canopy consulting

arborist report

Arboricultural Impact Assessment and

Tree Protection Management Plan

149-155 Airds Rd,
Minto NSW 2566

Inspection Date: 26 October 2022

PREPARED FOR:
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BESTPRACTICE CERTIFICATION ISO14001 ENVIRONMENT
BESTPRACTICE CERTIFICATION ISO45001 OH&S

Document Information

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Project Name:	**Proposed Warehouse Development**
Reference #:	**E-001640-22**
Client:	**Charter Hall**
Site:	**149-155 Airds Rd, Minto NSW 2566**
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Document Status

Status	Date	Revision type
Version 1 - Draft	29 November 2022	
Version 2	19 January 2023	Finalised based on updated plans. Editorial changes.
Version 3	30 January 2022	Included landscape plans. Editorial changes
Version 4	13 November 2023	Updated report based on revised design

Report Assumptions and Limitations

1. Any description or information provided to the consultant by the client or third party is assumed to be correct.
2. All information has been sourced with care and verified to the best of the consultant's knowledge. Any opinions not duly researched is based upon the consultant's experience and observations.
3. The consultant shall not be required to give testimony or attend court by reason of this report unless under a contractual agreement, including payment of additional fees and charges for such services.
4. Modification or extraction of key contextual components invalidates the entire report.
5. There is no warranty, explicit or implicit that the problems and deficiencies associated with the site or vegetation may not arise in future.
6. Unless stated otherwise, the information contained within the report will address the items outlined in the project brief or that were examined during any site assessment and reflect the condition of those items at the time of inspection.
7. Unless otherwise specified, the inspection is limited to ground-based inspection of accessible areas without dissection, excavation or probing.
8. This report and its recommendations reflect an impartial assessment of the tree and its condition based on the available evidence and projected outcomes.

Executive Summary

The following report examines the potential arboricultural impacts of the proposed construction, fit-out and operation of a warehouse and distribution centre and light industries premises within or adjacent to 149-155 Airds Rd, Minto NSW 2566.

This report is designed to provide information about the relative retention values of all trees that may be affected by the project, assess the impacts of the project and provide recommendations for alteration to design or construction methods where necessary to minimise negative impacts. The report also provides recommended tree protection measures to ensure the viable, long-term retention of trees to be retained where appropriate.

The report has applied the Australian Standard AS4970-2009 *Protection of trees on development site*s which provides radial offsets to ensure the viability of trees where they are to be retained. These offsets are known as the Tree Protection Zone (TPZ) and Structural Root Zone (SRZ). An encroachment of less than 10% of the entire TPZ is considered minor provided it is outside the SRZ, and the area lost is compensated for elsewhere and contiguous to the TPZ. A major TPZ encroachment is considered to be greater than 10% of the entire TPZ area or within the SRZ.

The trees have been allocated a significance rating and retention value as determined by using the Tree Significance - Assessment Criteria of the IACA Significance of a Tree, Assessment Rating System (STARS)© (IACA, 2010). An explanation of attributes required to achieve each category can be found in Appendix A. A total of 118 trees were assessed under 101 tag numbers.

A comparison of recommendations made between the February 2023 design and current design has been included. Table 1 shows tree retention and removal from the earlier assessment.

Table 1: Impact Assessment Summary - February 2023

		Retention Value				
Recommendation	***Encroachment Type***	**High - Priority for Retention**	**Medium - Consider for Retention**	**Low - Consider for Removal**	**Priority for Removal**	**Grand Total**
Remove	**Major**	35	18	25	9	87
Remove Total		35	18	25	9	87
Retain - generic	**Minor**	5	1			6
	Nil	3	2			5
Retain - generic Total		8	3			11
Retain - specific	**Major**	2	1			3
Retain - specific Total		2	1			3
Grand Total		**45**	**22**	**25**	**9**	**101**

The February 2023 assessment required a total of 93 trees under 87 tag numbers to be removed to facilitate the proposed development.

