BDAR Waiver Request

SSD-35962232: Burrows Road Multi Level Warehouse, St Peters

Goodman Property Services (Aust) Pty Ltd

GPO Box 4703, Sydney NSW 2001

Prepared by:

SLR Consulting Australia

SLR Project No.: 610.30907.00400

18 October 2024

Revision: 6.0

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
v6.0	18 October 2024	Elise Newberry	Fiona Iolini	Jeremy Pepper
v5.0	25 July 2024	Elise Newberry	Fiona Iolini	Jeremy Pepper
v4.0	2 March 2023	Joshua Drane	Fiona Iolini	Jeremy Pepper
v3.0	2 November 2022	Joshua Drane	Fiona Iolini	Jeremy Pepper
v2.0	12 August 2022	Joshua Drane	Fiona Iolini	Jeremy Pepper
v1.0	11 August 2022	Joshua Drane	Fiona Iolini	Jeremy Pepper

Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Goodman Property Services (Aust) Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

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1.0 Introduction

1.1 Background and Purpose

Goodman Property Services (Aust) Pty Ltd (Goodman) is seeking to develop a multilevel industrial warehouse and distribution centre at 1-3 Burrows Road, St Peters, NSW. The subject land is currently occupied by older low-rise industrial units that are largely consistent with development in the surrounding area which is predominantly of an industrial nature.

The proposed development will form a State Significant Development Application (SSDA) and the proponent is seeking to waive the requirements for the preparation of a Biodiversity Development Assessment Report (BDAR). The following sections specifically address the information requirements of the DPIE (2019) "*How to apply for a Biodiversity Development Assessment Report Waiver for a Major Project Application*" guidelines (the 'BDAR waiver guidelines') and the latest web advice provided by the NSW Government (NSW DCCEEW 2024a).

1.2 Methods

1.2.1 Site Inspection

An ecological inspection was conducted by one qualified Ecologist, Elise Newberry on 26 June 2024 to assess the biodiversity impacts of the proposed development application. The ecological inspection involved:

- Identification and assessment of native vegetation, including any Plant Community Types (PCTs) present.
- Searches for threatened plant species (via walked transect).
- Fauna habitat searches (e.g. hollow-bearing trees, nests).
- Trees and buildings were checked using a torch and bat detector to search for potential bat roosts.

1.2.2 Staff Qualifications

The roles and qualifications of all staff responsible for the preparation of this report are listed in Table 1.

Table 1 Staff Roles and Qualifications

Staff Name & Title	Qualifications and Training	Role
Elise Newberry Project Ecologist	Bachelor of Environmental Biotechnology, University of Technology Sydney Eucalypt Identification Course, ECA 2024	Report preparation, site inspection
Fiona Iolini Associate Ecologist	Bachelor of Environmental Science and Management, University of Newcastle Cert. III Conservation and Land Management, TAFE Accredited BAM Assessor (BAAS19042 2019)	Project manager, report review
James Hugo Senior GIS Analyst	Master of Environmental Management and Sustainability, University of Newcastle (2020) Bachelor of Science (Hons), University of Newcastle (2016)	Mapping (GIS data management)

1.2.3 Licenses and Permits

The SLR ecology team operates under a Scientific Licence (licence number SL100176, issued under the BC Act), which authorises field staff to trap, capture, harm, hold and release plants and animals protected under the BC Act and *National Parks and Wildlife Act 1974*, as well as Animal Research Authority (issued by the Secretary of the NSW Animal Care and Ethics Committee), which allows trapping of animals in NSW for 'animal research'.

2.0 Site Particulars

2.1 Administration Information

The BDAR waiver request requirements for administration are addressed in Table 2 below.

Table 2: Project Administration Information

Information Requirement	Project Information
Proponent name and contact details	• Goodman Property Services (Aust) Pty Ltd • 1-11 Hayes Road, Rosebery NSW 2018 • Project contact: Rory Pryor – 0408 618 928.
Project ID (Information to identify which SSD or SSI project the request relates to and where the project is up to in the assessment process).	• SSD-35962232 • Burrows Road Multi-level Warehouse, St Peters • SEARs issued • EIS received
Name and ecological qualifications of person completing Table 2	Qualification of all staff responsible for the preparation of this report are included in Table 1.

2.2 Site Details

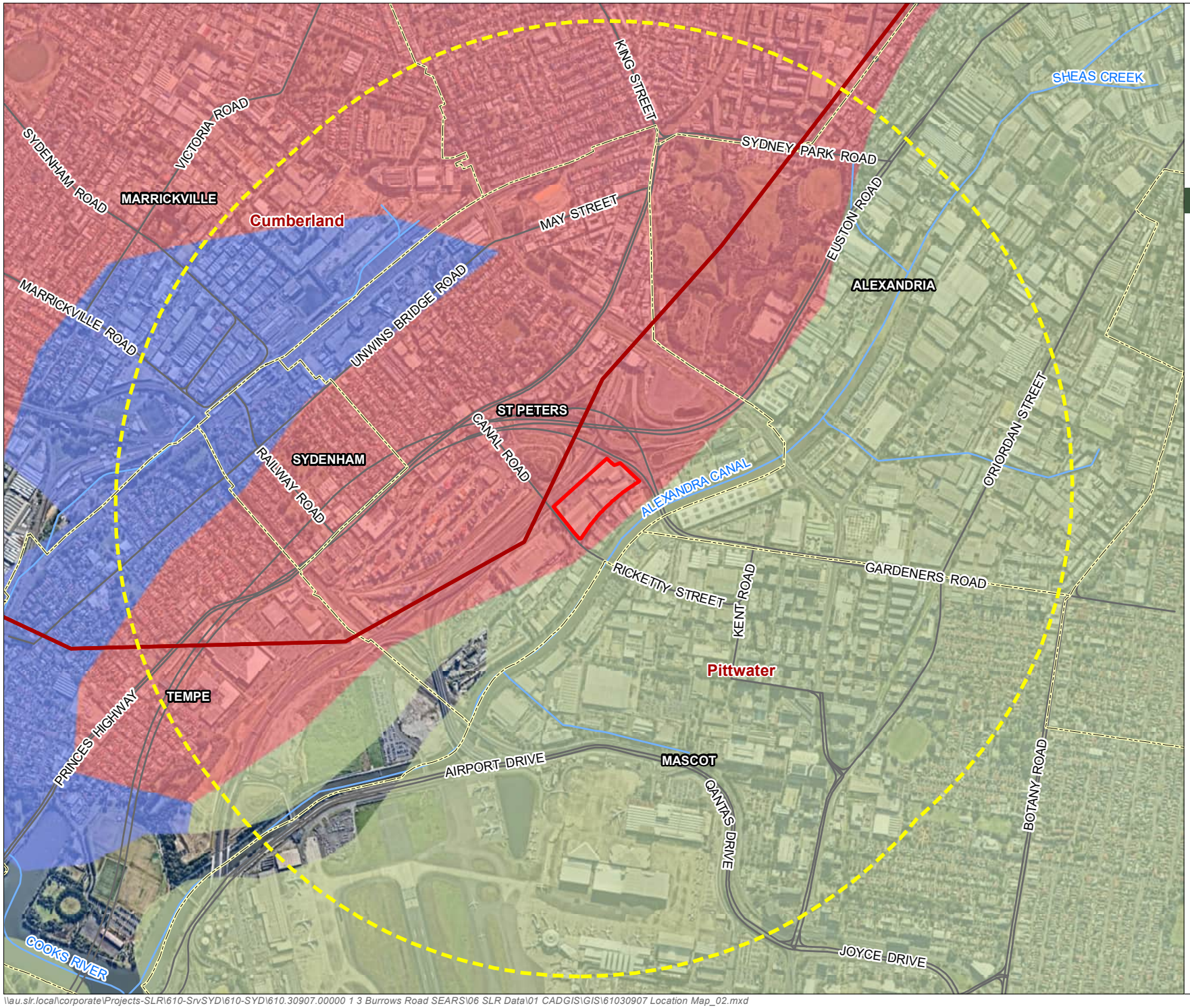
The BDAR waiver request requirements for site details are addressed in Table 3 below.

Table 3: Site Details

Information Requirement	Project Information
Street address, Lot and DP, local government area	The subject land is located in the suburb of St Peters within the City of Sydney local government area and includes the following properties: • Lot 1 DP 1227450 • Lot 11 DP 606737
Description of existing development site, i.e., the area of land that is subject to the proposed development application. If any part of the land is considered 'Category 1– exempt land' information must be provided to demonstrate how the land meets the criteria[1] that applies to Category 1 – Exempt Land.	The proposed development site is located within an existing industrial precinct which has been subject to historic clearing and development (see historic aerial imagery in Appendix A). The site is bound by: • The WestConnex Interchange to the north and east • Canal Road to the east • Burrows Road to the south

[1] https://www.lls.nsw.gov.au/sustainable-land-management/facts-sheets2/land-categorisation-and-the-land-management-framework

Information Requirement	Project Information
	Recent aerial imagery demonstrates that most of the site is made up of buildings and areas of hardstand surface (carparks, driveways). Vegetation is restricted to landscape plantings at the site peripheries.
Location map showing the development site in the context of surrounding areas and landscape features. Satellite image of site in context of adjoining sites.	See Figure 1
Site Map (to scale, ideally as a spatial shapefile).	See Figure 2



1-3 BURROWS ROAD SEARS

LOCATION MAP

FIGURE 1

- Subject Land
- 1500m Buffer (827.246 Ha)
- Native Vegetation (0 Ha)
- IBRA Subregions
- Suburb Boundaries
- Roads
- Watercourses

Mitchell Landscapes

- Ashfield Plains
- Port Jackson Basin
- Sydney - Newcastle Barriers and Beaches

Data Sources:
NSW Spatial Information Exchange
Nearmap Imagery 2024
Native Vegetation: State Vegetation Type Mapping (DPE 2023)
Mitchell Landscapes: NSW DCCEEW (2016)
IBRA regions: Commonwealth DCCEEW (2012)

0 250 500 m

Coordinate System:	GDA 1994 MGA Zone 56
Scale:	1:17,500 at A4
Project Number:	610.30907
Date:	03-Jul-2024
Drawn by:	JH

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1-3 BURROWS ROAD SEARS

SITE MAP

FIGURE 2

- Survey Tracks
- Contours (2m)
- Subject Land
- Property Boundaries

Data Sources:
NSW Spatial Information Exchange
Nearmap Imagery 2024

0 25 50 m

Coordinate System:	GDA 1994 MGA Zone 56
Scale:	1:2,000 at A4
Project Number:	610.30907
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3.0 Proposed Development

The BDAR waiver request requirements for proposed development are addressed in Table 4 below.

Table 4: Proposed Development

Information Requirement	Project Information

Project Description providing enough information to enable an understanding of the nature and scale of the proposed development and any associated activities (including construction etc.).	This proposed SSDA seeks approval for the following:
	• Demolition of all existing structures and buildings on site.
	• Tree removal both on site and for a limited number of trees in the public domain and adjoining lot.
	• Site remediation, and establishment works, including minor excavation / bulk earthworks.
	• Design, construction and operation of a two-storey warehouse and distribution centre building with
	• ancillary offices for each warehouse tenancy, including:
	  ○ Approximately 34,051sqm of total GFA, comprising:
	  - 30,389sqm of warehouse and distribution centre GFA.
	  - 3,353sqm of GFA for ancillary office space; and
	  - End of Trip Facilities on the ground floor of 309 sqm GFA.
	  ○ Maximum building height of RL 29.70 (maximum 25m from existing ground level).
	  ○ Operation 24 hours per day seven days a week.
	• Provision of on grade car parking accessed off Burrows Road which provides 145 tenant and
	• visitor car parking spaces (including 8 accessible bays), 14 motorcycle spaces, and bicycle
	• parking and end-of-trip facilities (including 66 bicycle parking spaces, showers, lockers and
	• change rooms for occupants).
	• New crossings to Burrows Road for truck and car access.
	• Single fire and utilities services ingress crossing off Canal Road.
	• Site landscaping works totalling approximately 6,856sqm (or 19.8% of the site), including
	  ○ Two x 6-metre landscaped setback areas to both the Burrows Road and Canal Road site frontages.
	  ○ 3,829sqm or 11.0% deep soil landscaping.
	  ○ 3,027sqm or 8.7% of permeable paving; and
	  ○ 5,450sqm or 15.7% tree canopy coverage.
	• Provision of building / business identification and wayfinding signage.

Proposed Site Plan.	See Appendix B for proposed development plans and Appendix C for Arborist report.

4.0 Assessment of Impacts on Biodiversity Values

4.1 Overview

The subject land is not mapped by the Biodiversity Values Map and Threshold Tool (NSW DCCEEW 2024b) as containing biodiversity values. Regional scale mapping (NSW DCCEEW 2024d) indicates that there is no native vegetation within the subject land or on immediately adjoining properties.

The vegetation within the subject land and immediately adjoining road verge areas is a mix of planted native vegetation and planted non-native vegetation.

A licensed search of the BioNet Wildlife Atlas database (NSW DCCEEW 2024c) for records of threatened species within 10km of the sites centre was undertaken on 3 June 2024 (see Appendix D). The search detected 3,980 records of 89 species. Most of the threatened species recorded are not likely to occur on the subject land due to geographic limitations, lack of suitable habitats and the disturbed and modified nature and condition of the site.

Many of the fauna species recorded by the atlas search are estuary or wetland dependent and the location of the records are associated with Botany Bay and its associated wetlands or floodplain areas associated with the Cooks River (e.g. Green and Golden Bell Frog, Little Tern, Curlew Sandpiper, Great Knot). Most other records of threatened fauna species are sporadic through the 10km surrounds and represent highly mobile species, or are a substantial distance from the site, without connecting habitat (e.g. Long-nosed Bandicoot threatened population in Inner Western Sydney). The subject land has limited habitat potential for threatened species and communities.

Mobile species recorded nearby that may be of relevance to the site include the Grey-headed Flying-fox, Powerful Owl, Dusky Woodswallow, Yellow-bellied Sheathtail-bat and Large Bent-winged Bat. There is some potential these species could use the native tree canopies across the subject land, or that the buildings could be considered potential habitat for threatened microchiropteran bats (‘microbats’).

The proposed development has been designed to avoid removal of the majority of the planted vegetation at the peripheries of the subject land. Based on the results of an ecological site inspection, the areas of vegetation and the buildings to be removed provide marginal artificial habitats for threatened species and removal of these features is not likely to result in a significant impact on threatened species.

An assessment of impacts on biodiversity values in accordance with the BDAR waiver requirements is provided in Table 5. An assessment of each of the specific requirements of the BC Act and BC Regulation are also included in Table 6 in accordance with BDAR waiver guidelines.

Table 5: Assessment of Biodiversity Values

Information Requirement	Project Information
Complete Table 2 below on Biodiversity Values. *For each biodiversity value, the proponent must either:* • *explain why the value is not relevant to the proposed development* • *where a biodiversity value may be relevant, provide an explanation of how impacts have been avoided and identify the likelihood and extent of any remaining impacts of the proposed development, including impacts prescribed under clause 6.1 of the BC Regulation.*	See Table 6

Information Requirement	Project Information
A biodiversity value is not relevant to a proposed development if the value is not present on the development site and there is no potential for direct or indirect impacts on the biodiversity value if it occurs off-site.	
Where one or more biodiversity values may be relevant to the proposed development, Table 2 is to be completed by a suitably qualified person with tertiary qualifications in natural sciences including subjects that relate to the observation and description of terrestrial biodiversity and landforms, and at least three years of work experience in environmental assessment including field identification of plant and animal species and habitats. The person does not need to be an accredited person under the BC Act.	This BDAR waiver request has been completed by project ecologist Elise Newberry. This report has also been reviewed by BAM Accredited Assessor Fiona Iolini (#BAAS19042), who has approximately 15 years of ecological consulting experience. Qualifications for Fiona and Elise are provided in Section 1.2.2.
Attach any additional information required where biodiversity values are relevant to the site. E.g. Vegetation Map (indicating plant community types), Ecology Reports, Water Quality data, BioNet Atlas, Directory of Important Wetlands (DIWA), migratory bird flyway information.	There is no native vegetation mapped by NSW DCCEEW (2024d) on the subject land. See Appendix D for BioNet Atlas search results. Photographs from a site inspection that was undertaken by Elise Newberry on 26 June 2024 are included in Appendix E.

4.2 Impact on Biodiversity Values

The impact of the proposed development on biodiversity values is addressed in Table 6 in accordance with the requirements of Section 1.4 of the BC Regulation and Section 1.5 of the BC Act.

Table 6 Impact on Biodiversity Values

Biodiversity value	Meaning	Relevant (✓ or NA)	Potential impacts
Vegetation abundance 1.4(b) BC Regulation *Where vegetation is present on the development site, provide a map on digital aerial photography or the best available imagery of the development site showing:* • *native vegetation (including grasslands and other non-woody vegetation types)*	*Occurrence and abundance of vegetation at a particular site*	✓	There is no native vegetation on the subject land. Some scattered cultivated native plants are present at the peripheries of the site and as streetscape trees along the road verges of Canal Road and Burrows Road. The proposed development has been designed to avoid clearing of existing cultivated native trees where possible. According to the site plans (Appendix B) the proposal will require the removal of 20 cultivated plants including: • 11 that are native to NSW, being one *Eucalyptus saligna*, four *E. botryoides*, one *E. robusta,* one *Corymbia maculata,* one *Acacia longifolia*, one *Callistemon viminalis* and two *Syzygium luehmannii* • nine that are exotic, being six *Livistona chinensis,* two *Celtis sinensis* and one *Corymbia citriodora* Any trees that are to be retained would be subject to arboricultural impact assessment and standard tree protection in accordance with the Australian

Biodiversity value	Meaning	Relevant (✓ or NA)	Potential impacts
and non-native vegetation • *the area of land that is directly impacted by the proposed development, including related infrastructure such as roads, pipelines, access tracks, temporary material stockpiles, asset protection zones and powerlines, if applicable.* *Describe how the proposed development avoids impacts on native vegetation and identify the likelihood and extent of any remaining impacts including removal of isolated or cultivated native plants.*			Standards AS 4970-2009. This would reduce the likelihood of any incidental impacts on retained trees.
Vegetation integrity 1.5(2)(a) BC Act *Describe the vegetation integrity and any impacts on vegetation integrity of identified plant communities. For example, information on impacts from proposed development to vegetation cover, structure, condition and function. This can include details on the presence of weeds, disturbance, planted native vegetation and species and growth form diversity.*	Degree to which the composition, structure and function of vegetation at a particular site and the surrounding landscape has been altered from a near natural state	✓	There is no native vegetation within the subject land or adjoining properties therefore it is not expected that the proposal will impact on the vegetation integrity (i.e. vegetation cover, structure, condition and function) of any native vegetation. With respect to planted native vegetation the proposal will require the removal of 11 planted trees that are native to NSW (see Appendix B). These trees include: • Tree 12 – *Syzygium luehmannii* • Tree 14 – *Syzygium luehmannii* • Tree 15 – *Callistemon viminalis* • Tree 16 – *Eucalyptus botryoides* • Tree 17 – *Eucalyptus botryoides* • Tree 18 – *Eucalyptus botryoides* • Tree 20 – *Eucalyptus robusta* • Tree 21 – *Eucalyptus botryoides* • Tree 22 – *Eucalyptus saligna* • Tree 25 – *Acacia longifolia* • Tree 64 – *Corymbia maculata* Due to the disturbed nature of the subject land and the nature of the plantings as street trees and

Biodiversity value	Meaning	Relevant (✓ or NA)	Potential impacts
			isolated trees in an industrial landscape the vegetation integrity of the planted native vegetation is considered to be low. Native plant species diversity and cover is low, there are few large trees or hollows and there is limited fallen timber or leaf litter. Due to the disturbed nature of the site, it is not expected that the proposal will impact to any relevant extent on the vegetation integrity (i.e. vegetation cover, structure, condition and function) of any planted native vegetation.
Habitat suitability 1.5(2)(b) BC Act *Identify any threatened species or ecological communities or their habitat on the development site. Describe how the proposed development avoids impacts on habitat suitability and identify the likelihood and extent of any remaining impacts including the impacts of development on the following habitat of threatened species or ecological communities:* • *karst, caves, crevices, cliffs and other geological features of significance* • *rocks* • *human-made structures* • *non-native vegetation (prescribed under clause 6.1(1)(a) of the BC Regulation).* *Impacts may include the removal or modification (e.g. noise, light, etc.) of*	Degree to which the habitat needs of threatened species are present at a particular site	✓	Threatened species of fauna which may potentially utilise artificial habitats (landscape plantings and buildings) within the subject land include highly mobile species such as bats and birds. The ecological site inspection undertaken on 26 June 2024, involved inspection of the buildings and vegetation for potential microbat roosts in accordance with the DPIE 2019 BDAR waiver guidelines (i.e. using a torch and bat detector to search for roosts), as well as searches for hollows and nests and other signs of fauna activity. No evidence of microbats was detected, and no nests were found. The site does not contain any natural rocks, karst, caves, crevices, cliffs and other geological features of significance. A native planted Blue Quandong (*E*. *grandis*) which was found to contain a hollow that was approximately 2 m from ground level (10 cm wide by 20 cm tall by 12 cm deep - see photograph in Appendix E) is located along the northern boundary of the site. However, the hollow showed no evidence of current or past use. The potential for microbat habitat within most of the buildings and structures on site was determined to be marginal due to a lack of suitable open cracks and crevice and ongoing disturbances due to active use. One derelict office building in the northwest corner of the site contained potential habitat for microbats, as the underside of the roof eaves had deteriorated creating openings in multiple areas (see Appendix E). A small disused service building also had some potential as microbat habitat (see Appendix E). However, at the time of the site inspection there were no signs of bat usage (e.g. urine stains, droppings and remains) and no bats were detected with a handheld bat detector. The non-native vegetation on the site is unlikely to be important habitat for any potential threatened species using the site. Along the south-western boundary is a large planted native Swamp Mahogany (*E*. *robusta*) and this specimen may have some value as a winter food resource for mobile fauna species (such as bats and birds).

Biodiversity value	Meaning	Relevant (✓ or NA)	Potential impacts
the habitat of threatened species or ecological communities.			However, it is highly isolated and surrounded by roads and other ongoing disturbances so it is unlikely that the tree would represent important winter foraging habitat (such as for the Swift Parrot). Whilst one threatened plant species, *Eucalyptus scoparia* has been detected within the planted native vegetation (see Appendix C), this species is a popular cultivar and street tree and is outside of its natural range in the Sydney Basin region. No other threatened species of flora were detected during the ecological site inspection and the subject land does not represent suitable habitat for threatened flora due to a lack of native vegetation. The subject land does not contain any native vegetation, threatened flora habitats or threatened ecological communities and the prescribed impact features of the site, including human-made structures and non-native vegetation, are unlikely to provide any important habitat for any threatened species of fauna potentially using the site. Currently the site is used as industrial warehouses, the proposed multistorey warehouses and distribution centre will potentially increase noise, dust and light. The potential increase is unlikely to result in a significant impact on any potential threatened species using the site.
Threatened species abundance 1.4(a) BC Regulation *Describe how the proposed development avoids impacts on threatened species abundance and identify the likelihood and extent of any remaining impacts including:* • *Impacts of vehicle strikes on threatened species of animals or on animals that are part of a threatened ecological community*	Occurrence and abundance of threatened species or threatened ecological communities, or their habitat, at a particular site	✓	The proposed development limits removal of planted vegetation that could represent marginal foraging habitat for mobile threatened species such as owls and bats. With respect to remaining impacts: • Due to the slow speeds of vehicles travelling across the site impacts of vehicle strikes on threatened species of animal are considered negligible and equivalent to existing vehicle traffic conditions. • The potential for microbat habitat within the buildings and structures on site was determined to be marginal and there was no evidence of bats using the buildings. Impacts on threatened species associated with the demolition of human-made structures are likely to be negligible. • The potential impact on threatened species due to removal of planted native and non-native vegetation from within landscaped areas of the subject land is likely to be negligible. • There are no relevant impacts on threatened species habitat associated with non-natural water bodies.

