spp.</i>) and spike rushes (<i>Eleocharis spp.</i>)	Low



Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Comment	Likelihood
Ardeidae	Ixobrychus flavicollis	Black Bittern	V,P		1	The Black Bittern has a wide distribution, from southern NSW north to Cape York and along the north coast to the Kimberley region. The species also occurs in the south-west of Western Australia. In NSW, records of the species are scattered along the east coast, with individuals rarely being recorded south of Sydney or inland. Inhabits both terrestrial and estuarine wetlands, generally in areas of permanent water and dense vegetation. Where permanent water is present, the species may occur in flooded grassland, forest, woodland, rainforest, and mangroves.	Low
Accipitridae	Haliaeetus leucogaster	White-bellied Sea-Eagle	V,P		20	In New South Wales it is widespread along the east coast, and along all major inland rivers and waterways. Habitats are characterised by the presence of large areas of open water including larger rivers, swamps, lakes, and the sea. Occurs at sites near the sea or seashore, such as around bays and inlets, beaches, reefs, lagoons, estuaries, and mangroves; and at, or in the vicinity of freshwater swamps, lakes, reservoirs, billabongs, and saltmarsh. Terrestrial habitats include coastal dunes, tidal flats, grassland, heathland, woodland, and forest (including rainforest). Breeding habitat consists of mature tall open forest, open forest, tall woodland, and swamp sclerophyll forest close to foraging habitat. Nest trees are typically large emergent eucalypts and often have emergent dead branches or large dead trees nearby which are used as 'guard roosts'. Nests are large structures built from sticks and lined with leaves or grass.	Low



Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Comment	Likelihood
Accipitridae	Lophoictinia isura	Square-tailed Kite	V,P,3		1	The Square-tailed Kite ranges along coastal and subcoastal areas from south-western to northern Australia, Queensland, NSW, and Victoria. In NSW, scattered records of the species throughout the state indicate that the species is a regular resident in the north, north-east and along the major west-flowing river systems. It is a summer breeding migrant to the south- east, including the NSW south coast, arriving in September, and leaving by March.	Low
Accipitridae	MPandion cristatus	Eastern Osprey	V,P,3		3	Favour coastal areas, especially the mouths of large rivers, lagoons, and lakes. Feed on fish over clear, open water. Breed from July to September in NSW. Nests are made high up in dead trees or in dead crowns of live trees, usually within one kilometre of the sea.	Low
Charadriidae	Pluvialis squatarola	Grey Plover	Ρ	C,J,K	2	Grey Plovers occur almost entirely in coastal areas, where they usually inhabit sheltered embayments, estuaries and lagoons with mudflats and sandflats, and occasionally on rocky coasts with wave-cut platforms or reef-flats, or on reefs within muddy lagoons. They also occur around terrestrial wetlands such as near- coastal lakes and swamps, or salt-lakes. The species is also very occasionally recorded further inland, where they occur around wetlands or salt-lakes	Low



Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Comment	Likelihood
Scolopacidae	Actitis hypoleucos	Common Sandpiper	Ρ	C,J,K	1	The species utilises a wide range of coastal wetlands and some inland wetlands, with varying levels of salinity, and is mostly found around muddy margins or rocky shores and rarely on mudflats. The Common Sandpiper has been recorded in estuaries and deltas of streams, as well as on banks farther upstream; around lakes, pools, billabongs, reservoirs, dams and claypans, and occasionally piers and jetties. The species is often associated with mangroves, and sometimes found in areas of mud littered with rocks or snags	Low
Laridae	Thalasseus bergii	Crested Tern	Р	J	23	Occurs along coasts and estuaries; very rarely further inland or on freshwater ponds/lagoons.	Low
Cacatuidae	Calyptorhynchus lathami lathami	South- eastern Glossy Black- Cockatoo	V,P,2	V	3	Inhabits open forest and woodlands of the coast and the Great Dividing Range where stands of Sheoak occur. Black Sheoak (<i>Allocasuarina littoralis</i>) and Forest Sheoak (<i>A. torulosa</i>) are important foods. Inland populations feed on a wide range of Sheoaks, including Drooping Sheoak, <i>Allocasuaraina diminuta</i> , and <i>A. gymnathera</i> . Belah is also utilised and may be a critical food source for some populations. In the Riverina, birds are associated with hills and rocky rises supporting Drooping Sheoak but also recorded in open woodlands dominated by Belah (<i>Casuarina cristata</i>).	Low



Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Comment	Likelihood
Psittacidae	Glossopsitta pusilla	Little Lorikeet	V,P		3	Forages primarily in the canopy of open Eucalyptus Forest and woodland, yet also finds food in <i>Angophora</i> <i>sp</i> , <i>Melaleuca sp</i> and other tree species. Riparian habitats are particularly used, due to higher soil fertility and hence greater productivity. Isolated flowering trees in open country, e.g., paddocks, roadside remnants and urban trees also help sustain viable populations of the species. Feeds mostly on nectar and pollen, occasionally on native fruits such as mistletoe, and only rarely in orchards	Low
Psittacidae	Lathamus discolor	Swift Parrot	E1,P,3	CE	5	On the mainland they occur in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations. Favoured feed trees include winter flowering species such as Swamp Mahogany <i>Eucalyptus robusta</i> , Spotted Gum <i>Corymbia maculata</i> , Red Bloodwood <i>C. gummifera</i> , Forest Red Gum <i>E. tereticornis</i> , Mugga Ironbark <i>E. sideroxylon</i> , and White Box <i>E. albens</i> . Commonly used lerp infested trees include Inland Grey Box <i>E. microcarpa</i> , Grey Box <i>E. moluccana</i> , Blackbutt <i>E. pilularis</i> , and Yellow Box <i>E. melliodora</i> . Return to some foraging sites on a cyclic basis depending on food availability.	Low



Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Comment	Likelihood
Strigidae	Ninox connivens	Barking Owl	V,P,3		4	Inhabits woodland and open forest, including fragmented remnants and partly cleared farmland. It is flexible in its habitat use, and hunting can extend in to closed forest and more open areas. Sometimes able to successfully breed along timbered watercourses in heavily cleared habitats (e.g., western NSW) due to the higher density of prey found on these fertile riparian soils. Roost in shaded portions of tree canopies, including tall midstorey trees with dense foliage such as <i>Acacia</i> and <i>Casuarina</i> species. During nesting season, the male perches in a nearby tree overlooking the hollow entrance. Requires very large permanent territories in most habitats due to sparse prey densities. Monogamous pairs hunt over as much as 6000 hectares, with 2000 hectares being more typical in NSW habitats.	Low
Strigidae	Ninox strenua	Powerful Owl	V,P,3		402	The Powerful Owl inhabits a range of vegetation types, from woodland and open sclerophyll forest to tall open wet forest and rainforest. The Powerful Owl requires large tracts of forest or woodland habitat but can occur in fragmented landscapes as well. The species breeds and hunts in open or closed sclerophyll forest or woodlands and occasionally hunts in open habitats. It roosts by day in dense vegetation comprising species such as Turpentine <i>Syncarpia glomulifera</i> , Black She- oak <i>Allocasuarina littoralis</i> , Blackwood <i>Acacia</i> <i>melanoxylon</i> , Rough-barked Apple <i>Angophora</i> <i>floribunda</i> , Cherry Ballart <i>Exocarpus cupressiformis</i> and a number of eucalypt species.	Moderate



Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Comment	Likelihood
Tytonidae	Tyto tenebricosa	Sooty Owl	V,P,3		1	Occupies the easternmost one-eighth of NSW, occurring on the coast, coastal escarpment, and eastern tablelands. Territories are occupied permanently.	Low
Neosittidae	Daphoenositta chrysoptera	Varied Sittella	V,P		1	Inhabits eucalypt forests and woodlands, especially those containing rough-barked species and mature smooth-barked gums with dead branches, mallee, and Acacia woodland.	Low
Dasyuridae	Dasyurus maculatus	Spotted- tailed Quoll	V,P	E	3	Recorded across a range of habitat types, including rainforest, open forest, woodland, coastal heath, and inland riparian forest, from the sub-alpine zone to the coastline. Individual animals use hollow-bearing trees, fallen logs, small caves, rock outcrops and rocky-cliff faces as den sites.	Low
Phascolarctidae	Phascolarctos cinereus	Koala	E1,P	E	5	In New South Wales, koala populations are found on the central and north coasts, southern highlands, southern and northern tablelands, Blue Mountains, southern coastal forests, with some smaller populations on the plains west of the Great Dividing Range. Inhabit eucalypt woodlands and forests. Feed on the foliage of more than 70 eucalypt species and 30 non-eucalypt species, but in any one area will select preferred browse species.	Low
Burramyidae	Cercartetus nanus	Eastern Pygmy- possum	V,P		16	The Eastern Pygmy-possum is found in south-eastern Australia, from southern Queensland to eastern South Australia and in Tasmania. In NSW it extends from the coast inland as far as the Pilliga, Dubbo, Parkes, and Wagga Wagga on the western slopes.	Low



Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Comment	Likelihood
Pteropodidae	Pteropus poliocephalus	Grey-headed Flying-fox	V,P	V	574	Occur in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths, and swamps as well as urban gardens and cultivated fruit crops. Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy.	Moderate
Emballonuridae	Saccolaimus flaviventris	Yellow- bellied Sheathtail- bat	V,P		4	Roosts singly or in groups of up to six, in tree hollows and buildings; in treeless areas they are known to utilise mammal burrows. When foraging for insects, flies high and fast over the forest canopy, but lower in more open country. Forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory.	Low
Molossidae	Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	V,P		2	Occur in dry sclerophyll forest, woodland, swamp forests and mangrove forests east of the Great Dividing Range. Roost mainly in tree hollows but will also roost under bark or in man-made structures.	Low
Vespertilionidae	Chalinolobus dwyeri	Large-eared Pied Bat	V,P	V	4	Roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin (<i>Petrochelidon ariel</i>), frequenting low to mid-elevation dry open forest and woodland close to these features	Low
Vespertilionidae	Myotis macropus	Southern Myotis	V,P		51	Generally, roost in groups of 10 - 15 close to water in caves, mine shafts, hollow-bearing trees, storm water channels, buildings, under bridges and in dense foliage.	Low



Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Comment	Likelihood
Vespertilionidae	Scoteanax rueppellii	Greater Broad-nosed Bat	V,P		4	Utilises a variety of habitats from woodland through to moist and dry eucalypt forest and rainforest, though it is most commonly found in tall wet forest. Although this species usually roosts in tree hollows, it has also been found in buildings. Open woodland habitat and dry open forest suits the direct flight of this species as it searches for beetles and other large, slow-flying insects; this species has been known to eat other bat species.	Low
Miniopteridae	Miniopterus australis	Little Bent- winged Bat	V,P		33	Moist eucalypt forest, rainforest, vine thicket, wet and dry sclerophyll forest, <i>Melaleuca</i> swamps, dense coastal forests, and banksia scrub. Generally found in well-timbered areas. Little Bentwing-bats roost in caves, tunnels, tree hollows, abandoned mines, stormwater drains, culverts, bridges and sometimes buildings during the day, and at night forage for small insects beneath the canopy of densely vegetated habitats.	Low
Miniopteridae	Miniopterus orianae oceanensis	Large Bent- winged Bat	V,P		50	Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings, and other man-made structures. Form discrete populations centred on a maternity cave that is used annually in spring and summer for the birth and rearing of young. Maternity caves have very specific temperature and humidity regimes. At other times of the year, populations disperse within about 300 km range of maternity caves. Cold caves are used for hibernation in southern Australia. Breeding or roosting colonies can number from 100 to 150,000 individuals. Hunt in forested areas, catching moths and other flying insects above the treetops.	Low



Family	ily Scientific Name Cor Nar		NSW status	Comm. status	Records	Comment	Likelihood
Otariidae	Arctocephalus forsteri	New Zealand Fur-seal	V,P		27	Occurs in Australia and New Zealand. Reports of non- breeding animals along southern NSW coast particularly on Montague Island, but also at other isolated locations to north of Sydney.	
Otariidae	Arctocephalus pusillus doriferus	Australian Fur-seal	V,P		2	Reported to have bred at Seal Rocks, near Port Stephens and Montague Island in southern NSW. Haul outs are observed at isolated places along the NSW coast.	Low
Balaenidae	Eubalaena australis	Southern Right Whale	E1,P	E	3	Temperate and subpolar waters of the Southern Hemisphere, with a circumpolar distribution between about 20°S and 55°S with some records further south to 63°S.	Low
Petaluridae	Petalura gigantea	Giant Dragonfly	E1		1	The Giant Dragonfly is found along the east coast of NSW from the Victorian border to northern NSW. It is not found west of the Great Dividing Range. There are known occurrences in the Blue Mountains and Southern Highlands, in the Clarence River catchment, and on a few coastal swamps from north of Coffs Harbour to Nadgee in the south.	Low
Flora				•			
Casuarinaceae	Allocasuarina portuensis	Nielsen Park She-oak	E1,3	E	5	The original known habitat of the Neilsen Park She-oak is at Nielsen Park, in Woollahra local government area. There are no plants left at the original site where it was discovered. However, propagation material has been planted successfully at a number of locations at Nielsen Park and other locations in the local area, e.g., Gap Bluff, Hermit Point and Vaucluse House.	Low



Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Comment	Likelihood
Ericaceae	Epacris purpurascens var. purpurascens	V			17	Recorded from Gosford in the north, to Narrabeen in the east, Silverdale in the west and Avon Dam vicinity in the South. Found in a range of habitat types, most of which have a strong shale soil influence.	Low
Fabaceae (Mimosoideae)	Acacia terminalis subsp. Eastern Sydney	Sunshine wattle	E1	E	15	Mainly in near-coastal areas from the northern shores of Sydney Harbour south to Botany Bay, with most records from the Port Jackson area and the eastern suburbs of Sydney. Recorded from North Head, Middle Head, Dover Heights, Parsely Bay, Nielsen Park, Cooper Park, Chifley, Watsons Bays, Wollstonecraft, and Waverley. Coastal scrub and dry sclerophyll woodland on sandy soils.	Low
Hygrophoraceae	bhoraceae Hygrocybe aurantipes		V		1	Known from type locality, Lane Cove Bushland Park, Lane Cove, and other locations in the Sydney region including Royal National Park, Chatswood, Northbridge, and the Blue Mountains (Mount Wilson, Hazelbrook, Springwood). Occurs in gallery warm temperate forests dominated by Lilly Pilly (<i>Acmena</i> <i>smithii</i>), Grey Myrtle (<i>Backhousia myrtifolia</i>), Cheese Tree (<i>Glochidion ferdinandi</i>) and Sweet Pittosporum (<i>Pittosporum undulatum</i>).	Low
Hygrophoraceae	Hygrocybe reesiae		V		1	Known from type locality, Lane Cove Bushland Park, Lane Cove, and other locations in the Sydney region including Royal National Park, Chatswood, Castle Hill, Northbridge, Marsfield, East Linfield, and the Blue Mountains (Mount Wilson, Hazelbrook). Occurs in gallery warm temperate forests dominated by Lilly Pilly (<i>Acmena smithil</i>), Grey Myrtle (<i>Backhousia myrtifolia</i>), Cheese Tree (<i>Glochidion ferdinandi</i>) and Sweet Pittosporum (<i>Pittosporum undulatum</i>).	Low



Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Comment	Likelihood
Lamiaceae	Prostanthera marifolia	Seaforth Mintbush			Low		
Myrtaceae	^^Callistemon linearifolius	Netted Bottle Brush	V,3		6	For the Sydney area, recent records are limited to the Hornsby Plateau area near the Hawkesbury River. The species was more widespread in the past, and there are currently only 5-6 populations remaining from the 22 populations historically recorded in the Sydney area. Three of the remaining populations are reserved in Ku-ring-gai Chase National Park, Lion Island Nature Reserve and Spectacle Island Nature Reserve. The species has also been recorded from Yengo National Park. Grows in dry sclerophyll forest on the coast and adjacent ranges.	Low



Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Comment	Likelihood
Myrtaceae	Eucalyptus camaldulensis	Eucalyptus camaldulensi s population in the Hunter catchment	E2		1	The Hunter population occurs from the west at Bylong, south of Merriwa, to the east at Hinton, on the bank of the Hunter River, in the Port Stephens local government area. It has been recorded in the local government areas of Lithgow, Maitland, Mid-Western Regional, Muswellbrook, Port Stephens, Singleton, and Upper Hunter. Prior to European settlement, between 10,000 and 20,000 ha of habitat suitable for the River Red Gum occurred in the Hunter catchment. Today only 19 stands are known, occupying at most c. 100 ha, the largest remnant being 15 - 20 ha in extent. Smaller remnants contain only one to several trees. The total number of individuals is estimated to be between 600 - 1000 mature or semi mature trees.	Low
Myrtaceae	Eucalyptus glaucina	Slaty Red Gum	V	V	1	Found in separate districts along the eastern seaboard of NSW, from near Casino, to Taree, south to Broke, and recently discovered on the eastern side of the Blue Mountains National Park near Warragamba Dam. Grows in grassy woodland and dry eucalypt forest	Low
Myrtaceae	eae <i>Rhodomyrtus</i> Native Guava E4A		E4A	CE	1	Occurs from Broken Bay, approximately 90 km north of Sydney, New South Wales, to Maryborough in Queensland. Populations are typically restricted to coastal and sub-coastal areas of low elevation however the species does occur up to c. 120 km inland in the Hunter and Clarence River catchments and along the Border Ranges in NSW. This species is characterised being extremely susceptible to infection by Myrtle Rust. Myrtle Rust affects all plant parts	Low



Family	Scientific Name	ic Name Common NSW Comm. Records Comment Status		Comment	Likelihood		
Myrtaceae	Darwinia biflora		V	V	17	Recorded in Ku-ring-gai, Hornsby, Baulkham Hills, and Ryde local government areas. The northern, southern, eastern, and western limits of the range are at Maroota, North Ryde, Cowan, and Kellyville, respectively. Occurs on the edges of weathered shale- capped ridges, where these intergrade with Hawkesbury Sandstone.	Low
Myrtaceae	Melaleuca deanei	Deane's Paperbark	V	V	4	Deane's Paperbark occurs in two distinct areas, in the Ku-ring-gai/Berowra and Holsworthy/Wedderburn areas respectively. There are also more isolated occurrences at Springwood (in the Blue Mountains), Wollemi National Park, Yalwal (west of Nowra) and Central Coast (Hawkesbury River) areas. The species occurs mostly in ridgetop woodland, with only 5% of sites in heath on sandstone.	Low
Myrtaceae	Rhodamnia rubescens	Scrub Turpentine	E4A	CE	4	Occurs in coastal districts north from Batemans Bay in New South Wales, approximately 280 km south of Sydney, to areas inland of Bundaberg in Queensland. Populations of <i>R. rubescens</i> typically occur in coastal regions and occasionally extend inland onto escarpments up to 600 m a.s.l. in areas with rainfall of 1,000-1,600 mm. Found in littoral, warm temperate and subtropical rainforest, and wet sclerophyll forest usually on volcanic and sedimentary soils.	Low



Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Comment	Likelihood
Myrtaceae	Syzygium paniculatum	Magenta Lilly Pilly	E1	E1 V 4		The Magenta Lilly Pilly is found only in NSW, in a narrow, linear coastal strip from Upper Lansdowne to Conjola State Forest. On the south coast the Magenta Lilly Pilly occurs on grey soils over sandstone, restricted mainly to remnant stands of littoral (coastal) rainforest. On the central coast Magenta Lilly Pilly occurs on gravels, sands, silts and clays in riverside gallery rainforests and remnant littoral rainforest communities.	Low
Proteaceae	Macadamia integrifolia	Macadamia V 1 Not known to occur natu		Not known to occur naturally in the wild in NSW	Low		
Rhamnaceae	v		E2		5	Known from only three sites within the listed local government areas, at Rydalmere, within Rookwood Cemetery and at The Crest of Bankstown.	Low



Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Comment	Likelihood
Thymelaeaceae	Pimelea curviflora var. curviflora		V	V	2	Confined to the coastal area of the Sydney and Illawarra regions. Populations are known between northern Sydney and Maroota in the north-west. New population discovered at Croom Reserve near Albion Park in Shellharbour LGA in August 2011. Formerly recorded around the Parramatta River and Port Jackson region including Five Dock, Bellevue Hill and Manly. Occurs on shaley/lateritic soils over sandstone and shale/sandstone transition soils on ridgetops and upper slopes amongst woodlands.	Low
Zannichelliaceae	Zannichellia palustris	Tadgell's Bluebell in the local government areas of Auburn, Bankstown, Baulkham Hills, Canterbury, Hornsby, Parramatta, and Strathfield	E1		6	In NSW, known from the lower Hunter and in Sydney Olympic Park. Grows in fresh or slightly saline stationary or slowly flowing water.	Low





APPENDIX C ARBORIST REPORT, 2025





ARBORICULTURAL IMPACT ASSESSMENT

&

TREE PROTECTION SPECIFICATION

REF: L&Co24004 | 10 March 2025 | v2.4SITE ADDRESS | Cammeray Public SchoolPREPARED FOR | Department of Education (DoE)PREPARED BY |Dr Matthew LaurenceMs Emma ClarkBSc. (Hons)BA (Hons)PhD (Plant Pathology)

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Grad Cert (Arboriculture)

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1.0 EXECUTIVE SUMMARY |

- **1.1** This Arboricultural Impact Assessment and Tree Protection Specification Report has been prepared to support a Review of Environmental Factors (REF) for the Department of Education (DoE) for the upgrade of the Cammeray Public School (CPS) (the activity).
- **1.2** The purpose of the REF is to assess the potential environmental impacts of the activity prescribed by State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&I SEPP) as "development permitted without consent" on land carried out by or on behalf of a public authority under Part 5 of the Environmental Planning and Assessment Act 1979 (EP&A Act). The activity is to be undertaken pursuant to Chapter 3, Part 3.4, Section 3.37 of the T&I SEPP and in consideration of the stakeholder and community participation plan.
- **1.3** The proposed activity is for upgrades to the existing CPS at 68 Palmer Street, Cammeray NSW 2062 (the site). This report has determined the impact of the proposed works on the trees at Cammeray Public School and neighbouring properties and where appropriate, has provided tree sensitive construction methods to minimise negative impacts to the trees.
- 1.4 A total of twenty-five (25) trees were assessed that were a mix of Australian native and exotic species.
- **1.5** The supplied plans show no works are proposed within the TPZs of Trees 14, 15, 29, 31, 33, 34, 68, 69, 74, 175, 181, 182, 186 & LC8. However, the tree protection measures outlined in this report should be implemented to avoid indirect impacts.
- **1.6** The supplied plans show the demolition of existing demountables is within the TPZs of trees 1-4, 68, 69 & 74 and represents a considerable risk of indirect negative impacts. Therefore, the tree protection recommended in this report must be installed prior to the start of demolition works. Further, the proposed asphalt or synthetic turf must be installed at or above existing grade and be constructed of permeable material to allow water infiltration. The final design must be reviewed by Project Arborist or equivalent.
- **1.7** The proposed works represent a *Minor Encroachment* (as defined by AS4970) on Trees 32 & 16. However, a minor encroachment is considered acceptable by the standard when it is compensated for elsewhere and contiguous within the TPZ, as in the current cases. Further, the tree protection measures outlined in this report will reduce the likelihood of negative impacts on Trees 32 & 16.
- **1.8** The proposed works are within the TPZ of Trees 35 & 13 and represents a *Major Encroachment* (as defined by AS4970). However, the proposed encroachment is beyond an existing retaining wall and negative impacts can be avoided if the tree sensitive construction methods and protection measures outlined in this report are implemented and be acceptable under the Australian Standard AS4970, Clause 3.3.4. Although the retaining wall should have restricted root growth into the area of encroachment, there was some evidence of roots lifting the asphalt in the TPZ. Therefore, root mapping should be considered to understand the impacts on the long term physiological and structural condition on the Tree 13. The root mapping location is provided. Trees 35 & 13 will also need to be pruned for building clearance and a Pruning Specification is provided. Only a single first order branch is required for building clearance and will not impact the long-term viability of the tree.
- **1.9** The proposed building works represent *Major Encroachment* on Trees 26, 27 & 28 and will need to be removed as the TPZ encroachment is too large for their long-term viability, based on a consideration of the health, structure and the size of the encroachment. Further, a large first order branch on Tree 27 would need to be pruned for building clearance. A wound of this size is highly unlikely to occlude and could lead to decay in the trunk in the medium term. Tree 27 was assigned a High Landscape Significance Value.



2.0 INTRODUCTION |

2.1 Background

- 2.1.1 This Arboricultural Impact Assessment and Tree Protection Specification Report was prepared for Department of Education (DoE) in relation to the proposed upgrade of Cammeray Public School. This report has determined the impact of the proposed works on the trees at Cammeray Public School and neighbouring properties and where appropriate, has provided tree sensitive construction methods to minimise negative impacts to the trees. This report has been prepared to have been prepared to provide Arboricultural advice for a Review of Environmental Factors (REF) for an activity that requires approval under Part 5 of the EP&A Act.
- 2.1.2 In preparing this report, the author is aware of and has considered the objectives of the North Sydney Council's North Sydney Development Control Plan Section 16: Tree and Vegetation Management (2013), North Sydney Local Environmental Plan (2013), North Sydney Council Urban Forest Strategy (2019); North Sydney Council Street Tree Strategy (2016), Australian Standard 4970 Protection of Trees on Development Sites (2009), Australian Standard 4373 Pruning of Amenity Trees (2007) and Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal Work (2016).
- 2.1.3 Further methodology used in the preparation of this report is detailed in Appendix 1.
- 2.1.4 This Arboricultural Impact Assessment was based on an assessment of the following supplied documentation/plans only (Appendix 4):
 - External Works Plan Prepared by Fulton Trotter Architects. Dated 28.02.2025
 - Electrical Services Site Plan Prepared by NDY. Dated 21.02.2025
 - Bulk Earthworks Plan Prepared by Meinhardt. Dated 25.02.2025
 - Civil Siteworks Plan Prepared by Meinhardt. Dated 25.02.2025
 - Proposed Site Plan Prepared by Fulton Trotter Architects. Dated 11.02.2025
 - Construction Management Strategy Prepared by Fulton Trotter Architects. Dated 21.02.2025
 - Hydraulic Services Proposed Site Plan Prepared by ACOR. Dated 03.03.2025
 - Demolition Site Plan Prepared by Fulton Trotter Architects. Dated 21.02.2025
 - Detail and Level Survey. Issue B. Prepared by SDG Pty Ltd. Dated 21.05.2024

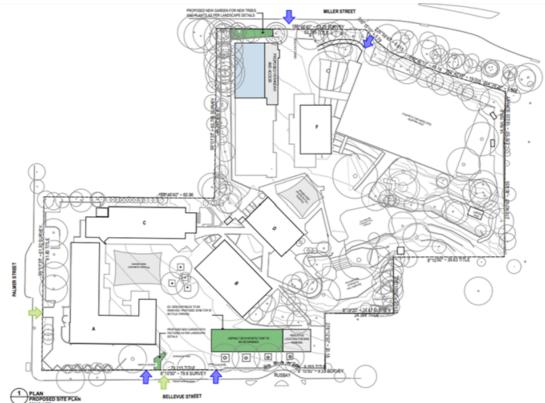
2.2 The Proposal

- 2.2.1 The proposed activity involves upgrades to the existing CPS, including the following:
 - Construction of 4 new permanent teaching and learning spaces and 2 practical activity areas
 - New egress lift and stairs for access to all building levels
 - External covered walkways connecting the new building to the existing school network
 - Landscaping and external works including compensatory planting
 - Upgrades to site infrastructure and services to support the new buildings
 - 50 bicycle parking spaces
 - Removal of 3 temporary (demountable) classrooms from the eastern side of the school

2.2.2 The intent of the activity is to provide 4 permanent teaching spaces (PTS) plus 2 practical activity areas (PAA) across a two-storey addition, adjoining Building E. This will result in CPS retaining the capacity of a 'large' school (553-1,000 students) under EFSG (SINSW Education Facilities Standards and Guidelines).