Table 2: Impact Assessment Summary November 2023 Version

		Tree ID and Retention Value			
Recommendation	**Tag/Tree QTY (Tree QTY)**	**High - Priority for Retention**	**Medium - Consider for Retention**	**Low - Consider for Removal**	**Priority for Removal**
Remove - project impacts	75 (81)	8, 9, 10, 11, 12, 14, 15, 16, 18, 25, 30, 31, 37, 43, 44, 48, 50, 51, 52, 54, 55, 59, 60, 63, 66, 70, 76, 77, 78, 79, 81, 83 Tag QTY: (32) Tree QTY: (32)	4, 5, 6, 23, 24, 29, 32, 34, 38, 39, 40, 53, 67, 69, 80 Tag QTY: (15) Tree QTY: (15)	7, 17, 26, 28, 33, 35, 36, 41, 45, 46, 57, 61, 62, 64, 65, 71, 72, 73, 74, 75, 82, 84 Tag QTY: (22) Tree QTY: (28)	13, 27, 42, 56, 58, 68 Tag QTY: (6) Tree QTY: (6)
Remove - irrespective	3 (3)			21 Tag QTY: (1) Tree QTY: (1)	20, 22 Tag QTY: (2) Tree QTY: (2)
Retain - generic	18 (29)	1, 86, 87, 89, 90, 91, 93, 95, 99, 100, 101 Tag QTY: (11) Tree QTY: (11)	2, 3, 85, 88, 94 Tag QTY: (5) Tree QTY: (16)	92 Tag QTY: (1) Tree QTY: (1)	96 Tag QTY: (1) Tree QTY: (1)
Retain - specific	5 (5)	19, 98 Tag QTY: (2) Tree QTY: (2)	47, 49 Tag QTY: (2) Tree QTY: (2)	97 Tag QTY: (1) Tree QTY: (1)	
Total	**101 (118)**				

Subsequent revision of the design has reduced the number of trees recommended for removal.

Under the current proposal, a total of 81 trees combined under 75 tags have major, unmitigable encroachments into their TPZ and SRZ for the proposed driveway, civil works and warehouse footprint and require removal to facilitate the proposed development. Of these:

- 32 are High Retention Value (T8, 9, 10, 11, 12, 14, 15, 16, 18, 25, 30, 31, 37, 43, 44, 48, 50, 51, 52, 54, 55, 59, 60, 63, 66, 70, 76, 77, 78, 79, 81, 83)
- 15 are Medium Retention Value (T4, 5, 6, 23, 24, 29, 32, 34, 38, 39, 40, 53, 67, 69, 80
- 28 under 22 tag numbers are Low Retention Value (T7, 17, 26, 28, 33, 35, 36, 41, 45, 46, 57, 61, 62, 64, 65, 71, 72, 73, 74, 75, 82, 84)
- 6 are a Priority for Removal (T105, 113, 121, 163, 165, 252)

A total of 3 trees are recommended for removal irrespective of the development due to their health, species and/or structure.

A total of 29 trees grouped under 18 tags can be retained with generic tree protection measures.

A further 5 trees can be retained with specific tree protection measures which include plant health care techniques, and the application of mulch and irrigation prior to and during construction.

The current proposed development would see the removal of a total of 84 trees (78 tags), of which 3 are recommended for removal irrespective of the development.

Comparatively, the revised design aims to retain an additional 9 trees, 3 of which are High Retention Value, 2 of which are Medium Retention Value and 3 Low Retention Value The retention of these tree is subject largely to cultural plant health practices prior to, during and post construction that will promote root growth and offset the area lost to encroachment.

Table Of Contents

1. Background

1.1. Introduction

Charter Hall ('the client') proposes to undertake the construction, fit-out and operation of a warehouse and distribution centre and light industries premises at 149-155 Airds Rd, Minto NSW 2566.

Tactical Group has engaged Canopy Consulting on behalf of the client to investigate trees adjacent to the proposed works where they may be adversely affected by the project (hereafter 'the site' or 'the project').

The purpose of this report is to:

- identify tree within the study area
- assign retention values of all trees that may be affected within the site and those on adjoining properties
- assess the impacts of the project
- provide recommendations for alteration to design or construction methods where necessary to minimise negative impacts
- make recommendations in accordance with Australian Standard 4970–2009: *Protection of Trees on Development Sites* to ensure the viable, long-term retention of trees to be retained where appropriate

1.2. Project Overview and Location

The proposal applies to three industrial allotments; Part Lot 12 in DP 251997 (149 Airds Rd), Lot 131 in DP 583995 (149 Airds Rd), Lot 213 in DP 260735 (155 Airds Rd).

The total area of the site is approximately 52, 339.3 sqm. The site is zoned as IN1 - General Industrial under the Campbelltown Local Environmental Plan 2015 (CLEP).