Biodiversity value	Meaning	Relevant (✓ or NA)	Potential impacts
(prescribed under clause 6.1(1)(f) of the Regulation). • *Impacts on threatened species, for example, microbats, associated with the demolition of human-made structures (prescribed by 6.1 (1) a (iii) of the Regulation).* • *Impacts on threatened species habitat associated with non-native vegetation (prescribed by 6.1 (1) a (iv) of the Regulation).* *Impacts on threatened species habitat associated with non-natural water bodies (prescribed by 6.1 (1) a (iii) of the Regulation). For example, threatened frogs such as the green and golden bell frog in landfill areas, drains and brick pits.*			
Habitat connectivity 1.4 (c) BC Regulation *Identify whether the development site contributes to habitat connectivity. Describe how the proposed development avoids impacts on habitat connectivity and*	Degree to which a particular site connects different areas of habitat of threatened species to facilitate the movement of those species across their range	✓	As shown in Figure 1 there is no native vegetation within the subject land and adjoining properties. The subject land does not contribute to habitat connectivity. The trees on site are unlikely to provide important habitat connectivity for threatened species, however the design has preferentially retained trees where possible.

Biodiversity value	Meaning	Relevant (✓ or NA)	Potential impacts
identify the likelihood and extent of any remaining impacts of development on the connectivity of different areas of habitat of threatened species that facilitates the movement of those species across their range (prescribed under clause 6.1(1)(b) of the BC Regulation).			
Threatened species movement 1.4(d) BC BC Regulation *Describe how the proposed development avoids impacts on threatened species movement and identify the likelihood and extent of any remaining impacts of development on movement of threatened species that maintains their lifecycle (prescribed under clause 6.1(1)(c) BC Regulation).*	Degree to which a particular site contributes to the movement of threatened species to maintain their lifecycle	✓	Impacts to threatened species movements are avoided through the retention of the planted vegetation at the site's peripheries where possible. Mobile threatened species (such as the Grey-headed Flying-fox and Powerful Owl) could potentially forage over the site and could occasionally use native tree canopies, however the trees on site are unlikely to facilitate important lifecycle movements for these species. The proposed development would not have any conceivable impacts on threatened species movements.
Flight path integrity 1.4(e) BC Regulation *Identify whether flight paths of protected animals occur over the development site. Protected animals are animals of a species listed or referred to in Schedule 5 of the*	Degree to which the flight paths of protected animals over a particular site are free from interference	N/A	Migratory birds (such as the Curlew Sandpiper and Little Tern) are likely to fly over the site from time to time, however the proposed development is unlikely to have a significant impact on the flight paths of these species. The proposed development would not have any conceivable impacts on the flight path integrity of any protected species.

Biodiversity value	Meaning	Relevant (✓ or NA)	Potential impacts
BC Act. They include any species of birds, mammals, amphibians or reptiles that are native to Australia or that periodically or occasionally migrate to Australia. *Describe how the proposed development avoids impacts on flight path integrity and identify the likelihood and extent of any remaining impacts.* *Note: The impacts of wind turbine strikes on protected animals are prescribed under clause 6.1(1)(e) of the BC Regulation. It is, therefore, unlikely that a BDAR waiver would be issued for a proposed wind farm.*			
Water sustainability 1.4(f) BC Regulation *Describe how the proposed development avoids impacts on water sustainability and identify the likelihood and extent of any remaining impacts of development on water quality, water bodies and hydrological processes that sustain threatened species and threatened ecological communities (including from subsidence or*	Degree to which water quality, water bodies and hydrological processes sustain threatened species and threatened ecological communities at a particular site.	N/A	There are no threatened ecological communities or waterbodies on the subject land or adjoining properties. Alexandria Canal is a man-made canal that is situated approximately 80 m to the southeast of the subject land, however the subject land is not considered or mapped as riparian lands. The proposed development will avoid impacts on water sustainability through implementation of best practise erosion and sediment control and stormwater design.

Biodiversity value	Meaning	Relevant (✓ or NA)	Potential impacts
upsidence resulting from underground mining or other development) (prescribed under clause 6.1(1)(d) of the BC Regulation).			

5.0 Conclusions

The subject land has been historically cleared of its original native vegetation and contains existing industrial buildings. The trees and vegetation on the subject land are cultivated for landscaping purposes and do not represent native vegetation or remnant species. There are no identifiable Plant Community Types on the site.

The site inspection did not detect any threatened species or habitats within the subject land. A single hollow bearing tree identified as Blue Quandong (*Elaeocarpus grandis*) was found in the northern portion of the subject land, however there was no evidence of hollow usage and under the proposed development this tree will be retained. Additionally, there are no active nests or evidence of nesting activity currently within the site.

The vegetation identified on the development site, being limited to a number of planted trees (several of which are native species), is unlikely to provide important habitat connectivity or flight paths for any threatened species occurring in the locality.

According to the Biodiversity Values Map, the site is not identified as containing areas of high biodiversity value.

The development only proposes the removal of cultivated vegetation and the existing buildings. The areas of vegetation and the buildings to be removed provide marginal artificial habitats for threatened species and removal of these features is not likely to result in a significant impact on threatened species.

The subject land contains very limited or negligible biodiversity values. The proposed development avoids removal of most of the planted vegetation at the peripheries of the subject land. Based on the results of the ecological site inspection, the areas of vegetation and the buildings to be removed provide marginal artificial habitats for threatened species and removal of these features is not likely to result in a significant impact on threatened species.

The site does not contain any vegetated links or fauna movement corridors and the proposed development will not affect movement of threatened or migratory species through the landscape. Consequently, the project is unlikely to have a significant impact on the limited biodiversity values of the site. On this basis, we hereby request a waiving of the requirements of the SEARs and the BC Act to the extent that a BDAR is not required for the project application.

6.0 References

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Appendix A Historic Aerial Imagery

BDAR Waiver Request

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Goodman Property Services (Aust) Pty Ltd

SLR Project No.: 610.30907.00400

18 October 2024

Figure A-1: Extract of 1943 Historic Aerial Imagery, Showing Site Boundary in Red Dashed Line (DFSI 2022)

Figure A-2: Extract of 2009 Historic Aerial Imagery, Showing Site Boundary in Red Line (NearMap 2024)

Appendix B Site Plans

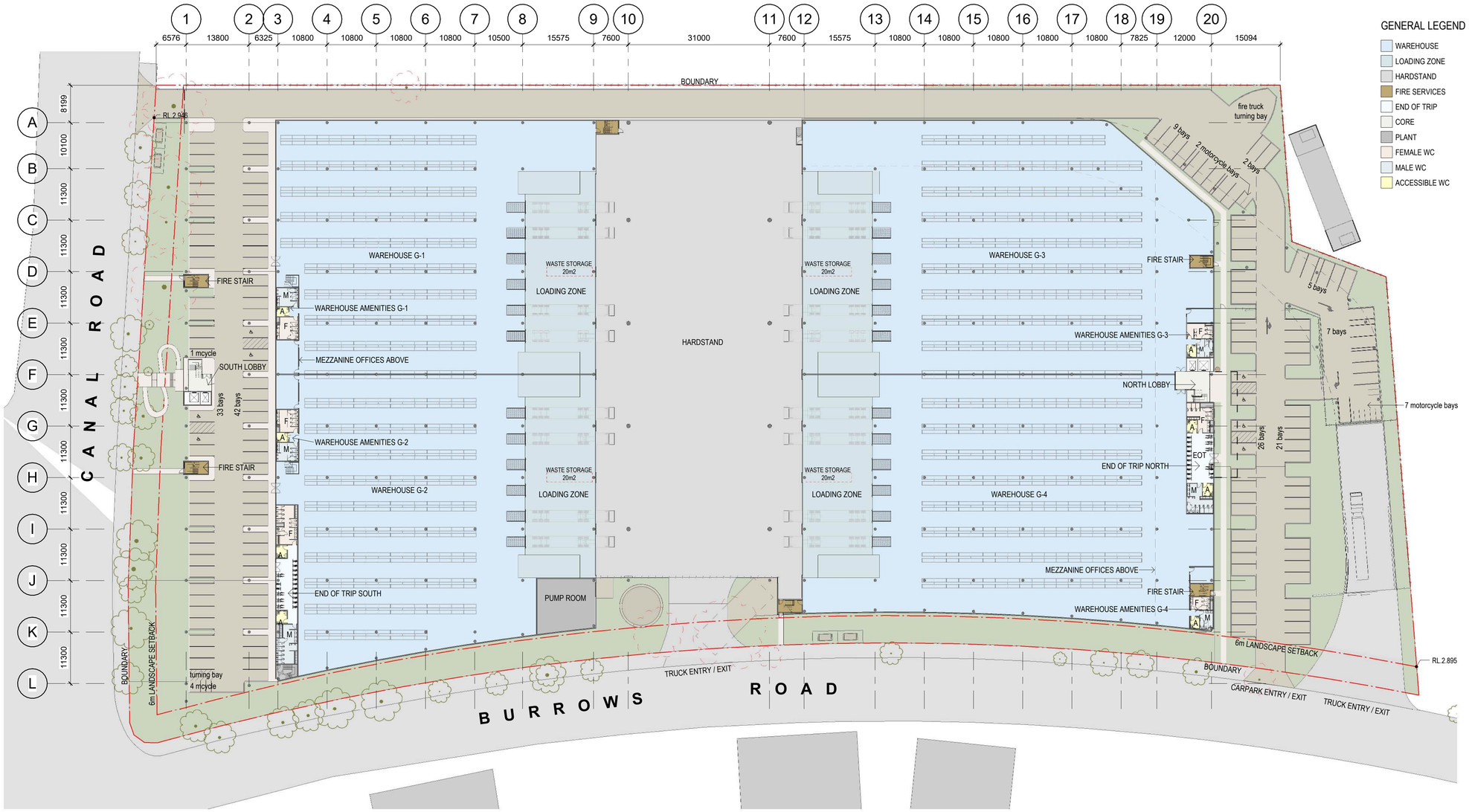
BDAR Waiver Request

SSD-35962232: Burrows Road Multi Level Warehouse, St Peters

Goodman Property Services (Aust) Pty Ltd

SLR Project No.: 610.30907.00400

18 October 2024



1 GROUND 1 : 500

1 / DA300

GENERAL LEGEND

- WAREHOUSE
- LOADING ZONE
- HARDSTAND
- FIRE SERVICES
- END OF TRIP
- CORE
- PLANT
- FEMALE WC
- MALE WC
- ACCESSIBLE WC

NORTH

REVISION

REV	DESCRIPTION	DATE
1	ISSUED FOR INFORMATION	02/07/2024
	Grid 18-20 revised	
	Fencing & Gates added	
2	ISSUE FOR REVIEW	11/07/2024
3	ISSUE FOR REVIEW	23/07/2024
4	ISSUED FOR REVIEW	29/07/2024
5	ISSUED FOR REVIEW	30/07/2024
6	ISSUED FOR DIP	01/08/2024
7	ISSUED FOR SSDA REVIEW	30/08/2024
8	ISSUED FOR SSDA	13/09/2024

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Welsh + Major

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ABN: 67 612 977 303

Nominated Architects
C. Major ARB No. 9193
D. Welsh ARB No. 6968

PROJECT

Multilevel Industrial Facility

1-3 Burrows Road, Alexandria

TITLE

Site & Ground Floor Plan

SCALE 1 : 500 @ A1

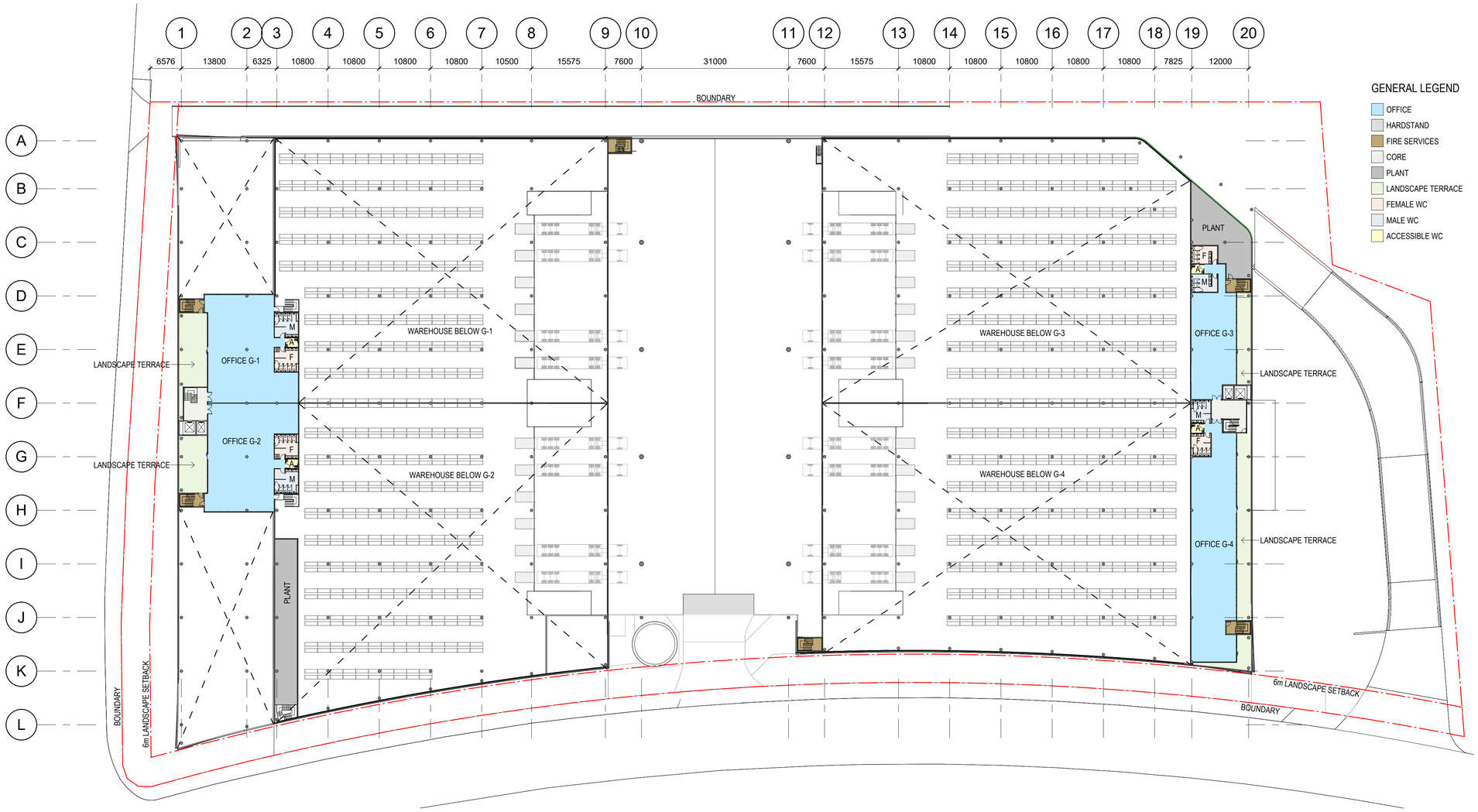
PROJECT NO	DRAWING NO	REV
24132	DA200	8

13/09/2024 3:42:40 PM

NORTH

REVISIONS

REV	DESCRIPTION	DATE
1	ISSUED FOR INFORMATION	02/07/2024
	Grid 18-20 revised	
2	ISSUE FOR REVIEW	11/07/2024
3	ISSUE FOR REVIEW	23/07/2024
4	ISSUED FOR REVIEW	29/07/2024
5	ISSUED FOR DIP	01/08/2024
6	ISSUED FOR SSDA REVIEW	30/08/2024
7	ISSUED FOR SSDA	13/09/2024
8	ISSUED FOR SSDA	03/10/2024



GENERAL LEGEND

- OFFICE
- HARDSTAND
- FIRE SERVICES
- CORE
- PLANT
- LANDSCAPE TERRACE
- FEMALE WC
- MALE WC
- ACCESSIBLE WC

1 / DA300 2. GROUND MEZZANINE 1 : 500

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Nominated Architects
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D. Welsh ARB No. 6968

PROJECT

Multilevel Industrial Facility

1-3 Burrows Road, Alexandria

TITLE

Ground Level Mezzanine

SCALE 1 : 500 @ A1

PROJECT NO	DRAWING NO	REV
24132	DA201	8

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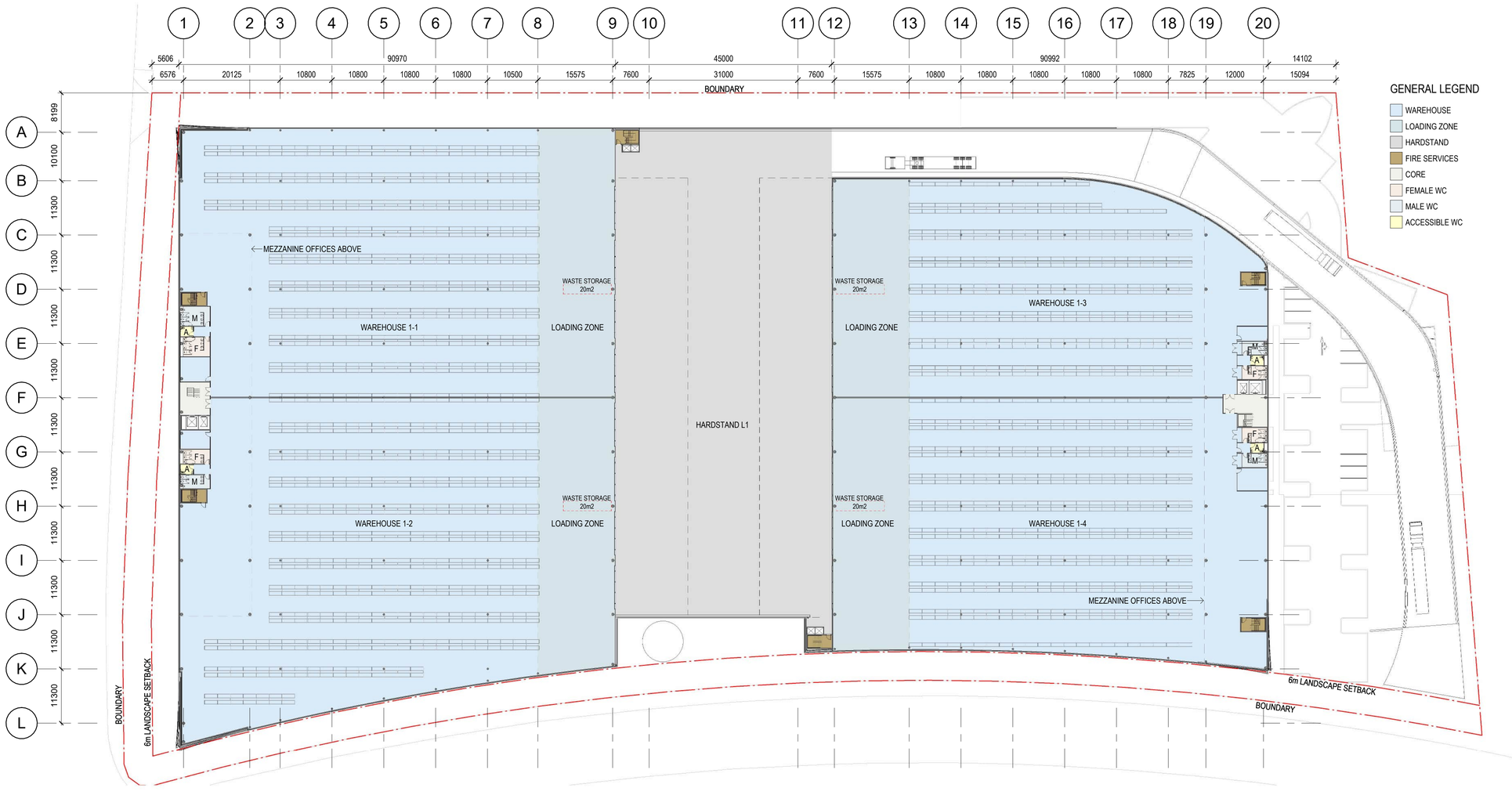
NORTH



GENERAL LEGEND

- WAREHOUSE
- LOADING ZONE
- HARDSTAND
- FIRE SERVICES
- CORE
- FEMALE WC
- MALE WC
- ACCESSIBLE WC

1 / DA300 3. LEVEL 1 1 : 500

REVISION

REV	DESCRIPTION	DATE
1	ISSUED FOR INFORMATION	02/07/2024
	Grid 18-20 revised	
2	ISSUE FOR REVIEW	11/07/2024
3	ISSUE FOR REVIEW	23/07/2024
4	ISSUED FOR REVIEW	29/07/2024
5	ISSUED FOR DIP	01/08/2024
6	ISSUED FOR SSDA REVIEW	30/08/2024
7	ISSUED FOR SSDA	13/09/2024