Figure 2 below shows the scope of works for the proposed activity.







3.0 RESULTS |

3.1 The Site

3.1.1 CPS is located at 68 Palmer Street, Cammeray on the northern side of Palmer Road, bound by Palmer

3.1.2 Street to the south, Bellevue Street to the east and Miller Street to the west. The site has an area of 1.36 ha3.1.3 and comprises 11 allotments, legally described as:

- Lot 11 DP 837836
 - Lot 1 DP 316130
 - Lot 1 DP 316706
- Lot 1 DP 123406
- Lot 2 DP 174370
- Lot 1 DP 174370
- Lot 4 Sec 35 DP 758790
- Lot 5 Sec 35 DP 758790
- Lot 66 DP 1049613
- Lot 3 DP 571310
- Lot 4 DP 571310
- 3.1.4 The site currently comprises an existing co-education primary (K-6) public school with 6 permanent buildings, 3 demountable structures, covered walkways linked at multiple levels, play areas, on-grade parking, sports court, covered outdoor learning area (COLA) and vegetation/green spaces with mature trees.
- 3.1.5 The existing school buildings are clustered towards the southern portion of the site and comprise both single and 2 storey buildings. The northern portion of the site contains the sports court, vegetable garden and play equipment. The north-western portion of the site is heavily vegetated with trees of high landscape significance that are protected with fencing.
- 3.1.6 The site is identified as a locally listed heritage item (I0019) under Schedule 5 Environmental Heritage pursuant to the North Sydney Local Environmental Plan 2013 (NSLEP). The school is also identified in the Plateau Heritage Conservation Area (HCA) (Part 2 Schedule 5 of the NSLEP). The school is listed on the Department of Education (DoE) Section 170 Heritage Conservation Register as 'Cammeray Public School' The site is approximately 115m from a State Heritage Item (I0004) being the electricity substation at 143



Bellevue Street and in close proximity to locally heritage listed items.

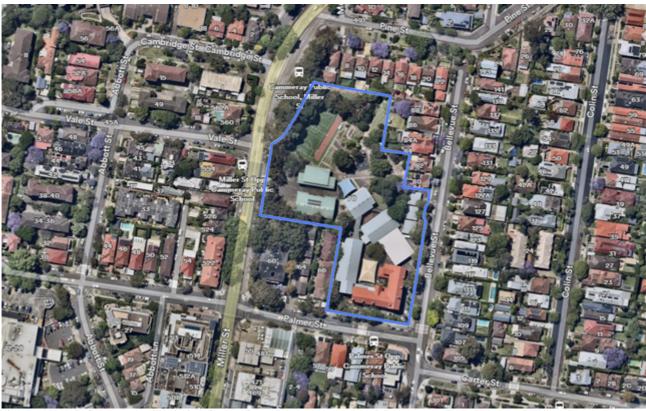
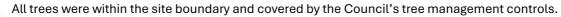


Figure 1 Aerial image of the site, outlined in blue (Source: NearMap, taken 30 October 2024)

3.2 The Trees

- 3.2.1 A Visual Tree Assessment (VTA) (Mattheck & Breloer, 2003) has been undertaken on trees growing within the site to determine their health and structural condition (Appendix 2). A full VTA of trees located outside of the site boundaries was not undertaken due to limited access. The species and trunk diameter were recorded for the purposes of determining Tree Protection Zone (TPZ) and Structural Root Zone (SRZ) calculations only. The distance of each tree from the site boundary is an approximation due to limited access.
- 3.2.1 The Australian Standard 4970: *Protection of Trees on Development Sites* (2009) Clause 2.3.2, requires the allocation of a Tree Retention Value. This value is based on the Useful Life Expectancy (ULE) and Landscape Significance, which considers the tree's health, structural condition and site suitability. The Retention Value does not consider any proposed development works and is not a schedule for tree retention or removal. The trees have been allocated one of the following Retention Values:
 - Priority for Retention
 - Consider for Retention
 - Consider for Removal
 - Priority for Removal
- 3.2.2 The Australian Standard 4970: *Protection of Trees on Development Sites* (2009) also requires the calculation of the Tree Protection Zone (TPZ) and Structural Root Zone (SRZ) for each tree (Appendix 1).
- 3.2.3 A total of twenty-five (25) trees and group trees were assessed which were a mix of Australian native and exotic species. Not all trees were surveyed due to site access restrictions, specifically in the northwest corner. These trees were grouped and assigned High Landscape Significance values based on their size and species.
- 3.2.4 A search of the BioNet Atlas of NSW Wildlife Database was undertaken in March 2025. No individual threatened tree species that were listed within this database for the area were identified during the current field investigations of the site. *The* ecological significance and habitat value of the trees has not been assessed and is beyond the scope of this report.





4.0 ARBORICULTURAL IMPACT ASSESSMENT |

4.1 Trees 14, 15, 29, 31, 33, 34, 68, 69, 74, 175, 181, 182, 186 & LC8

- 4.1.1 The supplied plans show no works are proposed within the TPZ of Trees 14, 15, 29, 31, 33, 34, 68, 69, 74, 175, 181, 182, 186 & LC8. However, the following tree protection should be installed to avoid indirect impacts.
- 4.1.2 TPZ fencing should be installed prior to any site works (including demolition) and remain in place for the duration of the demolition and construction processes.
- 4.1.3 The area within the TPZ fencing should be mulched to a depth of 50mm with a non-toxic product (i.e. woodchips) with no fines.
- 4.1.4 Coir logs should be installed on the perimeter of the TPZ fencing to prevent runoff from the building works into the TPZ.
- 4.1.5 Materials, waste storage and temporary services should not be located within the TPZ fenced area. If works are required within the TPZ fenced area, then they should be supervised by the Project Arborist.
- 4.1.6 The tree protection measures must be inspected by the Project Arborist prior to the start prior of site works, including demolition.
- 4.1.7 Refer to AS4970 and Appendices 5, 6, 7 & 8 for further details for further details.

4.2 Trees 1-4, 68, 69 & 74

- 4.2.1 The supplied plans show the demolition of existing demountables is within the TPZs of Trees 1-4, 68, 69 & 74 and represents a considerable risk of indirect negative impacts. Therefore, the tree protection recommended in this report must be installed prior to the start of demolition works.
- 4.2.2 TPZ fencing should be installed prior to any site works (including demolition) and remain in place for the duration of the demolition and construction processes.
- 4.2.3 The area within the TPZ fencing should be mulched to a depth of 50mm with a non-toxic product (i.e. woodchips) with no fines.
- 4.2.4 Coir logs should be installed on the perimeter of the TPZ fencing to prevent runoff from the building works into the TPZ.
- 4.2.5 Materials, waste storage and temporary services should not be located within the TPZ fenced area. If works are required within the TPZ fenced area, then they should be supervised by the Project Arborist.
- 4.2.6 The tree protection measures must be inspected by the Project Arborist prior to the start prior of site works, including demolition.
- 4.2.7 Refer to AS4970 and Appendices 5, 6, 7 & 8 for further details for further details
- 4.2.8 Further, the proposed asphalt or synthetic turf must be installed at or above existing grade and be constructed of permeable material to allow water infiltration. The final design must be reviewed by Project Arborist or equivalent.

4.3 Tree 26

- 4.3.1 Tree 26 was identified as *Eucalyptus botryoides* (Bangalay) and was allocated a Moderate Landscape Significance Value and a Retention Value of *Consider for Retention*.
- 4.3.2 The supplied plans show that the proposed building extension is within the TPZ of Tree 26. The TPZ encroachment is approximately 13.2% and represents a *Major Encroachment* as defined by AS-4970. A *Major Encroachment* is considered acceptable by the standard when it is compensated for elsewhere and contiguous within the TPZ, as is in the current case. However, 20% of the crown will need to be pruned to accommodate the proposal. The tree is also likely to experience significant indirect impacts and given the Fair physiological condition, removal and replacement should be considered.
- 4.3.3 Removal and replacement with a healthy advanced size specimen would replace the loss of amenity within a short to medium timeframe.
- 4.3.4 Refer to AS4970 and Appendices 5, 6 & 7 for further details.

4.4 Tree 27

- 4.4.1 Tree 27 was identified as *Eucalyptus saligna* (Sydney Blue Gum) and was allocated a High Landscape Significance Value and a Retention Value of *Priority for Retention*. Tree 27 was assigned a Fair physiological condition due to reduced crown density.
- 4.4.2 The supplied plans show the proposed building extension is within the SRZ of Tree 27. Works within the SRZ represent a *Major Encroachment* as defined by AS-4970 as root severance within the SRZ can lead to the destabilisation of the tree. The overall TPZ encroachment was estimated to be 31.8% and also represents a *Major Encroachment* as defined by AS-4970.
- 4.4.3 There was no existing structure to prevent root growth into the encroachment area and there was evidence of roots growing under the existing asphalt (Appendix 9 Plates). The crown will also be impacted by the



proposal and a large diameter first order branch would need to be removed. Given the size, the pruning wound is unlikely to occlude and would be a source of decay in the future.

- 4.4.4 Given the size and location of the encroachment, the long term structural and physiological viability of Tree
 27 is highly likely to be compromised by the proposed encroachment and the tree will need to be removed to accommodate the works.
- 4.4.5 Removal and replacement with a healthy advanced size specimen would replace the loss of amenity within a medium to long timeframe.
- 4.4.6 Refer to AS4970 and Appendices 5, 6 & 7 for further details.

4.5 Tree 28

- 4.5.1 Tree 28 was identified as *Corymbia maculata* (Spotted Gum) and was allocated a Moderate Landscape Significance Value and a Retention Value of *Consider for Retention*.
- 4.5.2 The supplied plans show that the proposed building extension is within the SRZ of Tree 28. Works within the SRZ represent a *Major Encroachment* as defined by AS-4970 as root severance within the SRZ can lead to the destabilisation of the tree. The overall TPZ encroachment was estimated to be 16.7% and also represents a *Major Encroachment* as defined by AS-4970.
- 4.5.3 Given the size and location of the encroachment, the long term structural and physiological viability of Tree 28 is highly likely to be compromised by the proposed encroachment and the tree will need to be removed to accommodate the works.
- 4.5.4 Removal and replacement with a healthy advanced size specimen would replace the loss of amenity within a short to medium, long timeframe.
- 4.5.5 Refer to AS4970 and Appendices 5, 6 & 7 for further details.

4.6 Trees 32 & 16

- 4.6.1 Tree 32 was identified as *Corymbia maculata* (Spotted Gum). Tree 16 was identified as *Casuarina glauca* (*Swamp She Oak*) and were allocated High and Moderate Landscape Significance Values and Retention Values of *Priority for Retention* and *Consider for Retention* respectively.
- 4.6.2 The supplied plans show that the proposed building extension is within the TPZs of Trees 32 & 68. The TPZ encroachments are approximately 5.5% and 9.3%, respectively, and represent *Minor Encroachments* as defined by AS-4970. A *Minor Encroachment* is considered acceptable by the standard when it is compensated for elsewhere and contiguous within the TPZ, as is in the current cases.
- 4.6.3 Given the good physiological condition of the trees and the size of the encroachment, the proposed development can be accommodated without affecting the long term structural and physiological viability of Trees 32 & 35 if the following tree sensitive construction methods and protection measures are carefully implemented under the supervision of the Project Arborist.
- 4.6.4 TPZ fencing should be installed prior to any site works (including demolition) and remain in place for the duration of the demolition and construction processes.
- 4.6.5 The area within the TPZ fencing should be mulched to a depth of 50mm with a non-toxic product (i.e. woodchips) with no fines.
- 4.6.6 Coir logs should be installed on the perimeter of the TPZ fencing to prevent runoff from the building works into the TPZ.
- 4.6.7 Materials, waste storage and temporary services should not be located within the TPZ fenced area. If works are required within the TPZ fenced area, then they should be supervised by the Project Arborist.
- 4.6.8 The tree protection measures must be inspected by the Project Arborist prior to the start prior of site works, including demolition.
- 4.6.9 Refer to AS4970 and Appendices 5, 6, 7 & 8 for further details for further details.

4.7 Trees 29, 31, 33, 34, 14 & 15

- 4.7.1 The supplied plans show no works are proposed within the TPZs of Trees 29, 31, 33, 34, 14 & 15. However, the following tree protection should be installed to avoid indirect impacts.
- 4.7.2 TPZ fencing should be installed prior to any site works (including demolition) and remain in place for the duration of the demolition and construction processes.
- 4.7.3 The area within the TPZ fencing should be mulched to a depth of 50mm with a non-toxic product (i.e. woodchips) with no fines.
- 4.7.4 Coir logs should be installed on the perimeter of the TPZ fencing to prevent runoff from the building works into the TPZ.
- 4.7.5 Materials, waste storage and temporary services should not be located within the TPZ fenced area. If works are required within the TPZ fenced area, then they should be supervised by the Project Arborist.
- 4.7.6 The tree protection measures must be inspected by the Project Arborist prior to the start prior of site works, including demolition.



- 4.7.7 Refer to AS4970 and Appendices 5, 6, 7 & 8 for further details for further details.
- 4.7.8 The trees require pruning for building clearance and a Pruning Specification is provided in Appendix 10. Only a single first order branch is required for building clearance and will not impact the long-term viability of the trees.
- 4.8 Tree 35
- 4.8.1 Tree 35 was identified as *Corymbia maculata* (Spotted Gum) and was allocated a High Landscape Significance Value and a Retention Value of *Priority for Retention*.
- 4.8.2 The supplied plans show the proposed development is within the TPZ of Tree 35. The TPZ encroachment is approximately 11.4% and represents a *Major Encroachment* as defined by AS-4970. However, Clause 3.3.4 of AS-4970 does allow for *Major Encroachments* if design factors (e.g. tree sensitive construction methods) are used to minimise negative impacts, or existing or past structures are likely to have been obstacles to root growth into the area of encroachment.
- 4.8.3 The proposed encroachment is beyond an existing retaining wall and negative impacts can be avoided if the tree sensitive construction methods and protection measures outlined in this report are implemented and be acceptable under the Australian Standard AS4970, Clause 3.3.4.
- 4.8.4 TPZ fencing should be installed prior to any site works (including demolition) and remain in place for the duration of the demolition and construction processes.
- 4.8.5 The area within the TPZ fencing should be mulched to a depth of 50mm with a non-toxic product (i.e. woodchips) with no fines.
- 4.8.6 Coir logs should be installed on the perimeter of the TPZ fencing to prevent runoff from the building works into the TPZ.
- 4.8.7 Materials, waste storage and temporary services should not be located within the TPZ fenced area. If works are required within the TPZ fenced area, then they should be supervised by the Project Arborist.
- 4.8.8 The tree protection measures must be inspected by the Project Arborist prior to the start prior of site works, including demolition.
- 4.8.9 Refer to AS4970 and Appendices 5, 6, 7 & 8 for further details for further details.

4.9 Tree 13

- 4.9.1 Tree 13 was identified as *Corymbia maculata* (Spotted Gum) and was allocated a High Landscape Significance Value and a Retention Value of *Priority for Retention*.
- 4.9.2 The supplied plans show the proposed development is within the TPZ of Tree 13. The TPZ encroachment is approximately 24.4% and represents a *Major Encroachment* as defined by AS-4970. However, Clause 3.3.4 of AS-4970 does allow for *Major Encroachments* if design factors (e.g. tree sensitive construction methods) are used to minimise negative impacts, or existing or past structures are likely to have been obstacles to root growth into the area of encroachment.
- 4.9.3 All of the proposed TPZ encroachment is beyond an existing retaining wall, which is likely to have created an inhospitable environment for root growth, and consequently, is likely to have reduced root growth in the area of the proposed works. However, there was evidence of root growth under the asphalt within the TPZ (see Appendix 9). Non-destructive root mapping should be undertaken to determine the location of structural roots (>25mm Ø). Refer to Appendix 5 plans for root mapping trench location.
- 4.9.4 The crown of Tree 13 will be impacted by the new building and a Pruning Specification is provided in Appendix
 10. Only a single first order branch is required for building clearance and will not impact the long-term viability of the tree.
- 4.9.5 TPZ fencing should be installed prior to any site works (including demolition) and remain in place for the duration of the construction. Materials, waste storage and temporary services should not be located within the TPZ fenced area. If works are required within the TPZ fenced area, then they should be supervised by the Project Arborist.
- 4.9.6 The tree protection measures must be inspected by the Project Arborist prior to the start of site works, including demolition.
- 4.9.7 No over-excavation, battering, or benching should be undertaken beyond the footprint of any structure unless approved by the Project Arborist. Hand excavation and root pruning along the excavation line should be completed prior to the commencement of mechanical excavation to prevent tearing and shattering damage to the roots.
- 4.9.8 Refer to AS4970 and Appendices 5, 6 & 7 for further details.



4.10 Pruning, Removal & Replacement Planting

- 4.10.1 Pruning/removal works should be carried out by a practising arborist. The practising arborist should hold a minimum qualification equivalent (using Australian Qualifications Framework) of Level 3 or above in arboriculture or its recognised equivalent. The practising arborist should have a minimum of 3 years of practical experience. Pruning/removal works should be undertaken in accordance with the Australian Standard 4373: Pruning of Amenity Trees (2007), Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal Work (2016) and other applicable legislation and codes.
- 4.10.2 Replacement tree planting should be provided when trees are removed. Replacement trees should be supplied as advanced size stock to help offset the loss of amenity resultant from the tree removals.
- 4.10.3 Replacement planting should be supplied in accordance with Australian Standard 2303: Tree Stock for Landscape Use (2015).

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5.0 REFERENCES |

Mattheck & Breloer (2003), The Body Language of Trees – A Handbook for Failure Analysis.

NSW Office of Environment and Heritage's Atlas of NSW Wildlife (2011), BioNet Atlas of NSW Wildlife.

Standards Australia (2009) Protection of Trees on Development Sites AS4970.

Standards Australia (2007) Pruning of Amenity Trees AS4373.

Standards Australia (2015) Tree Stock for Landscape Use AS2303.



6.0 APPENDIX 1 | METHODOLOGY

- **6.1** This report was based on data from a site inspection conducted on the 29.8.23 & 15.8.24. The recommendations in this report are based on and limited to observations from these site inspections.
- 6.2 The subject tree(s) was assessed using the Visual Tree Assessment methodology described in *The Body Language of Trees – A Handbook for Failure Analysis* (Mattheck et al., 2003). Subject trees were assessed from the ground only to provide an Arboricultural Impact Assessment and Tree Protection Specification report. No internal diagnostic testing was undertaken as part of this assessment. Trees outside the subject site were assessed from the property boundaries only.
- 6.3 The dimensions of the subject tree(s) are an approximation only.
- 6.4 The location of the subject tree(s) was determined from the location plan provided. Trees not shown on this plan have been plotted in their approximate location only.
- **6.5** Tree Protection Zones & Structural Root Zones for the subject tree(s) was based on methods outlined in Australian Standard 4970: *Protection of Trees on Development Sites* (2009).
- 6.6 The health of the subject tree(s) was determined by assessing:
 - Foliage size and colour
 - Pest and disease infestation
 - Extension growth
 - Crown density
 - Deadwood size and volume
 - Presence of epicormic growth
- 6.7 The structural condition of the subject tree(s) was assessed by:
 - Visible evidence of structural defects or instability
 - Evidence of previous pruning or physical damage
- **6.8** The Useful Life Expectancy (ULE) is used to estimate a tree's longevity in its growing environment. The ULE is based on a tree's species, health, structural condition and site suitability. The tree(s) has been allocated one of the following ULE categories (modified from Barrell, 2001):
 - 40 years +
 - 15-40 years
 - 5-15 years
 - Less than 5 years
- **6.9** The Landscape Significance is based on a qualitative assessment of a tree's cultural, environmental and aesthetic value. This provides a relative measure of a tree's Landscape Significance and can be used to determine its Retention Value. Trees are rated under the following categories:
 - Very High
 - High
 - Moderate
 - Low
 - Insignificant



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VERY HIGH	The subject tree is listed as a Heritage Item under the Local Environmental Plan with a local or state level of significance.										
	The subject tree is listed on Council's Significant Tree Register.										
	The subject tree is a remnant tree.										
HIGH	The subject tree creates a 'sense of place' or is considered 'landmark' tree.										
	The subject tree is of local, cultural or historical importance or is widely known.										
	The subject tree has been identified by a suitably qualified professional as a species scheduled as a Threatened or Vulnerable Species or forms part of an Endangered Ecological Community associate with the subject site, as defined under the provisions of the Threatened Species Conservation Act 1995 (NSW) or the Environmental Protection and Biodiversity Conservation Act 1999.										
	The subject tree is known to provide habitat to a threatened species.										
	The subject tree is an excellent representative of the species in terms of aesthetic value.										
	The subject tree is of significant size, scale or makes a significant contribution to the canopy cover the locality.										
	The subject tree forms part of the curtilage of a heritage item with a known or documented association with that item.										
MODERATE	The subject tree makes a positive contribution to the visual character or amenity of the area.										
	The subject tree provides a specific function such as screening or minimising the scale of a building										
	The subject tree has a known habitat value.										
	The subject tree is a good representative of the species in terms of aesthetic value.										
LOW	The subject tree is an environmental pest species or is exempt under the provisions of the local Council's Tree Management Controls.										
	The subject tree makes little or no contribution to the amenity of the locality.										
	The subject tree is a poor representative of the species in terms of aesthetic value.										
INSIGNIFICANT	The subject tree is declared a Noxious Weed under the Noxious Weeds Act.										

Significance.



6.10 The Retention Value is based on a tree's ULE and Landscape Significance. The subject tree(s) has been allocated one of the following Retention Values:

- Priority for Retention
- Consider for Retention
- Consider for Removal
- Priority for Removal

	VERY HIGH	VERY HIGH HIGH MODERATE		LOW	INSIGNIFICAN				
40 years +	Priority for Retention	Priority fo	or Retention	Consider for	Priority for Removal				
15-40 years		Priority for Retention	Consider for Retention	Removal					
5-15 years	C	onsider for Retent	tion						
Less than 5 years	Consider for Removal		Priority	for Removal					

The above table was provided by Anna Hopwood of TreeIQ™

- **6.11** The Tree Protection Zone (TPZ) is the area above and below ground required to preserve the vigour and long-term viability of the tree. The TPZ is based on scientific research and is generally considered by the arboricultural industry as the area required to provide adequate tree protection during construction. The TPZ is the primary means of protecting trees on development sites (Australian Standard 4970:*Protection of Trees on Development Sites*, 2009).
- **6.12** Works within the TPZ should be avoided. However, *Minor Encroachments*, defined in AS4970 as less than 10% of the TPZ area, are considered acceptable when it is compensated for elsewhere and contiguous within the TPZ. A *Major Encroachment*, defined in AS4970 as greater than 10% of the TPZ area or within the Structural Root Zone (SRZ), may require root investigations by non-destructive methods and tree sensitive construction methods.
- **6.13** The TPZ is the area within a circle that is centred on the trunk. The radius of the TPZ is calculated by the following formula:

TPZ= DBH x 12

where

DBH= Diameter at Breast Height (1.4m)



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- 6.14 The SRZ is the minimum area around the base of the tree required for the tree's stability. The SRZ only relates to tree stability and not the vigour and long-term viability of the tree.
- **6.15** The SRZ is the area within a circle that is centred on the trunk. The radius of the SRZ is calculated by the following formula:

SRZ= (Dx50)^{0.42} x 0.64

where

D= Trunk diameter (m) above the root buttress

- **6.16** Encroachment into SRZ (i.e. severance of structural roots >25mmØ) may lead to the destabilisation of the tree and the long-term viability must be demonstrated in such cases. This may require root investigations by non-destructive methods.
- **6.17** For further details on the TPZ and SRZ please refer to Australian Standard 4970: *Protection of Trees on Development Sites* (2009).