Lot 12/-/DP251997 contains a warehouse in the centre of the site with a wrap-around driveway that encompasses the entire perimeter of the site to the existing fence line. Existing attributes are noted as follows:

- Vehicular access is located towards the northeastern corner of the site
- The warehouse is surrounded by a concrete access road and storage areas
- A concrete retaining wall was located along the western boundary
- A mounded landscape area of trees and maintained grass was located between the existing fence lines and Airds Rd.

Lot 213/-/DP260735 contains a warehouse in the centre of the site with a wrap-around driveway that encompasses the entire perimeter of the site. Existing attributes are notes as follows:

- The site is access via two crossovers from Airds Rd in the northeastern and southeastern corners of the site
- A battered grass area was located along the western boundary
- A landscaped area of trees and maintained grass were located along the Airds Rd frontage
- A narrow garden bed was located along the southern boundary
- The majority of the site comprises hardstand surfaces used for the storage of materials.

Table 3: Site Information

Allotment Type	Industrial
Address	149-155 Airds Rd, Minto NSW
Local Government Area (LGA)	Campbelltown City Council
Lot & DP Number	12/-/DP251997, 131/-/DP583995 and 213/-/DP260735
Zoning and Local Environment Plan (LEP)	IN1 - General Industrial under the Campbelltown Local Environmental Plan 2015
Site/Study Area	52, 339.3 sqm (approx.)

1.3. Project Area

The project area comprises the overall potential area of direct disturbance or impact by the project.

This may be temporary for construction or permanent for operational infrastructure and extend below the ground surface.

Note that proposed laydown areas have not been formally provided, and their impacts have not been assessed.

1.4. Reviewed Plans and Documents

This report has relied on the following plans and documents:

Table 4: Reviewed Plans and Documents

Title	Author	Dwg. No.	Revision	Date
COVER SHEET	WATCH THIS SPACE DESIGN PTY LTD	DA 2- 000	P8	15/11/2022
SURVEY PLAN	WATCH THIS SPACE DESIGN PTY LTD	DA 2- 001	P8	15/11/2022
SITE ANALYSIS PLAN	WATCH THIS SPACE DESIGN PTY LTD	DA 2- 002	P8	15/11/2022
SHADOW DIAGRAMS	WATCH THIS SPACE DESIGN PTY LTD	DA 2- 003	P8	15/11/2022

Title	Author	Dwg. No.	Revision	Date
OVERALL SITE PLAN	WATCH THIS SPACE DESIGN PTY LTD	DA 2- 004	P8	15/11/2022
PROPOSED FLOOR PLAN	WATCH THIS SPACE DESIGN PTY LTD	DA2-100	P8	15/11/2022
PROPOSED ROOF PLAN	WATCH THIS SPACE DESIGN PTY LTD	DA2-101	P8	15/11/2022
WAREHOUSE A - OFFICE PLANS	WATCH THIS SPACE DESIGN PTY LTD	DA2-110	P8	15/11/2022
WAREHOUSE A - OFFICE ELEVATIONS	WATCH THIS SPACE DESIGN PTY LTD	DA2-111	P8	15/11/2022
WAREHOUSE B - OFFICE PLANS	WATCH THIS SPACE DESIGN PTY LTD	DA2-120	P8	15/11/2022
WAREHOUSE B - OFFICE ELEVATIONS	WATCH THIS SPACE DESIGN PTY LTD	DA2-121	P8	15/11/2022
WAREHOUSE 1 - ELEVATIONS	WATCH THIS SPACE DESIGN PTY LTD	DA2-200	P8	15/11/2022
WAREHOUSE 1 - ELEVATIONS	WATCH THIS SPACE DESIGN PTY LTD	DA2-201	P8	15/11/2022
WAREHOUSE 1 - SECTIONS	WATCH THIS SPACE DESIGN PTY LTD	DA2-300	P8	15/11/2022
GENERAL INDUSTRIES - OFFICE C PLANS	WATCH THIS SPACE DESIGN PTY LTD	DA3-110	P8	15/11/2022
GENERAL INDUSTRIES - OFFICE C ELEVATIONS	WATCH THIS SPACE DESIGN PTY LTD	DA3-111	P8	15/11/2022
GENERAL INDUSTRIES - OFFICE D PLANS	WATCH THIS SPACE DESIGN PTY LTD	DA3-120	P8	15/11/2022
GENERAL INDUSTRIES - OFFICE D ELEVATIONS	WATCH THIS SPACE DESIGN PTY LTD	DA3-121	P8	15/11/2022
GENERAL INDUSTRIES - ELEVATIONS 01	WATCH THIS SPACE DESIGN PTY LTD	DA3-200	P8	15/11/2022
GENERAL INDUSTRIES - ELEVATIONS 02	WATCH THIS SPACE DESIGN PTY LTD	DA3-201	P8	15/11/2022
GENERAL INDUSTRIES - SECTIONS	WATCH THIS SPACE DESIGN PTY LTD	DA3-300	P8	15/11/2022
SIGNAGE DETAIL	WATCH THIS SPACE DESIGN PTY LTD	DA3-700	P8	15/11/2022
NOTIFICATION PLAN	WATCH THIS SPACE DESIGN PTY LTD	DA3-900	P8	15/11/2022
NOTIFICATION PLAN	WATCH THIS SPACE DESIGN PTY LTD	DA3-901	P8	15/11/2022
WAREHOUSE A & B FLOOR PLAN	WATCH THIS SPACE DESIGN PTY LTD	SK-05	P14	26/10/2023
DRAWING LIST & GENERAL NOTES	COSTIN ROE	CO14521.01-DA2-10	C	02/02/2023
EROSION & SEDIMENT CONTROL PLAN - STAGE 2	COSTIN ROE	CO14521.01-DA2-20	B	02/02/2023
EROSION & SEDIMENT CONTROL PLAN - SHEET 1	COSTIN ROE	CO14521.01-DA2-25	B	02/02/2023
EROSION & SEDIMENT CONTROL PLAN - SHEET 2	COSTIN ROE	CO14521.01-DA2-26	B	02/02/2023
BULK EARTHWORKS PLAN	COSTIN ROE	CO14521.01-DA2-30	C	03/11/2023