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PROJECT

Multilevel Industrial Facility

1-3 Burrows Road, Alexandria

TITLE

Level 1 Floor Plan

SCALE 1 : 500 @ A1

PROJECT NO	DRAWING NO	REV
24132	DA202	7

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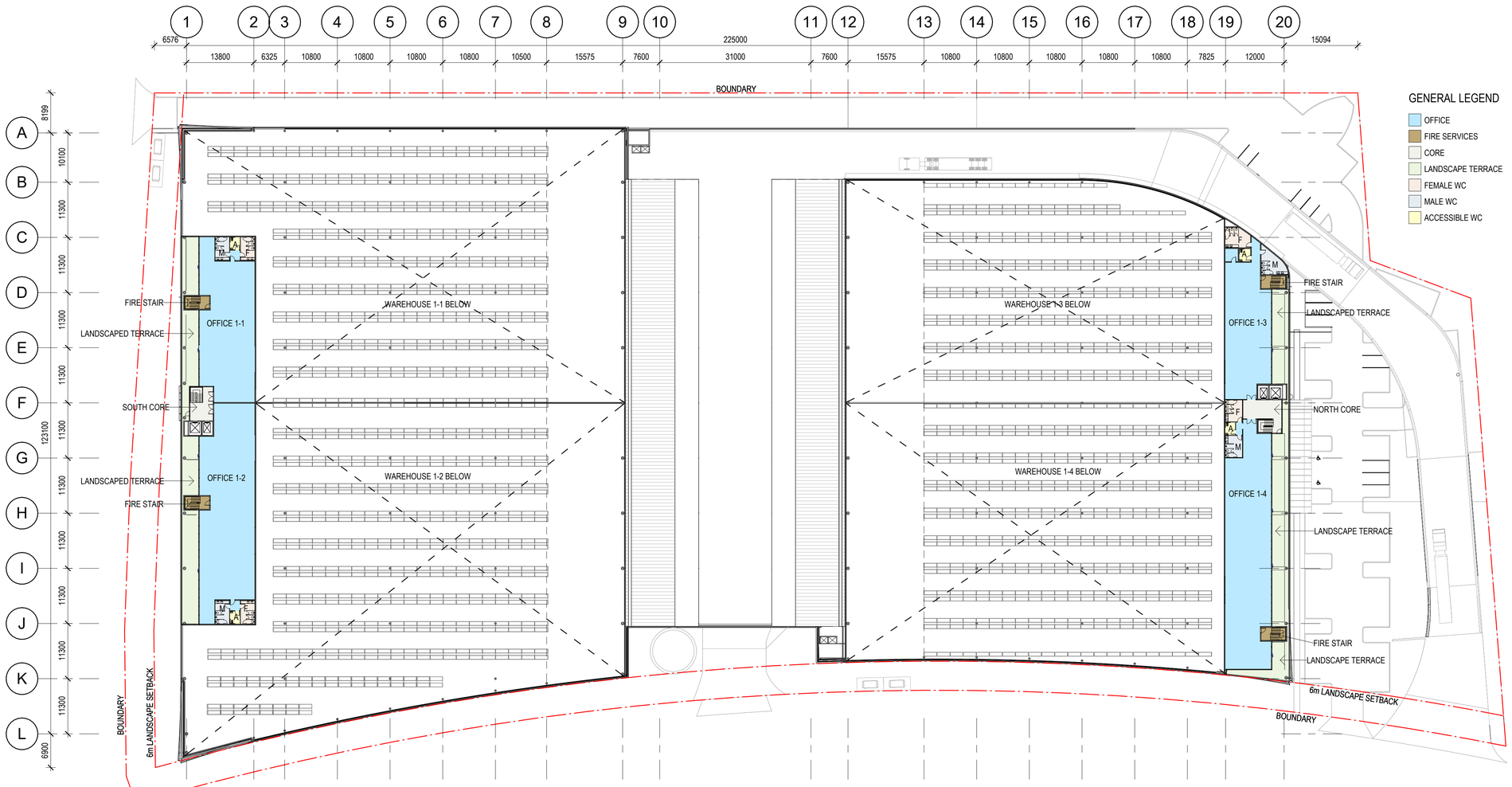

1 / DA300 4. LEVEL 1 MEZZANINE 1 : 500

NORTH

REVISIONS

REV	DESCRIPTION	DATE
1	ISSUED FOR INFORMATION	02/07/2024
	Grid 18-20 revised	
2	ISSUE FOR REVIEW	11/07/2024
3	ISSUE FOR REVIEW	23/07/2024
4	ISSUED FOR REVIEW	29/07/2024
5	ISSUED FOR REVIEW	30/07/2024
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7	ISSUED FOR SSDA REVIEW	30/08/2024
8	ISSUED FOR SSDA	13/09/2024
9	ISSUED FOR SSDA	03/10/2024

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D. Welsh ARB No. 8958

PROJECT
Multilevel Industrial Facility
1-3 Burrows Road, Alexandria

TITLE
Level 1 Mezzanine Plan

SCALE 1 : 500 @ A1

PROJECT NO	DRAWING NO	REV
24132	DA203	9

3/10/2024 8:12:57 AM

Appendix C Arborist Report

BDAR Waiver Request

SSD-35962232: Burrows Road Multi Level Warehouse, St Peters

Goodman Property Services (Aust) Pty Ltd

SLR Project No.: 610.30907.00400

18 October 2024

CIVICA | ArborSafe

Software Solutions for Tree Inventory Management

Arboricultural Impact Assessment

Goodman
AU130 Burrows Industrial Estate
1-3 Burrows Road
Alexandria NSW

3 October 2024

Assessment and report by:

Tom Axford Dip. Hort. (Arb.), Grad Cert (Arb.), AQF Level 8

Job No: 05426

CIVICA | ArborSafe

05426

3 October 2024

Angus Harrold
Project Administrator
Goodman
The Hayesbury
1-11 Hayes Roade
Rosebery NSW 2018

Arboricultural Impact Assessment Report regarding 58 trees located within the vicinity of the proposed development at Burrows Industrial Estate, 1-3 Burrows Road, St Peters

Dear Angus,

We are pleased to provide you the following Arboricultural Impact Assessment Report for 58 trees located within the grounds of the Burrows Industrial Estate.

Complete use of this report is authorised under the conditions limiting its use as stated in Appendix A Item 7 of "*Arboricultural Reporting Assumptions and Limiting Conditions*".

Should you have any queries relating to this report, its recommendations, or the options considered please do not hesitate to contact me on 0477-828-818.

Regards,

Tom Axford

Consulting Arborist
Dip. Hort. (Arb.), AQF Level 8

Version	Date	Author	Rationale
1	3 October 2024	Tom Axford	First Issue

Glossary and Abbreviations

Reference	Description
AIA	Arboricultural Impact Assessment
AS 4970–2009	Australian Standard: *Protection of Trees on Development Sites*
BS 5837–2012	British Standard: *Trees in Relation to Design, Demolition and Construction*
CEEC	Critically Endangered Ecological Community
Council	City of Sydney Council
DBH	Diameter at Breast Height
DCP	City of Sydney Development Control Plan 2012
DPE	Department of Planning and Environment
DRC	Diameter at Root Crown
LEP	City of Sydney Local Environmental Plan 2012
LGA	Local government area
RV	Retention value
SEARs	Secretary's Environmental Assessment Requirements
SEED	The Central Resource for Sharing and Enabling Environmental Data in NSW
SRZ	Structural Root Zone
SSDA	State significant development application
TPZ	Tree Protection Zone

Table of Contents

1 Executive Summary

1.1 Civica ArborSafe has prepared this Arboricultural Impact Assessment (Report) to accompany a State Significant Development Application (SSDA) for a proposed multi-level warehouse and distribution centre located at 1-3 Burrows Road, St Peters (the site).

1.2 This report has been prepared to identify the subject trees that can be retained or require removal to facilitate the proposed development and identify and reduce potential conflicts between subject trees and site development. This report has also been prepared to address the relevant Secretary's Environmental Assessment Requirements (SEARs) issued by the Department of Planning and Environment (DPE) for SSD-35962232 on 7 February 2022.

1.3 This report concludes that based on the supplied design proposal of the multi-level warehouse and distribution centre 20 trees; comprised of two Category A, five Category B and 13 Category C retention value (RV) trees, would require removal to facilitate the development. NB: Six of these trees were located outside the land parcel of 1-3 Burrows Road. (refer to 7.1 and Appendix E for further impact breakdown).

1.4 A further three trees were recommended to be removed irrespective of the proposed development (Category U) due to their poor health and/or structural condition and limited useful life expectancy (ULE). NB: Two of these trees were located outside of the land parcel of 1-3 Burrows Road. (refer to 7.1 and Appendix E for further impact breakdown)

1.5 Thirty-two trees were assessed as being suitable for retention under the proposed development and require generic, and in a number of cases specific protection and management measures during demolition and/or construction to ensure they remain viable following the completion of all proposed works (refer to 7.4 and Appendix E for further breakdown)

1.6 This report also concludes that the proposed warehouse and distribution centre would not likely result in any significant adverse impacts to the retained subject trees where the following mitigation measures can be implemented:

- Project arborist supervision
- Excavation methodology
- Activities restricted within the TPZ
- Protective fencing
- Trunk and ground protection
- Tree protection signage
- Demolition methodology
- Involvement from the project arborist
- Project milestones
- Compliance reporting.

1.7 Following the implementation of the above mitigation measures on the trees recommended for retention, the proposed multi-level warehouse and distribution centre development at 1-3 Burrows Road, St Peters will be in accordance with the Australian Standard AS 4970–2009: *Protection of Trees on Development Sites* (refer to Section 7.5 - 7.20 for relative information).

1.8 Accurate information on the area required for tree retention and methods/techniques suitable for tree protection during construction have been provided.

2 Introduction

2.1 Civica ArborSafe was engaged by Angus Harrold on behalf of the client to complete an Arboricultural Impact Assessment Report on 58 trees located within or adjacent to the Burrows Industrial Estate at 1-3 Burrows Road, St Peters.

2.2 This report has been prepared to identify subject trees that can be retained or require removal to facilitate the proposed development and identify and reduce potential conflicts between subject trees and site development during the demolition and construction stages.

2.3 The report has been requested as part of an SSDA that involves the demolition of the existing warehousing infrastructure and construction of new, multi-storey buildings in similar locations, along with associated access driveways and (hard and soft) landscaping.

2.4 This report intends to provide information on site trees and how the proposed development may impact them. Report findings and recommendations are based on the Australian Standard AS 4970–2009: *Protection of Trees on Development Sites*.

2.5 Observations and recommendations provided within this report are based upon the client's information and an arborist site visit.

2.6 As summarised in Table 1, this report has also been prepared to address the relevant the Secretary's Environmental Assessment Requirements (SEARs) issued by the Department of Planning and Environment (DPE) for SSD-35962232 on 7 February 2022.

Table 1 – SEARs requirements – SSD-35962232

Item	Description of Requirement	Report Reference
7	**Trees and Landscaping** *Identifies the number and location of trees to be removed and retained, and how opportunities to retain significant trees have been explored and/or informs the plan.*	Refer to Section 6 and 7, and Appendix E

3 Scope

3.1 Carry out a visual examination of the nominated trees within the vicinity of the proposed development, including trees within neighbouring properties likely to be affected by the proposal.

3.2 Provide an objective appraisal of the subject trees in relation to their species, estimated age, health, structural condition, useful life expectancy (ULE) and viability within the landscape.

3.3 Based on the findings of this investigation, provide independent recommendations on the retention value of the trees.

3.4 Nominate subject trees that can be retained or require removal to facilitate the development.

3.5 Identify and reduce potential conflicts between subject trees and site development by providing accurate information on the area required for tree retention and methods/techniques suitable for tree protection during construction.

3.6 Provide information on restricted activities within the area nominated for tree protection and suitable construction methods to be adopted during demolition and/or construction.

4 Methodology

4.1 Data Collection

4.1.1 Tom Axford of Civica ArborSafe conducted a site inspection of the subject trees on 5 August 2022.

4.1.2 Trees that are the subject of this report (Figure 3) were identified during discussions with the client, reviewing relevant supplied development documentation and the description of a non-exempt 'Tree' identified within the City of Sydney Development Control Plan 2012 Section 3 - General Provisions (City of Sydney, 2012) which defines a tree as the following:

(1) A permit or development consent is required to ringbark, cut down, top, lop, prune, remove, injure or wilfully destroy a tree that:

(a) has a height of 5m or more; or

(b) has a canopy spread of over 5m; or

(c) has a trunk diameter of more than 300mm, measured at ground level; or

(d) is listed in the Register of Significant Trees.

(3) Provision (1) does not apply to a tree of the following species that is less than 10m in height

(a) Cinnamomum camphora (Camphor Laurel)

(b) Celtis sinensis (Chinese Hackberry)

(c) Celtis occidentalis (American Nettle Tree)

NB: Other provisions and clauses apply but have been removed as they were not relevant in this circumstance.

4.1.3 The subject trees were inspected from the ground using the initial component of Visual Tree Assessment (VTA) (Mattheck, 1994). No foliage or soil samples were taken, and no aerial, underground or internal investigations were undertaken.

4.1.4 Tree height and crown spread were estimated and provided in various ranges with 5 metre increments.

4.1.5 Trunk diameter at breast height (DBH) and trunk diameter at the root crown (DRB) were measured with a diameter tape and provided to the nearest centimetre.

4.1.6 Encroachment calculations were performed using CAD. Please refer to Appendices E for calculations and F for CAD drawings.

4.1.7 Environmental and heritage information has been sourced from SEED, the NSW mapping portal (SEED, n.d.).

4.1.8 Data collected on site was analysed by Tom Axford, Lachlan Andrews and Nick Arnold, collated into report format, and relevant recommendations were formulated.

4.1.9 Tree protection zones (TPZ) and structural root zones (SRZ) were calculated in accordance with the Australian Standard AS 4970–2009: *Protection of Trees on Development Sites* (refer to Section 7.6).

4.1.10 Retention values have been determined based upon a modified version of the British Standard BS 5837–2012: *Trees in Relation to Design, Demolition and Construction* (refer to Appendix C).

4.1.11 All photographs were taken at the time of the site inspection by the assessing arborist and have not been altered for brightness or contrast or cropped.

4.1.12 Plans of the existing site and of the proposed development were provided to ArborSafe on 22 May 2024.

4.1.13 No proposed underground service locations have been reviewed in the preparation of this report.

5 Observations

5.1 Location

5.1.1 The land to which this SSDA relates was located at 1-3 Burrows Road, St Peters. The site comprised two parcels of land (allotments) and is legally described as follows:

- Lot 1 DP 1227450; and
- Lot 11 DP 606737

5.1.2 The site was an irregular-shaped allotment with a total area of approximately 35,895 square metres. The site adjoined Burrows Road to the east with a primary curved frontage of approximately 528 metres and adjoins Canal Road to the west with a secondary frontage of approximately 289 metres.

5.1.3 The site was located in the City of Sydney Local Government Area (LGA), at the junction with the Inner West and Bayside Local Government Areas (LGA's).

5.1.4 The site was occupied by older low-rise industrial units that were largely consistent with development in the surrounding area, predominantly of an industrial nature. The industrial units comprised four, large format steel-framed warehouse/distribution facilities. It is understood these buildings no longer meet the requirements of contemporary industrial users in this market.

5.1.5 The site was situated within a mainly established industrial area to the immediate south of the St Peters WestConnex Interchange and was well-connected to the Sydney Airport. The site's locality was characterised by existing industrial and commercial developments, new roads, and other major transport infrastructure. The Alexandra Canal was located approximately 100 metres to the south-east and east.

5.1.6 A Location Plan, including the site is provided in Figure 1.

5.1.7 An aerial image of the site is provided in Figure 2.

5.1.8 Site soils were considered to be heavily disturbed due to previous site development.

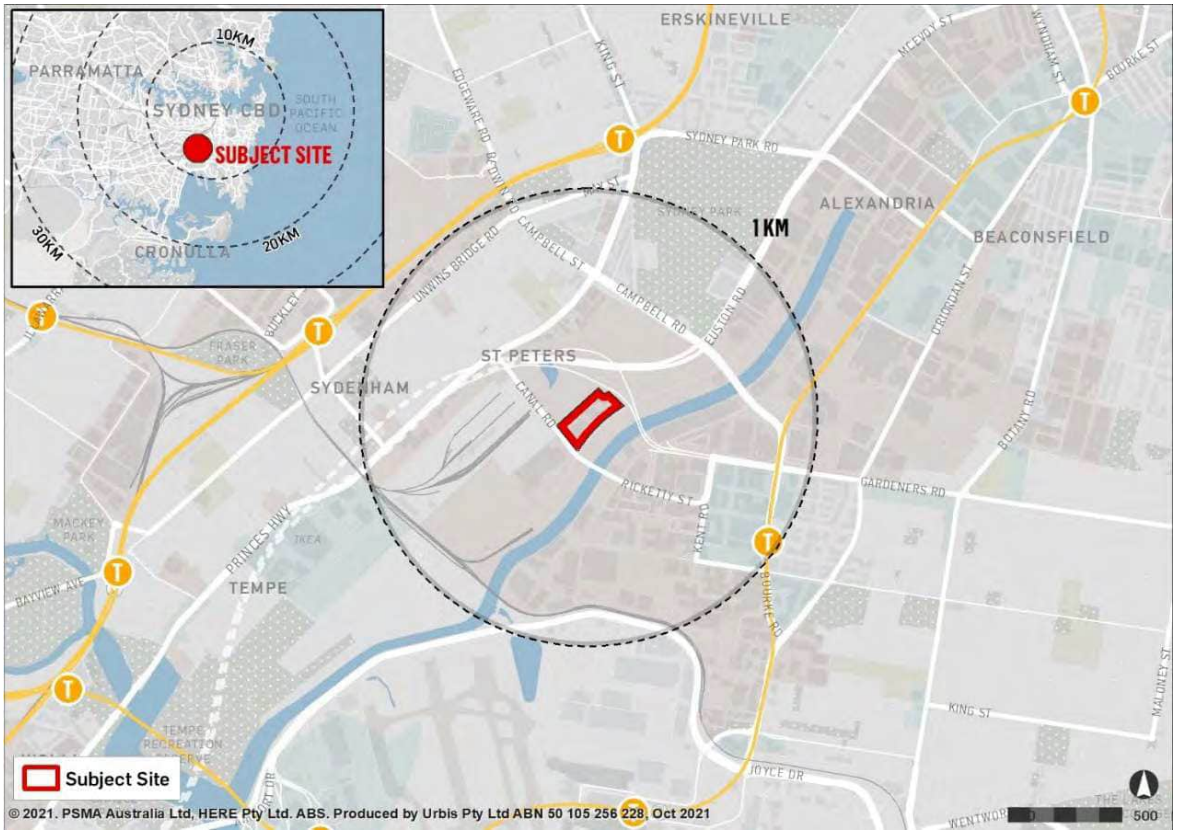


Figure 1. Location Plan. Urbis, July 2022.

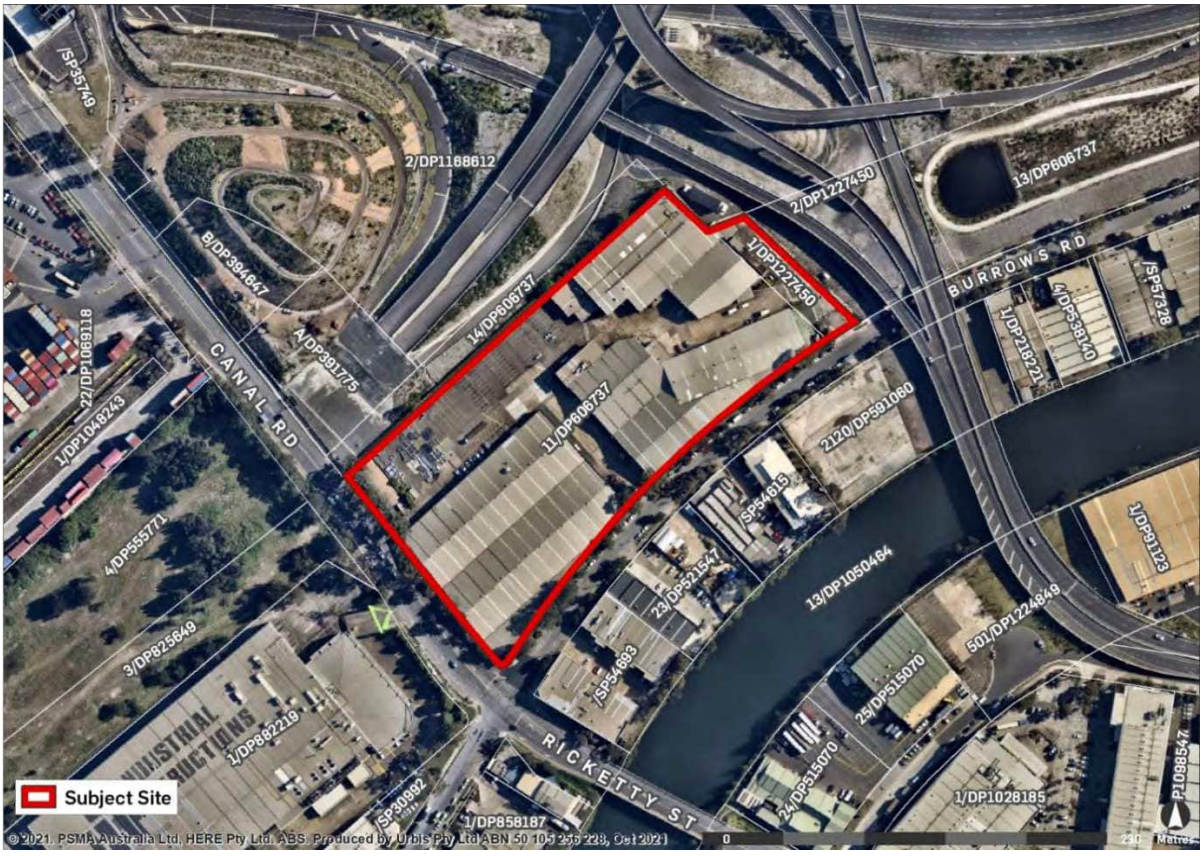


Figure 2. Aerial image of the site. Urbis, July 2022.

5.2 The subject trees

5.2.1 Trees subject to this report, Tree tag numbers between 1-64 (Figure 3).

Figure 3. Site map showing subject trees located within the land parcel of 1-3 Burrows Road. ArborSafe, June 2024.
Note that icon colour indicates trees current risk rating (not Retention Value). Tree attributes can be obtained from Appendix E.

5.2.2 The subject trees numbered 1-23 (Figure 4) were located within the land parcel of 1-3 Burrows Road, St Peters also known as (AKA) Burrows Industrial Estate and were numbered in line with the existing ArborSafe tree numbering system.

5.2.3 Trees can be identified on-site using white tree tags which are typically located at approximately 2.0m from ground level on the trunk.

5.2.4 The majority of the trees located within the site were a mixture of relatively young or mature plantings and ranged from good to fair health and structure, all of which were assumed to have been planted.

5.2.5 These trees formed part of the existing ArborSafe Tree Management System for the entire Burrows Industrial Estate site and as such, have been tagged, positioned on aerial imagery and visually assessed annually since 2015.
NB: Only 18 trees comprise the number range of 1-23 as some have been removed since 2015.

Figure 4. Site map showing subject trees located within the land parcel of 1-3 Burrows Road. ArborSafe, June 2024.
Note that icon colour indicates trees current risk rating (not Retention Value). Tree attributes can be obtained from Appendix E.

5.2.6 Two trees, Tree 24 and 25 (Figure 5) were located outside the land parcel of 1-3 Burrows Road, St Peters AKA Burrows Industrial Estate and were numbered in line with the existing ArborSite tree numbering system for the Burrows Industrial Estate.