7.0 APPENDIX 2 | TREE ASSESSMENT SCHEDULE

Tree No.	Species	Height (m)	Radial Crown Spread (m)	DBH comb. (mm)	Radial TPZ (m)	TPZ Area (m²)	Radial SRZ (m)	Health Rating	Structural Rating	Age Class	ULE (years)	L/Sign	Retention Value	Comments	TPZ Encroachment (%)
26	Eucalyptus botryoides (Bangalay)	12	4	350	4	55	2.2	Fair	Good	Late Mature	5-15	Moderate	Consider for Retention	Crown density 25-50%. Small (<25mmø) deadwood in moderate volumes. Small (<25mmø) epicormic growth in moderate volumes. Structures within SRZ. Pavement over roots.	13.2%
27	Eucalyptus saligna (Sydney Blue Gum)	23	10	650	8	191	2.9	Fair	Good	Late Mature	15-40	High	Priority for Retention	Crown density 50-75%. Small (<25mmø) & medium (25-75mmø) deadwood in moderate volumes. Small (<25mmø) & medium (25- 75mmø) epicormic growth in moderate volumes. Structures within SRZ.	31.8% (Within SRZ)
28	Corymbia maculata (Spotted Gum)	16	8	300	4	41	2.1	Fair	Good	Semi- mature	5-15	Moderate	Consider for Retention	Reduced crown density	16.7%
29	Acacia mearnsii (Black Wattle)	4	3	200	2	18	1.8	Poor	Poor	Senescent	<5	Low	Priority for Removal	Crown density 0-25%. Wound(s) with fungal brackets. Trunk cavity(s), major. Borer.	No Encroachment
31	Phoenix canariensis (Canary Island Date Palm)	5	4	400	5	72	2.3	Good	Good	Mature	<5	Low	Priority for Removal		No Encroachment
32	Corymbia maculata (Spotted Gum)	18	7	500	6	113	2.6	Good	Good	Mature	15-40	High	Priority for Retention	Wound(s), early signs of decay. Trunk cavity(s), minor. Borer.	6.2%



Tree No.	Species	Height (m)	Radial Crown Spread (m)	DBH comb. (mm)	Radial TPZ (m)	TPZ Area (m²)	Radial SRZ (m)	Health Rating	Structural Rating	Age Class	ULE (years)	L/Sign	Retention Value	Comments	TPZ Encroachment (%)
33	Corymbia maculata (Spotted Gum)	18	7	300	4	41	2.1	Good	Good	Mature	15-40	High	Priority for Retention		No Encroachment
35	Corymbia maculata (Spotted Gum)	18	7	450	5	92	2.5	Good	Good	Mature	15-40	High	Priority for Retention		10.4%
13	Corymbia maculata (Spotted Gum)	18	7	310	7	163	2.8	Good	Good	Mature	15-40	High	Priority for Retention	Small (<25mmø) & medium (25-75mmø) deadwood in low volumes. Wound(s), no visible sign of decay. Structures within SRZ.	39.79%
34	Casuarina glauca (Swamp She Oak)	7	4	225	3	23	1.8	Good	Good	Mature	15-40	Moderate	Consider for Retention		No Encroachment
14	Casuarina glauca (Swamp She Oak)	12	4	300	4	41	2.1	Good	Good	Mature	15-40	Moderate	Consider for Retention		No Encroachment
15	Casuarina glauca (Swamp She Oak)	12	4	300	4	41	2.1	Good	Good	Mature	15-40	Moderate	Consider for Retention		No Encroachment
16	Casuarina glauca (Swamp She Oak)	12	4	300	4	41	2.1	Good	Good	Mature	15-40	Moderate	Consider for Retention		3.8%
175	Jacaranda mimosifolia (Jacaranda)	7	5	192	2.3	16.7	1.7	Dormant. No rating.	Fair	Semi- mature	5-15	Low	Consider for Removal	Co-dominant inclusions, major. Limited crown clearance. Structures within SRZ.	No Encroachment
LC8	Casuarina glauca (Swamp She Oak)	15	5	200	2.4	18.1	1.8	Good	No access to base. No rating.	Mature	15-40	Moderate	Consider for Retention	Structures within SRZ.	No Encroachment



Tree No.	Species	Height (m)	Radial Crown Spread (m)	DBH comb. (mm)	Radial TPZ (m)	TPZ Area (m²)	Radial SRZ (m)	Health Rating	Structural Rating	Age Class	ULE (years)	L/Sign	Retention Value	Comments	TPZ Encroachment (%)
181	Casuarina glauca (Swamp She Oak)	15	5	200	2.4	18.1	1.8	Good	No access to base. No rating.	Mature	15-40	Moderate	Consider for Retention		No Encroachment
182	Casuarina glauca (Swamp She Oak)	15	5	340	4.1	52.3	2.2	Good	No access to base. No rating.	Mature	15-40	Moderate	Consider for Retention	Bark inclusion(s), minor.	No Encroachment
186	Lophostemon confertus (Brush Box)	14	7	750	9.0	254.5	3.1	Fair	Good	Mature	5-15	High	Consider for Retention	Crossing branches. Crown density 50-75%. Small (<25mmø) deadwood in moderate volumes. Previously crown lifted. Wound(s), no visible sign of decay. Structures within SRZ.	No Encroachment
1	Lophostemon confertus (Brush Box)	18	8	900	10.8	366.4	3.3	Fair	Good	Late Mature	5-15	High	Consider for Retention	Crown density 50-75%. Small (<25mmø) & medium (25-75mmø) deadwood in moderate volumes. Flush cuts. Wound(s), early signs of decay. Pavement over roots.	Indirect Only.
2	Lophostemon confertus (Brush Box)	15	8	800	9.6	289.5	3.1	Poor	Good	Senescent	5-15	Moderate	Consider for Retention	Lcd Crown density 0-25%. Small (<25mmø) & medium (25-75mmø) deadwood in high volumes. Pavement over roots.	Indirect Only.
3	Lophostemon confertus (Brush Box)	12	9	475	5.7	102.1	2.5	Good	Good	Mature	15-40	Moderate	Consider for Retention	Pavement over roots.	Indirect Only.

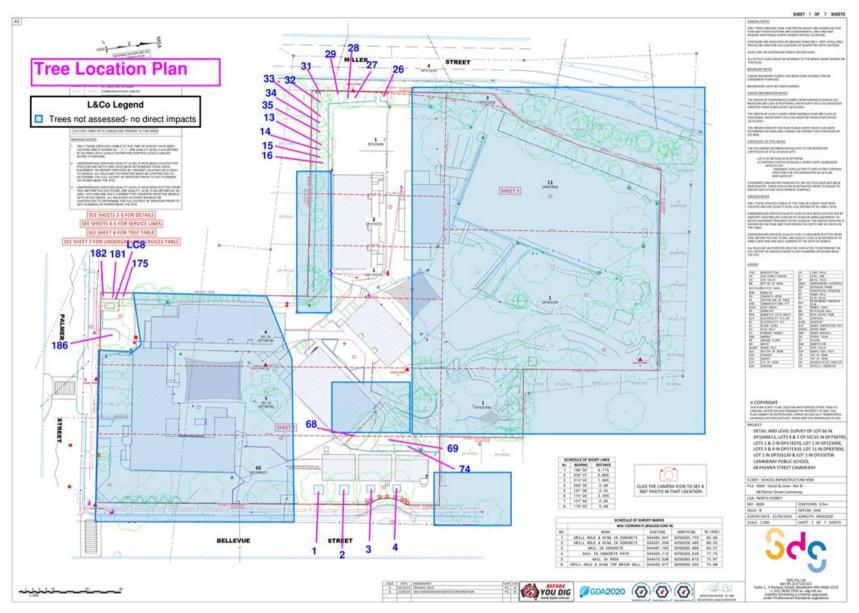


Tree No.	Species	Height (m)	Radial Crown Spread (m)	DBH comb. (mm)	Radial TPZ (m)	TPZ Area (m²)	Radial SRZ (m)	Health Rating	Structural Rating	Age Class	ULE (years)	L/Sign	Retention Value	Comments	TPZ Encroachment (%)
4	Lophostemon confertus (Brush Box)	10	8	500	6.0	113.1	2.6	Good	Fair	Late Mature	5-15	Moderate	Consider for Retention	Lost central leader. Crown density 75-95%. Small (<25mmø) deadwood in low volumes. Wound(s), advanced stages of decay. Trunk cavity(s), major. Pavement over roots.	Indirect Only.
74	Callistemon viminalis (Weeping Bottlebrush)	5	3	200	2.4	18.1	1.8	Good	Fair	Mature	5-15	Low	Consider for Removal	G4 Co-dominant inclusions, major. Structures within SRZ.	Indirect Only.
69	Viburnum sp. (Viburnum)	10	5	200	2.4	18.1	1.8	Good	Good	Mature	5-15	Moderate	Consider for Retention	Small (<25mmø) & medium (25-75mmø) epicormic growth in moderate volumes. Limited crown clearance. Structures within SRZ.	Indirect Only.
68	Liquidamber styraciflua (Liquidamber)	12	6	300	3.6	40.7	2.1	Dormant. No rating.	Good	Mature	5-15	Moderate	Consider for Retention	Exposed structural roots Bark inclusion(s), minor. Structures within SRZ.	Indirect Only.



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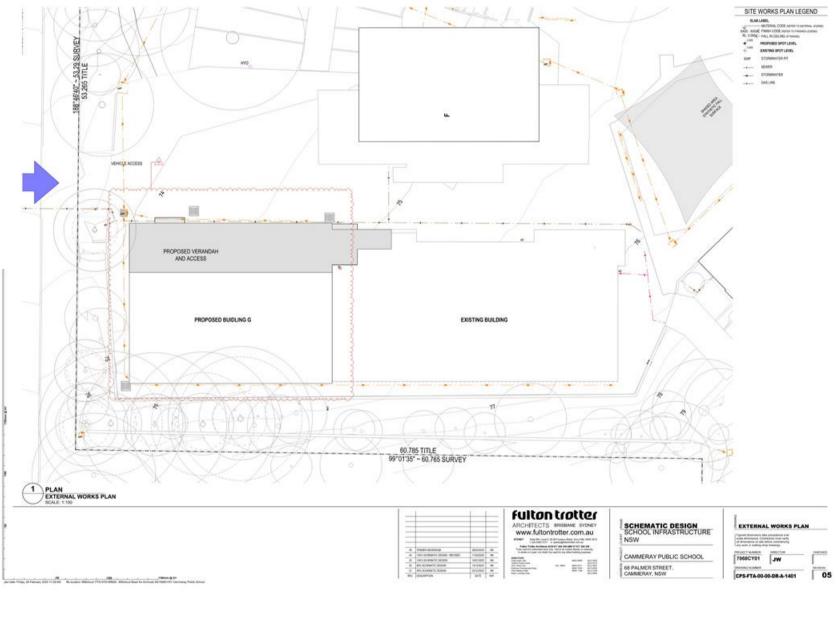
8.0 APPENDIX 3 | TREE LOCATION PLAN





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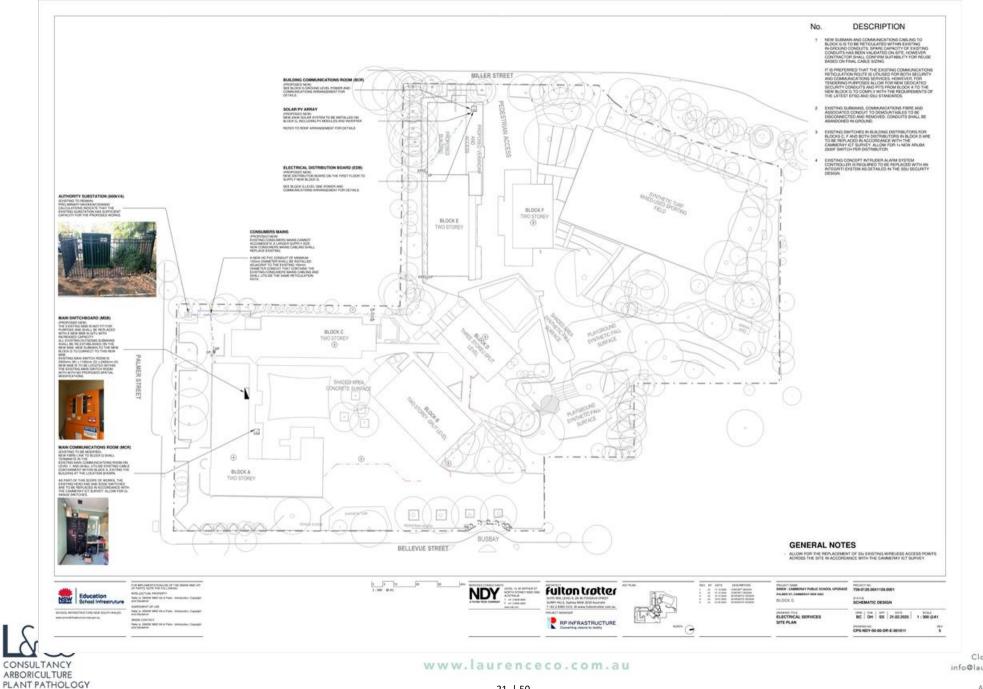
9.0 APPENDIX 4 | PROPOSED DEVELOPMENT PLANS



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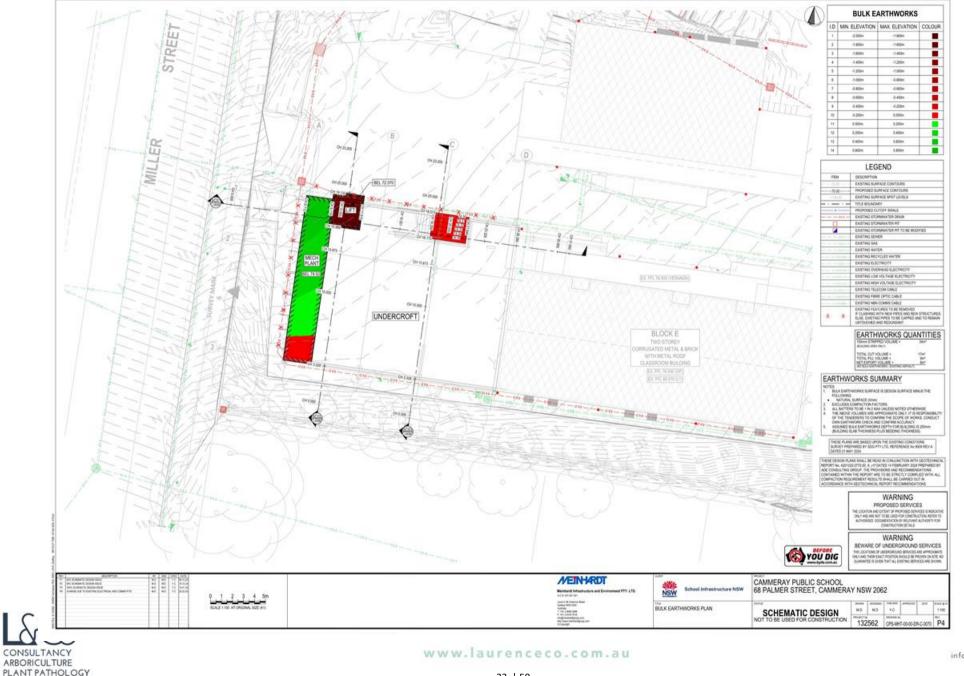
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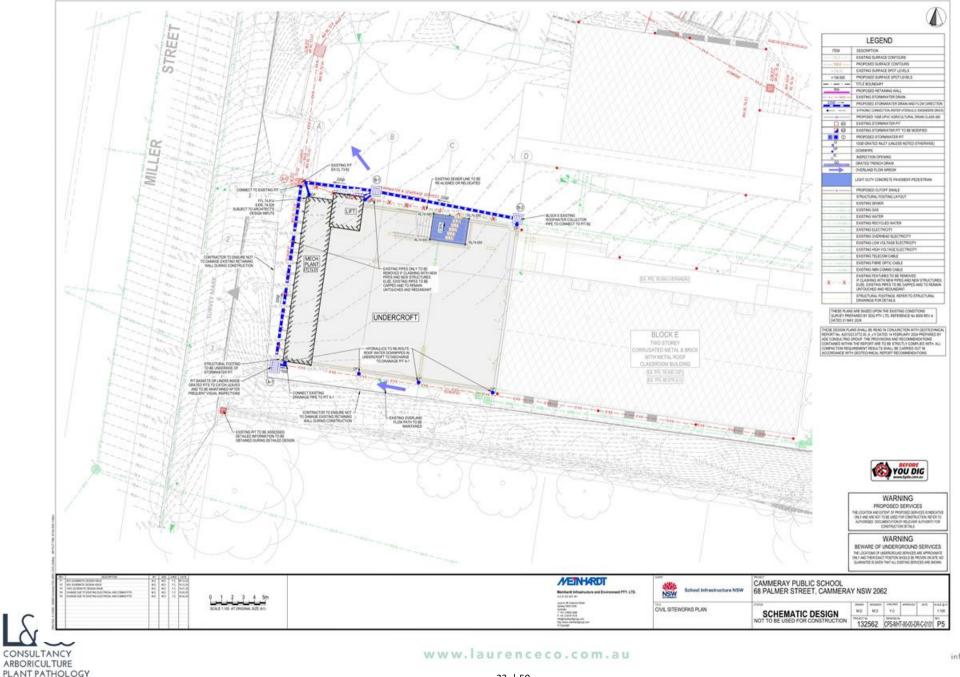
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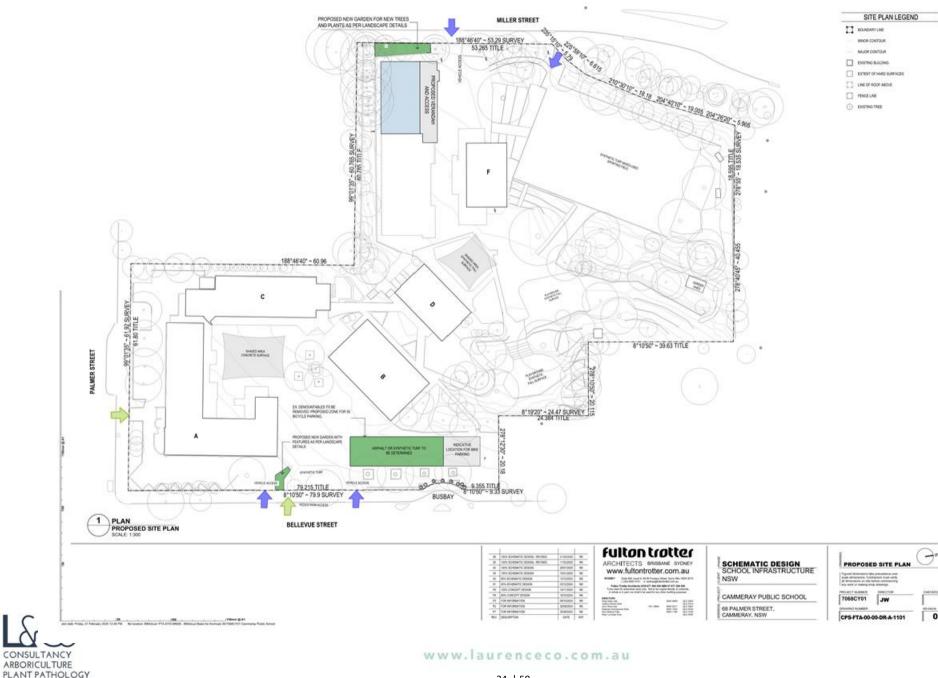
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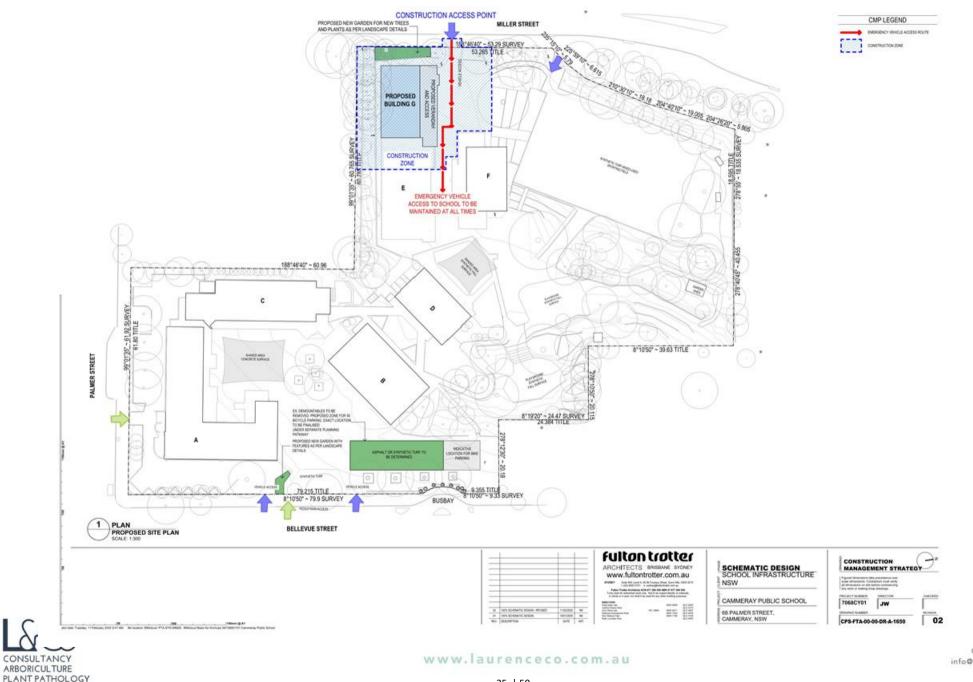


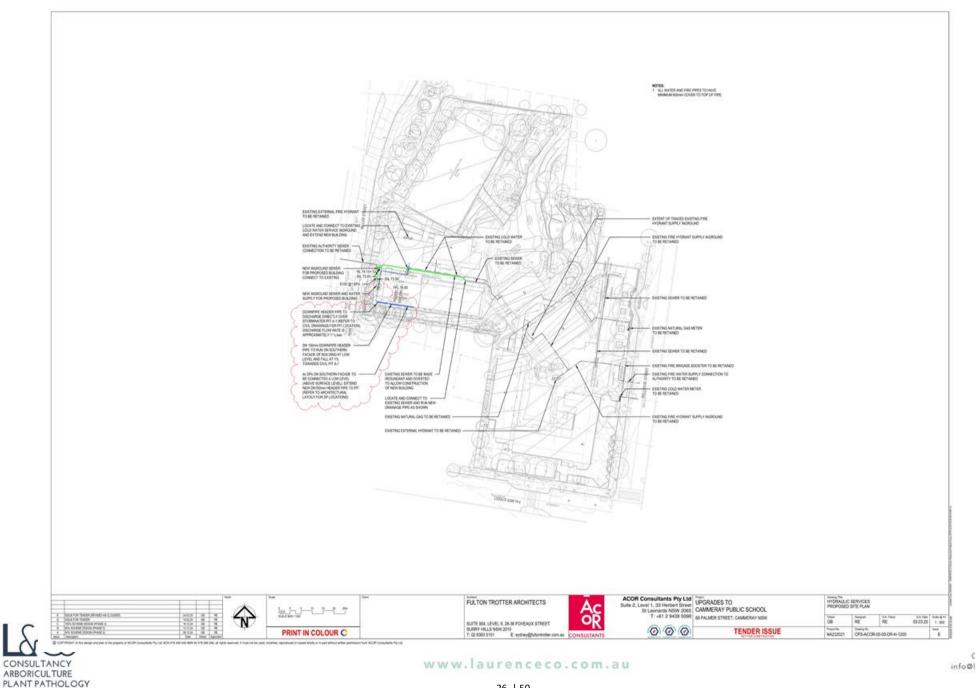
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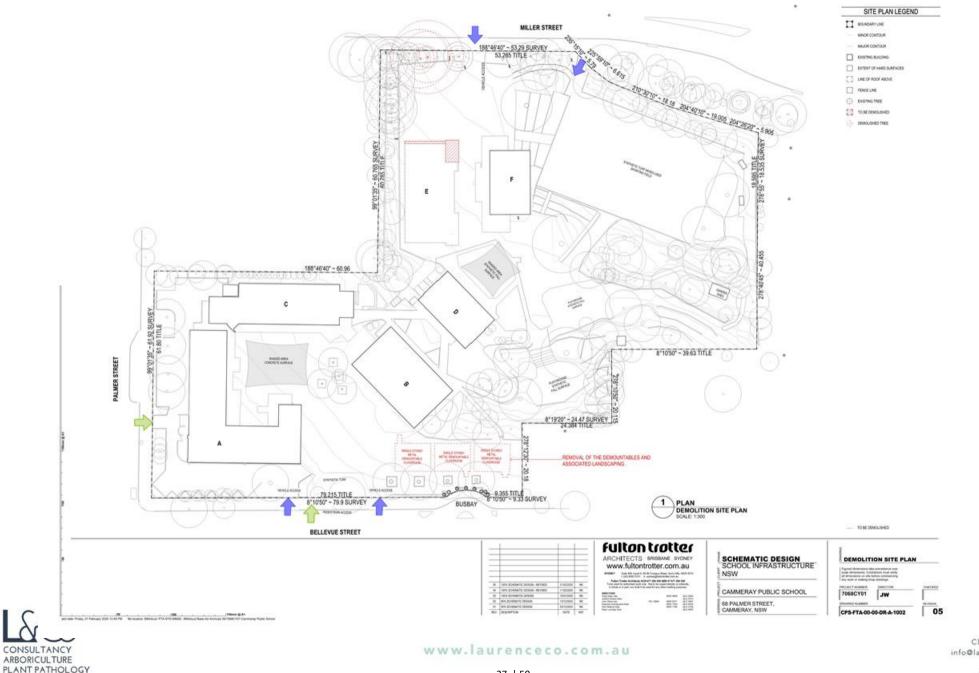


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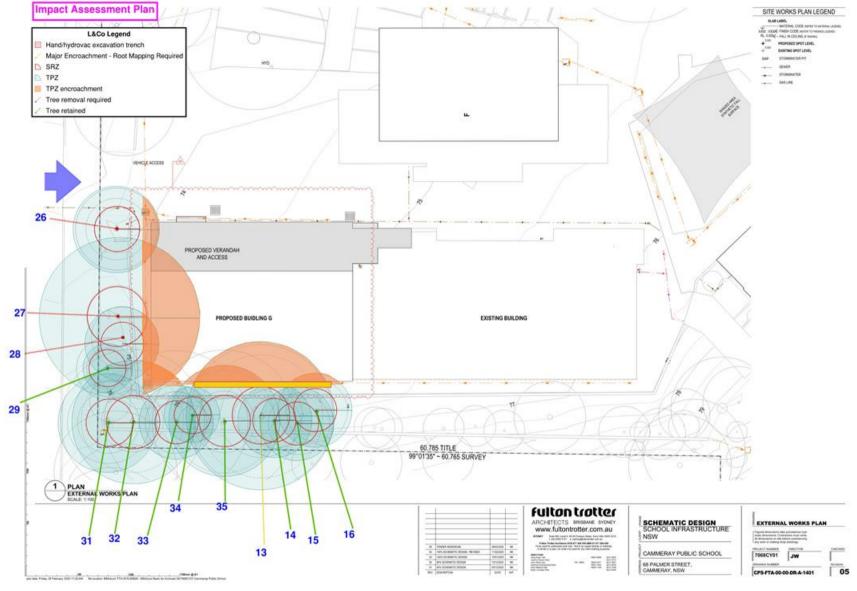