Title	Author	Dwg. No.	Revision	Date
BULK EARTHWORKS PLAN	COSTIN ROE	CO14521.01-DA2-35	A	03/11/2023
STORMWATER DRAINAGE PLAN	COSTIN ROE	CO14521.01-DA2-40	D	03/11/2023
STORMWATER DRAINAGE DETAIL SHEET 1	COSTIN ROE	CO14521.01-DA2-45	B	02/03/2023
STORMWATER DRAINAGE DETAIL SHEET 2	COSTIN ROE	CO14521.01-DA2-46	B	02/03/2023
STORMWATER DRAINAGE DETAIL SHEET 3	COSTIN ROE	CO14521.01-DA2-47	B	02/03/2023
FINISHED LEVELS PLAN	COSTIN ROE	CO14521.01-DA2-50	D	03/11/2023
LANDSCAPE CONCEPT PLAN	HABIT8	L-01:L-15	E	24/01/2023

1.5. Development/Project Description

The proposal involves the construction, fit-out and operation of a warehouse and distribution centre and light industries premises of 28,130m2 gross floor area (GFA), comprising:

- Warehouse A: 11,358m2 warehouse GFA and 289m2 ancillary office GFA
- Warehouse B: 11,809m2 warehouse GFA and 6800m2 ancillary office GFA
- Provision of 2 new vehicle crossovers from Airds Road
- Private access road and turning circle
- Hardstand and loading docks
- 156 car parking spaces
- Bulk earthworks
- Provision of site infrastructure
- Hard and soft landscaping
- Estate and building identification signage

The layout of the proposal is shown in Figure 1.