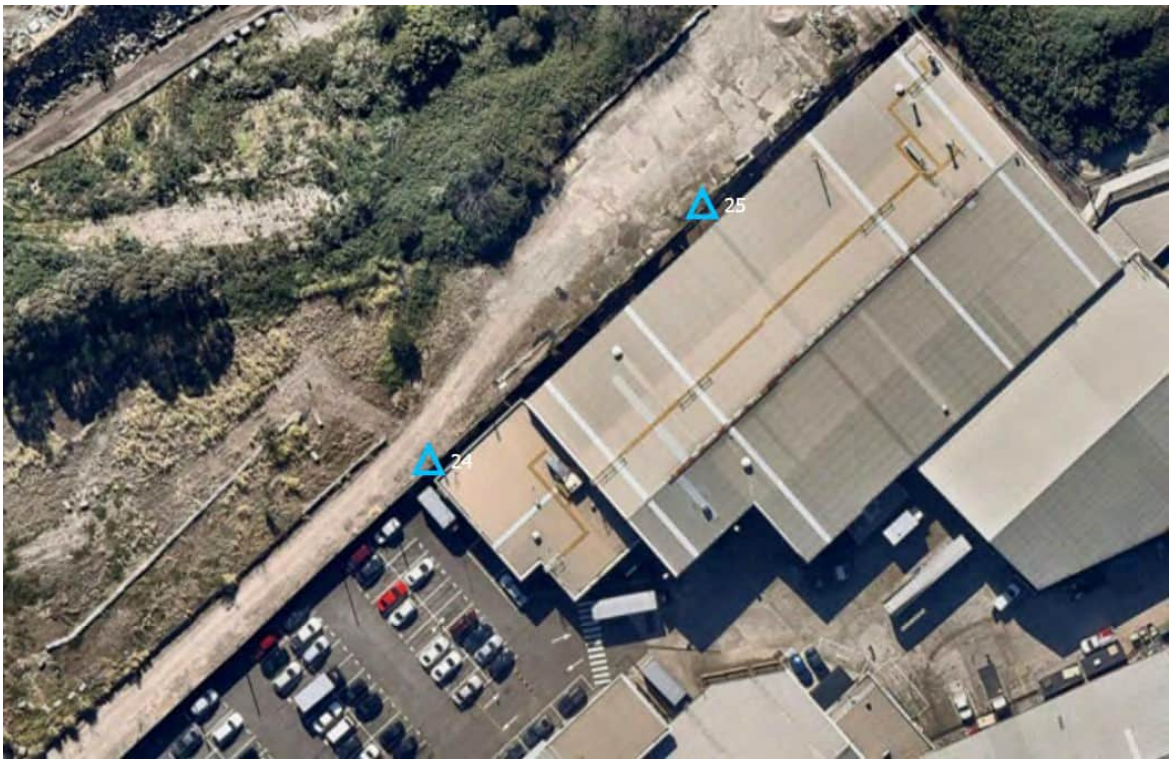


Figure 5. Site map showing subject trees located on the neighbouring property outside the land parcel of 1-3 Burrows Road. ArborSafe, June 2024. Note that icon colour indicates trees current risk rating (not Retention Value).
Tree attributes can be obtained from Appendix E.

5.2.7 The remaining subject trees numbered 26-64 (Figure 6) were located outside the land parcel of 1-3 Burrows Road, St Peters AKA Burrows Industrial Estate and were numbered in line with the existing ArborSite tree numbering system for the Burrows Industrial Estate.

5.2.8 Most of the larger trees, all of which were Australian Natives, were located on the perimeter of the site.

5.2.9 Trees on the nature strip were assumed to be under the care, control and management of the City of Sydney and were not tagged.

Figure 6. Site map showing subject trees located outside the land parcel of 1-3 Burrows Road.
Note that icon colour indicates trees current risk rating (not Retention Value).
Tree attributes can be obtained from Appendix E. ArborSafe, June 2024.

5.3 Species overview

5.3.1 Nineteen species were identified across the site with the most prevalent being *Agonis flexuosa* (Willow Myrtle/Peppermint), *Corymbia maculata* (Spotted Gum) and *Livistona chinensis* (Chinese Fan Palm).

5.3.2 The treescape was relatively young with 21 (36.2%) of the existing surveyed trees rated as semi-mature and a further 14 trees (24.1%) being in the young/juvenile category. Twenty-three trees (39.7%) were rated as mature specimens.

5.4 Tree retention values

5.4.1 Tree retention values have been determined based upon a modified version of the British Standard BS 5837–2012: *Trees in Relation to Design, Demolition and Construction*. This standard categorises tree retention value, based upon an assessment of a tree's quality (health and structure) and useful life expectancy, into one of four categories – A, B, C and U. Refer to Appendix C for further details.

5.4.2 Other criteria such as a tree's physical dimensions, age class, location and its amenity, heritage and/or environmental significance and potential replacement time were also considered. A breakdown of the attributes required for classification in each category can be obtained from Appendix C.

5.4.3 In relation to development applications, relevant consent authorities will generally consider:

- **Category A Retention Value** trees as significant and alterations to the design proposal and/or specific protection measures are generally recommended to facilitate successful tree retention post project completion.
- **Category B Retention Value** trees as a site constraint consideration. Trees in this retention category warrant proportional design consideration and amendment to ensure their viable retention post project completion.
- **Category C Retention Value** trees are not considered a site constraint and do not generally warrant design consideration or amendment.
- **Category U Retention Value** trees are considered a site opportunity, as such trees are generally of poor arboricultural quality and normally recommended for removal irrespective of proposed development.

Category	Tree numbers
A	18, 19, 21, 42, 43, 50, 57, 63
B	16, 17, 20, 26, 29, 33, 35, 36, 37, 40, 41, 46, 48, 51, 53, 60, 62, 64
C	2, 3, 4, 8, 9, 10, 12, 14, 15, 22, 23, 24, 25, 28, 30, 31, 32, 34, 38, 39, 44, 45, 47, 49, 52, 55, 56, 58, 61
U	11, 54, 59

5.5 Heritage / Environment Status

5.5.1 Heritage Status

5.5.2 The proposed development site had no trees identified as being of national, state or local heritage significance. (SEED, n.d.).

5.5.3 Botanical and Environmental Status

5.5.4 The site trees were considered common species within the local area and held limited botanical significance.

5.5.5 No subject trees were listed within the City of Sydney Significant Tree Register.

6 Discussion

6.1 Project background

6.1.1 Planning Proposal PP-2020-298

6.1.2 The applicant previously obtained approval on 16 September 2020 for a Planning Proposal (PP-2020-298) at the site. The approved Planning Proposal amended the Sydney Local Environmental Plan 2012 (SLEP 2012) by increasing the applicable maximum building height for the site from 18 metres to 30 metres. The Planning Proposal also introduced a set of site-specific controls for 1-3 Burrows Road, St Peters, in the SLEP 2012, including a 6-metre setback control to Burrows Road and Canal Road for landscaping purposes.

6.1.3 Competitive design alternatives process

6.1.4 Goodman undertook a Competitive Design Alternatives Process (CDP) with three selected architectural firms following an expression of interest process.

6.1.5 The Design Integrity Panel resolved that the Welsh + Major scheme best demonstrated the ability to achieve design excellence as per Clause 6.21 of the SLEP 2012 and the scheme which best met the design, planning and commercial objectives of the Competition Brief. The Welsh + Major scheme was subsequently awarded the winner of the CDP .

6.2 Proposed development

6.2.1 The vision for the project is to transform the site into a functional and adaptable multi-storey industrial warehouse building (Figure 7) that will support industrial expansion in this highly accessible location and build upon strong ecommerce drivers close to Sydney Airport, Port Botany, Cooks River Intermodal Terminal and the Sydney CBD.

6.2.2 This detailed SSDA follows on from the CDP undertaken between January and April 2022, whereby, the winning project architects Welsh and Major (W&M) were announced by the Selection Jury (Jury).

6.2.3 This proposed SSDA seeks approval for the following:

- Demolition of all existing structures and buildings on site.
- Tree removal both on site and for a limited number of trees in the public domain and adjoining lot.
- Site remediation, and establishment works, including minor excavation / bulk earthworks.
- Design, construction and operation of a two-storey warehouse and distribution centre building with ancillary offices for each warehouse tenancy, including:
  - Approximately 34,032sqm of total GFA, comprising:
    - 30,389sqm of warehouse and distribution centre GFA.
    - 3,334sqm of GFA for ancillary office space; and
    - End of Trip Facilities on the ground floor of 309 sqm GFA.
  - Maximum building height of RL 29.70 (maximum 25m from existing ground level).
  - Operation 24 hours per day seven days a week.
- Provision of on grade car parking accessed off Burrows Road which provides 145 tenant and visitor car parking spaces (including 8 accessible bays), 14 motorcycle spaces, and bicycle parking and end-of-trip facilities (including 66 bicycle parking spaces, showers, lockers and change rooms for occupants).
- New crossings to Burrows Road for truck and car access.
- Single fire and utilities services ingress crossing off Canal Road.

- Site landscaping works totalling approximately 6,856sqm (or 19.8% of the site), including
  - Two x 6-metre landscaped setback areas to both the Burrows Road and Canal Road site frontages.
  - 3,829sqm or 11.0% deep soil landscaping.
  - 3,027sqm or 8.7% of permeable paving; and
  - 5,450sqm or 15.7% tree canopy coverage.
- Provision of building / business identification and wayfinding signage.

6.2.4 This report has been prepared for the Arboricultural Impact Assessment and provides an analysis of which trees will need to be removed and/or can be retained under the current design.

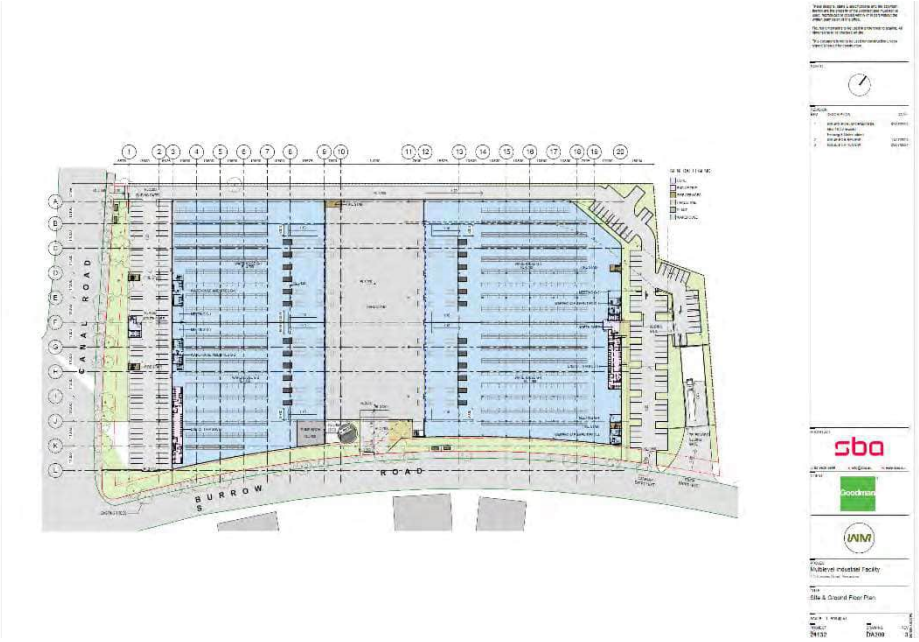


Figure 7. Excerpt from Site & Ground Floor Plan (Ref. DA200, Rev: 3). Welsh + Major, 23 July 2024.

6.3 Determining TPZ encroachment

6.3.1 Major encroachment. As per the Australian Standard AS 4970–2009: *Protection of Trees on Development Sites*, a major encroachment into the TPZ of any tree is considered to occur when it is beyond 10 percent of the total TPZ area.

6.3.2 Trees with major encroachment may require removal or, in certain instances, be retained with specific protection requirements throughout the construction stage.

6.3.3 Minor encroachment. Under the aforementioned standard, a minor encroachment is determined as being less than 10 percent of the total TPZ area. Trees with minor encroachment may be retained with specific, generic or no protection requirements throughout the construction stage.

6.3.4 No encroachment. Trees with no encroachment may be retained with generic or no protection requirements throughout the construction stage.

6.3.5 For the purposes of this report, trees to be removed or retained have been identified as those:

- Requiring removal due to a level of encroachment into their TPZ that would likely result in a detrimental impact upon their future health and/or stability
- Retainable and requiring specific protection requirements throughout construction (i.e. generic requirements plus a combination of arborist supervision and careful construction methods within their TPZ)
- Retainable and requiring generic tree protection measures only (i.e. protective fencing and restriction of activities within the TPZ)

6.4 Impact of proposed development

6.4.1 The proposed development has been reviewed and consists of the demolition of the existing Burrows Industrial Estate buildings with the subsequent construction of a multi-story warehouse and distribution centre across a similar footprint.

6.4.2 The trees affected by direct conflict with the proposed construction footprint would require removal under the current design. To retain any of these trees a redesign or relocation of the development would be required.

6.4.3 The main development impact which affects trees, but not necessarily to the point of requiring immediate removal, is significant root damage/severance due to major TPZ encroachment. Root damage/severance largely occurs due to two main impacts – soil compaction (compacting existing site soil to build on or installing additional fill to raise soil levels) and/or direct root severance (excavation for service installation or lowering surface levels).

6.4.4 Negative tree impacts can manifest as either a reduction in health and/or vigour due to root loss (absorption and/or transport roots) resulting in a reduction in water and nutrient absorption capability or on tree stability if larger roots are impacted. Ultimately, the outcome for the trees depends on a number of variable factors including species, age, current health, TPZ encroachment percentage, soil type, topography, previous site use and the proposed design and construction methodology.

6.4.5 Compacted soils, especially artificially compacted soils, such as those commonly found under driveways or building platforms, have a higher bulk density down to a deeper level of subsoil. Bulk density is the term used for describing the weight of soil per unit volume. The broad engineering thinking is that the higher the density the more stable the road surface due to less soil movement in expansion, contraction, or compression. A higher bulk density is produced by compacting the soil to reduce available pore space between the soil particles.

6.4.6 The effect of compacted soils on plants is somewhat influenced by soil type but generally a reduction in soil pore space reduces the available area for oxygen and water within the soil profile. A reduction in available soil water and/or oxygen inhibits root activity within the soil, as they are essential for root elongation and growth, and the lack of these properties is considered a major limiting factor. Due to this reason, existing infrastructure, such as roads, situated in close proximity to the base of trees can act as root barriers thereby affecting the shape of the TPZ and allowing closer works than would otherwise be permitted.

6.4.7 The impact of significant soil level rises across the TPZ generally occurs over a longer time frame, as the stored energy can still be utilised and shifted within the tree even if the long-term use of the affected root is limited, than if the roots were directly severed. Soil level rises generally allows the tree more time to react to the changed growing environment whereas root severance has the same effect, reduction in root function and capability, but on an instantaneous time scale where there is no time for the tree to adjust.

6.4.8 The assumption of allowable encroachment and minimal long-term health or structural impacts to trees rely on a combination of the following being used – root sensitive construction methods being adhered to within the TPZ, minimal excavation within the TPZ to limit root severance (i.e. construction placed outside the TPZ where possible), fill rather than excavation utilised to affect level changes where possible (i.e. to minimise root severance and allow the tree's root system time to adjust), no construction occurring within the SRZ, compensatory area being available around the unimpacted aspects of the trees, and the enhancement of the existing TPZ area (i.e. mulched, soil conditioning and irrigation when required).

6.4.9 Twenty subject trees 2, 3, 4, 8, 9, 10, 12, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24, 25 26 and 64 will be affected by direct conflict with the proposed construction footprint and or have significant grade changes within their respective TPZ/SRZ and would require removal under the current design. To retain any of these trees a redesign or relocation of the development would be required.

6.4.10 A further three trees are considered Category U rated trees and have been recommended for removal irrespective of the proposed development works i.e. Trees 11, 54 and 59.

6.4.11 Three subject trees are predicted to incur a major encroachment and will require specific protection and management measures during the proposed works to ensure their successful retention and are numbered 19, 45 and 51.

6.4.12 Thirty-two trees are predicted to incur minor or no encroachment and can be successfully retained provided generic protection measures are effectively established throughout the project. These trees are numbered 39, 40, 41, 42, 43, 44, 46, 47, 48, 49, 50, 52, 53, 55, 56, 57, 58, 60, 61, 62 and 63.

7 Tree protection and management recommendations

7.1 Tree removal

7.1.1 To facilitate the supplied design proposal, 20 trees would require removal (Figure 8).

7.1.2 A further three trees are recommended to be removed irrespective of development (Category U) due to their poor health and/or structural condition.

Recommendation	Category A High retention value		Category B Moderate retention value		Category C Low Retention value		Category U No retention value	
	Qty	Tree numbers	Qty	Tree numbers	Qty	Tree numbers	Qty	Tree numbers
Remove for development	2	18, 21	5	16, 17, 20, 26, 64	13	2, 3, 4, 8, 9, 10, 12, 14, 15, 22, 23, 24, 25	0	
Remove irrespective of development / Remove in context of the development	0		0		0		3	11, 54, 59

7.2 Trees located within the land parcel of 1-3 Burrows Road, St Peters

7.2.1 Of the trees requiring removal, seventeen numbered 2, 3, 4, 8, 9, 10, 12, 14, 15, 16, 17, 18, 20, 21, 22 and 23 were located within the subject site of 1-3 Burrows Road, St Peters.

7.3 Trees located outside of the land parcel of 1-3 Burrows Road, St Peters

7.3.1 Of the trees requiring removal, six trees numbered 24, 25, 26, 54 59 and 64 were located outside the subject site of 1-3 Burrows Road, St Peters.

7.3.2 Four trees, numbered 26, 54, 59 and 64 were located on the nature strip and were presumed to be under the care, control and management of the City of Sydney.

7.3.3 Trees 24 and 25 were located on the neighbouring north-western property boundary. It was unclear at the time of assessment if these trees were located on the land parcel of 1-3 Burrows Road, St Peters (located just on the other side of the dividing fence) or not. Both of these trees were Category C RV trees. One of which is exempt under the City of Sydney DCP 2012 (City of Sydney, 2012). Both will require removal for the proposed development.

7.3.4 Two trees, numbered 54 and 59, located on the nature strip under the care, control and management of the City of Sydney, were categorised as Category U RV (remove irrespective of development) due to advanced decay and poor structure.

Figure 8. Site map showing trees requiring removal to facilitate the development. ArborSafe, August 2022.

7.4 Tree retention

7.4.1 Thirty-six trees are recommended for retention (Figure 9) with generic, and in some cases specific, protection measures during construction to ensure they remain viable following the completion of works.

Recommendation	Category A High retention value		Category B Moderate retention value		Category C Low Retention value	
	Qty	Tree numbers	Qty	Tree numbers	Qty	Tree numbers
Retain with specific protection requirements	1	19	1	51	1	45
Retain with generic protection requirements	5	42, 43, 50, 57, 63	13	29, 33, 35, 36, 37, 40, 41, 46, 48, 53, 60, 62	15	28, 30, 31, 32, 34, 38, 39, 44, 47, 49, 52, 55, 56, 58, 61

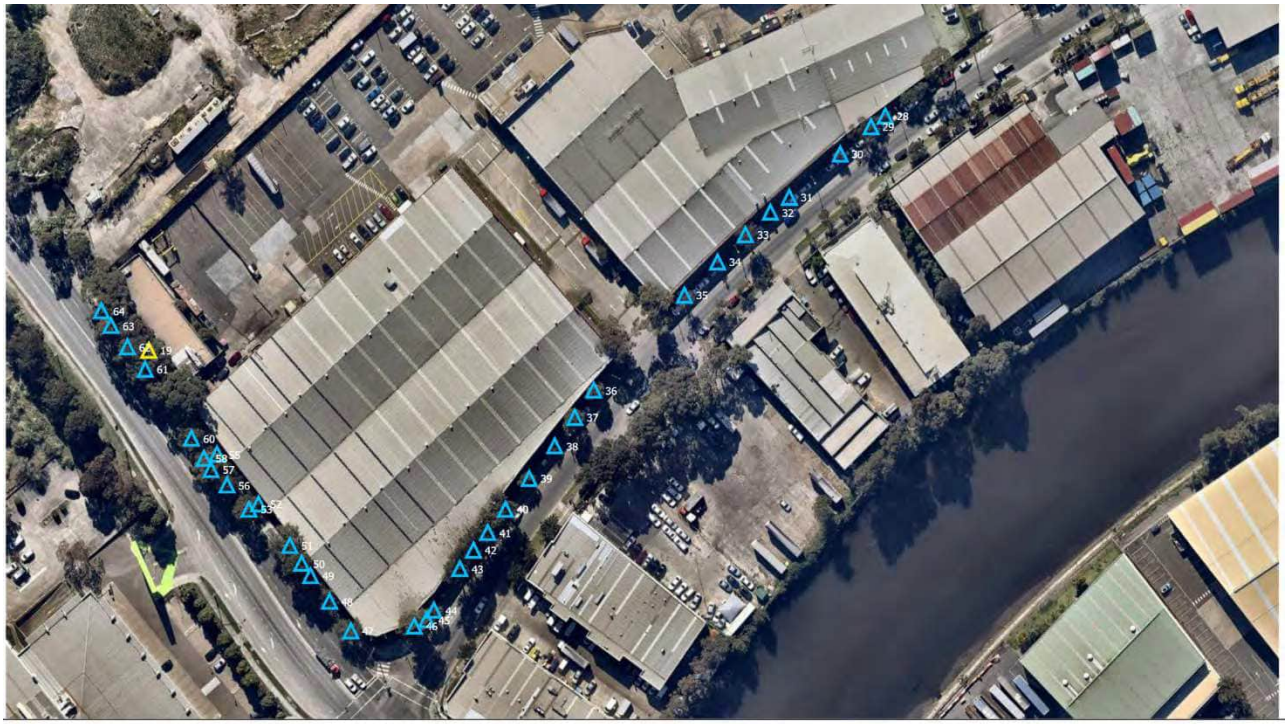


Figure 9. Site map showing all retained trees requiring generic/specific protection measures. ArborSafe, August 2022.

7.5 Specific protection measures

7.5.1 Trees 19, 45 and 51 (Figure 10) have proposed demolition and/or construction works with a portion of their respective TPZ that is >10%, though in all three instances considered tolerable considering the species profile, growing environment and tolerability to relatively minor root damage.

7.5.2 Excavation occurring within int the TPZ of these trees it is to be carried out under arborist supervision and/or with the consent of the project arborist.

7.5.3 In the first instance any and all proposed encroachment(s) into a tree's designated SRZ are to be eliminated at the design phase, as significant root damage/severance inside of this area can impact future tree health and/or stability within the soil profile.

7.5.4 It is recommended that any proposed excavation commence at the outer extent of the TPZ and move inwards to minimise root damage/severance to the subject trees.

7.5.5 Where soil excavations represent a TPZ incursion in excess of 10 percent, or are proposed to occur within the SRZ, exploratory, root sensitive excavation techniques will invariably be recommended such as:

- Excavation using a vacuum truck
- Excavation using an air spade with vacuum truck
- Excavation by hand

7.5.6 Where exploratory excavation(s) identifies significant root mass, a modification to the proposed design and/or a revision of individual tree retention/removal status may be required.

7.5.7 Roots discovered are to be treated with care and minor roots (<30-40 millimetres in diameter) pruned with a sharp, sterile handsaw or secateurs.

7.5.8 All significant roots (>30-40 millimetres in diameter) are to be preserved/protected from desiccation, recorded, photographed and reported to the project arborist for review. At the discretion of the project arborist they may decide that retention of such roots is required for the sake of future tree health, or may determine such roots can be pruned without any significant impact on future health and/or stability.