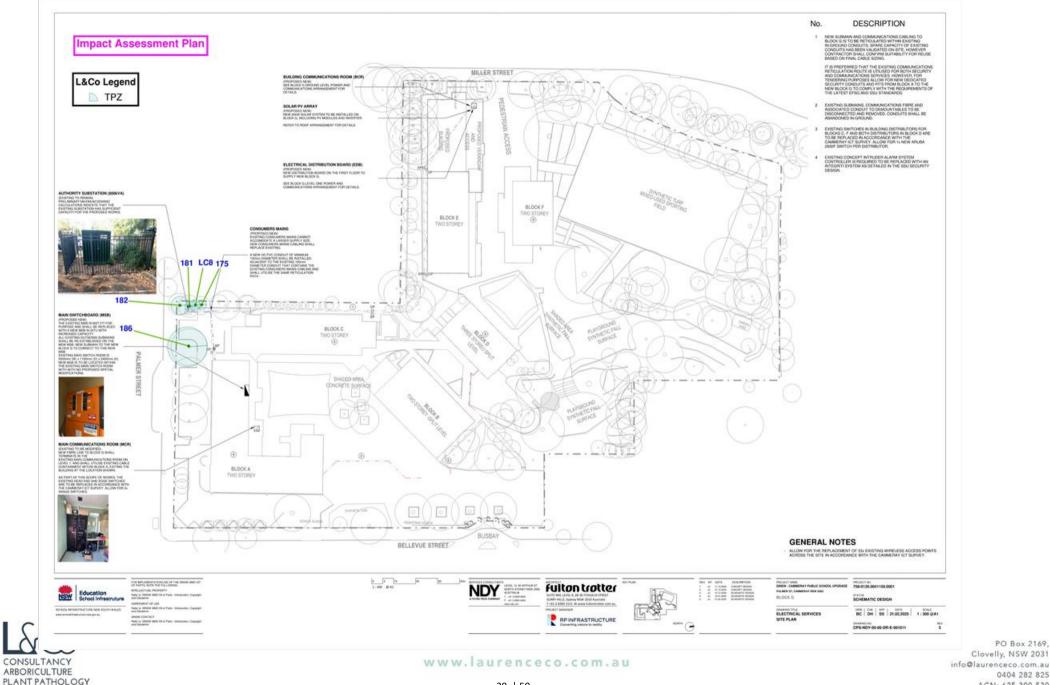
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10.0 APPENDIX 5 | ARBORICULTURAL IMPACT ASSESSMENT PLANS



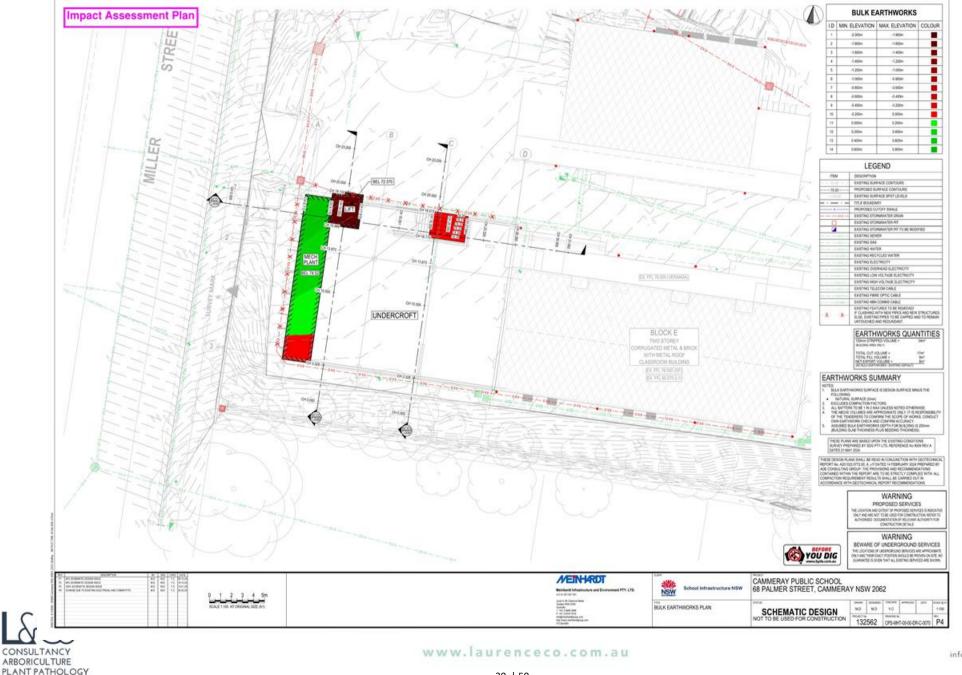
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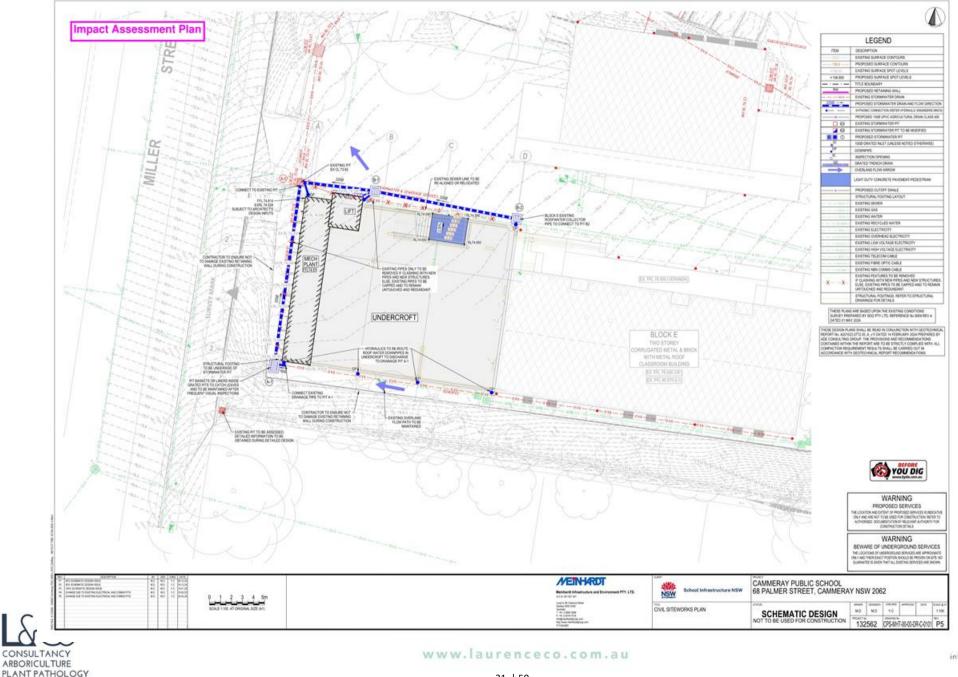


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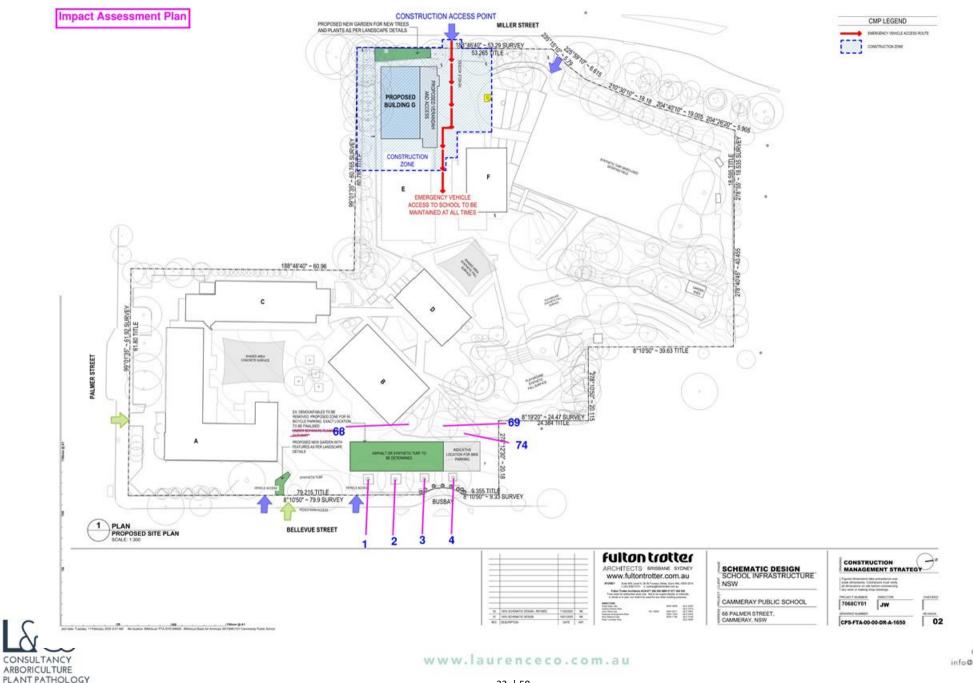
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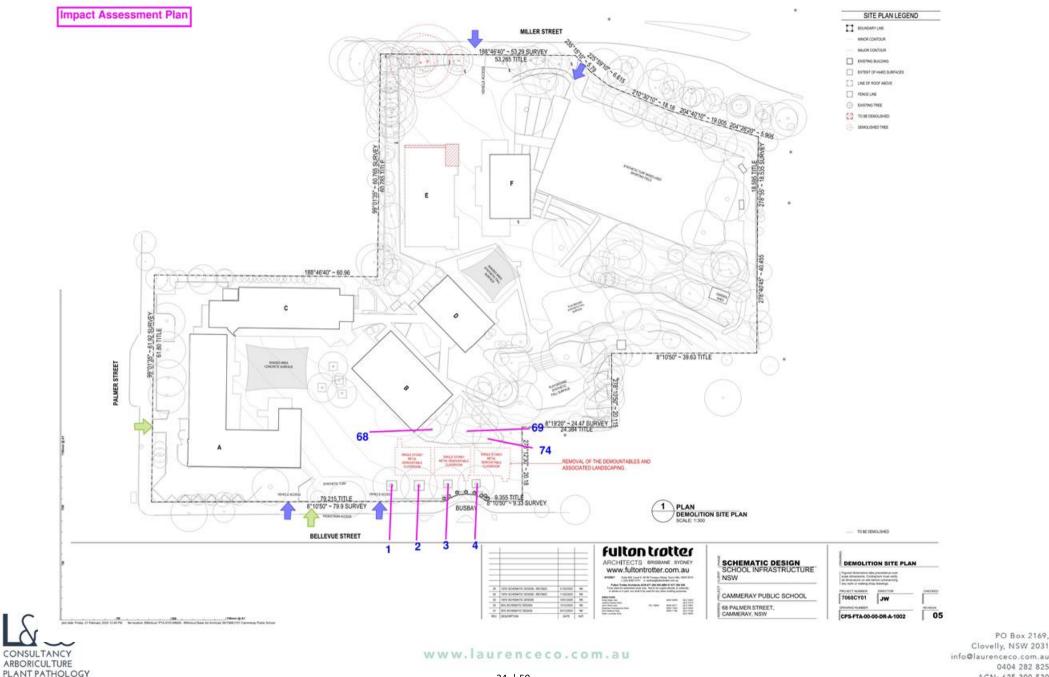
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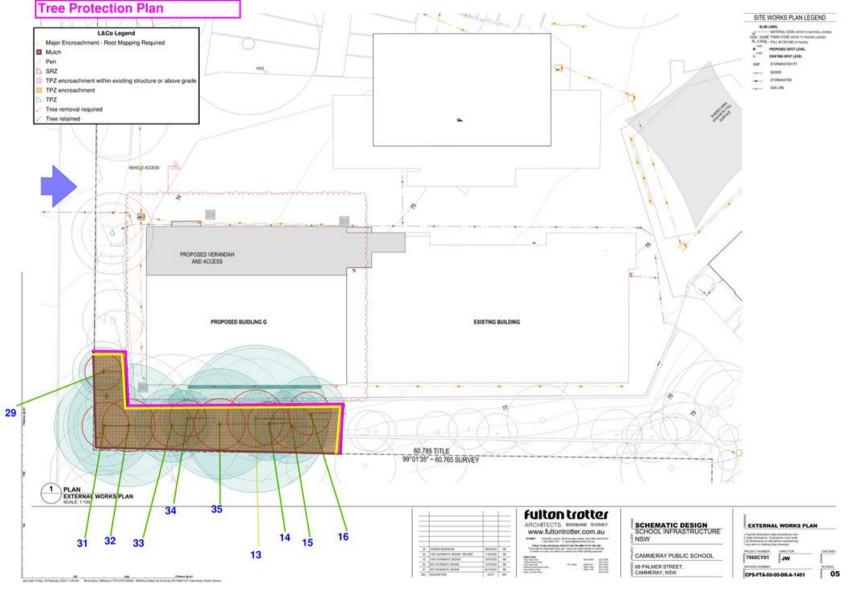






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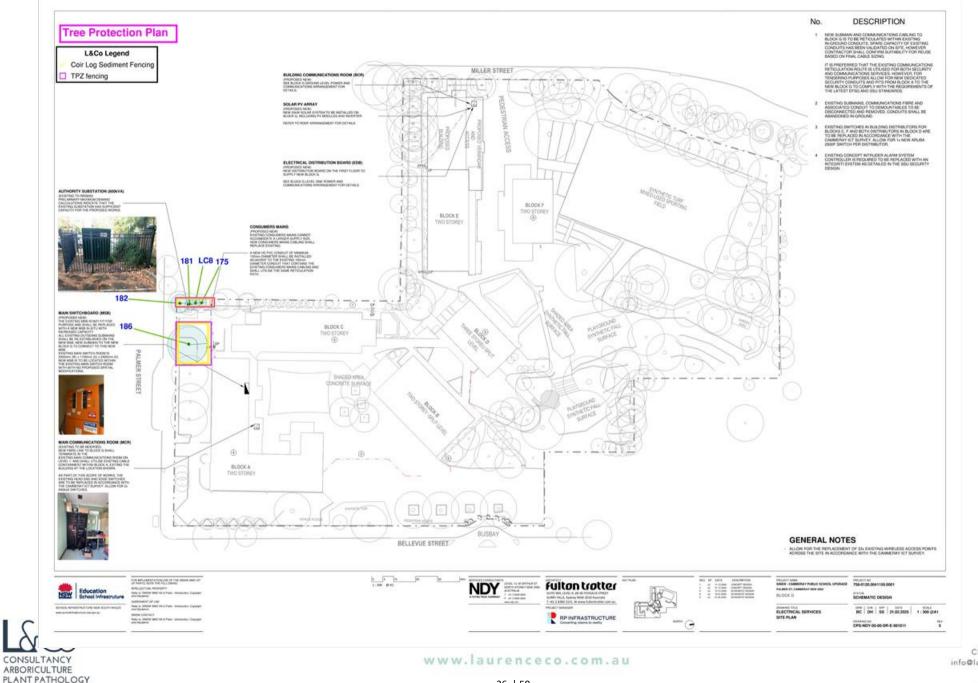
11.0 APPENDIX 6 | TREE PROTECTION PLAN

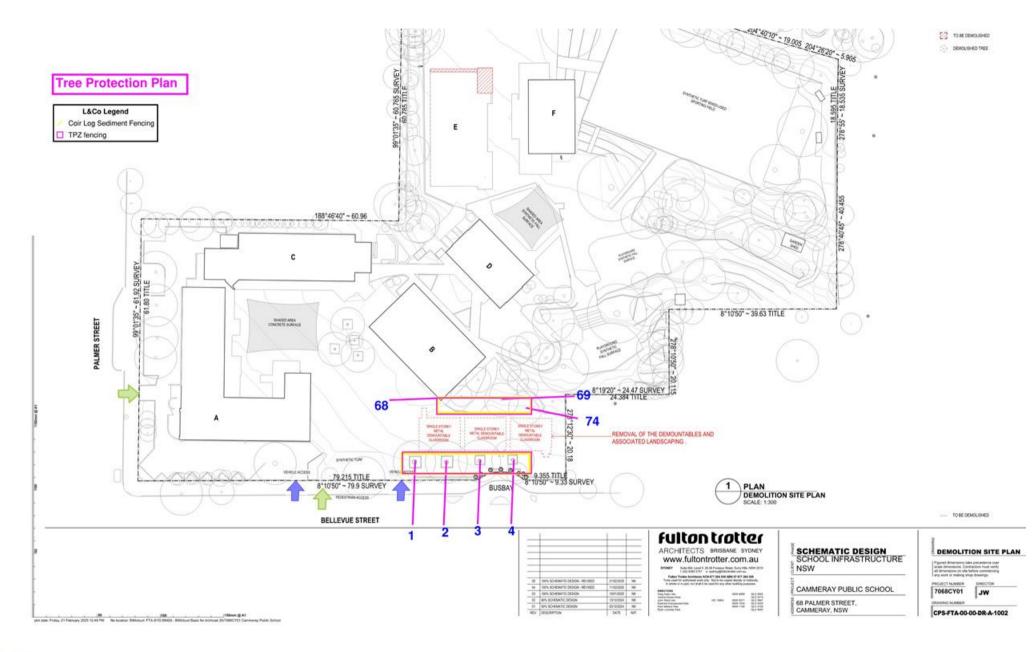


CONSULTANCY ARBORICULTURE PLANT PATHOLOGY

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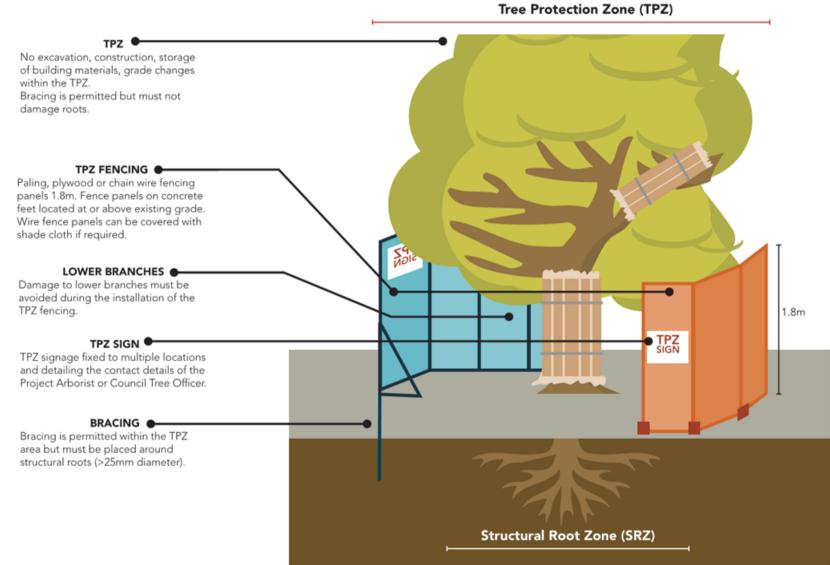




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12.0 APPENDIX 7 | TYPICAL TREE PROTECTION DETAIL

Tree Protection Detail - TPZ Fencing



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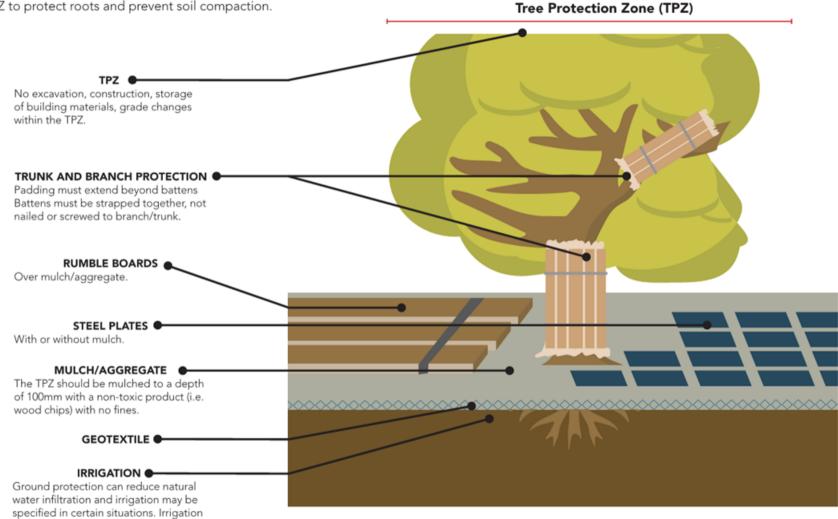
PO Box 2169, Clovelly, NSW 2031 info@laurenceco.com.au 0404 282 825 ACN: 625 300 530

Tree Protection Detail - Ground Protection

must be installed by licensed irrigator and soil moisture levels monitored by

the Project Arborist.

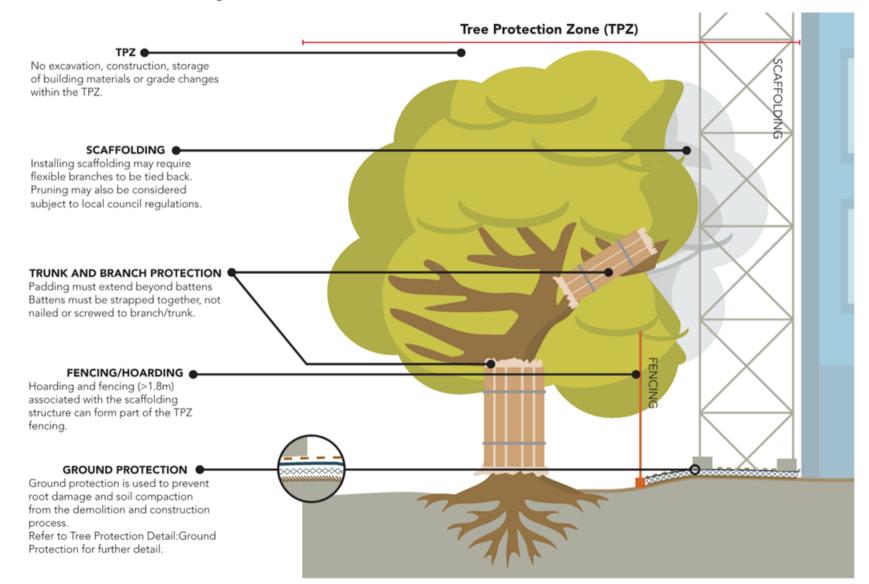
Required if temporary access for machinery is required within the TPZ to protect roots and prevent soil compaction.



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Tree Protection Detail - Scaffolding within TPZ





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13.0 APPENDIX 8 | TREE PROTECTION SPECIFICATION

13.1 Appointment of Project Arborist

13.1.1 Prior to commencement of works a Project Arborist should be engaged to monitor compliance with the protection measures. The Project Arborist will inspect tree protection measures and prepare a compliance certification for the principal certifying authority prior to the release of compliance certification. Contractors and site workers are to receive these specifications at least 3 days prior to commencing works. Contractors and site workers working within the TPZ should sign the site log confirming they have read and understood these specifications prior to commencing works.

13.2 Compliance

13.2.1 The Project Arborist will conduct regular site visits to certify the works are compliant with this specification. A compliance document will be prepared by the Project Arborist following each site inspection. The compliance document will include evidence of compliance with the tree protection measures detailed in this specification.

13.3 Tree & Vegetation Removal

- 13.3.1 Tree and vegetation removal will be undertaken prior to installation of tree protection measures. Tree removal works should be undertaken in accordance with the Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal Work (2016).
- 13.3.2 Tree and vegetation removal must not damage trees to be retained.

13.4 Tree Protection Zone

- 13.4.1 Trees that are to be retained must be protected prior to and during construction from works that could negatively impact their health and structural integrity. The following works should not occur within the TPZ unless authorised by the Project Arborist:
 - Modification of existing soil levels, excavations and trenching
 - Mechanical removal of vegetation
 - Movement of naturally occurring rock
 - Storage of materials, plant/equipment and building of sheds
 - No signage or hoarding shall be fixed to the trees
 - Preparation of building materials, refuelling or disposal of waste materials and chemicals
 - No lighting of fires
 - No pedestrian or vehicular traffic
 - Temporary or permanent location of services, or works required for their installation
 - Any other activities that may damage the tree



13.6 Tree Protection Fencing

13.6.1 The TPZ fencing must be positioned at the perimeter of the TPZ and may be combined to form a single area where the TPZs of multiple trees overlap. The approximate location of the TPZ fencing is outlined in the Arboricultural Impact Assessment with the exact location determined by consultation between the Principal Contractor/Project Manager and the Project Arborist prior to the commencement of works. Fencing may be setback to allow for demolition/construction access and for the installation of pavements only where appropriate ground protection is installed and approved by the Project Arborist. The TPZ fencing must be at least 1.8m above grade and made of wire mesh panels that are supported by concrete feet and fastened together to prevent sideways movement. Tree damage, including any low branches, must be avoided during the installation of the tree protection fencing. The TPZ fencing must include signage to identify the TPZ fencing and include the Project Arborist contact details.

13.7 Site Management

13.7.1 Materials, waste storage and temporary services should not be located within the TPZ.

13.8 Works within the Tree Protection Zones

- 13.8.1 In certain situations, works within the TPZ may be authorised by the determining authority. These works must be supervised by the Project Arborist. When working within the TPZ, special care should be taken to avoid damage to the tree's root system, trunks and lower branches.
- 13.8.2 If roots (>25mmØ) are encountered during excavation, demolition and construction works, these roots must be retained undamaged and advice sought from the Project Arborist. The design and final levels must remain flexible to enable the retention of roots >25mmØ where deemed necessary by the Project Arborist.

13.9 Ground Protection

- 13.9.1 The movement of machinery should be restricted to existing paved areas or in areas with temporary ground protection (i.e. steel road plates, ground mats) when deemed necessary by the Project Arborist.
- 13.9.2 Ground protection should be installed as per AS4970 and Appendix 7- Typical Tree Protection Detail.
- 13.9.3 If irrigation is considered necessary, it should be installed first and by a licensed irrigator under the supervision of the Project Arborist with no trenching.
- 13.9.4 The irrigation should be covered with a layer of geotextile and mulched to a depth of 100mm with a non-toxic product (i.e. woodchips) with no fines.
- 13.9.5 Once the irrigation, geotextile and mulch are in place then the ground protection boards (steel plates or rumble boards) can in be installed.
- 13.9.6 Boards should remain in place for the entire build.

13.10 Trunk & Branch Protection

- 13.10.1 If trunk protection is required it should be installed by wrapping the trunk and first order branching with padding (i.e. carpet underlay or 10mm thick geotextile) to a minimum height of 2m. Timber battens (90 x 45mm), spaced at 150mm centres should be strapped together and placed over the padding (Refer to AS4970 for further details).
- 13.10.2 Branch protection should be installed when considered necessary by the Project Arborist.
- 13.10.3 Branches should be wrapped with padding (i.e. Ableflex) to provide protection. Where possible, branches should be tied back and construction works to take place around branches (with appropriate branch protection installed as required). If pruning is unavoidable it should be in accordance with AS4373 and supervised by the Project Arborist.