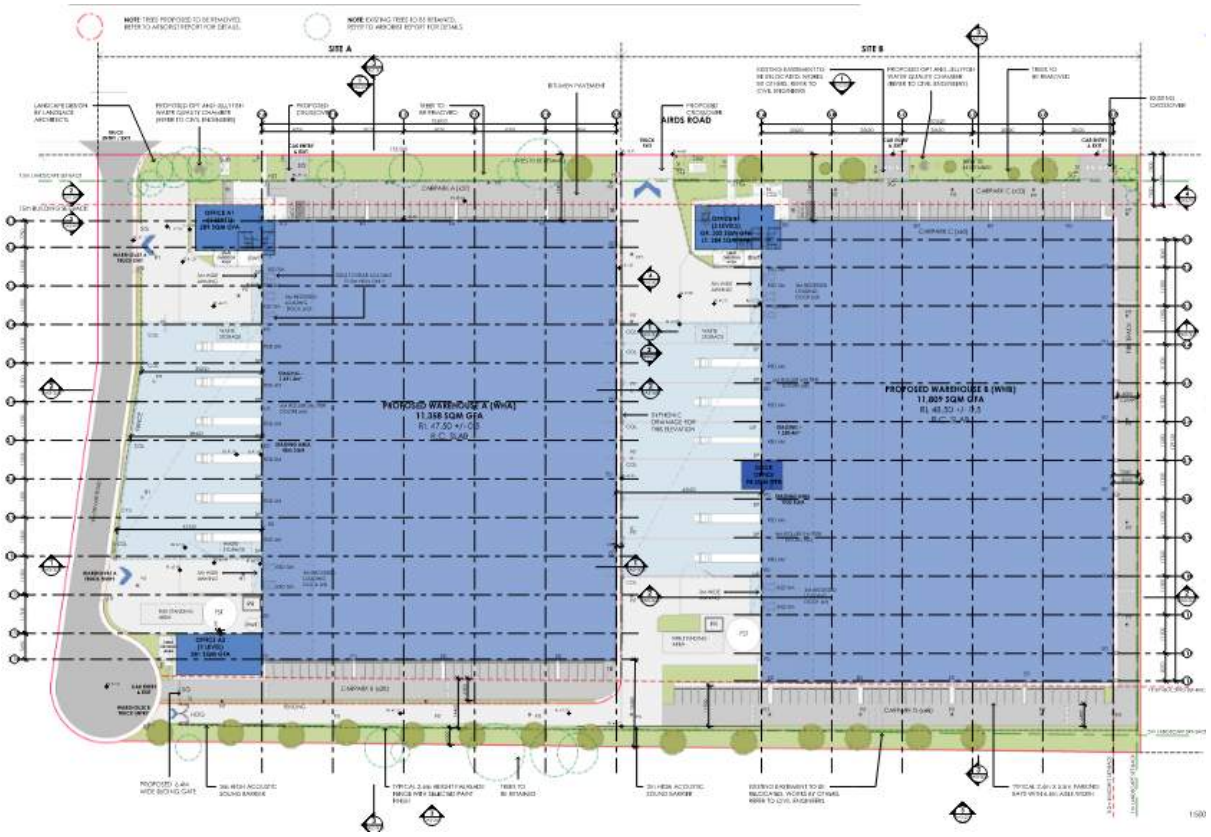

Figure 1: Layout. (Watch This Space Design, 2023)

1.6. Legislative Context

The Commonwealth of Australia manages nationally significant ecological communities and heritage items regulated under the Commonwealth Environmental Protection & Biodiversity Conservation Act 1999 (EPBC Act).

The EPBC Act delegates to the NSW Biodiversity Conservation Act 2016 (BC Act), allowing state and local authorities to manage ecological and heritage matters of state or regional significance. The BC Act repealed the NSW Threatened Species Conservation Act 1995 but still has some transitional arrangements. The BC Act may require Species Impact Statement and Biodiversity Banking and Offset Scheme agreements determined by the Biodiversity Assessment Method (BAM).

NSW state planning legislation is regulated under the NSW Environmental Planning and Assessment Act 1979 (EP&A Act), which manages significant development and infrastructure in NSW. The EP&A Act utilises Environmental Planning Instruments (EPI). These instruments include State Environment Planning Policies (SEPP) that deal with matters of state or regional environmental planning significance and Local Environmental Plans (LEP) and Development Control Plans (DCP) that provide local Councils with a framework for land usage.

1.7. Planning Controls

The report has been prepared considering the Campbelltown City Council Local Environment Plan, 2015 (CLEP) and the Campbelltown (Sustainable City) Development Control Plan 2015 (SCDCP) made

pursuant to Chapter 2 of the State Environmental Planning Policy (Biodiversity and Conservation) 2021 (the BCSEPP).