7.5.9 Other proposed surfacing within the TPZ is to be installed above the existing grade and be of a permeable nature to allow the passage of air and moisture into the soil profile. If the surfacing is to be load bearing, a geogrid/web or similar such design is to be incorporated to ensure the soil profile within the TPZ does not become compacted.

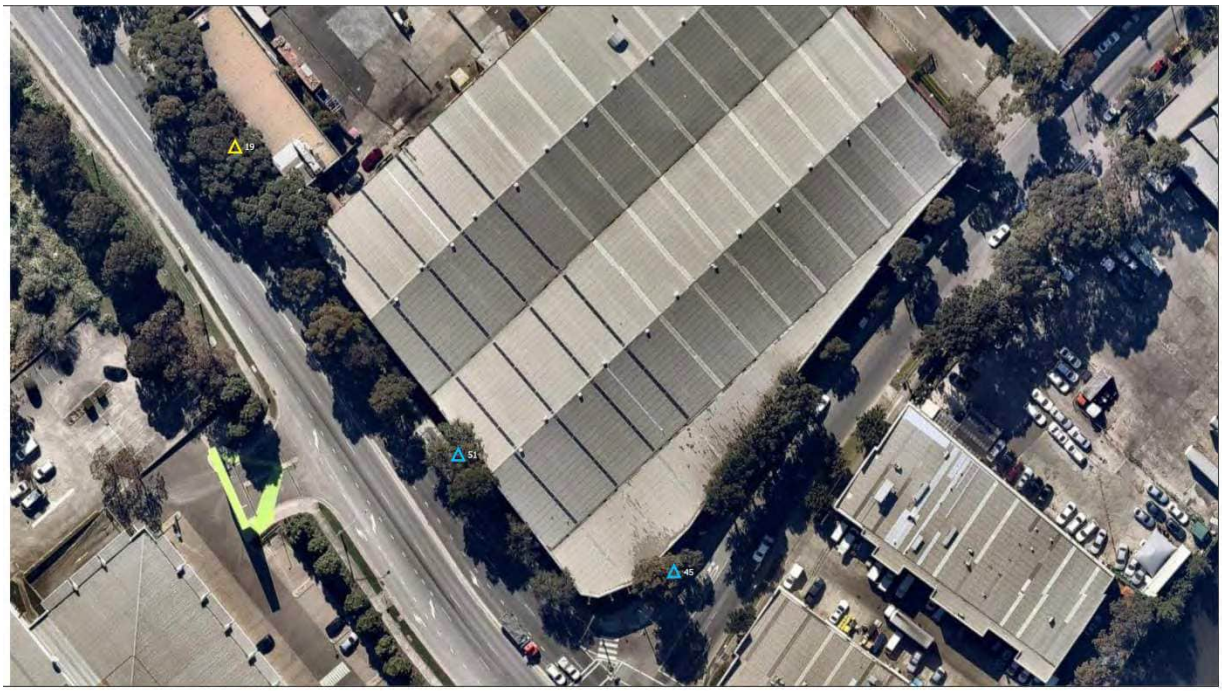


Figure 10. Site map showing tree requiring specific protection measures. ArborSafe, August 2022.

7.6 Generic protection and reporting measures

7.6.1 All subject trees designated for retention require generic protection measures during the demolition and/or construction stage. Tree protection measures include a range of:

- Activities restricted within the TPZ
- Protective fencing
- Trunk and ground protection
- Tree protection signage
- Involvement from the project arborist
- Project milestones
- Compliance reporting

7.7 Activities prohibited within the TPZ

- Machine excavation including trenching
- Storage
- Preparation of chemicals, including cement products
- Parking of vehicles and plant
- Refuelling
- Dumping of waste
- Wash down and cleaning of equipment
- Placement of fill
- Lighting of fires
- Soil level changes
- Temporary or permanent installation of utilities and signs
- Physical damage to the tree

7.8 Protective fencing specification

7.8.1 Tree protective protection fencing is to be installed at the designated TPZ or maximum practicable extent. As a guide fencing is to be erected as per the image below before any machinery or materials are brought to site and before commencement of works (including demolition).

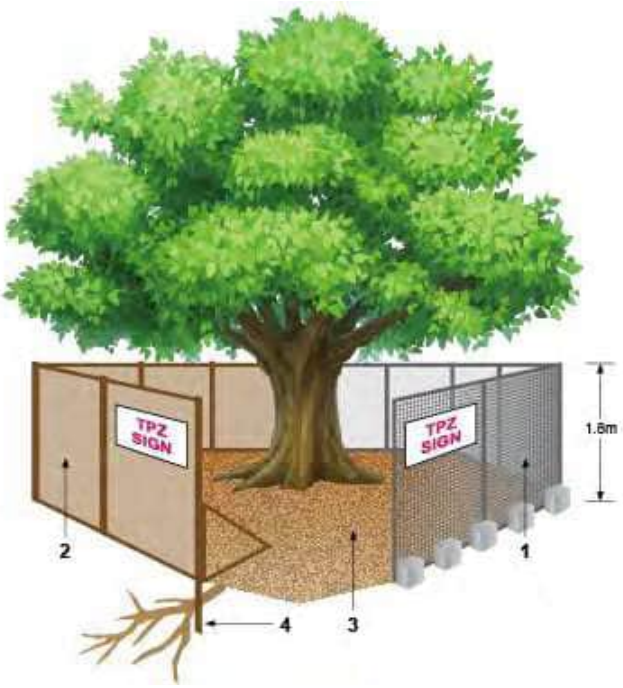
7.8.2 In some areas of the site (i.e. protection of trees on neighbouring properties) existing boundary fencing and/or external site fencing may be used as an alternative to protective fencing.

7.8.3 Once erected, tree protection fencing must not be removed or altered without approval from the project arborist and/or the responsible authority and is to be secured to restrict unauthorised access.

7.8.4 Tree protection fencing is to be a minimum of 1.8 metres high and mesh or wire between posts must be highly visible. Fence posts and supports should have a diameter greater than 20 millimetres and should ideally be freestanding, otherwise be located clear of tree roots.

7.8.5 Tree protection fencing must remain intact throughout all proposed construction works and must only be dismantled after their conclusion. The temporary dismantling of tree protection fencing must only be done with the authorisation of the project arborist and/or the responsible authority.

7.8.6 The subject trees themselves must also not to be used as a billboard to support advertising material. Affixing nails or screws into the trunks of trees to display signs of any type is not a recommended practice in the successful retention of trees.



Legend:
1. Chain wire mesh panels with shade cloth attached (if required), held in place with concrete feet
2. Alternative plywood or wooden paling fence panels. This fencing material also prevents building materials or soil entering the TPZ
3. Mulch installation across surface of TPZ (at discretion of the project arborist). No excavation, construction activity, grade changes, surface treatment or storage materials of any kind are permitted within the TPZ
4. Bracing is permissible within the TPZ. Installation of supports should avoid damaging roots.

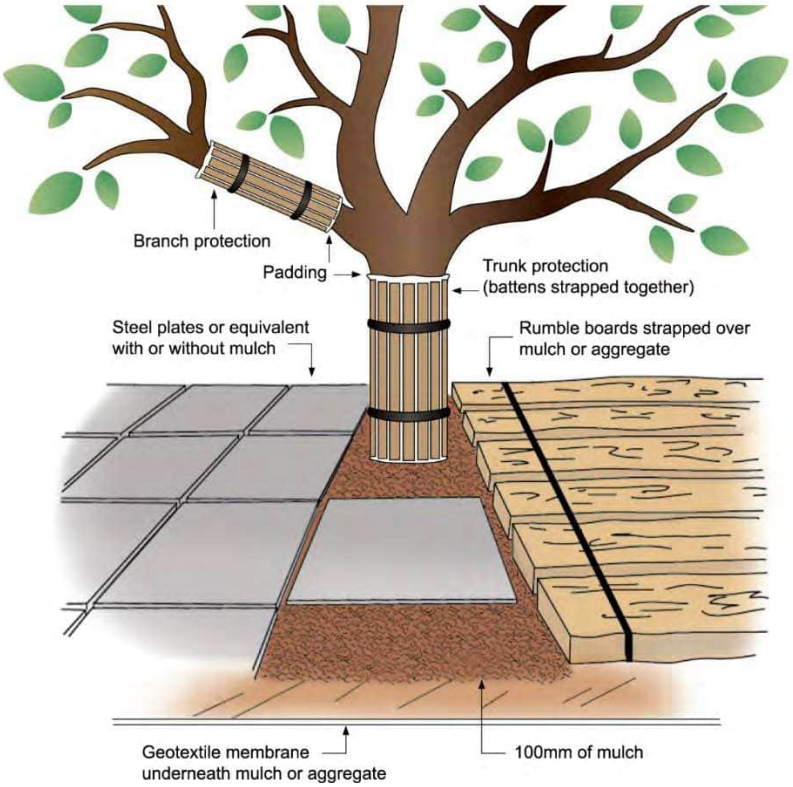
Figure 11. Depicts standard fencing techniques. AS 4970–2009.

7.9 Trunk and ground protection

7.9.1 Where proposed works are within the TPZ of retained subject trees, standard protective fencing may not always be a viable method of protection. In these instances, trunk protection and/or ground protection should be installed prior to the commencement of site establishment and remain in place until after all proposed works have been completed.

7.9.2 Where construction access into the TPZ of retained subject trees cannot be avoided, the root zone of each affected tree must be protected using steel plates or rumble boards strapped over mulch/aggregate until such a time as permanent, above-ground surfacing (cellular confinement system or similar) is installed.

7.9.3 Trunk and ground protection is to be undertaken in accordance with the Australian Standard AS 4790–2009: *Protection of Trees on Development Sites* as per the image below.



Notes:
1. For trunk and branch protection use boards and padding that will prevent damage to bark. Boards are to be strapped to trees, not nailed or screwed.
2. Rumble boards should be of a suitable thickness to prevent soil compaction and root damage.

Figure 12. Depicts trunk and ground protection techniques. AS 4970–2009.

7.10 Tree protection signs

7.10.1 Signs identifying the TPZ are to be placed at approximate 10 metres intervals around the edge of the TPZ fencing and must be visible from within the development site.

Figure 13. Depicts an example of a tree protection sign. AS 4970–2009.

7.11 Proposed pruning

7.11.1 No trees were specifically identified as requiring pruning, however, minor reduction pruning of tree canopies may be required to allow for vehicle egress or general site movements.

7.11.2 Reduction pruning should focus on the removal of smaller diameter branches where feasible and remove no greater than 10% of the total crown. Branches no greater than 50mm diameter are to be removed unless specifically approved by the project arborist.

7.11.3 To ensure a high standard of works is achieved, all pruning/tree removal is recommended to be completed in accordance with the Australian Standard AS 4373–2007: *Pruning of Amenity Trees* (Standards Australia, 2007) and undertaken by a suitably qualified arborist (minimum AQF 3 arborist).

7.12 Project arborist

7.12.1 A project arborist must be commissioned to oversee all tree protection measures, approved works within TPZ's (where necessary) and complete regular monitoring and compliance certification.

7.12.2 The project arborist must be suitably experienced and competent in arboriculture, having acquired through training, a minimum qualification in this field under the Australian Qualification Framework (AQF) of Level 5, or an equivalent.

7.12.3 Regular site inspections are to be conducted by the project arborist at several, key points during the project to ensure all tree protection recommendations are being adhered to during demolition and/or construction. Such inspections will also allow for any alterations in tree health and/or additional tree protection or remediation measures to be identified and addressed.

7.13 Project milestones

7.13.1 The following visits and milestones are recommended as a guide as to when on-site inspections by the project arborist are required:

Item	Purpose of Visit	Timing of Visit(s)	Prerequisites
1	Pre-start induction	Following sign-off from Item 1. Contractor to provide a minimum of five days' advance notice for this visit.	Prior to commencement of works. All parties involved in the project to attend.
2	Supervision of works in TPZ's, including all regrading and excavations	Whenever there is work planned to be performed within the TPZ's. Contractor to provide a minimum of five days' advance notice for such visits.	
3	Regular site inspections	Minimum frequency monthly for the duration of the project.	The checklist must be completed by the project arborist at each site inspection and be signed by both parties.
4	Final sign off	Following completion of all works.	Practical completion of works and prior to tree protection removal.

7.14 Compliance reporting

7.14.1 Following each site inspection, the project arborist is to prepare a report detailing the health and structural condition of the subject trees designated for retention. These reports should certify whether the works are being undertaken in accordance with the consent/conditions relating to tree protection and management.

7.14.2 These reports should contain photographic evidence (where applicable) to demonstrate that all tree protection and management recommendations are being carried out as specified.

7.14.3 Matters to be monitored and contained in these reports must include tree health and structural condition, the appropriateness and effectiveness of tree protection measures and any potential impact(s) on retained subject trees relating to conducted works which may arise from changes to the endorsed plans.

7.14.4 After completion, the reports shall be submitted to the project manager (as well as the clients' nominated representative where required).

7.14.5 If any tree protection conditions are found to have been breached, clear remedial action specifications must be specified, and the responsible authority notified.

7.15 Underground service installation

7.15.1 The installation of underground services (including drainage) must not encroach within the TPZ of any retained subject tree unless authorised by the project arborist and/or the responsible authority in which case underground boring will invariably be recommended.

7.15.2 The boring of services is to occur at a minimum depth of 800 millimetres (top of pipe) below the existing grade for trees with a trunk DBH of <100 centimetres, 950 millimetres for trees with a trunk DBH of 100–150 centimetres and 1100 millimetres for trees with a trunk DBH of >150 centimetres.

7.15.3 To minimise soil disturbance associated with service installation, communal service lines must be used where appropriate. The entry and exit pits for boring must also be positioned outside the designated TPZ for each tree.

7.16 Offset tree planting

7.16.1 Offset plantings are recommended to reflect the number of subject trees removed and the initial loss of amenity and biomass at a ratio of 1:1, or a rate designated by the responsible authority. Replacement trees are to be sourced from a reputable supplier and planted after the completion of all proposed works and at a time of year conducive to successful tree planting and establishment.

7.16.2 Replacement tree species must suit their location on the site in terms of their potential physical dimensions at maturity and their tolerance(s) to the surrounding environmental conditions e.g. water and climate sensitive selections. To avoid unethical or unprofessional species selection and/or their placement within the landscape, replacement species must be selected in consultation with a consulting arborist, who can also assist in implementing successful tree planting and establishment techniques.

7.16.3 Replacement tree species must have the genetic potential to reach physical dimensions at maturity that are comparable to those trees which have been removed.

7.16.4 A mixture of family, genus and species within the replacement tree planting list is considered desirable to help build resilience within the overall tree population on site, and surrounding area.

7.16.5 Newly planted trees will likely require maintenance and after planting care for a period of 2–3 years to ensure successful establishment. Plantings which fail during the establishment period are to be removed and replaced like for like.

7.16.6 Maintenance schedules may include (but not be limited to) watering, mulching, staking, guarding and formative pruning.

7.17 Additional excavation/trenching within TPZ's

7.17.1 In the event additional excavation is required within the TPZ of subject trees designated for retention/preservation, this is only to be conducted with the express consent of the project arborist and/or the responsible authority.

7.17.2 Upon review these excavations may be required to be conducted using techniques that are sensitive to tree roots to avoid unnecessary damage.

7.18 Plant health care

7.18.1 When managing a tree affected by development incursions within its TPZ, plant tonic and growth stimulant drenching may be required. Plant tonic and growth stimulant drenching is the process of adding diluted products directly to the root area of a tree to promote and assist trees to cope with loss of roots during the development process. They also assist trees to provide better resistance to sap sucking insects and fungal attack/disease and improve the establishment of beneficial microbial populations and nutrient uptake.

7.19 Irrigation

7.19.1 Regular checks are required to ensure retained trees are receiving the correct amount of water. The majority of a tree's fine water absorbing roots are located in the top 10–30 centimetres of soil. To undertake a basic soil moisture test, a small hole to a depth of approximately 40 centimetres at the dripline of the tree. If the soil is moist at this depth, water is not needed. Slow irrigation that provides an even coverage and targets the absorbing roots is the key to successful irrigation and encourages a deeper tree root system. Irrigation near the trunk is unnecessary as for most trees there are generally fewer water absorbing roots in this area. Irrigating the soil from half-way between the trunk and the dripline as well as beyond the dripline will provide water where it will most effectively be used.

7.19.2 Preferably, trees should be watered during the cooler evening and early morning period when temperatures are lower, humidity is higher, and the air is calmer thereby reducing water evaporation from the soil surface. Irrigation in the middle of the day is not harmful to most trees however it is less efficient.

7.19.3 Avoid watering trees during peak, daytime temperatures to minimise evaporation and potential foliar damage.

7.20 Mulching

7.20.1 Mulching regulates soil moisture and temperature levels, suppresses weeds, minimises soil compaction and reduces run off during periods of heavy rain. Acquiring wood chip mulch from programmed tree works (and by purchasing it from local tree contractors) is a proactive way to improve the growing conditions around trees that ultimately will result in improved tree health and vitality.

7.20.2 Mulch should aim to cover an area at least as large as a tree's crown projection (and preferably larger) for it to be effective. It should also be laid at a uniform thickness of 75–100 millimetres and kept clear of the trunk. Mulch should also be placed over damp to wet soil and never over dry soil. Application during the cooler months of the year is ideal. In areas where grass exists where you wish to mulch, spray the grass first with a non-selective herbicide and allow it to wilt and die before placement. This practice will negate grass growing up through the mulch over time.

7.20.3 Mulching within the crown projection of trees not only improves long term tree and soil health but also acts to reduce tree risk potential by reducing targets that may pass and/or congregate under their crowns. This in turn will minimise the likelihood of injury in the event of unanticipated branch failure.

8 References

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Plans of the existing site and of the proposed development were provided to Civica ArborSafe on 21 May 2024 and include (but are not limited to):

- Ground Floor Warehouse Plan, Dwg. Ref. SK 101, Issue: B. Welsh + Major, January 2024.
- North Section, Dwg. Ref. SK 211. Welsh + Major, 10 May 2024.

Appendix A. Arboricultural reporting assumptions and limiting conditions

1. Any legal description provided to the consultant is assumed to be correct. Any titles and ownership of any property are assumed to be good. No responsibility is assumed for matters legal in character.

2. It is assumed that any property/project is not in violation of any applicable codes, ordinances, statutes or other government regulations.

3. Care has been taken to obtain all information from reliable sources. All data has been verified in so far as possible, however, the consultant can neither guarantee nor be responsible for the accuracy of the information provided by others.

4. The consultant shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services.

5. Loss or alteration of any part of this report invalidates the entire report.

6. Possession of this report or a copy thereof does not imply right of publication or use for any purpose by anyone but the person to whom it is addressed, without the prior written consent of the consultant.

7. Neither all nor any part of the contents of this report, nor any copy thereof, shall be used for any purpose by anyone but the person to whom it is addressed, without the written consent of the consultant. Nor shall it be conveyed by anyone, including the Client, to the public through advertising, public relations, news, sales or other media, without the written consent of the consultant.

8. This report and any values expressed herein represent the opinion of the consultant and the consultant's fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.

9. Sketches, diagrams, graphs and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys unless expressed otherwise.

10. Information contained in this report covers only those items that were examined and reflect the condition of those items at the time of inspection.

11. Inspection is limited to visual examination of accessible components without dissection, excavation or probing. There is no warranty or guarantee expressed or implied that the problems or deficiencies of the plants or property in question may not arise in the future.

Appendix B. Explanation of tree assessment terms

Tree number: Refers to the individual identification number assigned within the ArborSafe software to each assessed tree on the site and the number which appears on the tree's tag.

Tree location: Refers to the easting and northing coordinates assigned to the location of the tree as obtained from the geo-referenced aerial image within the ArborSafe software.

Tree species: Provides the botanic name (genus, species, sub-species, variety and cultivar where applicable) in accordance with the International Code of Botanical Nomenclature (ICBN), and the accepted common name.

Trees in group: The number of trees encompassing a collective assessment of more than one tree. Typically grouped trees have similar attributes that can be encompassed within one data record.

Height: The estimated range in metres attributed to the tree from its base to the highest point of the canopy. Where required height will be estimated to the nearest metre.

Diameter at Breast Height (DBH): Refers to the tree's estimated trunk diameter measured 1.4m from ground level for a single trunked tree. These estimates increase in 50mm increments. Where required DBH will be measured to give an accurate measurement for single trunked trees, trees with multiple trunks, significant root buttressing, bifurcating close to ground level or trunk defects and will be measured as per the Australian Standard AS 4970–2009: *Protection of Trees on Development Sites*.

Tree Protection Zone (TPZ): A specified area above and below ground and at a given distance measured radially away from the centre of the tree's trunk and which is set aside for the protection of its roots and crown. It is the area required to provide for the viability and stability of a tree to be retained where it is potentially subject to damage by development. The radius of the TPZ is calculated by multiplying its DBH by 12. TPZ radius = DBH × 12. (Note "Breast Height" is nominally measured as 1.4m from ground level). TPZ is a theoretical calculation and can be influenced by existing physical constraints such as buildings, drainage channels, retaining walls, etc. (Standards Australia, 2009).

Structural Root Zone (SRZ): The area close to the base of a tree required for the tree's anchorage and stability in the ground. The woody root growth and soil cohesion in this area are necessary to hold the tree upright. The SRZ is nominally circular with the trunk at its centre and is expressed by its radius in metres. SRZ radius = (D × 50)0.42 × 0.64 (Standards Australia, 2009).

Canopy spread: The estimated range in metres attributed to the spread of the tree's canopy on its widest axis. Where required crown spread will be estimated to the nearest metre.

Origin: Refers to the origin of the species and its type.

Category	Description
Indigenous	Occurs naturally in the local area and is native to a given region or ecosystem.
State Native	Occurs naturally within State but is not indigenous.
Australian Native	Occurs naturally within Australia and its territories but is not a State native or indigenous.
Exotic Evergreen	Occurs naturally outside of Australia and its territories and typically retains its leaves throughout the year.
Exotic Deciduous	Occurs naturally outside of Australia and its territories and typically loses its leaves at least once a year.

Health: Refers to the health and vigour of the tree.

Category	Description
Excellent	Canopy full with even foliage density throughout, leaves are entire and are of an excellent size and colour for the species with no visible pathogen damage. Excellent growth indicators, e.g. seasonal extension growth. Exceptional specimen.
Good	Canopy full with minor variations in foliage density throughout, leaves are entire and are of good size and colour for the species with minimal or no visible pathogen damage. Good growth indicators, none or minimal deadwood.
Fair	Canopy with moderate variations in foliage density throughout, leaves not entire with reduced size and/or atypical in colour, moderate pathogen damage. Reduced growth indicators, visible amounts of deadwood, may contain epicormic growth.
Poor	Canopy density significantly reduced throughout, leaves are not entire, are significantly reduced in size and/or are discoloured, significant pathogen damage. Significant amounts of deadwood and/or epicormic growth, noticeable dieback of branch tips, possibly extensive.
Dead	No live plant material observed throughout the canopy, bark may be visibly delaminating from the trunk and/or branches.

Age: Refers to the life cycle of the tree.