13.11 Structure & Pavement Demolition

- 13.11.1 The Project Arborist should supervise the demolition of existing structures/pavement within the TPZ. Machinery is to be excluded from the TPZ unless operating from existing slabs, pavements or areas of ground protection. Machinery should not contact the tree's roots, trunks, branches and crown.
- 13.11.2 Existing pavement should be hand lifted to minimise disturbance to the existing sub-base and to prevent damage to tree roots. Wherever possible, the existing sub-base material should remain in situ.
- 13.11.3 When removing slab sections within the TPZ, machinery must work from the tree outwards to ensure the machinery always remains on the un-demolished section of slab. Wherever possible, footings or elements below grade should be retained to minimise disturbance to the tree's roots.
- 13.11.4 Structures must be shattered with hand-operated pneumatic/electric breaker before removal when considered necessary by the Project Arborist.
- 13.11.5 If roots (>25mmØ) are encountered during excavation, demolition and construction works these roots must be retained undamaged and advice sought from the Project Arborist. Exposed roots must be protected from direct sunlight, drying out and extremes of temperature by using 10mm thick jute geotextile fabric. This fabric should be kept moist at all times.
- 13.11.6 Where the Project Arborist determines that the tree is using underground elements (i.e. footings, pipes, rocks etc.) for support, these elements should be left *in situ*.

13.12 Pavement/Kerb Installation

- 13.12.1 Installation of pavements and sub-base within the TPZ must be supervised by the Project Arborist. New surfaces and subbase materials should be placed above grade to minimise excavations and retain roots (unless prior root mapping has determined that there are no roots within the area of construction).
- 13.12.2 If roots (>25mmØ) are encountered during the installation of the new sub-base and surfaces these roots must be retained undamaged and advice sought from the Project Arborist. The design and final levels must remain flexible to enable the retention of roots >25mmØ where deemed necessary by the Project Arborist.
- 13.12.3 Compaction of the ground prior to the installation of fill is not permitted.
- 13.12.4 New sub-base material should be a 20mm no-fines road base (i.e. Benedict Sand & Gravel- Product Code 20NF/RB or
- similar). Recycled concrete aggregates should not be used to avoid raising soil pH levels.



- 13.12.5 If required, bedding sand should be washed river sand (no crushed paving blends). The bedding sand should be consolidated with a pedestrian operated plate compactor only. If possible, pavement material should be permeable.
- 13.12.6 Kerbs within the TPZ should be modified to bridge roots (>25mmØ) unless root pruning is approved and undertaken by the Project Arborist.

13.13 Underground Services

- 13.13.1 The installation of underground services should be located outside of the TPZ. Where this is not possible they should be installed around or below roots (>25mmØ) using either hydrovac or hand excavation and supervised by the Project Arborist.
- 13.13.2 Boring methods may be used for the installation of services 800mm below grade. Excavations for starting and receiving pits for the boring equipment should be located outside of the TPZ or located to avoid roots (>25mmØ, or determined by the Project Arborist).
- 13.13.3 Excavations, Root Protection & Root Pruning
- 13.13.4 Excavations and root pruning within the TPZ must be supervised by the Project Arborist and should be avoided where possible.
- 13.13.5 No over-excavation, battering, or benching should be undertaken beyond the footprint of any structure unless approved by the Project Arborist. Hand excavation and root pruning along the excavation line should be completed prior to the commencement of mechanical excavation to prevent tearing and shattering damage to the roots.
- 13.13.6 Roots >25mmØ should be pruned by the Project Arborist only. Roots <25mmØ may be pruned by the Principal Contractor. Root pruning should be undertaken with clean, sharp secateurs or a pruning saw to ensure a smooth wound face, free from tears.
- 13.13.7 Damaged roots should be pruned behind the damaged tissues with the final cut made to the undamaged part of the root



43 | 50

14.0 APPENDIX 9 | PLATES



a) Showing site of the proposed development. b-c) Showing the existing retaining wall and signs of roots uplifting the asphalt. d) Showing Tree 16. e) Showing Tree 26. f) Showing trees 27 & 28 with the large first order branch that would requiring for building clearance.



Branch 1 (B1)	50	First	Reduction Pruning (R)	West	4m	1%



Tree No. 13	BRANCH Ø	BRANCH ORDER	AS4373 CODE	ORIENTATION	HEIGHT ABOVE GRADE (m)	Crown Encroachment (%)
Branch 1 (B1)	75	Third	Reduction Pruning (R)	North	10m	4%



Branch 1 (B1)	50	First	Reduction Pruning (R)	North	3m	4%

16.0 APPENDIX 11 | MITIGATION MEASURES TABLE

Mitigation Number/ Name	When is Mitigation Measure to be complied with	Mitigation Measure	Reason for Mitigation Measure
Root Mapping	Prior to demolition	Root mapping T13 to determine if tree can be retained.	Determine if Tree 13 can be retained.
Pruning Trees 33, 13 & 15	Prior to demolition	Pruning works should be carried out by a practising arborist. The practising arborist should hold a minimum qualification equivalent (using Australian Qualifications Framework) of Level 3 or above in arboriculture or its recognised equivalent. The practising arborist should have a minimum of 3 years of practical experience. Pruning works should be undertaken in accordance with the Australian Standard 4373: Pruning of Amenity Trees (2007), Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal Work (2016) and other applicable legislation and codes	Provide building clearance.
Tree Protection Fencing & sediment control	Prior to demolition	TPZ fencing should be installed prior to any site works (including demolition) and remain in place for the duration of the demolition and construction processes. The area within the TPZ fencing should be mulched to a depth of 50mm with a non- toxic product (i.e. woodchips) with no fines. Coir logs should be installed on the perimeter of the TPZ fencing to prevent runoff from the building works into the TPZ. Materials, waste storage and temporary services should not be located within the TPZ fenced area. If works are required within the TPZ fenced area, then they should be supervised by the Project Arborist. The tree protection measures must be inspected by the Project Arborist prior to the start prior of site works, including demolition. Refer to AS4970 and Appendices 5, 6, 7 & 8 for further details for further details	Retain trees and mitigate construction impacts.
Replacement Trees	Post construction	Replacement planting should be provided when trees are removed. Replacement trees should be supplied as advanced size stock to help offset the loss of amenity resultant from the tree removals. Replacement planting should be supplied in accordance with Australian Standard 2303: Tree Stock for Landscape Use (2015).	Replace the loss of amenity

17.0 APPENDIX 12 | LIMITATIONS & DISCLAIMERS

- **17.1** Subject trees were assessed from the ground only and for providing an Arboricultural Impact Assessment and Tree Protection Specification.
- **17.2** All recommendations in this Arboricultural Impact Assessment and Tree Protection Specification report are based on the observations made on the day of inspection (29.8.23 & 15.8.24). There is no warranty, expressed or implied, that problems or deficiencies relating to the subject trees, or the subject site may not arise in the future.
- **17.3** Laurence & Co Consultancy takes care to obtain information from reliable sources. However, Laurence & Co Consultancy can neither guarantee nor be responsible for the accuracy of information provided by others. Plans, diagrams, graphs and photographs in this Arboricultural Impact Assessment and Tree Protection Specification report are visual aids only and are not necessarily to scale. This report provides recommendations relating to tree management only. Advice should be sought from appropriately qualified consultants regarding design/construction/ecological/heritage etc. issues.
- **17.4** This report has been prepared for exclusive use by the client. This report should not be viewed by others or for any other reason outside its intended target or without the prior written consent of Laurence & Co Consultancy. Unauthorised alteration or separate use of any section of the report invalidates the report.
- **17.5** Many factors may contribute to tree failure and cannot always be predicted. Laurence & Co Consultancy takes care to accurately assess tree health and structural condition. However, a tree's internal structural condition may not always correlate to visible external indicators.
- **17.6** Limitation of Liability. Laurence & Co Consultancy shall be liable only for direct damages that result from negligence or wilful misconduct in the performance of its services. Under no circumstances shall Laurence & Co Consultancy be liable for indirect, consequential, special, or punitive damages, or for damages caused by the client's failure to perform its obligations under law or contract. Laurence & Co Consultancy shall not be liable for and Client shall indemnify Laurence & Co Consultancy from and against all claims, demands, liabilities and costs (including attorneys' and expert fees) arising out of or in any way related to our performance or non-performance of services, including all on-site activities except to the extent caused by Laurence & Co Consultancy's negligence or wilful misconduct. In no event shall Laurence & Co Consultancy's liability exceed the amount paid to Laurence & Co Consultancy by the Client for our professional services (net of reimbursable expenses) and Client specifically releases Laurence & Co Consultancy for any damages, claims, liabilities and costs in excess of that amount.
- **17.7** Reference should be made to any relevant legislation including Tree Management Controls. All recommendations contained within this report are subject to approval from the relevant Consent Authority.

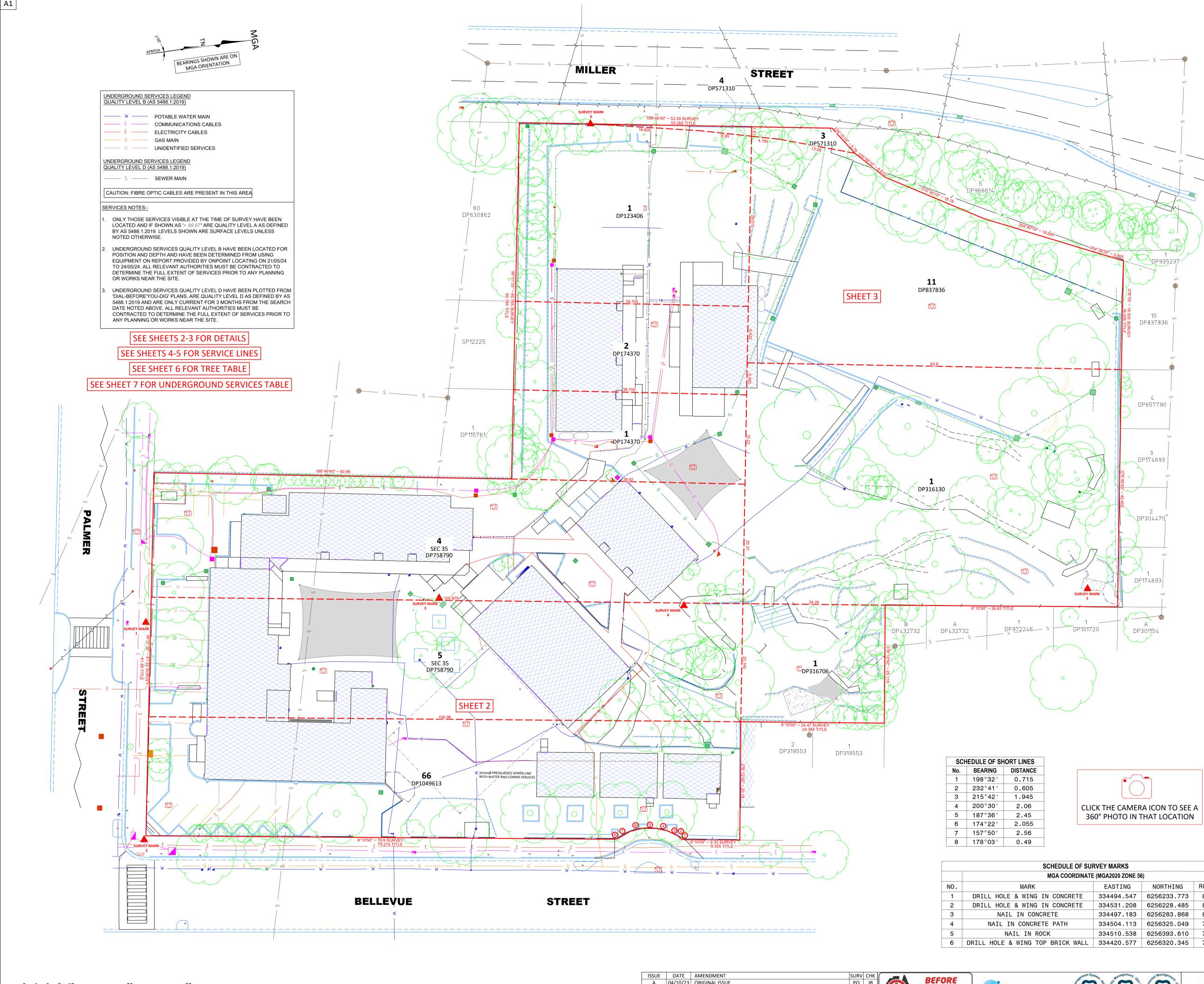






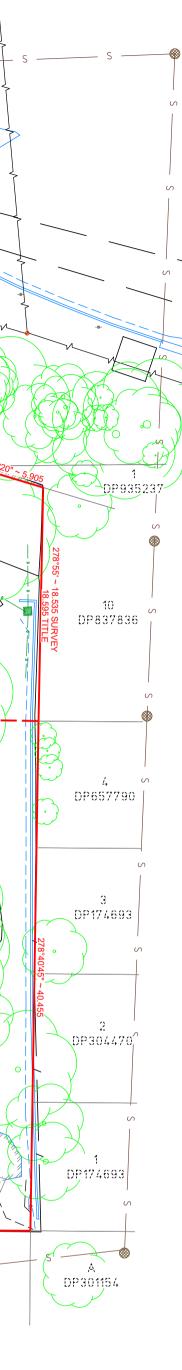
APPENDIX D SITE PLANS





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	ISSUE	DATE	AMENDMENT	SURV	СНК	DECODE	
	Α	04/10/23	ORIGINAL ISSUE	PQ	JB	BEFUKE	
	В	21/05/24	ADD UNDERGROUND SERVICES INFORMATION	PQ	JB		GDA2020
1						www.byda.com.au	87 C



EY MARKS	YEY MARKS				
MGA2020 ZONE 50	5)				
EASTING	NORTHING	RL(AHD)			
334494.547	6256233.773	85.86			
334531.208	6256228.485	86.55			
334497.183	6256283.868	83.57			
334504.113	6256325.049	77.75			
334510.538	6256393.610	75.97			
334420.577	6256320.345	74.98			

JONATHAN BURKE ID: 684 REGISTERED LAND SURVEYOR



GENERAL NOTES ONLY TREES GREATER THAN 3 METRES IN HEIGHT ARE SHOWN ON THIS

PLAN AND THEIR POSITIONS ARE DIAGRAMMATIC ONLY AND MAY REQUIRE ADDITIONAL SURVEY WHERE CRITICAL TO DESIGN. CONTOURS ARE INDICATIVE AT GROUND FORM ONLY. SPOT LEVELS ONLY SHOULD BE USED FOR CALCULATIONS OF QUANTITIES WITH CAUTION.

LEVELS ARE ON AUSTRALIAN HEIGHT DATUM (AHD).

ALL SETOUT LEVELS MUST BE REFERRED TO THE BENCH MARK SHOWN ON THIS PLAN.

BOUNDARY NOTES

A BASIC BOUNDARY SURVEY HAS BEEN DONE SUITABLE FOR DA LODGEMENT PURPOSES.

BOUNDARIES HAVE NOT BEEN MARKED.

SURVEY INFORMATION NOTES

THE ORIGIN OF COORDINATES COMES FROM SSM36614 E334531.011 N6256208.068 CLASS B POSITIONAL UNCERTAINTY (PU) 0.02 (MGA2020) ADOPTED FROM SCIMS DATED 18/10/2023.

THE ORIGIN OF LEVELS COMES FROM SSM36614 RL85.989 CLASS LB POSITIONAL UNCERTAINTY (PU) 0.03 ADOPTED FROM SCIMS DATED 18/10/2023.

THE ORIENTATION OF THIS PLAN IS MGA NORTH WHICH HAS BEEN DETERMINED BY GNSS AND IS BASED ON CORSNET DATA PROVIDED BY LRS NSW.

CERTIFICATE OF TITLE NOTES

THE FOLLOWING INFORMATION RELATES TO THE RESPECTIVE CERTIFICATE OF TITLE OF EACH LOTS:

VIDE AG432227

- LOT 4 OF SECTION 35 IN DP758790 (CT EDITION 2 DATED 01/09/2011 SEARCH DATE 15/08/2023) - AFFECTED BY: - EASEMENT FOR ELECTRICITY AND OTHER PURPOSES AFFECTING THE SITE DESIGNATED (A) IN PLAN

COVENANTS AND RESTRICTIONS NOTED ON THE TITLE HAVE NOT BEEN INVESTIGATED. THESE SHOULD BE INVESTIGATED PRIOR TO DESIGN TO ENSURE ANY FUTURE DEVELOPMENT COMPLIES.

SERVICES NOTES

ONLY THOSE SERVICES VISIBLE AT THE TIME OF SURVEY HAVE BEEN LOCATED AND ARE QUALITY LEVEL A AS DEFINED BY AS 5488.1:2019.

UNDERGROUND SERVICES QUALITY LEVEL B HAVE BEEN LOCATED FOR BY ONPOINT LOCATING ON 21/05/24 TO 24/05/24 USING EQUIPMENT AS NOTED ON REPORT PROVIDED DATED 24/05/24. THE SERVICE POSITION IS SHOWN ON THE PLAN AND THEIR RESPECTIVE DEPTH ARE AS STATED IN THE TABLE.

UNDERGROUND SERVICES QUALITY LEVEL D HAVE BEEN PLOTTED FROM 'DIAL-BEFORE'YOU-DIG' PLANS, ARE QUALITY LEVEL D AS DEFINED BY AS 5488.1:2019 AND ARE ONLY CURRENT AT THE DATE OF SEARCH.

ALL RELEVANT AUTHORITIES MUST BE CONTACTED TO DETERMINE THE FULL EXTENT OF SERVICES PRIOR TO ANY PLANNING OR WORKS NEAR THE SITE.

LEGEND

TAG	DESCRIPTION
AC	AIR CONDITIONING
AV	AIR VALVE
BB	BOTTOM OF BANK
BICYCL	EBICYCLE RACK
BUB	BUBBLER
СК	CONCRETE KERB
CL	CENTRELINE OF ROAD
СОМ	COMMUNICATIONS PIT
DISH	DISH DRAIN
DP	DOWNPIPE
DPG	DOWNPIPE WITH GRATE
ELP	ELECTRICITY PILLAR
EP	ELECTRICITY PIT
FL	FLOOR LEVEL
FP	FLAG POLE
FC	FIBROUS CEMENT
GDN	GARDEN
GF	GROUND FLOOR
GR	GRATE
GUARD	GUARD RAIL
GUT	GUTTER OF KERB
HYD	HYDRANT
INV	INVERT
LIP	LIP OF KERB
LND	LANDING

LP	LIGHT POLE
L1	LEVEL ONE
MP	METAL POLE
UGOH	UNDERGROUND OVERHEAD
OHP	OVERHEAD POWER
PC	PEDESTRIAN CROSSING
PP	POWER POLE
PV	PATH VALVE
RCP	REINFORCED CONCRETE PIPE
RR	RUBBLE ROCK
RW	RETAINING WALL
RWT	RAIN WATER TANK
SC	STOPCOCK
SIGN	SIGNPOST
SIP	SEWER INSPECTION PIT
SPEED	SPEED HUMP
SMH	SEWER MANHOLE
SS	STREET SIGN
ST	STAIRS
SUB	SUBSTATION
sv	STOP VALVE
SVP	SEWER VENT POLE
ТВ	TOP OF BANK
тк	TOP OF KERB
US	UNIDENTIFIED SERVICE
VC	VEHICLE CROSSING

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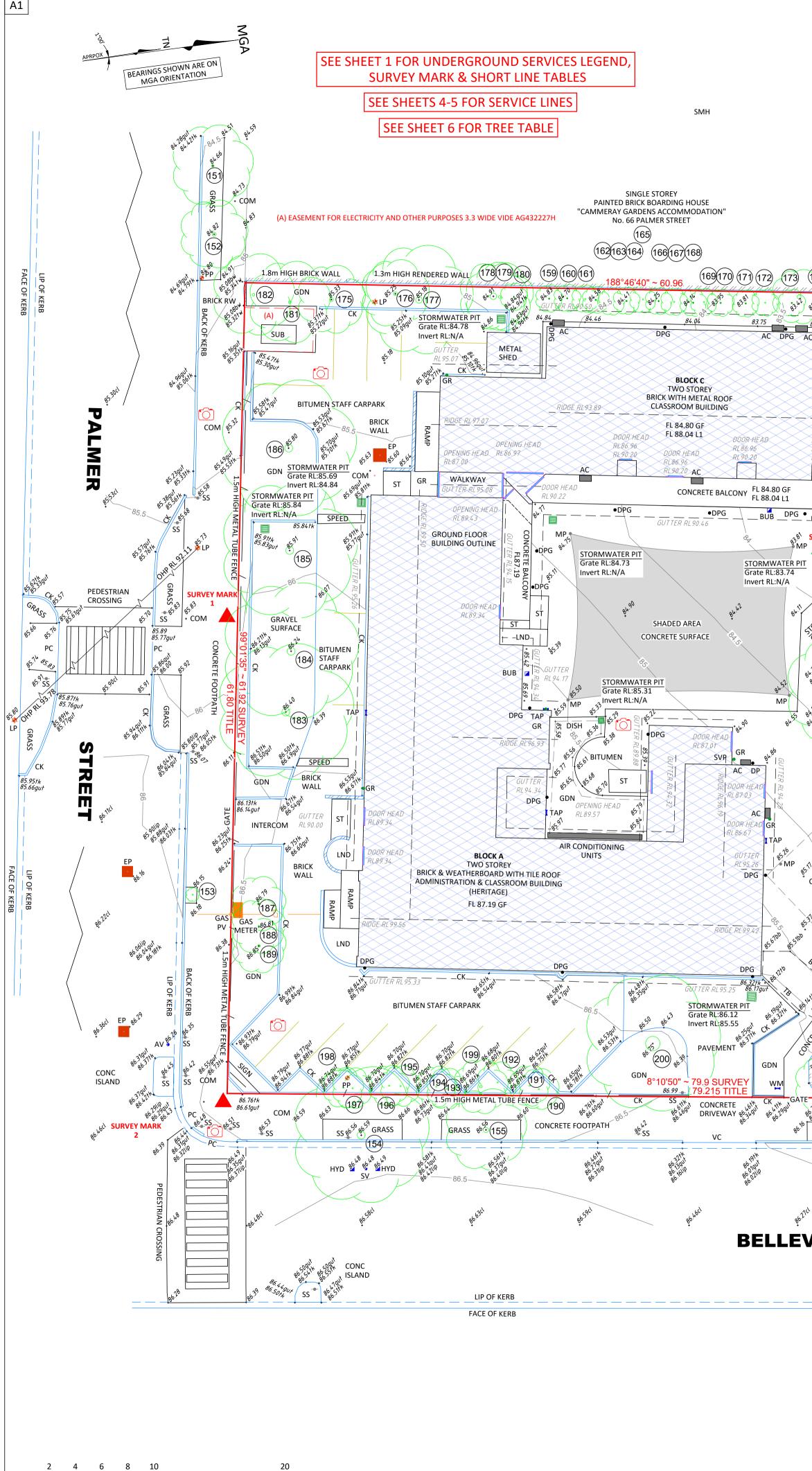
THIS PLAN IS NOT TO BE USED FOR ANY PURPOSE OTHER THAN ITS ORIGINAL INTENTION AND REMAINS THE PROPERTY OF SDG. THIS PLAN CANNOT BE REPRODUCED, COPIED OR DIGITALLY TRANSFERRED (IN WHOLE OR PART) WITHOUT PRIOR WRITTEN PERMISSION OF SDG. PROJECT:

DETAIL AND LEVEL SURVEY OF LOT 66 IN DP1049613, LOTS 4 & 5 OF SEC35 IN DP758790, LOTS 1 & 2 IN DP174370, LOT 1 IN DP123406, LOTS 3 & 4 IN DP571310, LOT 11 IN DP837836, LOT 1 IN DP316130 & LOT 1 IN DP316706 CAMMERAY PUBLIC SCHOOL 68 PALMER STREET CAMMERAY

CLIENT: SCHOOL INFRASTRUCTURE NSW FILE: 9009 - Detail & Level - Rev B -68 Palmer Street Cammeray

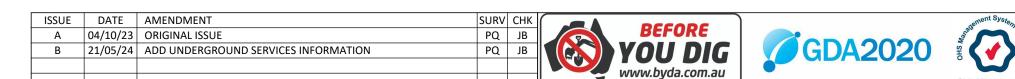
LGA: NORTH SYDNEY	
REF: 9009	CONTOURS: 0.5m
ISSUE: B	DATUM: AHD
SURVEY DATE: 21/05/2024	AZIMUTH: MGA2020
SCALE: 1:300	SHEET 1 OF 7 SHEETS

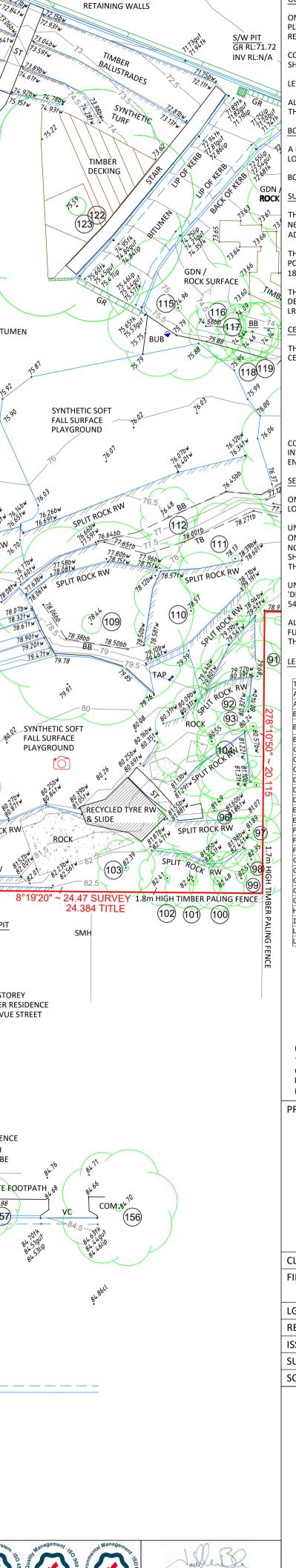




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TE	$ \begin{array}{c} & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & $	84.93bw 84.93bw 84.83bw 85.51 SS 85.51 SS 85.51 SS 85.51 85.51 85.51 85.51 SS 85.51	65.1011 85.124 85.85.1111 85.1011 85.124 85.85.1111	84.50bw 85.37tw 8°10'50" ~ 9.33 SURVE 85.24bw 9.355 TITLE 9.355 TITLE 85.12th 85.12th 9.355 TITLE 85.12th 85.03th 84.85gut 84.85gut 84.86lip 9.84.96lip	METAL TUBE FENCE 785,131 w 84.995 w SS b BACK OF KERB 84.88 BACK OF KERB
<u> </u>				LIP_OF_KERB	