1.8. Tree Management Controls

Prescribed trees within the Campbelltown City Council local government area (LGA) are protected under Part 11 of the CDCP made pursuant to Chapter 2 of the State Environmental Planning Policy (Biodiversity and Conservation) 2021 (the BCSEPP). The CDCP generally protects all 'declared vegetation' which are:

1. Vegetation that is wholly or partially located within the mapped extent of a heritage item or heritage conservation area in any environmental planning instrument,
2. Vegetation that form part of an Aboriginal object or is within an Aboriginal place of heritage significance,
3. Trees that are listed in any Significant Tree Register of Council,
4. Trees that are required to be retained or planted as a condition of a development consent issued on or after 1 January 2010,
5. Vegetation that is core or potential koala habitat identified under Council's Koala Plan of Management,
6. Vegetation that is or contains threatened flora species,
7. Vegetation that is part of an endangered ecological community,
8. Vegetation that is occupied by native fauna, and
9. Hollow bearing trees,
10. Vegetation on land with a slope greater than 20%.

A tree is defined as a means a perennial plant with at least one self-supporting stem which,

i) has a height of more than three (3) metres, or

ii) has an outside circumference of at least 500mm at ground level; or

iii) has a branch and foliage crown spread of at least 4 metres.

1.9. CDCP Exemptions

Under Part 11.3.6 of the CDCP, a permit is not required for clearing that is:

1. In accordance with a development consent,
2. Are for the reasonable maintenance of existing landscaped areas (e.g. hedge trimming) excluding the removal of trees, or
3. Undertaken by, or at the direction of, an emergency services agency as part of their functions under the State Emergency and Rescue Management Act 1989 or any regulation or plan made under that Act.
4. Undertaken by or on behalf of Council in relation to trees that are wholly or partially on community land.
5. Clearing of any of the species listed on Council's Exempt Species List subject to the following conditions:

a) Council being provided with a report from a suitably qualified arborist identifying the species of the tree(s) at least five business days prior to its removal, and

b) The clearing does not disturb the soil profile and leaves roots intact in the ground.

6. Pruning a tree if:

   a) For trees and shrubs greater than 5m in height:

      i) Pruning is undertaken by a suitably qualified arborist in accordance with Australian Standard AS 4373-2007 Pruning of amenity trees and no more than 10 percent of the canopy cover is pruned annually, and

      ii) The pruning specification prepared under Australian Standard AS 4373-2007 is held by the landholder for a period of two years, or

   b) For pruning of individual branches from any other tree less than 5m in height that overhangs a dwelling, formal driveway or path, where:

      i) The pruning is to remove the overhanging branches,

      ii) The pruning does not alter the overall shape of the tree,

      iii) The branches removed are less than 100mm in diameter at the final cut, and

      iv) The final cut is at branch collar or appropriate growth point

7. Clearing a tree that is within three (3) metres of a building that is Class 1 to 9 under the Building Code of Australia. The distance is measured from the foundation wall of the building to the centre of the trunk of the tree.

1.10. Additional Legislative Protections

The following relevant Government environmental and heritage mapping and overlays have been reviewed (SEED - NSW Government, 2022). Table 5 indicates the presence of the items on site.

Table 5: Mapping Overlays

NSW OEH	Present on Site	Relevance
Threatened Ecological Communities (TEC) Greater Sydney	☐	Not present on site. No relevance
State Heritage Register	☐	Not present on site. No relevance
Biodiversity Values	☐	Not present on site. No relevance
DCP/LEP		
Heritage	☐	Not present on site. No relevance
Terrestrial Biodiversity	☐	Not present on site. No relevance
Environmentally Sensitive Land	☐	Not present on site. No relevance

The site is not a listed heritage item or within a heritage conservation area.

The site is not mapped to contain any vegetation of heightened environmental significance.

The site is not within a designated 10/50 vegetation clearing entitlement area.

Figure 2 shows the site within the local area and associated planning overlays.

Figure 2: The subject site defined with a red polygon and associated planning overlays.

2. Scope

Detail the health and condition of site trees and those on adjoining properties that may be affected by the proposed works. This will be undertaken to derive tree retention values within the landscape based on any heritage, environmental and arboricultural principles.

Provide as an outcome of the assessment, the following:

- a description of the trees
- observations made
- retention values
- discussion of the effects the location of the proposed works may have on the trees
- make recommendations required for remedial or other works to the trees, if and where appropriate
- provide a description of the works or measures required to ameliorate the impact upon the trees to be retained; by the proposed building works or future impacts the trees may have upon the new building works if and where appropriate;
- or discuss the possible benefits of removal and replacement, if appropriate, for the medium to long-term amenity of the site.