Category	Description
Young	Newly planted small tree not fully established may be capable of being transplanted or easily replaced.
Juvenile	Tree is small in terms of its potential physical size and has not reached its full reproductive ability.
Semi-mature	Tree in active growth phase of life cycle and has not yet attained an expected maximum physical size for its species and/or its location.
Mature	Tree has reached an expected maximum physical size for the species and/or location and is showing a reduction in the rate of seasonal extension growth.
Senescent	Tree is approaching the end of its life cycle and is exhibiting a reduction in vigour often evidenced by natural deterioration in health and structure.

Structure: Refers to the structure of the tree from roots to crown.

Category	Description
Good	Sound branch attachments with no visible structural defects, e.g. included bark or acute angled unions. No visible wounds to the trunk and/or root plate. No fungal pathogens present.
Fair	Minor structural defects present, e.g. apical leaders sharing common union(s). Minor damage to structural roots. Small wounds present where decay could begin. No fungal pathogens present.
Poor	Moderate structural defects present, including bifurcations with included bark with union failure likely within 0–5 years. Wounding evident with cavities and/or decay present. Damage to structural roots.
Hazardous	Significant structural defects with failure imminent (3–6 months). Defects may include active splits and/or partial branch or root plate failures. Tree requires immediate arboricultural works to alleviate the associated risk.

Useful Life Expectancy (ULE): Useful life expectancy refers to an expected period of time the tree can be retained within the landscape before its amenity value declines to a point where it may detract from the appearance of the landscape and/or presents a greater risk and/or more hazards to people and/or property. ULE values consider tree species, current age, health, structure and location. ULE values are based on the tree at the time of assessment and do not consider future changes within the tree's location and environment which may influence the ULE value.

Category
0 Years
<5 Years
5–10 Years
10–15 Years
15–25 Years
25–50 Years
>50 Years

Defects: Visual observations made of the presenting defects of the tree and its growing environment that are, or have the capacity to impact upon, the health, structural condition and/or the useful life expectancy of the tree. Defects may include adverse physical traits or conditions, signs of structural weaknesses, plant disease and/or pest damage, tree impacts to assets or soil related issues.

Tree significance: Includes environmental, social or historical reasons why the tree is significant to the site. The tree may also be rare under cultivation or have a rare or localised natural distribution.

Arborist actions: A list of arboricultural and/or plant health care works that are aimed at maintaining or improving the tree's health, structural condition or form. Actions may also directly or indirectly reduce the risk potential of the tree such as via the removal of a particular branch or the moving of infrastructure from under its canopy.

Appendix C. Tree retention values

Based upon a modified version of the British Standard BS 5837–2012: *Trees in relation to design, demolition and construction* – recommendations.

Category and definition	Criteria (including sub-categories where appropriate)		
	1. Arboricultural qualities	**2. Landscape qualities**	**3. Cultural and environmental values**
Category A			
Trees of High Quality with an estimated remaining life expectancy of at least 25 years and of dimensions and prominence that it cannot be readily replaced in <20 years.	Trees that are particularly good examples of their species, especially if rare or unusual (in the wild or under cultivation); or those that are important components of groups or avenues.	Trees or groups of significant visual importance as arboricultural and/or landscape features. (e.g. feature and landmark trees).	Trees, groups or plant communities of significant conservation, historical, commemorative or other value (e.g. remnant trees, aboriginal scar trees, critically endangered plant communities, trees listed specifically within a Heritage statement of significance).
Category B			
Trees of Moderate Quality with an estimated remaining life expectancy of 15–25 years and of dimensions and prominence that cannot be readily replaced within 10 years.	Trees that might be included within Category A but are downgraded because of diminished condition such that they are unlikely to be suitable for retention beyond 25 years.	Trees that are visible from surrounding properties and/or the street but make little visual contribution to the wider locality.	Trees with conservation or other cultural value (trees within conservation areas or landscapes described within a statement of significance, locally indigenous species).
Category C			
Trees of Low Quality with an estimated remaining life expectancy of 5–15 years, or young trees that are easily replaceable.	Trees of very limited value or such impaired condition that they do not qualify in higher categories.	Trees offering low or only temporary/transient landscape benefits.	Trees with no material conservation or other cultural value.
Category U			
Trees in such a condition that they cannot realistically be retained as viable trees in the context of the current land use for longer than 5 years.	Trees that have a severe structural defect that are not remediable such that their failure is expected within 12 months. Trees that will become unviable after removal of other Category U trees (e.g. where for whatever reason the loss of companion shelter cannot be mitigated by pruning). Trees that are dead or are showing signs of significant, immediate and irreversible overall decline. Trees infected with pathogens of significance to the health and or safety of other trees nearby Low quality trees suppressing adjacent trees of better quality. Noxious weeds or species categorised as weeds within the local area. Note: Category U trees can have existing or potential conservation value* which might make it desirable to preserve.		

* Where trees would otherwise be categorised as U, B or C but have significant identifiable conservation, heritage or landscape value even though only for the short term, they may be upgraded, although they might be suitable for retention only.

Tree quality

		Health**			
		Excellent/ Good	Fair	Poor	Dead
Structure	Good	A	B	C	U
	Fair	B	B	C	U
	Poor	C	C	U	U
	Hazard *	U	U	U	U

* Structural hazard that cannot be remediated through mitigation works to enable safe retention.

** Trees of short term reduced health that can be remediated via basic, low cost plant health care works (e.g. mulching, irrigation etc.) may be designated in a higher health rating to ensure correct retention value nomination.

Category A	Typically trees in this category are of high quality with an estimated remaining life expectancy of at least 25 years and of dimensions and prominence that it cannot be readily replaced in <20 years. The tree may make significant amenity contributions to the landscape and may make high environmental contributions. In some cases, trees within this category may not meet the above criteria, however possess significant heritage or ecological value. Trees of this retention value warrant design consideration and amendment to ensure their viable retention.
Category B	Typically trees in this category are of moderate quality with an estimated remaining life expectancy of 15–25 years and prominence of size dimensions that cannot be readily replaced within 10 years. They may make moderate amenity contributions to the landscape and make low/moderate environmental contributions. Trees with this retention value warrant lesser design consideration in an attempt to allow for their retention.
Category C	Trees in this category are of low quality with an estimated remaining life expectancy of 5–15 years, or young trees that are easily replaceable, may have poor health and/or structure, are easily replaceable, or are of undesirable species and do not warrant design consideration.
Category U	Trees in this category are found to be in such a condition that they cannot realistically be retained as viable trees in the context of the current land use for longer than five years. These trees may be dead and/or of a species recognised as a weed that resulted in them being unretainable.

Appendix D. Plant health care and mulching

Guide to plant health tonics and root growth stimulants

Considering the varying sizes of trees in common urban landscapes, it is suggested that an application volume of combined water and product solution of 80–150L for small to medium sized trees (5-10m height), 150–250L for medium to large sized trees (10-20m height) and 250–400L for large to very large sized trees (+20m height). Note: a lesser volume of total mixed product could be used if a more concentrated mix is drenched and water irrigation used to further drench the area and therefore dilute the stronger mix application.

The following product recommendations have been based on previous successful works undertaken by ArborSafe. The information provided is to be used as a general guide only, depending on your tree species, health or location. We recommend you always refer to the manufacturers label before applying any product. You may need to further consult with ArborSafe or your Project Arborist to develop a more specific program for your tree needs.

- **Soil conditioner** concentrate such as Kelpro, Seasol or similar 600–800mL/100L of water.
  A concentration of beneficial nutrients stimulating plant growth and root establishment, ideal for trees under stress.
- **Nitrogen boost** concentrate such as Nitrosol liquid plant food or similar 300mL/100L of water.
  A general-purpose fertiliser that contains a nitrogen boost (the most abundantly used element for tree growth).
  NB: Care must be taken when applying general fertiliser, particularly where plants can be affected by phosphorus toxicity e.g. many Australian native plants.
- **Root bio stimulant** concentrate such as Auxinone or similar 400mL/100L of water.
  A scientific blend of hormone root growth stimulants and vitamins assisting in the regeneration of roots.
- **Microbial formulation** concentrate such as Noculate Liquid or similar 500mL/100L of water.
  Generally containing strains of beneficial soil microorganisms, humic acid, kelp, essential amino acids, vitamins, biotin, folic acid and natural sugars designed to enhance the establishment of beneficial microbial populations.
- **Carbohydrate energy source** such as Molasses 500–800mL/100L of water.
  Molasses is the by-product of sugar refining. It contains all the nutrients from the raw sugarcane plant and is a carbohydrate energy source that feeds soil microorganisms and increases microbial activity.
- **Surfactant/wetting agent** (optional) such as Dispatch (Liquid) 200–300ml/100L of water.
  Improves the infiltration and penetration of applied water and irrigation.

We recommend you always refer to the manufacturer's label before applying any product using the above as a guide only.

Guide to mulching and maintenance for established trees

The benefits of correctly applying mulch are often underestimated, extending the useful life expectancy (ULE) of newly planted, young trees and established trees alike. Maintaining a soil environment that is conducive to root growth, development and function is vital in long-term tree retention and viability. This guide provides information on appropriate maintenance practices around the base of trees, including mulching, and the restriction of activities that may cause damage to tree roots and/or trunks.

Why mulch?

Mulching is a plant health care action which can be undertaken to improve plant and soil health (Figure 14), as well as overall landscape aesthetics. Placing an organic (or sometimes inorganic) material on the soil surface reduces the level of direct sunlight contact. Mulching should not be confused with composting which involves incorporating organic matter such as composts or manures into the soil profile. All plants in their natural ecologies (except for some arid and coastal ecologies) are naturally mulched by the falling of leaves, bark, flowers and other organic material.

This action is of great importance in successful cultivation of plants as it:

- assists in the regulation of soil moisture and temperature levels
- helps to suppress weeds
- amends and prevents soil compaction
- reduces water run-off during periods of heavy rain
- promotes soil-microbes and beneficial soil bacteria
- retains ground water content
- prevents lawn mower and vehicle damage to roots
- acts to reduce tree risk by decreasing the number of targets that pass and/or congregate under tree canopies; this in turn minimises the likelihood of injury in the event of a branch failure
- improves the visual aesthetics of the landscape.

Mulch is best comprised of organic materials such as wood chips, leaf litter, straw or hay, as these will degrade over time. Long-term mulching improves soil health and structure as it encourages the activities of earthworms, microflora and beneficial fungi. The addition of inorganic mulch may be useful for drainage qualities, load bearing surfaces, or to prevent root damage, but will not provide the ongoing improvements to soil health.

Figure 14. An excellent example of how to mulch a young tree. Lachlan Andrews, September 2015.

How to mulch

- Apply mulch to damp soil, as placing mulch over dry soil makes it difficult to rehydrate. Applying during the cooler months of the year is an ideal time.
- If mulching on top of a pre-existing grass area, grass or weeds must first be hand weeded and/or sprayed with a non-selective herbicide and left to wilt and die before applying mulch.
- Mulch should be applied at a uniform thickness of 75–100mm and re-applied approximately every 12 months. Do not place mulch up against the trunk of a tree as the damp mulch can cause bark to decay.
- Apply over a wide area, at least as large as a tree's crown projection (preferably larger) where practical, within and outside the current root mass to encourage lateral root development and expansion.
- Wood chip mulch (such as that generated from wood chippers) is considered an ideal mulch for landscape use as it contains a wide variety of materials that are of different sizes (such as bark, foliage and timber), is relatively cheap to purchase, and can be obtained in large quantities. Stockpiling of mulch after tree contractors have conducted works at a site is a way of generating 'free' mulch and ensuring that plant material from tree pruning and/or removals is recycled on site, not imported from external suppliers, saving costs and making the site more self-sustaining.
- The use of mulch made from pine bark or red gum chips are discouraged as they seldom degrade and therefore do not add nutrition to the soil profile. The uniform particle size and resin content can provide an impervious layer to water as well as retarding gaseous exchange.
- Mulching within the canopy areas of larger trees (Figure 15) can not only improve long-term tree health but can also act to reduce tree risk by decreasing the number of targets that pass and/or congregate under their canopies. This in turn will minimise the likelihood of injury in the event of a branch failure.
- When using wood chip mulch, ensure that if it has been made from live plant material that is stored and allowed to compost for between 3 and 6 months prior to use. Never apply fresh, 'green' mulch around trees as this can induce what is called the nitrogen drawdown, which can result in the removal of nitrogen from the soil resulting in plants with nutrient deficiencies.

Types of mulch and uses

All mulch is beneficial however these benefits can be maximised using different mulches for specific applications. Our arborists can provide guidance on mulch for specific applications or purposes.

Coarse mulch or wood chip mulch (such as that generated from wood chippers) is considered an ideal mulch for landscape use as it contains a wide variety of materials that are of different sizes (such as bark, foliage and wood), is relatively cheap to purchase, and can be obtained in large quantities. Stockpiling of mulch after tree contractors have conducted works at a site is economical and mitigates biosecurity risks associated with importing products.

Coarse mulch high in pine bark or red gum chips interlocks together and is ideal for areas prone to wind and water erosion. The larger particles can take longer to degrade, reducing amendment to the soil profile, however, extending the lifespan of particles.

Fine mulch or re-ground mulch is wood chip which has been processed multiple times (up to three) to create a fine product. Fine mulch is more readily available for degradation and will provide soil amendments sooner. The uniform particle size provides a more aesthetic product, however, depending on particle size it can be impervious to water as well as retarding gaseous exchange.

When using wood chip mulch, ensure that if it has been made from live plant material, it is stored and allowed to compost for between 3 to 6 months prior to use. Never apply fresh, 'green' mulch around trees as this can induce what is called *nitrogen drawdown*, which can result in the removal of nitrogen from the soil, resulting in plants with nutrient deficiencies.

For further information refer to the Australian Standard AS 4454–2012: *Composts, Soil Conditioners and Mulches*.

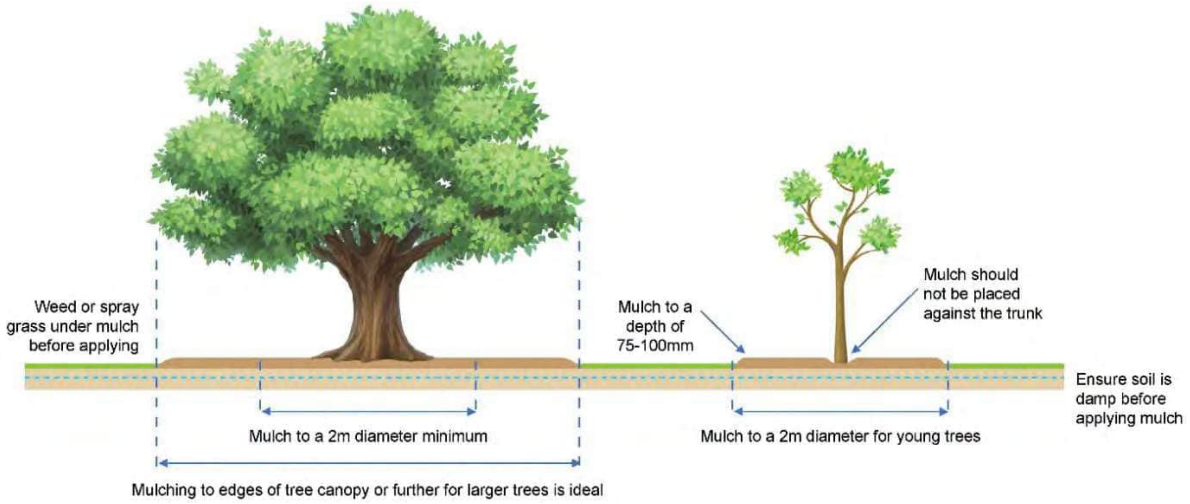


Figure 15. Mulching established and young trees. ArborSafe Australia, 2020.

Root and trunk damage

The function of tree roots is primarily to provide water and nutrient uptake for the tree, provide stability through structural roots that anchor it to the ground and as a means of food and nutrient storage. Damage to tree roots can lead to a reduction to any or all of these functions.

Damage to tree roots (Figure 16 and Figure 17) and the lower portion of a tree's trunk is a common and often unnecessary occurrence that can lead to the entry of decay fungi into a tree's structural framework. Once present, decay may develop in larger structural roots and/or the base of the trunk, which can result in a reduction in tree health and in severe cases even compromise stability.

Works such as trenching and excavation are often the cause of root damage to trees. Refer to ArborSafe's Guide – Tree protection during construction or the Australian Standard AS 4970–2009: *Protection of Trees on Development Sites* for things to consider when performing construction activities near trees.

Everyday activities such as grass cutting via mowing or brush cutters can result in serious root damage or wounding to the lower trunk. Young trees with their trunks damaged by machinery often need replacing, while damage to the trunks and/or surface roots of established trees is not only detrimental to tree health but can also result in costly repairs to machinery.

Another advantage to mulching around the trunk and root crown is that it limits damage to both parts from mowing equipment. This in turn reduces mechanical damage and compaction.

Figure 16. An example of damage to tree roots caused via mowing. Luke Dawson, June 2017.

Figure 17. Image showing wound caused to upper portion of surface root by mower. Luke Dawson, June 2017.

How to avoid root and trunk damage

The following points serve to highlight ways to avoid damage to tree roots and trunks caused via grass cutting activities:

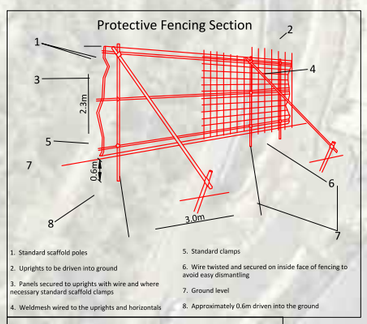
- Mulching around young and established trees negates the need for brush cutter and/or lawn mower use around the base of a tree. Mulching therefore not only creates a barrier between tree roots and trunk that are susceptible to damage, it improves soil condition, minimises soil compaction and decreases the total area required for mowing.
- Where mulching is not feasible, raising the cutting height of mowers and maintaining grass at a greater height can avoid unnecessary 'scalping' of roots and damage to mowers/blades.
- Where surface roots are located away from the trunk and in a location where neither the application of mulch nor the raising of mower height is inappropriate, it may be possible to raise the soil grade directly around the root/s to minimise damage. It is important that the application of new material does not result in significant changes to the soil profile that may inadvertently damage roots. Material applied should be permeable and allow the development of turf which will protect the roots. Coarse sand or a planting mix with a high sand to organic matter ratio (e.g. 80/20 mix) spread at a depth of 75–100mm could suitably protect the surface root from damage, while allowing turf to redevelop within the area.
- Civica ArborSafe is able to answer any questions regarding the material, depth and method of application to be used to ensure the tree/s remain viable for the long-term.