RUBBLE ROCK

SHEET 2 OF 7 SHEETS

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DISH	DISH DRAIN
DP	DOWNPIPE
DPG	DOWNPIPE WITH GRATE
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EP	ELECTRICITY PIT
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FP	FLAG POLE
FC	FIBROUS CEMENT
GDN	GARDEN
GF	GROUND FLOOR
GR	GRATE
GUARD	GUARD RAIL
GUT	GUTTER OF KERB
HYD	HYDRANT
INV	INVERT
LIP	LIP OF KERB
LND	LANDING

LP	LIGHT POLE
L1	LEVEL ONE
MP	METAL POLE
UGOH	UNDERGROUND OVERHEAD
OHP	OVERHEAD POWER
РС	PEDESTRIAN CROSSING
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RW	RETAINING WALL
RWT	RAIN WATER TANK
SC	STOPCOCK
SIGN	SIGNPOST
SIP	SEWER INSPECTION PIT
SPEED	SPEED HUMP
SMH	SEWER MANHOLE
SS	STREET SIGN
ST	STAIRS
SUB	SUBSTATION
sv	STOP VALVE
SVP	SEWER VENT POLE
ТВ	TOP OF BANK
тк	TOP OF KERB
US	UNIDENTIFIED SERVICE
VC	VEHICLE CROSSING

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JONATHAN BURKE ID: 684

REGISTERED LAND SURVEYOR

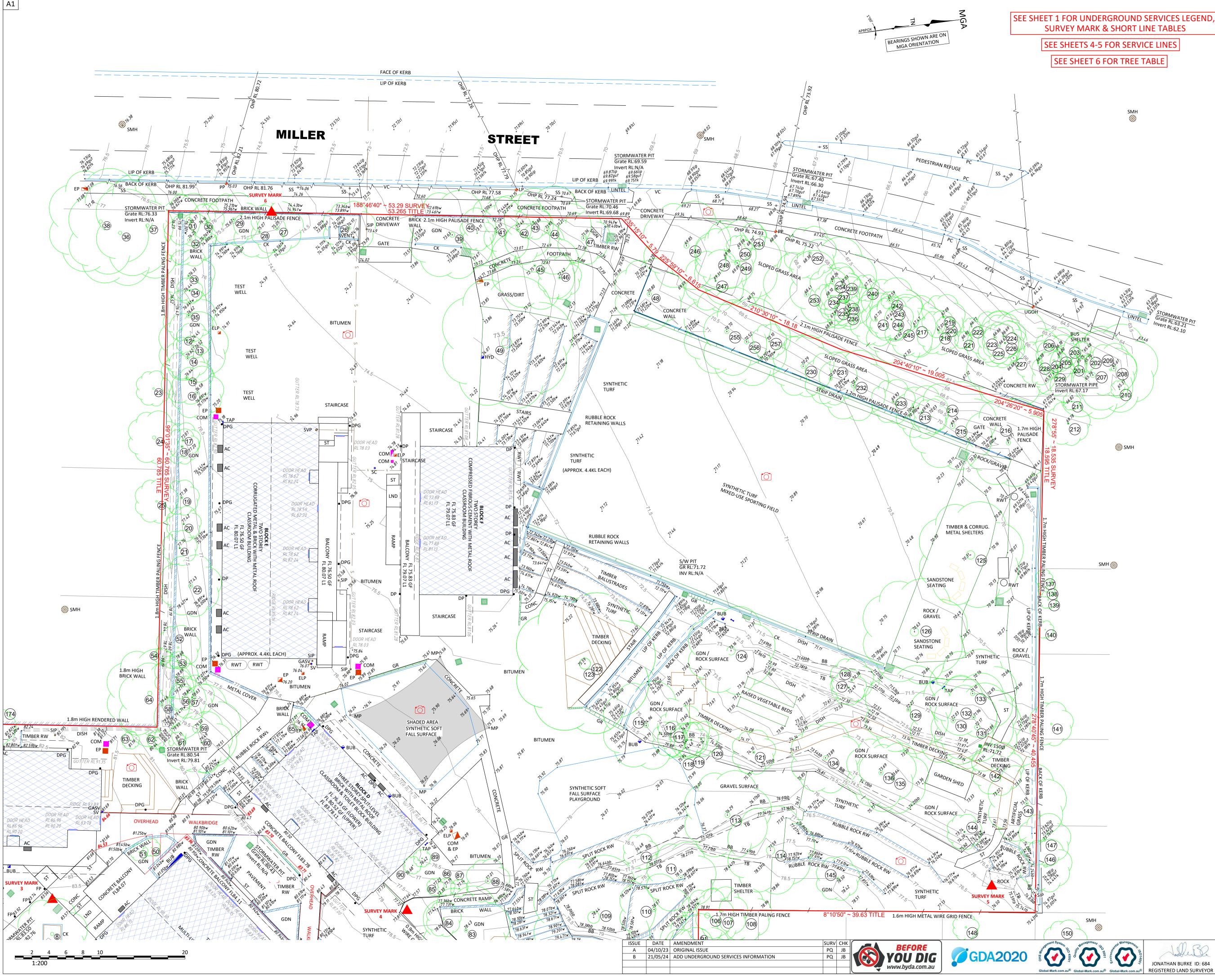
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CLIENT: SCHOOL INFRASTRUCTURE NSW FILE: 9009 - Detail & Level - Rev B -

68 Palmer Street Cammeray

LGA: NORTH SYDNEY	
REF: 9009	CONTOURS: 0.5m
ISSUE: B	DATUM: AHD
SURVEY DATE: 21/05/2024	AZIMUTH: MGA2020
SCALE: 1:200	SHEET 2 OF 7 SHEETS





SHEET 3 OF 7 SHEETS

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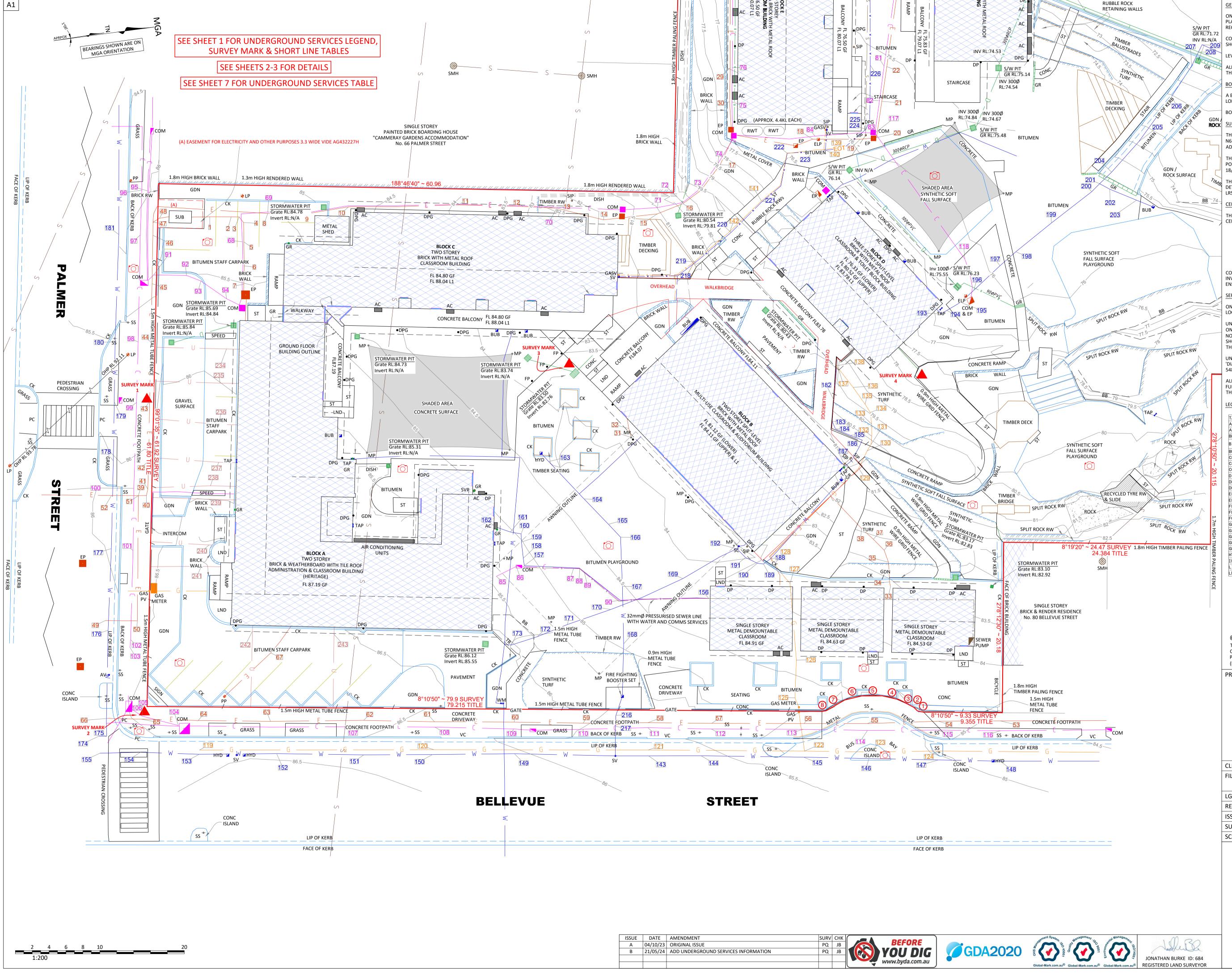
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CLIENT: SCHOOL INFRASTRUCTURE NSW FILE: 9009 - Detail & Level - Rev B -

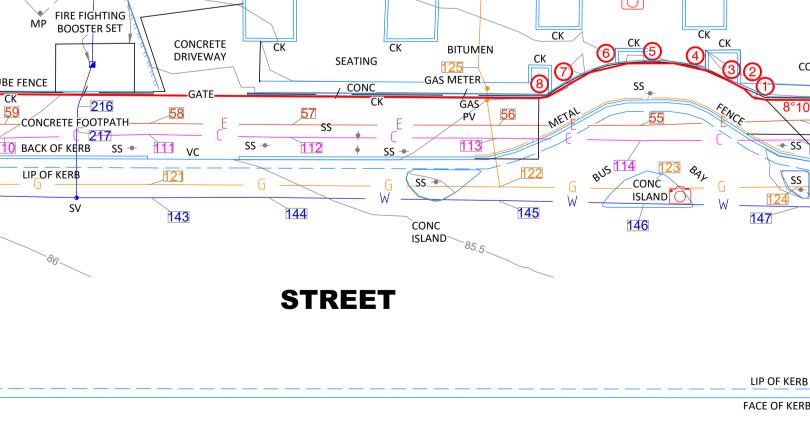
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	•
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ISSUE	DATE	AMENDMENT	SURV	СНК		DECODE		nement System
А	04/10/23	ORIGINAL ISSUE	PQ	JB		BEFUKE		Mar I
В	21/05/24	ADD UNDERGROUND SERVICES INFORMATION	PQ	JB			GDA2020	¥ (🖌)
					V	www.byda.com.au	J	Global-Mark.com.a



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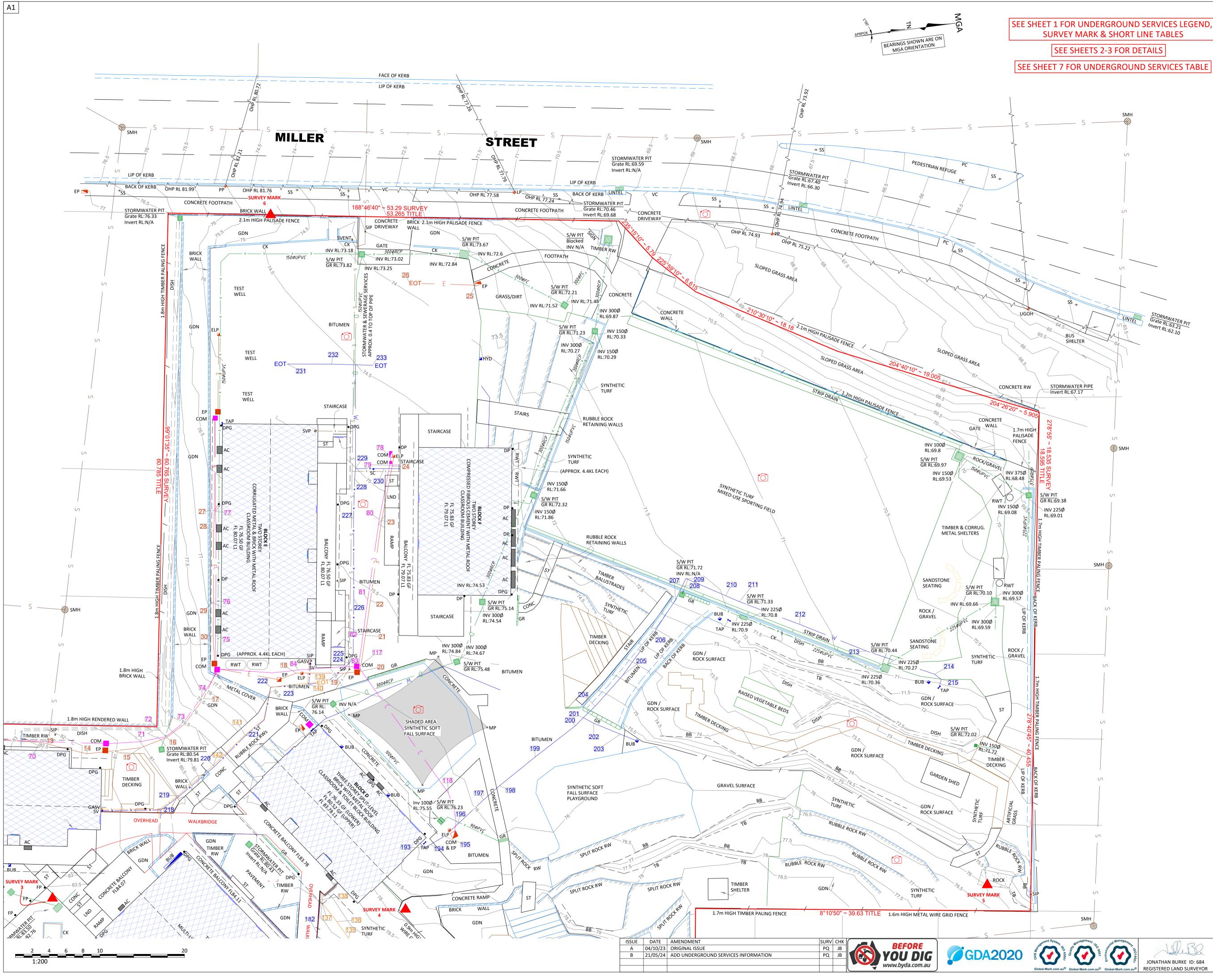
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CLIENT: SCHOOL INFRASTRUCTURE NSW FILE: 9009 - Detail & Level - Rev B -

68 Palmer Street Cammeray

LGA: NORTH SYDNEY	
REF: 9009	CONTOURS: 0.5m
ISSUE: B	DATUM: AHD
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SHEET 5 OF 7 SHEETS

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. .				<u> </u>						
Schedule of Trees			Schedule of Trees				Schedule of Trees			
iam	Spread	Height	No	Diam	Spread	Height	No	Diam	Spread	Height
1	10	10	33	0.3	6	12	65	0.1	2	4
.9	10	10	34	0.2	3	7	66	0.1	2	4
.8	10	10	35	0.5	6	13	67	0.5	7	10
.8	10	10	36	0.4	12	8	68	0.3	5	4
.2	5	8	37	0.4	12	8	69	0.5	8	11
.2	4	6	38	0.4	12	8	70	0.2	5	7
.8	10	10	39	0.6	10	12	71	0.2	5	7
.4	8	6	40	0.1	4	6	72	0.2	5	7
.4	8	6	41	0.4	8	12	73	0.2	5	7
.4	8	6	42	0.4	8	12	74	0.4	8	8
.2	4	6	43	0.2	4	6	75	0.5	8	11
.2	4	11	44	0.7	10	14	76	0.6	7	15
.5	8	12	45	0.3	10	7	77	0.3	5	6
.4	5	13	46	0.3	5	8	78	0.7	6	15
.4	6	13	47	0.5	6	6	79	0.5	6	15
.4	6	10	48	0.5	8	11	80	0.6	7	15
.3	4	7	49	1.2	15	11	81	0.6	7	15
.3	4	7	50	0.1	2	3	82	0.1	3	8
.3	4	9	51	0.1	2	3	83	0.4	10	7
.2	4	9	52	0.2	5	15	84	0.2	4	4
.2	4	9	53	0.1	2	3	85	0.1	2	3
.5	7	12	54	0.1	2	6	86	0.1	2	3
.2	4	10	55	0.2	5	10	87	0.1	2	3
.4	6	11	56	0.1	3	8	88	0.6	5	12
.2	5	7	57	0.2	5	12	89	0.1	2	3
.4	6	10	58	0.4	10	13	90	0.1	2	3
.5	6	11	59	1	10	16	91	0.5	8	10
.3	6	12	60	0.2	7	10	92	0.4	8	10
.4	6	6	61	0.1	2	4	93	0.5	8	10
.3	4	3	62	0.1	2	4	94	0.5	8	10
.6	6	6	63	0.1	2	4	95	0.4	8	10
.5	6	12	64	0.5	10	15	96	0.4	8	10

	Schedule of Trees						
No	Diam	Spread	Height				
1	1	10	10				
2	0.9	10	10				
3	0.8	10	10				
4	0.8	10	10				
5	0.2	5	8				
6	0.2	4	6				
7	0.8	10	10				
8	0.4	8	6				
9	0.4	8	6				
10	0.4	8	6				
11	0.2	4	6				
12	0.2	4	11				
13	0.5	8	12				
14	0.4	5	13				
15	0.4	6	13				
16	0.4	6	10				
17	0.3	4	7				
18	0.3	4	7				
19	0.3	4	9				
20	0.2	4	9				
21	0.2	4	9				
22	0.5	7	12				
23	0.2	4	10				
24	0.4	6	11				
25	0.2	5	7				
26	0.4	6	10				
27	0.5	6	11				
28	0.3	6	12				
29	0.4	6	6				
30	0.3	4	3				
31	0.6	6	6				
32	0.5	6	12				

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<th colspa<="" th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></th>	<th></th>																			
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	S	chedule of Trees	5	Schedule of Trees			Schedule of Trees			Schedule of Trees				Schedule of Trees						
B8 0.6 6 6 130 0.5 100 200 162 0.1 2 6 195 0.1 3 4 227 0.7 111 99 0.6 4 4 131 0.6 100 200 163 0.1 2 6 196 0.1 3 4 228 0.2 5 00 0.6 4 4 133 0.5 10 100 166 0.1 2 6 01 0.6 4 4 4 133 0.5 8 100 166 0.1 2 6 02 0.4 4 4 136 0.5 8 100 12 6 201 0.1 2 4 231 0.4 6 05 1 12 12 137 0.1 2 6 201 0.1 2 4 233 0.3 5 233 0.3 5 233 0.3 5 131 34 233 0.3 6 <	lo Diai	n Spread	Height	No	Diam	Spread	Height	No	Diam	Spread	Height	No	Diam	Spread	Height	No	Diam	Spread	Height	
99 0.6 4 4 131 0.6 10 20 163 0.1 2 6 196 0.1 3 4 228 0.2 5 00 0.6 4 4 133 0.4 10 10 166 0.1 2 6 197 0.1 3 4 229 0.2 5 02 0.4 4 4 133 0.5 8 100 166 0.1 2 6 197 0.1 3 4 229 0.2 5 02 0.4 4 4 138 0.5 8 100 11 2 6 199 0.1 3 4 220 0.5 8 231 0.4 6 233 0.3 5 8 100 11 2 4 170 0.1 2 6 233 0.1 2 4 233 0.3 5 11 323 0.3 5 11 33 24 0.1 2 4 233 0.1 <td>97 0.0</td> <td>6 6</td> <td>6</td> <td>129</td> <td>0.4</td> <td>10</td> <td>20</td> <td>161</td> <td>0.1</td> <td>2</td> <td>6</td> <td>194</td> <td>0.1</td> <td>3</td> <td>4</td> <td>226</td> <td>0.2</td> <td>5</td> <td>9</td>	97 0.0	6 6	6	129	0.4	10	20	161	0.1	2	6	194	0.1	3	4	226	0.2	5	9	
D0 0.6 4 4 132 0.4 10 10 164 0.1 2 6 197 0.1 3 4 229 0.2 5 01 0.6 4 4 4 133 0.5 10 10 165 0.1 2 6 197 0.1 3 4 230 0.5 7 03 0.4 4 4 4 136 0.5 8 10 165 0.1 2 6 197 0.1 3 4 230 0.5 7 03 0.4 4 4 4 4 4 135 0.3 8 10 165 0.1 2 6 05 11 12 137 0.1 2 6 170 0.1 2 6 200 0.1 2 4 233 0.3 5 13 235 0.1 3 4 13 237 0.3 6 13 237 0.3 6 13 236 13	0.0	6 6	6	130	0.5	10	20	162	0.1	2	6	195	0.1	3	4	227	0.7	11	14	
D1 0.6 4 4 133 0.6 10 10 165 0.1 2 61 33 4 12 0.4 4 4 133 0.5 8 10 166 0.1 2 6 198 0.1 3 4 5 230 0.5 7 33 0.4 4 4 135 0.3 8 10 166 0.1 2 6 199 0.2 4 5 230 0.5 7 34 0.5 8 10 136 0.5 8 10 166 0.1 2 6 10 10 11 2 6 8 10 11 12 10 11 12 11 10 11 12 11 11 12 11 11 12 11 11 12 11 11 12 11 11 12 13 13 13 13 13 13 13 13 13 13 13 13 13	9 0.0	6 4	4	131	0.6	10	20	163	0.1	2	6	196	0.1	3	4	228	0.2	5	8	
0 0 1	0.0	6 4	4	132	0.4	10	10	164	0.1	2	6	197	0.1	3	4	229	0.2	5	8	
22 0.4 4 4 134 0.5 8 10 166 0.1 2 6 33 0.4 4 4 135 0.3 8 10 166 0.1 2 6 34 0.5 8 10 136 0.5 8 10 166 0.1 2 6 35 1 12 12 137 0.1 2 4 169 0.1 2 6 36 0.6 6 6 138 0.1 2 4 172 0.1 2 6 37 0.6 6 6 140 0.1 2 4 172 0.1 2 6 39 1.4 14 144 0.2 5 7 173 0.1 2 6 204 0.2 3 5 3 237 0.3 238 0.3 239 0.3 4 206 0.3 5 11 206 0.3 5 11 206 0.3 5<	01 0.0	6 4	4	133	0.5	10		165	0.1	2	6	198	0.1	3	4	230	0.5	7	12	
33 0.4 4 4 135 0.3 8 10 167 0.1 2 6 200 1.1 100 11 222 0.5 8 136 0.5 8 100 136 0.5 8 100 166 0.1 2 6 200 1.1 100 11 222 0.5 8 136 0.6 6 6 138 0.1 2 4 170 0.1 2 66 171 0.1 2 66 200 0.1 2 4 233 0.3 5 11 30 3 5 11 206 0.1 2 4 236 0.1 3 237 0.3 6 236 0.1 3 237 0.3 6 238 0.3 6 238 0.3 6 238 0.3 6 238 0.3 6 238 0.3 6 238 0.3 6 238 0.3 6 238 0.3 6 238 0.3 6	0.4	4 4	4		0.5	8		166	0.1		6	199	0.2		5	231	0.4	6	7	
D4 0.5 8 10 168 0.1 2 6 201 0.1 2 4 D5 1 12 12 137 0.1 2 4 169 0.1 2 6 201 0.1 2 4 203 0.1 2 4 233 0.3 5 D6 0.6 6 6 139 0.1 2 4 171 0.1 2 6 203 0.1 2 4 233 0.1 3 236 0.1 3 D9 1.4 144 144 0.1 2 4 171 0.1 2 6 203 0.1 2 4 233 0.3 5 234 0.1 3 237 0.3 6 203 0.1 2 4 203 0.1 2 4 236 0.1 3 237 0.3 6 239 0.3 4 240 0.2 3 205 0.3 5 11 206 137 10.3 <td< td=""><td>0.4</td><td>4 4</td><td>4</td><td>135</td><td></td><td>8</td><td></td><td></td><td></td><td></td><td></td><td>200</td><td></td><td></td><td>11</td><td>232</td><td>0.5</td><td>8</td><td>13</td></td<>	0.4	4 4	4	135		8						200			11	232	0.5	8	13	
D5 1 12 12 137 0.1 2 4 169 0.1 2 6 D6 0.6 6 6 6 138 0.1 2 4 170 0.1 2 6 D7 0.6 6 6 6 6 6 6 6 6 6 6 6 140 0.1 2 4 171 0.1 2 6 D8 0.6 6 6 6 140 0.1 2 4 172 0.1 2 6 D9 1.4 144 141 0.2 5 7 173 0.1 2 6 D10 0.5 8 12 143 0.4 9 10 175 0.3 5 11 206 0.3 5 11 D2 1 4 0.2 4 4 177 0.5 8 10 12 206 0.3 5 11 D3 0.6 13 149	0.	5 8	10	136	0.5	8	10	-								233	0.3	5	6	
06 0.6 6 6 6 138 0.1 2 4 170 0.1 2 6 203 0.1 2 4 170 0.6 7 0.1 2 6 7 171 0.1 2 6 7 7 173 0.1 2 6 7 7 173 0.1 2 6 7 173 0.1 2 6 7 173 0.1 2 6 173 0.1 2 6 173 0.1 2 6 133 0.6 10 12 133 0.1 14 143 0.2 6 11 176 0.3 5 8 100 12 103 104 104 105 11	05 1	12	12	137	0.1	2	4									234	0.1	3	6	
77 0.6 6 6 6 139 0.1 2 4 172 0.1 2 6 204 0.2 3 7 236 0.1 3 08 0.6 6 6 6 6 6 6 140 0.1 2 4 172 0.1 2 6 3 7 236 0.3 5 111 00 0.5 8 12 142 0.2 6 8 177 0.3 5 111 207 0.6 100 12 203 0.3 5 111 207 0.6 100 12 203 0.3 5 111 207 0.6 100 12 204 0.2 3 7 238 0.3 4 12 0.1 4 7 144 0.2 4 4 177 0.5 8 100 12 200 0.2 6 8 111 0.4 6 244 0.2 5 7 213 0.3 6 <th< td=""><td>0.0</td><td>6 6</td><td>6</td><td>138</td><td>0.1</td><td>2</td><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>235</td><td>0.1</td><td>3</td><td>6</td></th<>	0.0	6 6	6	138	0.1	2	4									235	0.1	3	6	
B8 0.6 6 6 6 6 140 0.1 2 4 112 0.1 2 6 205 0.3 5 111 237 0.3 6 99 1.4 144 14 142 0.2 5 7 173 0.1 2 6 117 0.3 4 7 205 0.3 5 111 206 0.3 5 111 206 0.3 5 111 206 0.3 5 111 206 0.3 5 111 206 0.3 5 111 206 0.3 5 111 206 0.3 5 111 206 0.3 5 111 114 1175 0.3 5 8 100 117 0.5 8 100 117 0.5 8 100 117 0.5 8 100 117 0.5 7 210 0.1 2 6 211 0.1 2 6 244 0.2 5 7 211 0.1 2 6<	0.0	6 6	6	139	0.1	2	4									236	0.1	3	9	
09 1.4 14 14 14 14 14 0.2 5 7 1/3 0.1 2 6 8 12 10 0.5 8 12 142 0.2 6 8 175 0.3 5 11 206 0.3 5 11 209 0.6 10 12 201 144 0.2 4 4 175 0.3 5 8 10 12 201 0.1 22 6 10 12 209 0.2 6 10 12 209 0.2 6 11 210 0.1 2 6 241 0.4 240 0.2 3 241 0.4 240 0.2 3 241 0.4 240 0.5 11 176 0.3 5 8 100 1.4 147 0.3 6 117 0.5 8 100 1.1 2 6 8 117 0.5 118 0.2 5 7 213 0.3 6 8 214 0.1	0.0 80	6 6	6	140	0.1	2	4								-			6	10	
10 0.5 8 12 142 0.2 6 8 174 0.3 4 7 11 0.5 8 12 143 0.4 9 10 175 0.3 5 11 12 0.1 4 7 144 0.2 4 4 176 0.3 5 8 10 12 207 0.6 10 12 240 0.2 3 4 14 0.4 0.3 5 8 10 12 208 0.6 10 12 240 0.2 3 4 240 0.4 6 242 0.4 6 242 0.4 6 242 0.4 6 242 0.4 6 242 0.4 6 242 0.4 6 243 0.5 7 214 0.1 2 6 8 116 0.2 6 8 116 0.1 2 6 8 211 0.1 2 6 116 244 0.2 7 244 0.2	09 1.4	4 14	14	141	0.2	5	7									238	0.3	6	10	
11 0.5 8 12 143 0.4 9 10 175 0.3 5 11 12 0.1 4 7 144 0.2 4 4 176 0.3 5 8 10 12 208 0.6 10 12 241 0.4 6 13 0.6 10 6 144 0.2 4 4 177 0.5 8 10 12 209 0.2 6 11 241 0.4 6 14 1 10 10 146 0.4 6 10 178 0.5 5 8 10 110 210 0.1 2 6 211 0.1 2 6 211 0.1 2 6 212 0.2 5 7 244 0.2 5 8 10 18 0.2 6 8 18 0.1 2 6 8 114 0.1 2 6 8 18 0.1 2 6 8 18 18	10 0.	5 8	12	142	0.2	6	8			-						239	0.3	4	4	
12 0.1 4 7 144 0.2 4 4 176 0.3 5 8 10 209 0.2 6 11 241 0.4 6 13 0.6 10 6 145 0.3 5 3 177 0.5 8 10 209 0.2 6 11 242 0.4 2 14 1 10 10 146 0.4 6 10 177 0.5 8 10 210 0.1 2 6 11 241 0.4 242 0.4 2 15 0.5 10 144 0.4 6 10 1179 0.2 5 8 211 0.1 2 6 213 0.3 6 8 245 0.5 8 245 0.5 8 246 0.6 10 247 0.2 7 248 0.2 7 248 0.2 7 249 0.6 10 247 0.2 7 249 0.6 10 248	11 0.	5 8	12	143	0.4	9	10									240		3	3	
13 0.6 10 6 145 0.3 5 3 177 0.5 8 10 14 1 10 10 14 1 10 10 14 1 10 10 14 1 10 10 144 6 10 177 0.5 5 8 10 210 0.1 2 6 243 0.5 7 15 0.5 10 144 6 12 178 0.5 5 8 210 0.1 2 6 211 0.1 2 6 213 0.3 6 8 244 0.5 11 14 14 0.2 5 8 180 0.1 2 6 8 214 0.1 4 6 245 0.5 8 246 0.6 100 247 0.2 7 248 0.2 7 249 0.6 100 247 0.2 7 249 0.6 100 247 0.2 7 249 0.6 100 <td< td=""><td>12 0.</td><td>1 4</td><td>7</td><td>144</td><td>0.2</td><td>4</td><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>241</td><td>0.4</td><td>6</td><td>10</td></td<>	12 0.	1 4	7	144	0.2	4	4									241	0.4	6	10	
14 1 10 10 146 0.4 6 10 15 0.5 10 14 147 0.3 6 12 16 0.2 4 7 148 0.2 3 4 17 0.3 6 13 149 0.5 11 144 18 0.2 4 7 150 0.1 5 8 19 0.2 4 7 151 0.2 6 8 182 0.2 6 8 214 0.1 4 6 10 19 0.2 4 7 150 0.1 5 8 182 0.2 6 8 214 0.1 4 6 10 247 0.2 7 20 0.2 4 7 153 0.1 1 3 185 0.6 10 9 216 0.5 10 11 248 0.2 7 21 0.3 5 7 153 0.1 1 3 <td>13 0.0</td> <td>6 10</td> <td>6</td> <td>145</td> <td>0.3</td> <td>5</td> <td>3</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>242</td> <td>0.4</td> <td>2</td> <td>4</td>	13 0.0	6 10	6	145	0.3	5	3									242	0.4	2	4	
15 0.5 10 14 147 0.3 6 12 179 0.2 5 8 212 0.2 5 7 244 0.2 5 8 16 0.2 4 7 148 0.2 3 4 180 0.1 2 5 8 212 0.2 5 7 244 0.2 5 8 17 0.3 6 13 149 0.5 11 144 144 144 0.2 6 8 214 0.1 4 6 246 0.6 10 18 0.2 4 7 150 0.1 5 8 182 0.2 6 8 214 0.1 4 6 246 0.6 10 247 0.2 7 19 0.2 4 7 153 0.1 1 3 185 0.6 10 9 217 0.3 7 124 0.4 240 0.6 10 217 0.3 7 124 <t< td=""><td>14 1</td><td>10</td><td>10</td><td>146</td><td>0.4</td><td>6</td><td>10</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>243</td><td>0.5</td><td>7</td><td>12</td></t<>	14 1	10	10	146	0.4	6	10									243	0.5	7	12	
16 0.2 4 7 148 0.2 3 4 160 0.1 2 5 17 0.3 6 13 149 0.5 11 14 18 0.2 4 7 148 0.2 3 4 181 0.2 6 8 19 0.2 4 7 151 0.2 6 8 213 0.3 6 8 20 0.2 4 7 152 0.3 5 7 153 0.1 1 3 122 1.3 16 20 154 0.6 10 8 186 0.6 10 9 213 0.3 6 8 221 1.3 16 20 155 0.4 6 8 100 9 186 0.6 10 9 218 0.2 5 7 213 1.3 16 20 155 0.4 6 8 100 9 219 0.2 5 7 250	15 0.	5 10	14	147	0.3	6	12								7			5	9	
17 0.3 6 13 149 0.5 11 14 18 0.2 4 7 150 0.1 5 8 19 0.2 4 7 151 0.2 6 8 20 0.2 4 7 151 0.2 6 8 10 0.2 4 7 151 0.2 6 8 120 0.2 4 7 153 0.1 1 3 121 0.3 5 7 153 0.1 1 3 122 1.3 16 20 155 0.4 6 8 123 1.4 0.6 10 8 0.6 10 9 184 0.6 10 9 185 0.6 10 9 218 0.2 5 7 185 0.4 6 8 10 13 4 6 219 0.2 5 7 224 1 12 6 188 </td <td>16 0.2</td> <td>2 4</td> <td>7</td> <td>148</td> <td>0.2</td> <td>3</td> <td>4</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>8</td> <td></td> <td></td> <td>-</td> <td>12</td>	16 0.2	2 4	7	148	0.2	3	4								8			-	12	
18 0.2 4 7 150 0.1 5 8 162 0.2 6 6 6 10 13 215 0.6 10 13 215 0.6 10 13 215 0.6 10 13 216 0.5 10 11 248 0.2 7 20 0.2 4 7 153 0.1 1 3 183 0.6 10 9 216 0.6 10 11 21 0.3 5 7 153 0.1 1 3 185 0.6 10 9 217 0.3 7 12 249 0.6 10 22 1.3 16 20 154 0.6 10 8 0.6 10 9 137 0.2 4 4 187 0.2 4 4 219 0.2 5 7 250 0.1 3 24 1 10 10 155 0.4 6 8 188 0.2 4 4 <th< td=""><td>17 0.3</td><td>3 6</td><td>13</td><td>149</td><td>0.5</td><td>11</td><td>14</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>246</td><td></td><td>10</td><td>12</td></th<>	17 0.3	3 6	13	149	0.5	11	14									246		10	12	
19 0.2 4 7 151 0.2 6 8 183 0.0 10 9 20 0.2 4 7 151 0.2 6 8 184 0.6 10 9 21 0.3 5 7 153 0.1 1 3 185 0.6 10 9 216 0.5 10 11 249 0.6 10 22 1.3 16 20 154 0.6 10 8 187 0.2 4 4 218 0.2 5 7 250 0.1 3 24 1 10 10 155 0.4 6 8 10 188 0.2 4 4 210 0.1 2 6 25 1 12 166 0.5 8 10 188 0.2 4 4 220 0.1 2 6 26 1 12 20 1 2 6 190 0.1 3 4 223	18 0.2	2 4	7	150	0.1	5	8									247	0.2	7	7	
20 0.2 4 7 152 0.3 5 7 164 0.0 10 9 21 0.3 5 7 153 0.1 1 3 22 1.3 16 20 154 0.6 10 9 217 0.3 7 12 249 0.6 10 22 1.3 16 20 155 0.4 6 8 187 0.2 4 4 219 0.2 5 7 250 0.1 3 24 1 10 10 156 0.5 8 10 188 0.2 4 4 219 0.2 5 7 251 0.1 3 25 1 12 166 0.5 8 10 188 0.2 4 4 221 0.1 2 6 253 0.5 10 26 1 157 0.2 4 7 189 0.2 4 4 221 0.1 2 6 253	19 0.2	2 4	7	151	0.2	6	8									248	0.2	7	7	
21 0.3 5 7 153 0.1 1 3 22 1.3 16 20 154 0.6 10 8 186 0.6 10 9 218 0.2 5 7 25 7 25 0.4 6 8 10 187 0.2 4 4 219 0.2 5 7 25 7 25 0.4 6 8 10 188 0.2 4 4 220 0.1 2 6 25 0.1 2 6 10 9 218 0.2 5 7 250 0.1 3 24 1 10 10 155 0.4 6 8 188 0.2 4 4 220 0.1 2 6 253 0.5 10 253 0.5 10 255 0.5 10 255 0.5 10 255 0.5 10 255 0.5 10 255 0.5 10 255 0.5 10 255 0.5 1	20 0.2	2 4	7	152	0.3	5	7					217				249	0.6	10	13	
22 1.3 16 20 154 0.6 10 8 23 1.3 16 20 155 0.4 6 8 24 1 10 10 10 156 0.2 4 4 219 0.2 5 7 24 1 10 10 156 0.5 8 10 188 0.2 4 4 25 1 12 16 0.2 3 3 190 0.1 3 4 219 0.2 5 7 26 1 12 20 158 0.2 3 3 190 0.1 3 4 190 0.1 3 4 223 0.4 6 11 255 0.5 10 255 0.5 0.1 2 6 191 0.1 3 4 210 12 6 11 255 0.5 10 191 0.1 3 4 223 0.4 6 11 255	21 0.3	3 5	7	153	0.1	1	3									250	0.1	3	4	
23 1.3 16 20 155 0.4 6 8 24 1 10 10 10 156 0.5 8 10 188 0.2 4 4 220 0.1 2 6 25 1 12 16 157 0.2 4 7 189 0.2 4 4 221 0.1 2 6 253 0.5 10 26 1 12 20 158 0.2 3 3 190 0.1 3 4 223 0.4 6 11 255 0.5 10 27 0.2 4 7 159 0.1 2 6 11 255 0.5 10 27 0.2 4 7 190 0.1 3 4 223 0.4 6 11 255 0.5 10 255 0.5 10 191 0.1 3 4 6 11 256 0.5 10 256 0.5 10 <td< td=""><td>22 1.3</td><td>3 16</td><td>20</td><td>154</td><td>0.6</td><td>10</td><td>8</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>251</td><td>0.1</td><td>3</td><td>4</td></td<>	22 1.3	3 16	20	154	0.6	10	8									251	0.1	3	4	
24 1 10 10 156 0.5 8 10 100 110 110 12 160 0.1 110 110 12 160 0.1 110 110 12 160 0.1 100 110 110 120 160 0.1 189 0.2 4 4 189 0.2 4 4 190 0.1 3 4 121 0.1 2 6 100 253 0.5 100 26 1 12 20 158 0.2 3 3 190 0.1 3 4 223 0.4 6 11 255 0.5 10 27 0.2 4 0.1 3 4 4 223 0.4 6 11 256 0.5 10	23 1.3	3 16	20	155	0.4	6										252	0.4	6	6	
25 1 12 16 157 0.2 4 7 100 0.1 4 4 26 1 12 20 158 0.2 3 3 190 0.1 3 4 222 0.1 2 6 255 0.5 10 27 0.0 159 0.1 2 6 191 0.1 3 4 223 0.4 6 11 256 0.5 10	24 1	10	10	156		8	10									253	0.5	10	12	
26 1 12 20 158 0.2 3 3 190 0.1 3 4 27 0.0 1 0.1 2 6 191 0.1 3 4 223 0.4 6 11 255 0.5 10	25 1	12	16	157	0.2	4	7									254	0.5	10	12	
	26 1	12	20	158	0.2	3	3											10	10	
	27 0.2	2 4	8									224	0.3	5	9	256	0.5	10	10	
28 0.3 5 5 160 0.1 2 6 192 0.1 3 4 225 0.2 5 9 257 0.1 4	28 0.3	3 5	5	160	0.1	2	6									257	0.1	4	5	
193 0.1 3 4								193	0.1	3	4			-	-					





GENERAL NOTES

PLAN AND THEIR POSITIONS ARE DIAGRAMMATIC ONLY AND MAY REQUIRE ADDITIONAL SURVEY WHERE CRITICAL TO DESIGN. CONTOURS ARE INDICATIVE AT GROUND FORM ONLY. SPOT LEVELS ONLY SHOULD BE USED FOR CALCULATIONS OF QUANTITIES WITH CAUTION.

ONLY TREES GREATER THAN 3 METRES IN HEIGHT ARE SHOWN ON THIS

LEVELS ARE ON AUSTRALIAN HEIGHT DATUM (AHD).

ALL SETOUT LEVELS MUST BE REFERRED TO THE BENCH MARK SHOWN ON THIS PLAN.

BOUNDARY NOTES

A BASIC BOUNDARY SURVEY HAS BEEN DONE SUITABLE FOR DA LODGEMENT PURPOSES.

BOUNDARIES HAVE NOT BEEN MARKED.

SURVEY INFORMATION NOTES

THE ORIGIN OF COORDINATES COMES FROM SSM36614 E334531.011 N6256208.068 CLASS B POSITIONAL UNCERTAINTY (PU) 0.02 (MGA2020) ADOPTED FROM SCIMS DATED 18/10/2023.

THE ORIGIN OF LEVELS COMES FROM SSM36614 RL85.989 CLASS LB POSITIONAL UNCERTAINTY (PU) 0.03 ADOPTED FROM SCIMS DATED 18/10/2023.

THE ORIENTATION OF THIS PLAN IS MGA NORTH WHICH HAS BEEN DETERMINED BY GNSS AND IS BASED ON CORSNET DATA PROVIDED BY LRS NSW.

CERTIFICATE OF TITLE NOTES

THE FOLLOWING INFORMATION RELATES TO THE RESPECTIVE CERTIFICATE OF TITLE OF EACH LOTS:

> - LOT 4 OF SECTION 35 IN DP758790 (CT EDITION 2 DATED 01/09/2011 SEARCH DATE 15/08/2023) - AFFECTED BY: - EASEMENT FOR ELECTRICITY AND OTHER PURPOSES AFFECTING THE SITE DESIGNATED (A) IN PLAN VIDE AG432227

COVENANTS AND RESTRICTIONS NOTED ON THE TITLE HAVE NOT BEEN INVESTIGATED. THESE SHOULD BE INVESTIGATED PRIOR TO DESIGN TO ENSURE ANY FUTURE DEVELOPMENT COMPLIES.

SERVICES NOTES

ONLY THOSE SERVICES VISIBLE AT THE TIME OF SURVEY HAVE BEEN LOCATED AND ARE QUALITY LEVEL A AS DEFINED BY AS 5488.1:2019.

UNDERGROUND SERVICES QUALITY LEVEL B HAVE BEEN LOCATED FOR BY ONPOINT LOCATING ON 21/05/24 TO 24/05/24 USING EQUIPMENT AS NOTED ON REPORT PROVIDED DATED 24/05/24. THE SERVICE POSITION IS SHOWN ON THE PLAN AND THEIR RESPECTIVE DEPTH ARE AS STATED IN THE TABLE.

UNDERGROUND SERVICES QUALITY LEVEL D HAVE BEEN PLOTTED FROM 'DIAL-BEFORE'YOU-DIG' PLANS, ARE QUALITY LEVEL D AS DEFINED BY AS 5488.1:2019 AND ARE ONLY CURRENT AT THE DATE OF SEARCH.

ALL RELEVANT AUTHORITIES MUST BE CONTACTED TO DETERMINE THE FULL EXTENT OF SERVICES PRIOR TO ANY PLANNING OR WORKS NEAR THE SITE.

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DETAIL AND LEVEL SURVEY OF LOT 66 IN DP1049613, LOTS 4 & 5 OF SEC35 IN DP758790, LOTS 1 & 2 IN DP174370, LOT 1 IN DP123406, LOTS 3 & 4 IN DP571310, LOT 11 IN DP837836, LOT 1 IN DP316130 & LOT 1 IN DP316706 CAMMERAY PUBLIC SCHOOL 68 PALMER STREET CAMMERAY

CLIENT: SCHOOL INFRASTRUCTURE NSW

FILE: 9009 - Detail & Level - Rev B -68 Palmer Street Cammeray

LGA: NORTH SYDNEY

REF: 9009 CONTOURS: N/A ISSUE: B DATUM: N/A SURVEY DATE: 21/05/2024 AZIMUTH: N/A SCALE: N/A SHEET 6 OF 7 SHEETS





	SER\	/ICES-ELECTRICTY	
No	Surface RL	Approx Depth	Service RL
1	85.21	0.80	84.41
2	85.16	0.90	84.26
3	85.14	0.80	84.34
4	85.15	0.80	84.35
5	85.24	1.00	84.24
6	85.39	1.00	84.39
7	85.53	0.60	84.93
8	85.06	0.80	84.26
9	84.91	0.80	84.11
10	84.83		
11	83.92	0.60	83.32
12	83.03	0.50	82.53
13	82.36	0.50	81.86
14	82.02	0.60	81.42
15	81.16	0.60	
			80.56
16	80.24	0.30	79.94
17	78.02	0.30	77.72
18	76.11	0.60	75.51
19	75.94	0.50	75.44
20	75.89		
21	75.72	1.00	74.72
22	75.55	0.90	74.65
23	75.14	0.45	74.69
24	74.83		
25	73.68		
26	73.96		
27	75.68		
28	75.73	0.60	75.13
29	76.00	0.60	75.40
30	76.17	0.55	75.62
31	83.93		
32	83.88	0.20	83.68
33	83.42	0.20	83.22
34	83.40	0.20	83.20
35	82.86	0.30	82.56
36	82.64	0.30	82.34
37	82.04	0.30	82.11
38	82.20	0.60	81.60
39	86.10	1.10	85.00
		1.10	00.00
40	86.12	0.70	0E 40
41	86.12	0.70	85.42
42	86.05	0.50	85.55
43	85.89	0.50	85.39
14	85.74	0.60	85.14
45	85.37	0.50	84.87
16	85.17	0.70	84.47
17	85.13		
48	85.11		
19	86.16		
50	86.34		
51	86.10	1.10	85.00
52	85.92		
53	84.97	0.50	84.47
54	85.11	0.50	84.61
55	85.20	0.50	84.70
56	85.45	0.70	84.75
57	85.67	0.80	84.87
58	85.83	1.00	84.83
59	86.02	1.00	85.02
50 50	86.20	0.90	85.30
50 51	86.42	0.90	85.50
52	86.58	1.00	85.52
53 34	86.67	0.90	85.77
54	86.63	1.00	85.63
55 20	86.51	0.90	85.61
56	86.35	1.00	85.35
57	86.64	0.70	85.94
71	81.19	0.40	80.79
72	80.21	0.30	79.91
73	79.35	0.30	79.05

No		S-COMMUNICATION	
No	Surface RL	Approx Depth	Service RL
68	85.24	1.00	84.24
69	85.06	0.80	84.26
70	82.35	0.50	81.85
75	76.16	0.45	75.71
76	76.00	0.40	75.60
77	75.68		
78	74.77		
79	74.83		
80	75.14	0.45	74.69
81	75.56	0.70	74.86
82	75.72	0.70	75.02
83	75.90		
84	76.11	0.70	75.41
85	85.42	0.20	85.22
86	85.16		
87	84.73	0.20	84.53
88	84.68		
89	84.66	0.20	84.46
90	84.55	0.20	84.35
91	85.33	0.40	84.93
92	85.59	0.60	84.99
93	85.64	0.60	85.04
94	85.62	0.35	85.27
95	84.98	0.45	84.53
96	84.96	0.50	84.46
97	85.11	0.60	84.51
98	85.70	0.90	84.80
99	85.85	0.50	85.35
100	86.09	0.50	85.59
101	86.12	0.50	85.62
102	86.35	0.50	85.85
103	86.36		
104	86.56		
105	86.53	0.60	85.93
106	86.52	0.00	00130
107	86.55	0.70	85.85
107	86.39	0.70	85.69
08	86.17	0.70	85.09
110	86.00	0.50	85.50
111	85.83	0.35	85.48
112	85.66	0.40	85.26
113	85.42	0.35	85.07
114	85.17	0.40	84.77
115	85.06	0.40	84.66
116	84.90	0.40	84.50
17	75.90		

SERVICES-GAS					
No	Surface RL	Approx Depth	Service RL		
119	86.44	0.55	85.89		
120	86.25	0.50	85.75		
121	85.69	0.50	85.19		
122	85.29	0.50	84.79		
123	85.31	0.70	84.61		
124	85.11	0.65	84.46		
125	84.67	0.25	84.42		
126	84.30	0.20	84.10		
127	83.82	0.20	83.62		
128	84.00				
129	81.07	0.35	80.72		
130	80.75	0.15	80.60		
131	80.45				
132	80.13	0.30	79.83		
133	79.72	0.60	79.12		
134	79.52	0.60	78.92		
135	79.46	0.60	78.86		
136	79.36	0.60	78.76		
137	79.25	0.60	78.65		
138	79.25				
139	76.02				
140	76.10	0.30	75.80		
141	78.37	2.00	76.37		
142	79.55	0.55	79.00		