Appendix E. Tree assessment data

Tree no.	Easting (GDA94)	Northing (GDA94)	*Botanical Name*	Common Name	Origin	Trees in group	DBH Total (cm)	DRB (cm)	Radial TPZ (m)	TPZ area (m2)	Radial SRZ (m)	Tree Height (m)	Canopy (m)	Health	Structure	Age	TLE (Yrs.)	Defects	Significance	Action (irrespective of development)	Arborist comments	% TPZ Encroachment	Tree Quality Score	Tree Retention value subcategory	Recommendation
2	331779.53	6245487.49	*Livistona chinensis*	Chinese Fan Palm		1	30	40	3.6	40.72	2.3	<5	<5	Good	Good	Juvenile	>50		Amenity value/shade;		Development Encroachment 100%	100	C	1	Remove - tree located within proposed development footprint or has major encroachment into its TPZ.
3	331777.79	6245486.49	*Livistona chinensis*	Chinese Fan Palm		1	30	45	3.6	40.72	2.4	<5	<5	Good	Good	Juvenile	>50		Amenity value/shade;		Development Encroachment 100%	100	C	1	Remove - tree located within proposed development footprint or has major encroachment into its TPZ.
4	331775.79	6245485.37	*Livistona chinensis*	Chinese Fan Palm		1	30	45	3.6	40.72	2.4	<5	<5	Good	Good	Juvenile	>50		Amenity value/shade;		Development Encroachment 100%	100	C	1	Remove - tree located within proposed development footprint or has major encroachment into its TPZ.
8	331757.51	6245498.18	*Livistona chinensis*	Chinese Fan Palm		1	30	45	3.6	40.72	2.4	<5	<5	Good	Good	Juvenile	>50		Amenity value/shade;		Development Encroachment 100%	100	C	1	Remove - tree located within proposed development footprint or has major encroachment into its TPZ.
9	331755.52	6245497.19	*Livistona chinensis*	Chinese Fan Palm		1	30	45	3.6	40.72	2.4	<5	<5	Good	Good	Juvenile	>50		Amenity value/shade;		Development Encroachment 100%	100	C	1	Remove - tree located within proposed development footprint or has major encroachment into its TPZ.
10	331753.78	6245495.95	*Livistona chinensis*	Chinese Fan Palm		1	30	45	3.6	40.72	2.4	<5	<5	Good	Good	Juvenile	>50		Amenity value/shade;		Development Encroachment 41%	100	C	1	Remove - tree located within proposed development footprint or has major encroachment into its TPZ.
11	331559.35	6245427.78	*Elaeocarpus grandis (syn. E. angustifolius)*	Blue Quandong		1	65	79	7.8	191.13	3.0	10-15	5-10	Fair	Poor	Mature	5-10	Cavity(s); Co-dominant stems; Damaging infrastructure; Deadwood/stubs > 30mm; Decay; Dieback; Epicormic growth; Hanger(s); Mechanical damage; Previous failure(s); Wound(s);	Amenity value/shade; Significant due to age/size;	Removal;	Tree of poor health predominantly compromised of epicormic growth	3.98	U		Remove tree irrespective of future development.
12	331546.04	6245385.73	*Syzygium leuhmannii*	Small-leaved Lilly Pilly		1	22	30	2.6	21.13	2.0	5-10	<5	Good	Fair	Semi-Mature	15-25	Co-dominant stems; Included bark;	Amenity value/shade;		Development Encroachment 14% - Unviable longterm.	100	C	1	Remove - tree located within proposed development footprint or has major encroachment into its TPZ.
14	331553.88	6245376.15	*Syzygium leuhmannii*	Small-leaved Lilly Pilly		1	29	31	3.5	38.45	2.0	5-10	5-10	Good	Good	Semi-Mature	15-25	Co-dominant stems; Epicormic growth;	Amenity value/shade;		Development Encroachment 12% - Unviable longterm .	100	C	1	Remove - tree located within proposed development footprint or has major encroachment into its TPZ.
15	331676.9	6245401.41	*Callistemon viminalis*	Weeping Bottlebrush		1	17	29	2.0	13.07	2.0	5-10	5-10	Good	Good	Semi-Mature	25-50	Co-dominant stems; Deadwood/stubs < 30mm; Mechanical damage; Poor pruning; Previous failure(s); Wound(s);	Amenity value/shade;		Development Encroachment 100%	100	C	1	Remove - tree located within proposed development footprint or has major encroachment into its TPZ.
16	331693.32	6245384.24	*Eucalyptus botryoides*	Southern Mahogany		1	89	108	10.7	358.34	3.4	20-30	15-20	Fair	Fair	Mature	25-50	Bird browsing damage; Co-dominant stems; Deadwood/stubs > 100mm; Dieback; Epicormic growth; Wound(s);	Amenity value/shade; Attractive landscape feature;	Remove deadwood/stubs > 30mm;	10-08-2022 : Tom Axford : Wound margins at ~5m Western aspect of main trunk receding indicating decay pathogen presence though no fungal fruiting structure observed. Tree grows in raised garden bed ~1.7m wide also influencing TLE building ~1.5m north, garden bed edge ~1.3m East, ~0.8m south, garden edge ~4.7m West.	32.39	B	1	Remove - tree located within proposed development footprint or has major encroachment into its TPZ.
17	331680.76	6245375.16	*Eucalyptus botryoides*	Southern Mahogany		1	65	77	7.7	188.42	3.0	15-20	15-20	Good	Good	Mature	25-50	Co-dominant stems; Deadwood/stubs > 60mm; Epicormic growth;	Attractive landscape feature; Amenity value/shade;	Remove deadwood/stubs > 30mm;	10-08-2022 : Tom Axford : Tree grows in raised garden bed ~1.1m wide influencing TLE. Curn ~0.5m North, garden bed edge 2.5m East, building, 2.1m south, garden bed West to extremity of TPZ	36.06	B	1	Remove - tree located within proposed development footprint or has major encroachment into its TPZ.
18	331544.8	6245360.23	*Eucalyptus botryoides*	Southern Mahogany		1	95	117	11.4	408.28	3.5	20-30	15-20	Good	Fair	Mature	25-50	Co-dominant stems; Deadwood/stubs > 60mm; Dieback; Epicormic growth; Previous failure(s); Resin exudation/kino; Suckers; Wound(s);	Amenity value/shade;	Remove deadwood/stubs > 30mm; Trim suckers;	10-08-2022 : Tom Axford : Existing building/brick wall ~2m north.	25.54	A	2	Remove - tree located within proposed development footprint or has major encroachment into its TPZ.
19	331535.47	6245371.93	*Eucalyptus botryoides*	Southern Mahogany		1	60	71	7.2	162.86	2.9	15-20	15-20	Good	Fair	Mature	15-25	Co-dominant stems; Deadwood/stubs < 30mm; Dieback; Excessive end weight; Included bark; Previous failure(s); Weak union(s); Wound(s);	Amenity value/shade;		10-08-2022 : Tom Axford : Existing building ~2.5m north.	16.55	A	2	Retain tree with specific protection requirements (i.e. Generic measures plus supervision of works within the TPZ and/or use of root sensitive construction techniques).
20	331530.67	6245378.44	*Eucalyptus robusta*	Swamp Mahogany		1	75	80	9.0	254.47	3.0	15-20	10-15	Good	Fair	Mature	25-50	Co-dominant stems; Deadwood/stubs > 60mm; Epicormic growth; Wound(s);	Amenity value/shade;	Remove deadwood/stubs > 30mm;	10-08-2022 : Tom Axford : Existing building ~2.5m north.	25.88	B	1	Remove - tree located within proposed development footprint or has major encroachment into its TPZ.
21	331523.77	6245389.84	*Eucalyptus botryoides*	Southern Mahogany		1	92	105	11.0	382.90	3.4	15-20	15-20	Good	Fair	Mature	25-50	Co-dominant stems; Crossing/rubbing branches; Deadwood/stubs > 100mm; Epicormic growth; Previous failure(s); Wound(s);	Amenity value/shade;	Remove deadwood/stubs > 30mm; Remove epicormic growth; Remove selective branches;	10-08-2022 : Tom Axford : Tree assessed. Grade change ~3m West for WestConnex construction site access. Existing building/brick wall ~2m north.	100	A	2	Remove - tree located within proposed development footprint or has major encroachment into its TPZ.
22	331554.39	6245374.25	*Eucalyptus saligna*	Sydney Blue Gum		1	12	14	2.0	12.57	1.5	5-10	<5	Good	Good	Juvenile	15-25	Deadwood/stubs < 30mm; Soil problems;	Amenity value/shade;		10-08-2022 : Tom Axford : Insufficient reproductive material available at time of assessment for positive species ID. Tree grows in a restricted soil volume influencing TLE. Not tagged.	100	C	1	Remove - tree located within proposed development footprint or has major encroachment into its TPZ.
23	331550.17	6245379.56	*Celtis sinensis*	Chinese Hackberry		1	9	13	2.0	12.57	1.5	5-10	<5	Good	Good	Juvenile	15-25	Undesirable species;	Amenity value/shade;		10-08-2022 : Tom Axford : Exempt due to size or species. Not tagged. Unretainabble in location due to proposed surrounding works	100	C	3	Remove - tree located within proposed development footprint or has major encroachment into its TPZ.
24	331632.26	6245496.08	*Celtis sinensis*	Chinese Hackberry		1	32	40	3.8	46.32	2.3	5-10	5-10	Good	Good	Semi-Mature	10-15	Co-dominant stems; Damaging infrastructure; Exposed root(s); Undesirable species;	Amenity value/shade;		10-08-2022 : Tom Axford : Exempt due to size or species. Located on neighbouring property. Not tagged.	31.83	C	3	Remove - tree located within proposed development footprint or has major encroachment into its TPZ.
25	331671.29	6245531.18	*Acacia longifolia*	Sallow Wattle		1	38	37	4.6	66.46	2.2	5-10	5-10	Good	Fair	Mature	5-10	Co-dominant stems; Crossing/rubbing branches; Included bark;	Amenity value/shade;		10-08-2022 : Tom Axford : Located on neighbouring property. Not tagged.	29.62	C	1	Remove - tree located within proposed development footprint or has major encroachment into its TPZ.
26	331780.32	6245456.07	*Corymbia citriodora*	Lemon-scented Gum		1	60	75	7.2	162.86	2.9	15-20	10-15	Good	Good	Mature	15-25	Co-dominant stems; Damaging infrastructure; Mechanical damage; Wound(s);	Amenity value/shade; Attractive landscape feature; Avenue tree;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and footpath. ~2m West to building. Not tagged.	100	B	1	Remove - tree located within proposed development footprint or has major encroachment into its TPZ.
28	331764.21	6245441.79	*Agonis flexuosa*	Willow Myrtle/Peppermint		1	39	45	4.7	68.81	2.4	<5	5-10	Good	Fair	Semi-Mature	10-15	Co-dominant stems;	Amenity value/shade; Avenue tree;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and footpath. ~2m West to building. Not tagged.	0	C	1	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
29	331759.7	6245438.61	*Eucalyptus sideroxylon*	Red Ironbark		1	64	74	7.7	185.30	2.9	10-15	10-15	Good	Fair	Mature	15-25	Borers/termites; Co-dominant stems; Damaging infrastructure; Soil problems; Wound(s);	Amenity value/shade; Attractive landscape feature; Avenue tree;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and footpath. ~2m West to building. Not tagged.	0	B	2	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
30	331750.12	6245430.47	*Melaleuca quinquenervia*	Broad-leaved Paperbark		1	33	36	4.0	49.27	2.2	5-10	<5	Good	Good	Semi-Mature	15-25	Co-dominant stems; Exposed root(s); Soil problems;	Amenity value/shade; Avenue tree;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and footpath. ~2m West to building. Not tagged.	0	C	1	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
31	331734.37	6245417.57	*Angophora costata*	Smooth-barked Apple Myrtle		1	26	30	3.1	30.58	2.0	5-10	<5	Good	Good	Juvenile	25-50	Damaging infrastructure; Exposed root(s); Soil problems;	Amenity value/shade; Avenue tree;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and footpath. ~2m West to building. Not tagged.	0	C	1	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
32	331728.54	6245413.02	*Angophora costata*	Smooth-barked Apple Myrtle		1	20	25	2.4	18.10	1.8	5-10	<5	Good	Good	Juvenile	25-50	Co-dominant stems;	Amenity value/shade; Avenue tree;		Tree located on the nature strip growing in a restricted soil volume beterrn curb and footpath. ~2m West to building. Not tagged.	0	C	1	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
33	331720.83	6245406.46	*Eucalyptus scoparia*	Wallangarra White Gum		1	41	50	4.9	76.05	2.5	10-15	10-15	Fair	Good	Semi-Mature	15-25	Damaging infrastructure; Deadwood/stubs < 30mm; Dieback; Epicormic growth; Exposed root(s); Pests/insects; Soil problems;	Avenue tree; Amenity value/shade;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and footpath. Recovering from winter bronzing. ~2m West to building. Not tagged.	0	B	2	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
34	331712.13	6245398.32	*Angophora costata*	Smooth-barked Apple Myrtle		1	26	33	3.1	30.58	2.1	5-10	<5	Good	Good	Juvenile	25-50	Exposed root(s); Soil problems;	Amenity value/shade; Avenue tree;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and footpath. ~2m West to building. Not tagged.	0	C	1	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
35	331701.89	6245388.38	*Eucalyptus scoparia*	Wallangarra White Gum		1	36	48	4.3	58.63	2.4	10-15	5-10	Good	Good	Semi-Mature	15-25	Damaging infrastructure; Deadwood/stubs < 30mm; Exposed root(s); Mechanical damage; Pests/insects; Soil problems; Wound(s);	Amenity value/shade; Avenue tree;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and footpath. ~2m West to building. Not tagged.	0	B	2	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
36	331673.7	6245360.04	*Melaleuca quinquenervia*	Broad-leaved Paperbark		1	41	51	4.9	76.05	2.5	10-15	5-10	Good	Good	Semi-Mature	25-50	Co-dominant stems; Damaging infrastructure; Exposed root(s); Soil problems;	Amenity value/shade; Avenue tree;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and footpath. ~2m West to building. Not tagged.	0	B	2	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
37	331667.87	6245352.0	*Melaleuca quinquenervia*	Broad-leaved Paperbark		1	92	125	11.0	382.90	3.6	10-15	5-10	Good	Good	Mature	25-50	Crossing/rubbing branches; Damaging infrastructure; Included bark; Soil problems;	Amenity value/shade; Avenue tree;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and footpath. ~2m West to building. Not tagged.	7.02	B	2	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
38	331661.59	6245343.44	*Agonis flexuosa*	Willow Myrtle/Peppermint		1	32	41	3.8	46.32	2.3	<5	<5	Good	Good	Semi-Mature	15-25	Co-dominant stems; Crossing/rubbing branches; Deadwood/stubs < 30mm; Exposed root(s); Mechanical damage; Wound(s);	Amenity value/shade; Avenue tree;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and footpath. Frequent vehicle strike to lower trunk influencing TLE. ~2m West to building. Not tagged.	0	C	2	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).

Tree no.	Easting (GDA94)	Northing (GDA94)	*Botanical Name*	Common Name	Origin	Trees in group	DBH Total (cm)	DRB (cm)	Radial TPZ (m)	TPZ area (m2)	Radial SRZ (m)	Tree Height (m)	Canopy (m)	Health	Structure	Age	TLE (Yrs.)	Defects	Significance	Action (irrespective of development)	Arborist comments	% TPZ Encroachment	Tree Quality Score	Tree Retention value subcategory	Recommendation
39	331653.55	6245333.81	*Melaleuca quinquenervia*	Broad-leaved Paperbark		1	43	43	**5.2**	83.65	**2.3**	5-10	5-10	Good	Fair	Juvenile	15-25	Co-dominant stems; Exposed root(s); Soil problems;	Amenity value/shade; Avenue tree;		Tree located on the nature strip growing in a restricted soil volume beterrn curb and footpath. ~2m West to building. Not tagged.	0	C	2	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
40	331646.18	6245324.61	*Casuarina cunninghamiana*	River She-oak		1	86	104	**10.3**	334.59	**3.4**	15-20	15-20	Good	Fair	Mature	10-15	Cavity(s); Co-dominant stems; Damaging infrastructure; Deadwood/stubs > 60mm; Decay; Exposed root(s); Previous failure(s); Soil problems; Wound(s);	Amenity value/shade; Avenue tree; Significant due to age/size;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and footpath. Advancing decay in lower trunk and upper crown structure influencing TLE. ~2m West to building. Not tagged.	4.98	B	1	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
41	331640.78	6245317.63	*Casuarina cunninghamiana*	River She-oak		1	76	99	**9.1**	261.30	**3.3**	15-20	15-20	Good	Fair	Mature	15-25	Co-dominant stems; Damaging infrastructure; Deadwood/stubs < 30mm; Decay; Epicormic growth; Exposed root(s); Soil problems; Wound(s);	Amenity value/shade; Avenue tree; Significant due to age/size;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and footpath. Developing decay in northern leader influencing TLE. ~2m West to building. Not tagged.	3.17	B	1	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
42	331636.27	6245312.45	*Casuarina cunninghamiana*	River She-oak		1	68	87	**8.2**	209.18	**3.1**	15-20	15-20	Good	Good	Mature	25-50	Co-dominant stems; Damaging infrastructure; Exposed root(s); Soil problems;	Amenity value/shade; Avenue tree; Significant due to age/size;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and footpath. ~2m West to building. Not tagged.	0	A	2	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
43	331632.19	6245306.84	*Casuarina cunninghamiana*	River She-oak		1	64	81	**7.7**	185.30	**3.0**	15-20	15-20	Good	Good	Mature	25-50	Co-dominant stems; Damaging infrastructure; Exposed root(s); Soil problems;	Avenue tree; Amenity value/shade; Significant due to age/size;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and footpath. ~2m West to building. Not tagged.	1.16	A	2	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
44	331624.04	6245294.47	*Angophora bakeri*	Narrow-leaved Apple		1	27	34	**3.2**	32.98	**2.1**	10-15	5-10	Good	Good	Semi-Mature	25-50	Co-dominant stems; Included bark; Previous failure(s); Uncharacteristic form;	Amenity value/shade; Avenue tree;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and footpath. Developing genetic predisposition to form included unions. ~2m West to building. Not tagged.	0	C	2	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
45	331621.84	6245291.72	*Agonis flexuosa*	Willow Myrtle/Peppermint		1	59	70	**7.1**	157.48	**2.8**	5-10	5-10	Good	Fair	Mature	15-25	Cavity(s); Co-dominant stems; Decay; Included bark; Soil problems;	Amenity value/shade; Avenue tree;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and footpath. Fair reaction wood developing around decay. ~2m West to building. Not tagged.- Existing building influencing TPZ	12	C	2	Retain tree with specific protection requirements (i.e. Generic measures plus supervision of works within the TPZ and/or use of root sensitive construction techniques).
46	331617.99	6245289.82	*Casuarina glauca*	Swamp she-oak		1	58	71	**7.0**	152.18	**2.9**	15-20	10-15	Good	Fair	Mature	15-25	Co-dominant stems; Damaging infrastructure; Included bark; Mechanical damage to root(s); Soil grade changes; Soil problems; Suckers;	Amenity value/shade; Avenue tree; Significant due to age/size;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and building which is influencing, TLE & retention. ~0.7m West to building. Not tagged.	0	B	12	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
47	331598.17	6245288.44	*Agonis flexuosa*	Willow Myrtle/Peppermint		1	75	89	**9.0**	254.47	**3.2**	5-10	5-10	Good	Fair	Mature	10-15	Cavity(s); Co-dominant stems; Crossing/rubbing branches; Decay; Mechanical damage; Mechanical damage to root(s); Soil grade changes; Wound(s);	Screen value; Amenity value/shade; Attractive landscape feature; Avenue tree; Significant due to age/size;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between footpath and building. Fair unbreached reaction growth surrounds lower trunk decay. ~1.3m NE to building. Not tagged.	0	C	12	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
48	331591.67	6245297.12	*Agonis flexuosa*	Willow Myrtle/Peppermint		1	76	84	**9.1**	261.30	**3.1**	5-10	5-10	Good	Fair	Mature	10-15	Co-dominant stems; Crossing/rubbing branches; Suppressed;	Avenue tree; Screen value; Significant due to age/size; Attractive landscape feature; Amenity value/shade;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between footpath and building. ~1.0m NE to building. Not tagged.	0	B	2	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
49	331585.84	6245304.84	*Agonis flexuosa*	Willow Myrtle/Peppermint		1	30	41	**3.6**	40.72	**2.3**	5-10	5-10	Good	Good	Juvenile	15-25	Epicormic growth; Suppressed;	Amenity value/shade; Avenue tree; Screen value;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between footpath and building. ~1.8m NE to building. Not tagged.	0	C	1	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
50	331582.97	6245308.43	*Casuarina cunninghamiana*	River She-oak		1	78	100	**9.4**	275.23	**3.3**	20-30	10-15	Good	Good	Mature	25-50	Deadwood/stubs > 30mm; Epicormic growth;	Amenity value/shade; Attractive landscape feature; Avenue tree; Significant due to age/size;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between footpath and building. ~1.4m NE to building. Not tagged.	0	A	1	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
51	331579.34	6245313.82	*Agonis flexuosa*	Willow Myrtle/Peppermint		1	97	102	**11.6**	425.65	**3.3**	10-15	5-10	Good	Fair	Mature	15-25	Co-dominant stems; Crossing/rubbing branches; Deadwood/stubs < 30mm; Decay;	Screen value; Amenity value/shade; Attractive landscape feature; Avenue tree; Significant due to age/size;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between footpath and building. Minor decain trunk. ~1.2m NE to building. Not tagged.- Existing building influcancing TPZ	16	B	2	Retain tree with specific protection requirements (i.e. Generic measures plus supervision of works within the TPZ and/or use of root sensitive construction techniques).
52	331569.65	6245326.2	*Agonis flexuosa*	Willow Myrtle/Peppermint		1	53	50	**6.4**	127.08	**2.5**	5-10	5-10	Fair	Fair	Semi-Mature	10-15	Co-dominant stems; Crossing/rubbing branches; Deadwood/stubs < 30mm; Dieback; Epicormic growth; Suppressed;	Amenity value/shade; Avenue tree; Screen value;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between footpath and building. ~1.4m NE to building. Not tagged.	0	C	1	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
53	331566.68	6245324.61	*Corymbia maculata*	Spotted Gum		1	46	58	**5.5**	95.73	**2.6**	10-15	10-15	Good	Good	Semi-Mature	15-25	Damaging infrastructure; Soil problems;	Avenue tree; Amenity value/shade;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and footpath. Not tagged.	0	B	2	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
54	331563.26	6245333.28	*Agonis flexuosa*	Willow Myrtle/Peppermint		1	73	98	**8.8**	243.79	**3.3**	5-10	5-10	Good	Poor	Mature	<5	Cavity(s); Co-dominant stems; Crack(s)/split(s); Crossing/rubbing branches; Deadwood/stubs < 30mm; Decay; Dieback; Weak union(s);	Amenity value/shade; Avenue tree;	Removal;	10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between footpath and building. Advanced decay with poor response growth. Remove. ~1.4m NE to building. Not tagged.	0	U		Remove tree irrespective of future development.
55	331556.77	6245341.0	*Agonis flexuosa*	Willow Myrtle/Peppermint		1	36	44	**4.3**	58.63	**2.3**	5-10	5-10	Good	Fair	Semi-Mature	15-25	Crack(s)/split(s); Wound(s);	Amenity value/shade; Avenue tree;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between footpath and building. Cambium missing from tensile portion of trunk resulting in poor structure of limited TLE. ~1.0m NE to building. Not tagged.	0	C	12	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
56	331559.74	6245331.8	*Corymbia maculata*	Spotted Gum		1	49	56	**5.9**	108.62	**2.6**	10-15	5-10	Fair	Poor	Semi-Mature	5-10	Canker(s); Resin exudation/kino; Uncharacteristic form; Wound(s);	Amenity value/shade; Avenue tree;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and footpath. Unusual Canker throughout structure. Not tagged.	0	C	12	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
57	331554.89	6245336.46	*Corymbia maculata*	Spotted Gum		1	58	82	**7.0**	152.18	**3.0**	15-20	10-15	Good	Good	Mature	25-50	Co-dominant stems;	Amenity value/shade; Avenue tree; Attractive landscape feature;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and footpath. Not tagged.	0	A		Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
58	331552.69	6245339.84	*Corymbia maculata*	Spotted Gum		1	32	40	**3.8**	46.32	**2.3**	10-15	5-10	Fair	Fair	Semi-Mature	5-10	Decay; Fungal fruiting body(s); Suppressed; Uncharacteristic form; Wound(s);	Avenue tree; Amenity value/shade;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and footpath. Juvenile fungal fruiting body lower trunk. Not tagged.	0	C	1	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
59	331552.91	6245346.29	*Agonis flexuosa*	Willow Myrtle/Peppermint		1	30	40	**3.6**	40.72	**2.3**	<5	5-10	Fair	Poor	Semi-Mature	<5	Decay; Epicormic growth; Previous failure(s); Uncharacteristic form; Wound(s);	Amenity value/shade; Avenue tree;	Removal;	10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between footpath and building. Decay and previous failures have resulted in poor structure. Remove, ~1.2m NE to building. Not tagged.	0	U		Remove tree irrespective of future development.
60	331548.84	6245345.76	*Corymbia maculata*	Spotted Gum		1	49	65	**5.9**	108.62	**2.8**	10-15	10-15	Fair	Good	Semi-Mature	15-25	Co-dominant stems; Damaging infrastructure; Deadwood/stubs < 30mm; Dieback; Epicormic growth; Pests/insects; Soil problems;	Avenue tree; Amenity value/shade;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and footpath. Not tagged.	0	B	1	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
61	331534.41	6245366.28	*Corymbia maculata*	Spotted Gum		1	29	38	**3.5**	38.05	**2.2**	10-15	5-10	Good	Good	Juvenile	25-50		Amenity value/shade; Avenue tree;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and footpath. Not tagged.	0	C	2	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
62	331528.91	6245372.94	*Corymbia maculata*	Spotted Gum		1	35	43	**4.2**	55.42	**2.3**	10-15	5-10	Good	Good	Semi-Mature	25-50	Suppressed;	Amenity value/shade; Avenue tree;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and footpath. Not tagged.	0	B	2	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
63	331523.84	6245379.29	*Corymbia maculata*	Spotted Gum		1	53	69	**6.4**	127.08	**2.8**	15-20	10-15	Good	Good	Semi-Mature	25-50	Damaging infrastructure; Deadwood/stubs > 30mm; Exposed root(s);	Amenity value/shade; Avenue tree;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and footpath. Not tagged.	0	A	1	Retain tree with generic protection requirements (i.e. protective fencing and restriction of activities within the TPZ).
64	331520.87	6245383.73	*Corymbia maculata*	Spotted Gum		1	31	38	**3.7**	43.47	**2.2**	10-15	5-10	Good	Good	Semi-Mature	25-50	Deadwood/stubs < 30mm; Epicormic growth; Suppressed;	Amenity value/shade; Avenue tree;		10-08-2022 : Tom Axford : Tree located on the nature strip growing in a restricted soil volume between kerb and footpath. Not tagged.	0	B	2	Remove - tree located within proposed development footprint or has major encroachment into its TPZ.