No 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186	Surface RL 85.73 85.59 85.34 85.37 85.02 84.89 86.05 86.29 86.45 86.49 86.45 86.45 86.45 86.53 86.45 84.15 85.12 85.11 84.99 84.99 84.95 85.00 85.04 84.31 84.31 84.31 84.31 84.31 84.31 84.46 84.93 84.07 84.67 85.15 85.15 85.46 86.13 86.43 86.41 85.99 86.02 85.79	Approx Depth 1.20 1.20 0.90 1.00 0.85 0.95 1.00 1.20 1.00 0.95 0.95 1.00 0.10 0.10 0.40 0.30 0.30 0.30 0.30 0.30 0.55 0.40 0.10 1.30 1.20 1.20 1.00	Service RL 84.53 84.39 84.44 84.37 84.17 83.94 85.05 85.09 85.45 85.54 85.50 85.53 85.51 85.51 85.01 84.92 83.91 83.91 83.91 83.91 83.97 83.95 84.16 84.23 83.62 84.12 84.75 85.06 86.03 85.13
144 145 146 147 148 147 148 147 148 147 148 147 148 147 148 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 1	85.59 85.34 85.37 85.02 84.89 86.05 86.29 86.45 86.53 86.45 86.53 86.45 86.45 86.53 86.53 86.53 86.45 86.53 86.53 86.53 86.53 86.53 86.53 86.53 86.53 86.45 84.5 84.93 84.31 84.27 84.31 84.27 84.46 84.93 84.07 84.67 85.15 85.46 86.13 86.41 86.43 86.41 86.17 85.99 86.02 85.79	$ \begin{array}{r} 1.20 \\ 0.90 \\ 1.00 \\ 0.85 \\ 0.95 \\ 1.00 \\ 1.20 \\ 1.00 \\ 0.95 \\ 0.95 \\ 1.00 \\ 0.95 \\ 0.95 \\ 1.00 \\ 0.95 \\ 0.95 \\ 0.95 \\ 0.95 \\ 0.95 \\ 0.95 \\ 0.95 \\ 0.95 \\ 0.95 \\ 0.95 \\ 0.95 \\ 0.95 \\ 0.00 \\ 0.07 \\ 0.07 \\ 0.07 \\ 0.07 \\ 0.07 \\ 0.07 \\ 0.07 \\ 0.07 \\ 0.07 \\ 0.07 \\ 0.00 \\ 0.07 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.30 \\ 0.30 \\ 0.30 \\ 0.30 \\ 0.30 \\ 0.55 \\ 0.40 \\ 0.40 \\ 0.10 \\ 1.30 \\ 1.20 \\ 1.20 \\ 1.20 \\ 1.20 \\ 1.20 \\ 1.20 \\ 1$	84.39 84.44 84.37 84.17 83.94 85.05 85.09 85.45 85.54 85.50 85.53 85.53 85.51 85.53 85.53 85.01 84.92 83.91 83.91 83.91 83.91 83.95 84.16 84.23 83.62 84.12 84.75 85.06 86.03
145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 177 178 177 178 177 178 179 180 181 182 183 184	85.34 85.02 84.89 86.05 86.29 86.45 86.45 86.45 86.53 86.45 86.53 86.45 86.45 86.45 86.45 86.45 86.45 86.45 86.45 86.45 86.45 86.45 86.45 86.45 86.45 86.45 84.15 85.00 85.01 85.04 84.31 84.31 84.31 84.27 84.25 84.46 84.93 84.07 85.15 85.46 86.13 86.43 86.41 86.43 86.41 86.02 85.79	$\begin{array}{c} 0.90 \\ 1.00 \\ 0.85 \\ 0.95 \\ 1.00 \\ 1.20 \\ 1.00 \\ 0.95 \\ 0.95 \\ 0.95 \\ 1.00 \\ \end{array}$	84.44 84.37 84.17 83.94 85.05 85.09 85.45 85.54 85.50 85.53 85.01 84.92 83.91 83.91 83.91 83.97 83.95 84.16 84.23 83.62 84.12 84.75 85.06 86.03
146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184	85.37 85.02 84.89 86.05 86.29 86.45 86.45 86.45 86.53 86.45 86.53 86.45 86.45 86.53 86.53 86.53 86.53 86.53 86.53 86.45 84.15 85.12 85.11 84.99 84.95 85.00 85.04 84.31 84.31 84.31 84.27 84.25 84.46 84.93 84.07 85.15 85.46 86.13 86.43 86.43 86.41 86.17 85.99 86.02 85.79	$ \begin{array}{r} 1.00 \\ 0.85 \\ 0.95 \\ 1.00 \\ 1.20 \\ 1.00 \\ 0.95 \\ 0.95 \\ 1.00 \\ 0.95 \\ 1.00 \\ 0.95 \\ 0.95 \\ 1.00 \\ 0.07 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.10 \\ 1.30 \\ 1.20 \\ 1.20 \\ 1.20 \\ 1.20 \\ 1.20 \\ 1.00 \\ 0.95 \\ 0.95 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.10 \\ 1.20 \\ $	84.37 84.17 83.94 85.05 85.09 85.45 85.54 85.50 85.53 85.53 85.53 85.01 84.92 83.91 83.91 83.91 83.91 83.95 84.16 84.23 83.62 84.12 84.75 85.06 86.03
146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184	85.37 85.02 84.89 86.05 86.29 86.45 86.45 86.45 86.53 86.45 86.53 86.45 86.45 86.53 86.53 86.53 86.53 86.53 86.53 86.45 84.15 85.12 85.11 84.99 84.95 85.00 85.04 84.31 84.31 84.31 84.27 84.25 84.46 84.93 84.07 85.15 85.46 86.13 86.43 86.43 86.41 86.17 85.99 86.02 85.79	$ \begin{array}{r} 1.00 \\ 0.85 \\ 0.95 \\ 1.00 \\ 1.20 \\ 1.00 \\ 0.95 \\ 0.95 \\ 1.00 \\ 0.95 \\ 1.00 \\ 0.95 \\ 0.95 \\ 1.00 \\ 0.07 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.10 \\ 1.30 \\ 1.20 \\ 1.20 \\ 1.20 \\ 1.20 \\ 1.20 \\ 1.00 \\ 0.95 \\ 0.95 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.10 \\ 1.20 \\ $	84.37 84.17 83.94 85.05 85.09 85.45 85.54 85.50 85.53 85.53 85.53 85.01 84.92 83.91 83.91 83.91 83.91 83.95 84.16 84.23 83.62 84.12 84.75 85.06 86.03
147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 177 178 177 178 179 180 181 182 183 184	85.02 84.89 86.05 86.29 86.45 86.45 86.53 86.45 86.45 86.53 86.45 86.45 86.45 86.45 86.53 86.45 86.45 86.45 84.15 85.12 85.11 84.99 84.95 85.00 85.01 84.93 84.31 84.27 84.46 84.93 84.07 84.67 85.15 85.46 86.13 86.43 86.43 86.41 86.17 85.99 86.02 85.79	0.85 0.95 1.00 1.20 1.00 0.95 0.95 1.00 0.10 0.07 0.10 0.07 0.40 0.40 0.30 0.30 0.30 0.30 0.30 0.30	84.17 83.94 85.05 85.09 85.45 85.54 85.50 85.53
148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184	84.89 86.05 86.29 86.45 86.49 86.45 86.53 86.45 84.15 85.12 85.11 84.99 84.95 85.00 85.04 84.31 84.31 84.31 84.31 84.31 84.31 84.31 84.5 85.00 85.04 84.67 85.15 84.46 84.93 84.67 85.15 85.46 85.15 85.46 86.13 86.41 86.17 85.99 86.02 85.79	0.95 1.00 1.20 1.00 0.95 0.95 1.00 0.10 0.10 0.07 0.40 0.40 0.30 0.30 0.30 0.30 0.30 0.30 0.55 0.40 0.40 0.45 0.55 0.40 0.10 1.20	83.94 85.05 85.09 85.45 85.54 85.50 85.53
149 150 151 152 153 154 155 156 157 158 157 158 157 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184	86.05 86.29 86.45 86.49 86.45 86.53 86.53 86.53 86.45 84.15 85.12 85.11 84.99 84.95 85.00 85.04 84.31 84.31 84.31 84.31 84.31 84.27 84.25 84.46 84.93 84.07 84.67 85.15 85.46 85.15 85.46 86.13 86.43 86.41 86.17 85.99 86.02 85.79	1.00 1.20 1.00 0.95 0.95 1.00 0.10 0.10 0.07 0.40 0.40 0.30 0.30 0.30 0.30 0.30 0.30 0.55 0.40 0.40 0.45 0.55 0.40 0.10 1.20	85.05 85.09 85.45 85.54 85.50 85.53
150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184	86.29 86.45 86.45 86.45 86.45 86.45 86.45 86.45 86.45 86.45 86.45 86.45 86.45 86.45 84.15 85.12 85.11 84.99 84.95 85.00 85.04 84.31 84.31 84.31 84.27 84.25 84.46 84.93 84.67 85.15 85.46 86.13 86.43 86.43 86.41 86.17 85.99 86.02 85.79	1.20 1.00 0.95 0.95 1.00 0.10 0.10 0.07 0.40 0.40 0.30 0.30 0.30 0.30 0.30 0.30 0.55 0.40 0.45 0.55 0.40 0.40 0.10 1.20	85.09 85.45 85.54 85.50 85.53 85.01 84.92 83.91 83.91 83.97 83.95 84.16 84.23 83.62 84.12 84.75 85.06 86.03
151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184	86.45 86.49 86.45 86.53 86.45 84.15 85.12 85.11 84.99 84.95 85.00 85.04 84.31 84.31 84.31 84.31 84.27 84.25 84.46 84.93 84.07 84.67 85.15 85.46 85.15 85.46 86.13 86.41 86.17 85.99 86.02 85.79	1.00 0.95 0.95 1.00 0.10 0.10 0.07 0.40 0.30 0.30 0.30 0.30 0.30 0.30 0.30	85.45 85.54 85.50 85.53 85.01 84.92 83.91 83.91 83.91 83.97 83.95 84.16 84.23 83.62 84.12 84.75 85.06 86.03
151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184	86.45 86.49 86.45 86.53 86.45 84.15 85.12 85.11 84.99 84.95 85.00 85.04 84.31 84.31 84.31 84.31 84.27 84.25 84.46 84.93 84.07 84.67 85.15 85.46 85.15 85.46 86.13 86.41 86.17 85.99 86.02 85.79	1.00 0.95 0.95 1.00 0.10 0.10 0.07 0.40 0.30 0.30 0.30 0.30 0.30 0.30 0.30	85.45 85.54 85.50 85.53 85.01 84.92 83.91 83.91 83.91 83.97 83.95 84.16 84.23 83.62 84.12 84.75 85.06 86.03
152 153 154 155 156 157 158 157 158 157 158 157 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184	86.49 86.45 86.53 86.45 84.15 85.12 85.11 84.99 84.95 85.00 85.04 84.31 84.31 84.31 84.31 84.27 84.25 84.46 84.93 84.07 84.67 85.15 85.46 85.15 85.46 86.13 86.43 86.41 86.17 85.99 86.02 85.79	0.95 0.95 1.00 0.10 0.10 0.07 0.40 0.40 0.30 0.30 0.30 0.30 0.30 0.30	85.54 85.50 85.53 85.01 84.92 83.91 83.91 83.91 83.97 83.95 84.16 84.23 83.62 84.12 84.75 85.06 86.03
153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184	86.45 86.53 86.45 84.15 85.12 85.12 85.11 84.99 84.95 85.00 85.04 84.31 84.31 84.31 84.31 84.31 84.67 84.67 85.15 85.46 86.13 86.43 86.41 86.77 85.99 86.02 85.79	0.95 1.00 0.10 0.07 0.40 0.40 0.30 0.30 0.30 0.30 0.30 0.70 0.45 0.55 0.40 0.40 0.45 0.55 0.40 0.10 1.20	85.50 85.53 85.01 84.92 83.91 83.91 83.97 83.95 84.16 84.23 83.62 84.12 84.75 85.06 86.03
154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184	86.53 86.45 84.15 85.12 85.11 84.99 84.95 85.00 85.04 84.31 84.31 84.31 84.27 84.25 84.67 85.15 85.46 86.13 86.43 86.43 86.41 86.79	1.00 0.10 0.07 0.40 0.40 0.30 0.30 0.30 0.30 0.70 0.45 0.55 0.40 0.40 0.40 0.10 1.30 1.20	85.53 85.01 84.92 83.91 83.91 83.97 83.95 84.16 84.23 83.62 84.12 84.75 85.06 86.03
155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184	86.45 84.15 85.12 85.11 84.99 84.95 85.00 85.04 84.31 84.31 84.31 84.31 84.31 84.31 84.31 84.31 84.31 84.31 84.31 84.67 85.15 85.46 86.13 86.43 86.41 86.23 86.42 85.79	0.10 0.07 0.40 0.40 0.30 0.30 0.30 0.30 0.70 0.45 0.55 0.40 0.40 0.40 0.10 1.30	85.01 84.92 83.91 83.91 83.97 83.95 84.16 84.23 83.62 84.12 84.75 85.06 86.03
156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184	84.15 85.12 85.11 84.99 84.95 85.00 85.04 84.31 84.31 84.31 84.27 84.25 84.46 84.93 84.07 84.67 85.15 85.46 85.15 85.46 86.13 86.41 86.17 85.99 86.02 85.79	0.07 0.40 0.40 0.30 0.30 0.30 0.70 0.45 0.55 0.40 0.40 0.10 1.30 1.20	84.92 83.91 83.91 83.97 83.95 84.16 84.23 83.62 84.12 84.75 85.06 86.03
157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184	85.12 85.11 84.99 84.95 85.00 85.04 84.31 84.31 84.31 84.27 84.25 84.46 84.93 84.07 84.67 85.15 85.46 85.15 85.46 86.13 86.43 86.41 86.17 85.99 86.02 85.79	0.07 0.40 0.40 0.30 0.30 0.30 0.70 0.45 0.55 0.40 0.40 0.10 1.30 1.20	84.92 83.91 83.91 83.97 83.95 84.16 84.23 83.62 84.12 84.75 85.06 86.03
157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184	85.12 85.11 84.99 84.95 85.00 85.04 84.31 84.31 84.31 84.27 84.25 84.46 84.93 84.07 84.67 85.15 85.46 85.15 85.46 86.13 86.43 86.41 86.17 85.99 86.02 85.79	0.07 0.40 0.40 0.30 0.30 0.30 0.70 0.45 0.55 0.40 0.40 0.10 1.30 1.20	84.92 83.91 83.91 83.97 83.95 84.16 84.23 83.62 84.12 84.75 85.06 86.03
158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184	85.11 84.99 84.95 85.00 85.04 84.31 84.31 84.31 84.27 84.25 84.46 84.93 84.07 84.67 85.15 85.46 85.15 85.46 86.13 86.43 86.43 86.41 86.17 85.99 86.02 85.79	0.07 0.40 0.40 0.30 0.30 0.30 0.70 0.45 0.55 0.40 0.40 0.10 1.30 1.20	84.92 83.91 83.91 83.97 83.95 84.16 84.23 83.62 84.12 84.75 85.06 86.03
159 160 161 162 163 164 165 166 167 168 167 168 167 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184	84.99 84.95 85.00 85.04 84.31 84.31 84.27 84.25 84.46 84.93 84.07 84.67 85.15 85.46 86.13 86.43 86.43 86.41 86.17 85.99 86.02 85.79	0.07 0.40 0.40 0.30 0.30 0.30 0.70 0.45 0.55 0.40 0.40 0.10 1.30 1.20	84.92 83.91 83.91 83.97 83.95 84.16 84.23 83.62 84.12 84.75 85.06 86.03
160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184	84.95 85.00 85.04 84.31 84.31 84.27 84.25 84.46 84.93 84.07 84.67 85.15 85.46 86.13 86.43 86.41 86.17 85.99 86.02 85.79	0.40 0.40 0.30 0.30 0.30 0.70 0.45 0.55 0.40 0.40 0.10 1.30	83.91 83.91 83.97 83.95 84.16 84.23 83.62 84.12 84.75 85.06 86.03
161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185	85.00 85.04 84.31 84.31 84.27 84.25 84.46 84.93 84.07 84.67 85.15 85.46 86.13 86.43 86.41 86.17 85.99 86.02 85.79	0.40 0.30 0.30 0.30 0.70 0.45 0.55 0.40 0.40 0.10 1.30	83.91 83.97 83.95 84.16 84.23 83.62 84.12 84.75 85.06 86.03
162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185	85.04 84.31 84.31 84.27 84.25 84.46 84.93 84.07 84.67 85.15 85.46 86.13 86.43 86.43 86.41 86.17 85.99 86.02 85.79	0.40 0.30 0.30 0.30 0.70 0.45 0.55 0.40 0.40 0.10 1.30	83.91 83.97 83.95 84.16 84.23 83.62 84.12 84.75 85.06 86.03
162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185	85.04 84.31 84.31 84.27 84.25 84.46 84.93 84.07 84.67 85.15 85.46 86.13 86.43 86.43 86.41 86.17 85.99 86.02 85.79	0.40 0.30 0.30 0.30 0.70 0.45 0.55 0.40 0.40 0.10 1.30	83.91 83.97 83.95 84.16 84.23 83.62 84.12 84.75 85.06 86.03
163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185	84.31 84.31 84.27 84.25 84.46 84.93 84.07 84.67 85.15 85.46 86.13 86.43 86.43 86.41 86.17 85.99 86.02 85.79	0.40 0.30 0.30 0.30 0.70 0.45 0.55 0.40 0.40 0.10 1.30	83.91 83.97 83.95 84.16 84.23 83.62 84.12 84.75 85.06 86.03
164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185	84.31 84.27 84.25 84.46 84.93 84.07 84.67 85.15 85.46 86.13 86.43 86.43 86.41 86.17 85.99 86.02 85.79	0.40 0.30 0.30 0.30 0.70 0.45 0.55 0.40 0.40 0.10 1.30	83.91 83.97 83.95 84.16 84.23 83.62 84.12 84.75 85.06 86.03
165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185	84.27 84.25 84.46 84.93 84.07 84.67 85.15 85.46 86.13 86.43 86.43 86.41 86.17 85.99 86.02 85.79	0.30 0.30 0.30 0.70 0.45 0.55 0.40 0.40 0.10 1.30	83.97 83.95 84.16 84.23 83.62 84.12 84.75 85.06 86.03
166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184	84.25 84.46 84.93 84.07 84.67 85.15 85.46 86.13 86.43 86.43 86.41 86.17 85.99 86.02 85.79	0.30 0.30 0.70 0.45 0.55 0.40 0.40 0.10 1.30	83.95 84.16 84.23 83.62 84.12 84.75 85.06 86.03
167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184	84.46 84.93 84.07 85.15 85.46 86.13 86.43 86.43 86.41 86.17 85.99 86.02 85.79	0.30 0.70 0.45 0.55 0.40 0.40 0.40 0.10 1.30	84.16 84.23 83.62 84.12 84.75 85.06 86.03
167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184	84.46 84.93 84.07 85.15 85.46 86.13 86.43 86.43 86.41 86.17 85.99 86.02 85.79	0.30 0.70 0.45 0.55 0.40 0.40 0.40 0.10 1.30	84.16 84.23 83.62 84.12 84.75 85.06 86.03
168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184	84.93 84.07 84.67 85.15 85.46 86.13 86.43 86.41 86.17 85.99 86.02 85.79	0.70 0.45 0.55 0.40 0.40 0.10 1.30	84.23 83.62 84.12 84.75 85.06 86.03
169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184	84.07 84.67 85.15 85.46 86.13 86.43 86.43 86.41 86.17 85.99 86.02 85.79	0.45 0.55 0.40 0.40 0.10 1.30 1.20	83.62 84.12 84.75 85.06 86.03
170 171 172 173 174 175 176 177 178 179 180 181 182 183 184	84.67 85.15 85.46 86.13 86.43 86.41 86.17 85.99 86.02 85.79	0.55 0.40 0.40 0.10 1.30	84.12 84.75 85.06 86.03
171 172 173 174 175 176 177 178 179 180 181 182 183 184	85.15 85.46 86.13 86.43 86.41 86.17 85.99 86.02 85.79	0.40 0.40 0.10 1.30 1.20	84.75 85.06 86.03
172 173 174 175 176 177 178 179 180 181 182 183 184	85.46 86.13 86.43 86.41 86.17 85.99 86.02 85.79	0.40 0.10 1.30 1.20	85.06 86.03
172 173 174 175 176 177 178 179 180 181 182 183 184	85.46 86.13 86.43 86.41 86.17 85.99 86.02 85.79	0.40 0.10 1.30 1.20	85.06 86.03
173 174 175 176 177 178 179 180 181 182 183 184 185	86.13 86.43 86.41 86.17 85.99 86.02 85.79	0.10 1.30 1.20	86.03
174 175 176 177 178 179 180 181 182 183 184 185	86.43 86.41 86.17 85.99 86.02 85.79	1.30	
175 176 177 178 179 180 181 182 183 184 185	86.41 86.17 85.99 86.02 85.79	1.20	85.13
176 177 178 179 180 181 182 183 184 185	86.17 85.99 86.02 85.79		
177 178 179 180 181 182 183 184 185	85.99 86.02 85.79		
178 179 180 181 182 183 184 185	86.02 85.79	1.00	84.97
178 179 180 181 182 183 184 185	86.02 85.79		84.99
179 180 181 182 183 184 185	85.79	1.30	84.72
180 181 182 183 184 185		1.50	04.72
181 182 183 184 185			
182 183 184 185	85.68	1.30	84.38
183 184 185	85.00	1.10	83.90
183 184 185	79.83	0.20	79.63
184 185	80.35	0.20	80.15
185			
	80.61	0.20	80.41
186	80.62	0.20	80.42
	80.82	0.10	80.72
187	80.93	0.10	80.83
188	83.95		
189	83.97		
		0.05	00.01
190	83.99	0.35	83.64
191	83.95	0.45	83.50
192	83.97		
193	76.33		
194	76.30	0.10	76.20
195	76.19	0.25	75.94
196	76.08	0.35	75.73
197	75.94	0.40	75.54
198	75.89	0.35	75.54
199	75.82	0.30	75.52
200	75.68	0.40	75.28
		0.70	10.20
201	75.61		
202	75.60	0.20	75.40
203	75.64	0.35	75.29
204	75.39	0.40	74.99
205	74.44	0.40	74.04
205	73.03	0.40	72.63
207	71.87	0.20	71.67
208	71.58	0.50	71.08
209	71.54	0.50	71.04
210	71.46	0.50	70.96
211	71.37	0.50	70.87
212	71.11	0.50	70.61
213	70.88	0.50	70.38
214	70.83	0.50	70.33
215	70.85	0.40	70.45
216	85.97	0.55	85.42
217	85.92	0.55	85.37
218	81.12	0.55	80.57
219	80.98		
220	79.55	0.55	79.00
221	78.36	2.00	76.36
222	76.28	0.40	75.88
223	76.15	0.30	75.85
224	75.89	0.45	75.44
	75.84	0.45	75.39
225		0.55	75.05
	75.60	0.35	74.86
226	75.60		
226 227	75.26	0.35	74.70
226 227 228	75.26 75.05	0.00	
226 227	75.26 75.05 74.98		
226 227 228	75.26 75.05	0.20	74.68
226 227 228 229	75.26 75.05 74.98		74.68
226 227 228 229 230	75.26 75.05 74.98 74.88	0.20	

SERVICES-UNIDENTIFIED					
No	Surface RL	Approx Depth	Service RL		
234	85.82	0.30	85.52		
235	86.01	0.30	85.71		
236	86.17	0.55	85.62		
237	86.33	0.35	85.98		
238	86.43	0.30	86.13		
239	86.48	0.30	86.18		
240	86.55	0.35	86.20		
241	86.64	0.40	86.24		
242	86.64	0.40	86.24		
243	86.52	0.40	86.12		

ISSUE	DATE	AMENDMENT	SURV	СНК		00	
A	04/10/23	ORIGINAL ISSUE	PQ	JB	BEFU	KE	
В	21/05/24	ADD UNDERGROUND SERVICES INFORMATION	PQ	JB		DIG	GDA2020
					www.byda.	com.au	

GENERAL NOTES ONLY TREES GREATER THAN 3 METRES IN HEIGHT ARE SHOWN ON THIS

PLAN AND THEIR POSITIONS ARE DIAGRAMMATIC ONLY AND MAY REQUIRE ADDITIONAL SURVEY WHERE CRITICAL TO DESIGN. CONTOURS ARE INDICATIVE AT GROUND FORM ONLY. SPOT LEVELS ONLY SHOULD BE USED FOR CALCULATIONS OF QUANTITIES WITH CAUTION.

LEVELS ARE ON AUSTRALIAN HEIGHT DATUM (AHD).

ALL SETOUT LEVELS MUST BE REFERRED TO THE BENCH MARK SHOWN ON THIS PLAN.

BOUNDARY NOTES

A BASIC BOUNDARY SURVEY HAS BEEN DONE SUITABLE FOR DA LODGEMENT PURPOSES.

BOUNDARIES HAVE NOT BEEN MARKED.

SURVEY INFORMATION NOTES

THE ORIGIN OF COORDINATES COMES FROM SSM36614 E334531.011 N6256208.068 CLASS B POSITIONAL UNCERTAINTY (PU) 0.02 (MGA2020) ADOPTED FROM SCIMS DATED 18/10/2023.

THE ORIGIN OF LEVELS COMES FROM SSM36614 RL85.989 CLASS LB POSITIONAL UNCERTAINTY (PU) 0.03 ADOPTED FROM SCIMS DATED 18/10/2023.

THE ORIENTATION OF THIS PLAN IS MGA NORTH WHICH HAS BEEN DETERMINED BY GNSS AND IS BASED ON CORSNET DATA PROVIDED BY LRS NSW.

CERTIFICATE OF TITLE NOTES

THE FOLLOWING INFORMATION RELATES TO THE RESPECTIVE CERTIFICATE OF TITLE OF EACH LOTS:

> - LOT 4 OF SECTION 35 IN DP758790 (CT EDITION 2 DATED 01/09/2011 SEARCH DATE 15/08/2023) - AFFECTED BY: - EASEMENT FOR ELECTRICITY AND OTHER PURPOSES AFFECTING THE SITE DESIGNATED (A) IN PLAN VIDE AG432227

COVENANTS AND RESTRICTIONS NOTED ON THE TITLE HAVE NOT BEEN INVESTIGATED. THESE SHOULD BE INVESTIGATED PRIOR TO DESIGN TO ENSURE ANY FUTURE DEVELOPMENT COMPLIES.

SERVICES NOTES

ONLY THOSE SERVICES VISIBLE AT THE TIME OF SURVEY HAVE BEEN LOCATED AND ARE QUALITY LEVEL A AS DEFINED BY AS 5488.1:2019.

UNDERGROUND SERVICES QUALITY LEVEL B HAVE BEEN LOCATED FOR BY ONPOINT LOCATING ON 21/05/24 TO 24/05/24 USING EQUIPMENT AS NOTED ON REPORT PROVIDED DATED 24/05/24. THE SERVICE POSITION IS SHOWN ON THE PLAN AND THEIR RESPECTIVE DEPTH ARE AS STATED IN THE TABLE.

UNDERGROUND SERVICES QUALITY LEVEL D HAVE BEEN PLOTTED FROM 'DIAL-BEFORE'YOU-DIG' PLANS, ARE QUALITY LEVEL D AS DEFINED BY AS 5488.1:2019 AND ARE ONLY CURRENT AT THE DATE OF SEARCH.

ALL RELEVANT AUTHORITIES MUST BE CONTACTED TO DETERMINE THE FULL EXTENT OF SERVICES PRIOR TO ANY PLANNING OR WORKS NEAR THE SITE.

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DETAIL AND LEVEL SURVEY OF LOT 66 IN DP1049613, LOTS 4 & 5 OF SEC35 IN DP758790, LOTS 1 & 2 IN DP174370, LOT 1 IN DP123406, LOTS 3 & 4 IN DP571310, LOT 11 IN DP837836, LOT 1 IN DP316130 & LOT 1 IN DP316706 CAMMERAY PUBLIC SCHOOL 68 PALMER STREET CAMMERAY

CLIENT: SCHOOL INFRASTRUCTURE NSW FILE: 9009 - Detail & Level - Rev B -

68 Palmer Street Cammeray

LGA: NORTH SYDNEY

REF: 9009	CONTOURS: N/A				
ISSUE: B	DATUM: N/A				
SURVEY DATE: 21/05/2024	AZIMUTH: N/A				
SCALE: N/A	SHEET 7 OF 7 SHEETS				









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