Appendix F. CAD drawings



1. Standard scaffold poles
2. Uprights to be driven into ground
3. Panels secured to uprights with wire and where necessary standard scaffold clamps
4. Weldmesh wired to the uprights and horizontals
5. Standard clamps
6. Wire twisted and secured on inside face of fencing to avoid easy dismantling
7. Ground level
8. Approximately 0.6m driven into the ground

Protective Fencing

To be erected prior to the commencement of all works on site, and retained in place throughout construction. To comprise either 2.4m wooden site hoarding; or a 2.1m high scaffolding framework, with uprights at maximum 3.5m spacings, every other one braced to the ground with 45 degree struts; supporting standard anti-climb 'Heras' welded mesh fence panels secured with anti-lift devices to concrete or plastic bases pinned to the ground by scaffold uprights sunk to a minimum depth of 500mm; individual panels fixed to each other with at least 2 clamps and to scaffolding with heavy-duty cable ties. "TREE PROTECTION ZONE - KEEP OUT" or similar notices to be attached to every fifth panel.

Indicative location(s) of TPZ/site boundary fencing (blue line).

Indicative location(s) of TPZ/site boundary fencing (blue line).

Indicative location(s) of TPZ/site boundary fencing (blue line).

nearmap
current : clear : change

LEGEND

Tree trunk & number:	Tree 1	Cat. A TPZ:	
Category U Crown & No:	Tree 1	Cat. B TPZ:	
Trees with specific controls	Tree 1	Cat. C TPZ:	
Proposed building footprint:		Tree to be removed for devt:	Tree 1
TPZ Fencing		SRZ (Structural Root Zone)	

Tree Retention Value

Trees have been categorised to allow an accurate account of which should and should not be a constraint. Tree categories are determined according to their health condition, quality and value.

Cat. U:- Trees to be removed irrespective of devt.
Cat. A:- Trees of high quality and value
Cat. B:- Trees of moderate quality and value
Cat. C:- Trees of low quality and value

Cat. A retention value trees should be retained, planned around and be protected from damage.

Cat. B retention value trees should be retained if possible.

Cat. C retention value trees will not be retained where they impose a significant constraint on development.

Cat. U retention value trees are unretainable for the forseeable future and typically recommended for removal irrespective of site development.

Tree Protection Zones (TPZs)

A model is used to assist in the prediction of the likely impact of development on retained trees. This model is based on the Diameter of Trunk at Breast Height (DBH) for an individual specimen.

TPZ = DBH x 12
(DBH measured at 1.5m on trunk)

It is recommended that an area around each retained tree should be protected from disturbance "in order to avoid (unacceptable) damage to the roots or rooting environment" (as a result of root severance or damage, or compaction or pollution of the soil).

These Tree Protection Zones ('TPZs') have been calculated for all retained trees and are shown as areas bordered in green, blue or grey according to tree category. These zones are normally portrayed as a circle of a fixed radius from the centre of the trunk.

The Structural Root Zone (SRZ) is the area required for tree stability. A larger area is required to maintain a viable tree. The SRZ only needs to be calculated when major encroachment into a TPZ is proposed. There are many factors that affect the size of the SRZ (e.g. tree height, crown area, soil type, soil moisture). The SRZ may also be influenced by natural or built structures, such as rocks and footings. An indicative SRZ radius can be determined from the trunk diameter measured immediately above the root buttress using the following formula:

$$SRZ\ radius = (D \times 50)^{0.42} \times 0.64$$

Root investigation may provide more information on the extent of these roots.

Permissible Encroachment in TPZs

As per the Australian Standard AS4970-2009 *Protection of Trees on Development Sites* a major encroachment into the TPZ of any tree is considered to occur when it is beyond 10% of the total TPZ area. A minor encroachment is determined as being less than 10% of the total TPZ area. If the proposed encroachment is minor and is outside the SRZ, detailed root investigations should not be required. The area lost to this encroachment should be compensated for elsewhere and contiguous with the TPZ. If the proposed encroachment is major or inside the SRZ, the project arborist must demonstrate that the tree(s) would remain viable. The area lost to this encroachment should also be compensated for elsewhere and contiguous with the TPZ. This may require root investigation by non-destructive methods and consideration of relevant factors.

Rev. 2_03.06.24 - Tree 27 RPTI & Tom A. RV Updates

PROJECT:	Arboricultural Impact Assessment Burrows Industrial Estate		
CLIENT:	Goodman		
DRAWING:	Tree Protection Plan		
DRAWING NO.:	05426_01	Rev. 2	03.06.24
BASED ON:	Site Plan: ArborSite/Nearmap Source: GDA94_56		
SCALE:	FOR GUIDANCE ONLY		
DRAWN BY:	NA		

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LEGEND

Tree trunk & number:	Tree 1	Cat. A TPZ:	
Category U Crown & No:	Tree 1	Cat. B TPZ:	
Trees with specific controls	Tree 1	Cat. C TPZ:	
Proposed building footprint:		Tree to be removed for devt:	Tree 1
TPZ Fencing		SRZ (Structural Root Zone)	

Tree Retention Value

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SRZ radius = $(D \times 50)^{0.42} \times 0.64$

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PROJECT:	Arboricultural Impact Assessment Burrows Industrial Estate		
CLIENT:	Goodman		
DRAWING:	Tree Protection Plan		
DRAWING NO.:	05426_02	Rev. 2	03.06.24
BASED ON:	Site Plan: ArborSite/Nearmap Source: GDA94_56		
SCALE:	FOR GUIDANCE ONLY		
DRAWN BY:	NA		

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LEGEND

Tree trunk & number:	Tree 1	Cat. A TPZ:	
Category U Crown & No:	Tree 1	Cat. B TPZ:	
Trees with specific controls	Tree 1	Cat. C TPZ:	
Proposed building footprint:		Tree to be removed for devt:	Tree 1
TPZ Fencing		SRZ (Structural Root Zone)	

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PROJECT:	Arboricultural Impact Assessment Burrows Industrial Estate		
CLIENT:	Goodman		
DRAWING:	Tree Protection Plan		
DRAWING NO.:	05426_03	Rev. 2	03.06.24
BASED ON:	Site Plan: ArborSite/Nearmap Source: GDA94_56		
SCALE:	FOR GUIDANCE ONLY		
DRAWN BY:	NA		

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for further information
call 1300 272 671
www.arborsafe.com.au

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Appendix D BioNet Atlas Search Results

BDAR Waiver Request

SSD-35962232: Burrows Road Multi Level Warehouse, St Peters

Goodman Property Services (Aust) Pty Ltd

SLR Project No.: 610.30907.00400

18 October 2024

Table D-1: BioNet Atlas Search Results within 10 km of Site

Scientific Name	Common Name	BC Act	EPBC Act	Count
Crinia tinnula	Wallum Froglet	V		1
Litoria aurea	Green and Golden Bell Frog	E1	V	677
Caretta caretta	Loggerhead Turtle	E1	E	7
Eretmochelys imbricata	Hawksbill Turtle		V	1
Varanus rosenbergi	Rosenberg's Goanna	V		1
Hoplocephalus bitorquatus	Pale-headed Snake	V		1
Stictonetta naevosa	Freckled Duck	V		2
Ptilinopus regina	Rose-crowned Fruit-Dove	V		1
Ptilinopus superbus	Superb Fruit-Dove	V		5
Apus pacificus	Fork-tailed Swift		C,J,K	2
Hirundapus caudacutus	White-throated Needletail	V	V,C,J,K	3
Diomedea exulans	Wandering Albatross	E1	V	3
Ardenna pacifica	Wedge-tailed Shearwater		J	6
Ardenna tenuirostris	Short-tailed Shearwater		C,J,K	9
Botaurus poiciloptilus	Australasian Bittern	E1	E	1
Ixobrychus flavicollis	Black Bittern	V		3
Haliaeetus leucogaster	White-bellied Sea-Eagle	V		4
Burhinus grallarius	Bush Stone-curlew	E1		6
Haematopus fuliginosus	Sooty Oystercatcher	V		1
Haematopus longirostris	Pied Oystercatcher	E1		11
Charadrius leschenaultii	Greater Sand-plover	V	V,C,J,K	4
Charadrius mongolus	Lesser Sand-plover	V	E,C,J,K	8
Charadrius veredus	Oriental Plover		C,J,K	1
Pluvialis fulva	Pacific Golden Plover		C,J,K	63
Pluvialis squatarola	Grey Plover		C,J,K	7
Actitis hypoleucos	Common Sandpiper		C,J,K	6
Arenaria interpres	Ruddy Turnstone		C,J,K	3
Calidris acuminata	Sharp-tailed Sandpiper		C,J,K	81
Calidris alba	Sanderling	V	C,J,K	6
Calidris canutus	Red Knot		E,C,J,K	37
Calidris ferruginea	Curlew Sandpiper	E1	CE,C,J,K	200
Calidris melanotos	Pectoral Sandpiper		J,K	3
Calidris ruficollis	Red-necked Stint		C,J,K	209
Calidris tenuirostris	Great Knot	V	V,C,J,K	16
Gallinago hardwickii	Latham's Snipe		J,K	30
Limicola falcinellus	Broad-billed Sandpiper	V	C,J,K	2

Scientific Name	Common Name	BC Act	EPBC Act	Count
Limosa lapponica	Bar-tailed Godwit		C,J,K	278
Limosa limosa	Black-tailed Godwit	V	E,C,J,K	11
Numenius madagascariensis	Eastern Curlew		CE,C,J,K	3
Tringa brevipes	Grey-tailed Tattler		C,J,K	14
Tringa glareola	Wood Sandpiper		C,J,K	1
Tringa incana	Wandering Tattler		J	1
Tringa stagnatilis	Marsh Sandpiper		C,J,K	1
Xenus cinereus	Terek Sandpiper	V	V,C,J,K	7
Chlidonias leucopterus	White-winged Black Tern		C,J,K	1
Hydroprogne caspia	Caspian Tern		J	21
Sterna hirundo	Common Tern		C,J,K	28
Sternula albifrons	Little Tern	E1	C,J,K	369
Thalasseus bergii	Crested Tern		J	111
Calyptorhynchus lathami lathami	South-eastern Glossy Black-Cockatoo	V	V	2
Glossopsitta pusilla	Little Lorikeet	V		2
Cuculus optatus	Oriental Cuckoo		C,J,K	1
Ninox strenua	Powerful Owl	V		45
Anthochaera phrygia	Regent Honeyeater	E4A	CE	1
Grantiella picta	Painted Honeyeater	V	V	1
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V		4
Petroica boodang	Scarlet Robin	V		2
Petroica phoenicea	Flame Robin	V		1
Stagonopleura guttata	Diamond Firetail	V	V	3
Motacilla flava	Yellow Wagtail		C,J,K	1
Dasyurus maculatus	Spotted-tailed Quoll	V	E	3
Perameles nasuta	Long-nosed Bandicoot population in inner western Sydney	E2		23
Phascolarctos cinereus	Koala	E1	E	8
Cercartetus nanus	Eastern Pygmy-possum	V		1
Pteropus poliocephalus	Grey-headed Flying-fox	V	V	1497
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V		9
Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	V		1
Chalinolobus dwyeri	Large-eared Pied Bat	V	E	1
Falsistrellus tasmaniensis	Eastern False Pipistrelle	V		5
Myotis macropus	Southern Myotis	V		6

Scientific Name	Common Name	BC Act	EPBC Act	Count
Miniopterus orianae oceanensis	Large Bent-winged Bat	V		30
Pseudomys novaehollandiae	New Holland Mouse		V	1
Dugong dugon	Dugong	E1		2
Arctocephalus pusillus doriferus	Australian Fur-seal	V		1
Senecio spathulatus	Coast Groundsel	E1		1
Hibbertia puberula		E1		1
Tetratheca juncea	Black-eyed Susan	V	V	6
Acacia pubescens	Downy Wattle	V	V	1
Acacia terminalis subsp. Eastern Sydney	Sunshine wattle	E1	E	10
Hygrocybe austropratensis		E1		3
Prostanthera marifolia	Seaforth Mintbush	E4A	CE	3
Eucalyptus nicholii	Narrow-leaved Black Peppermint	V	V	1
Eucalyptus pulverulenta	Silver-leafed Gum	V	V	1
Melaleuca deanei	Deane's Paperbark	V	V	10
Syzygium paniculatum	Magenta Lilly Pilly	E1	V	18
Caladenia tessellata	Thick Lip Spider Orchid	E1	V	2
Dichanthium setosum	Bluegrass	V	V	1
Macadamia integrifolia	Macadamia nut		V	2
Persoonia hirsuta	Hairy Geebung	E1	E	2

Data from the BioNet Atlas website, which holds records from a number of custodians. The data are only indicative and cannot be considered a comprehensive inventory and may contain errors and omissions. Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1°C; ^^ rounded to 0.01°C. Copyright the State of NSW through the Department of Planning, Industry and Environment. Search criteria: Licensed Report of all Valid Records of Threatened (listed on BC Act 2016) Commonwealth listed, CAMBA listed, JAMBA listed or ROKAMBA listed Entities in selected area [North: -33.87 West: 151.13 East: 151.23 South: -33.97] returned a total of 3,980 records of 89 species.

Report generated on 3/06/2024 1:44 PM.

Key: BC Act (species listing under the *Biodiversity Conservation Act 2016*); EPBC Act (species listing under the *Environment Protection and Biodiversity Conservation Act 1999*); V (vulnerable); E1 and E (endangered); E4A and CE (critically endangered); E2 (endangered population); E4 and X (extinct) C, J, K (migratory species - China, Japan and/or Korea migratory bird agreements).

Appendix E Site Photographs

BDAR Waiver Request

SSD-35962232: Burrows Road Multi Level Warehouse, St Peters

Goodman Property Services (Aust) Pty Ltd

SLR Project No.: 610.30907.00400

18 October 2024

Photo E-1: Tree 5 *Elaeocarpus grandis* with Hollow

Photo E-2: Patch of cultivated vegetation to be removed under proposed development

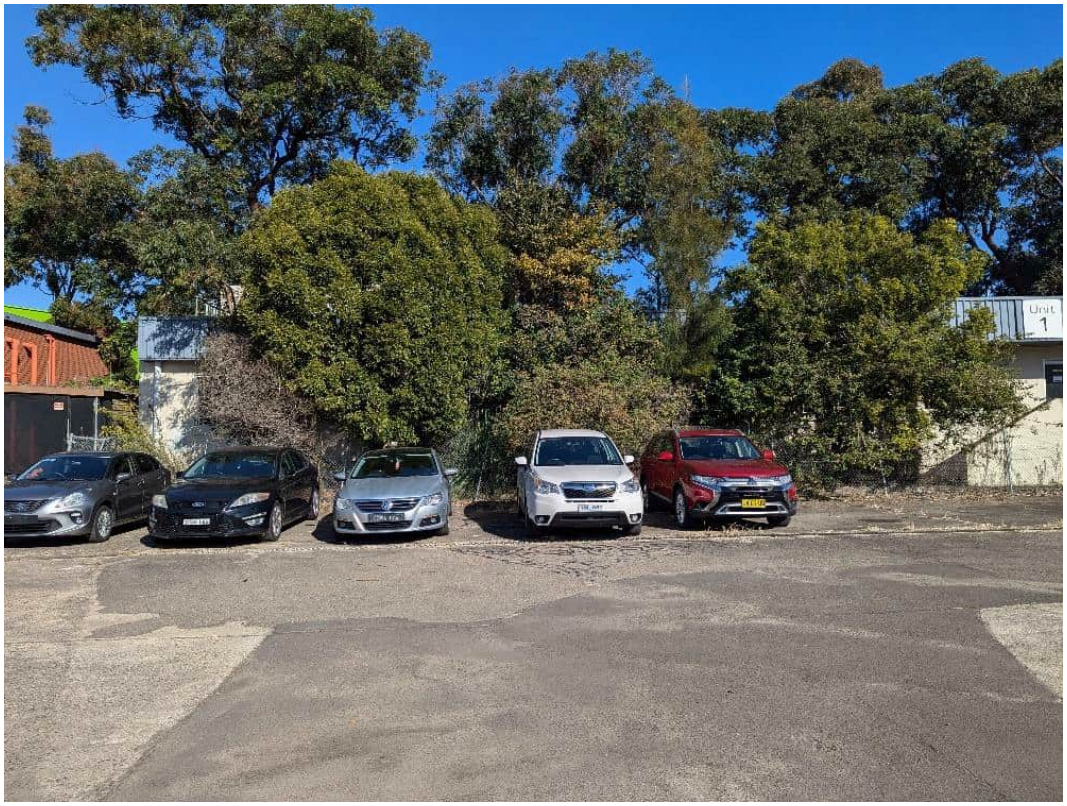


Photo E-3: Opening into Roof Eaves of the Office Building in the Western Corner of the Site

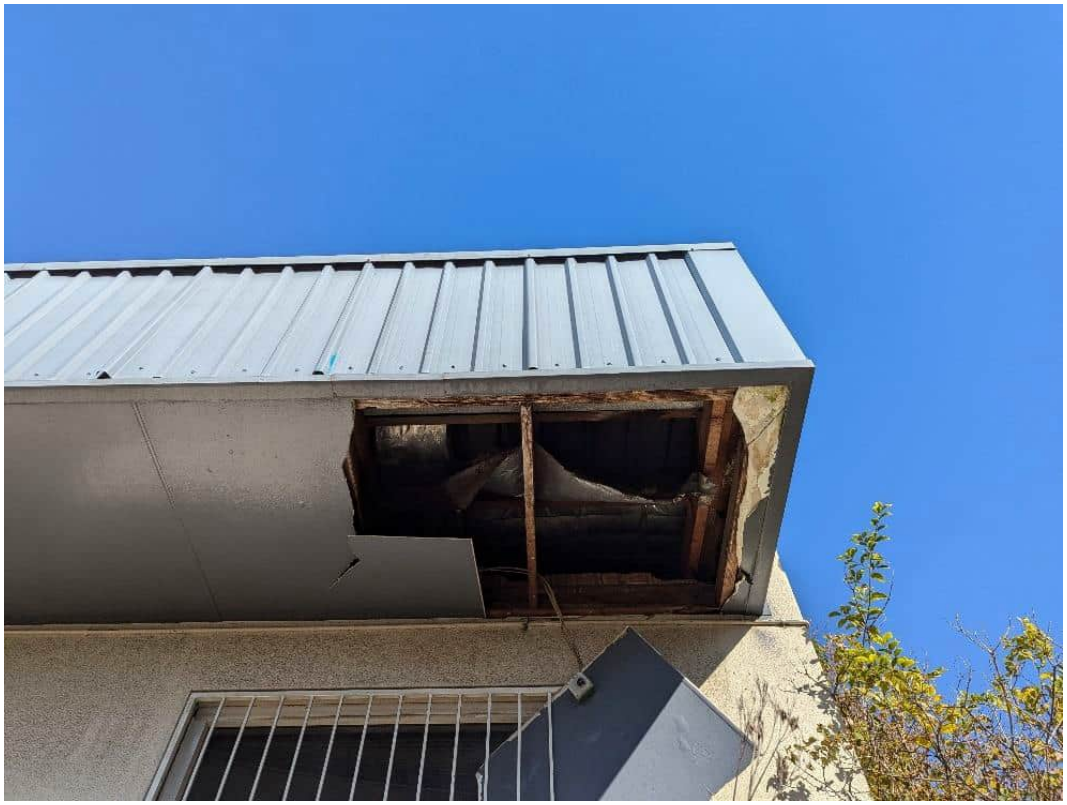
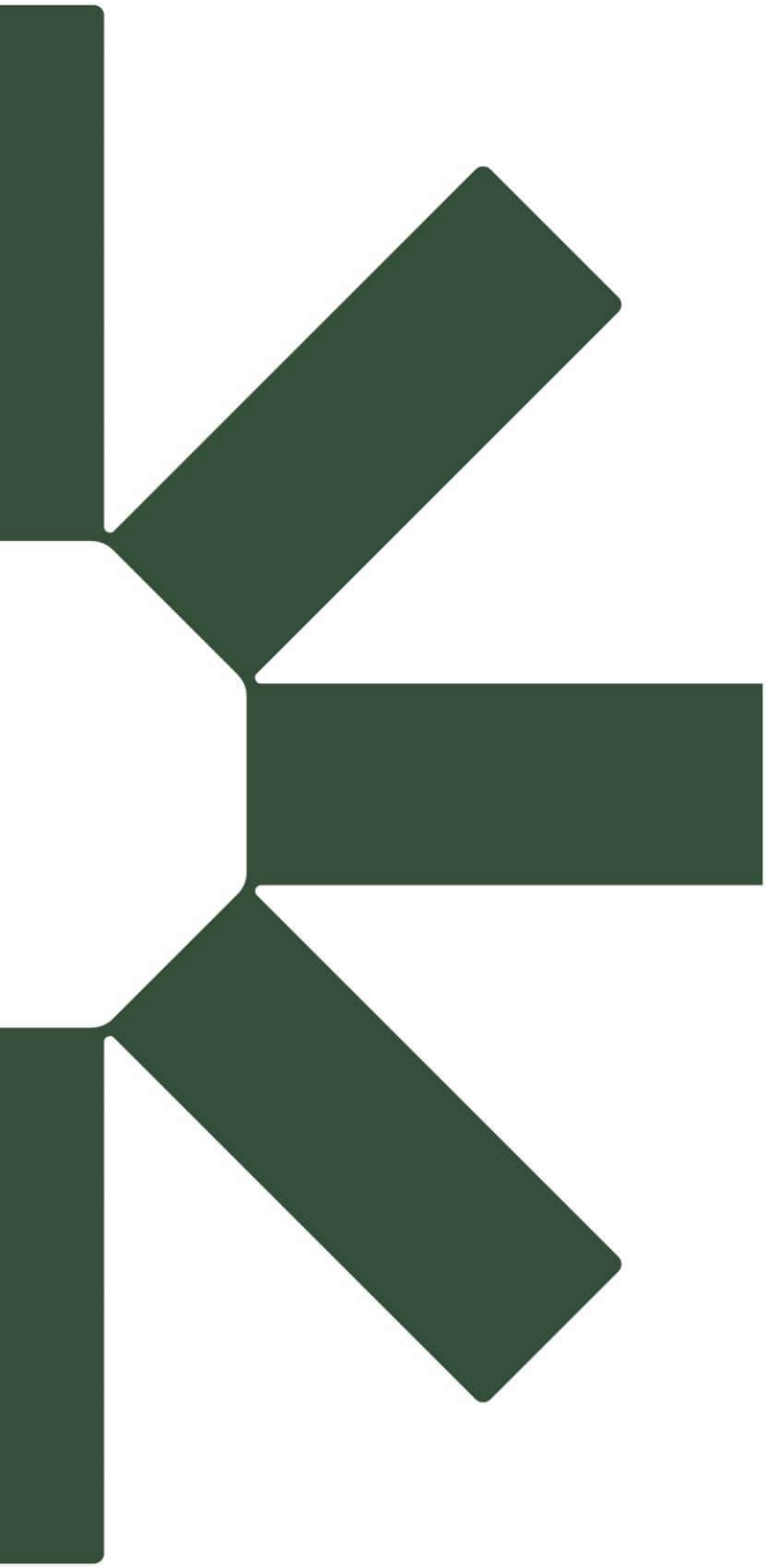


Photo E-4: View of subject land facing east

Photo E-5: *Eucalyptus robusta* Trees on the inside of Property Boundary

Photo E-6: Small Service Building with Open Access Inspected for Evidence of Microbats



Making Sustainability Happen