3. Method

3.1. Data Collection

To record the above-ground health and condition of each tree, a Visual Tree Assessment (VTA), adapted from (Lonsdale, 1999), was undertaken from ground level on 26 October 2022 by Kane Hollstein and Liam Strachan.

This involved an inspection of:

- Tree health and structural condition; both long and short term
- Site conditions
- Amenity value
- Heritage value
- Habitat value
- Environmental value

All diameter measurements were taken with a diameter tape or forestry callipers. All height and canopy spread values were estimated. Any offset measurements were measured with a tape measure.

Data was collected using GIS software linked to a Trimble Catalyst DA-2 GPS antenna with 1cm-2cm accuracy in optimal GPS conditions. Where trees were located on the survey plan, the locations were corrected using the following parameters:

- Locations were corrected to the dwg survey plan where present.
- Where absent from the survey, the GPS location was used. Using this method; locations may be +- 1m due to tree canopies and GPS interference.

Proposed plans were georeferenced to the survey plan and impacts were assessed in GIS software. Some discrepancies may exist between surveyed boundaries and those provided by the NSW cadastre.

3.2. Useful Life Expectancy

Estimated remaining Useful Life Expectancy (ULE) has been derived using a modified version of the TreeAZ SULE method (Barrell, 2009). An explanation of attributes required to achieve each category can be found in Appendix A.

3.3. Retention Value

The trees have been allocated a significance rating determined using the Tree Significance - Assessment Criteria of the IACA Significance of a Tree, Assessment Rating System (STARS)©. An explanation of attributes required to achieve each category can be found in Appendix A.

Tree retention value has been assessed using the Retention Value - Priority Matrix of the IACA Significance of a Tree, Assessment Rating System (STARS) © which is a matrix assessment of landscape significance and estimated Useful Life Expectancy. An explanation of attributes required to achieve each category can be found in Appendix A.

3.4. Tree Protection Zone and Structural Root Zone

The Tree Protection Zone (TPZ) and Structural Root Zone (SRZ) methods have been derived from the Australian Standard 4970–2009: Protection of Trees on Development Sites (Standards Australia Limited, 2009). The radius of the TPZ is calculated for each tree by multiplying its Diameter at Breast Height (DBH) by 12.

$$\text{TPZ radius} = \text{DBH} \times 12$$

In the event the crown spread of the tree extends beyond this offset, the TPZ may be adjusted to the outer extent of the crown spread.

The SRZ is the area around the base of a tree required for the tree's stability in the ground. The SRZ is nominally circular with the trunk at its centre and is expressed by its radius in metres.

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

4. Observations

4.1. Built Environment

Attributes of the built environment that may influence root growth include:

- Narrow garden beds on the southern boundary with limited soil volume
- Robust retaining wall along the western boundary
- Concrete driveway and warehouse slabs built for heavy vehicle traffic.

4.2. Site Soils

Site soils are expected to be relatively undisturbed given the rural setting. The site is located on the South Creek Alluvial soil landscape which is described as 'floodplains, valley flats and drainage depressions of the channels on the Cumberland Plain. Usually flat with incised channels; mainly cleared.' (Department of Planning, Industry and Environment, 2020)

Soils of the South Creek Alluvial landscape are characterised by 'often very deep layered sediments over bedrock or relict soils. Where pedogenesis has occurred structured plastic clays (Uf6.13) or structured loams (Um6.1) in and immediately adjacent to drainage lines; red and yellow podzolic soils (Dr5.11, Dy2.41, Dr2.21) are most common terraces with small areas of structured grey clays (Gn4.54), leached clay (Uf4.42) and yellow solodic soils (Dy4.42, Dy5.23).' (Department of Planning, Industry and Environment, 2020)

Vegetation of this soil landscape is described as 'The vegetation of this soil landscape reflects its frequent inundation. Common tree species include *Angophora subvelutina* (broad-leaved apple), *Eucalyptus amplifolia* (cabbage gum) and *Casuarina glauca* (swamp oak). Still water species such as *Eleocharis sphacelata* (tall spike rush), *Juncus usitatus* and *Polygonum* spp. occur where channels are silted up. On more elevated streambanks a tall shrubland of *Melaleuca* spp. (paperbarks) and *Leptospermum* spp. (tea trees) may occur. However much of this soil landscape has been previously cleared and is now dominated by exotic species such as *Rubus vulgaris* (blackberry) and other weeds.' (Department of Planning, Industry and Environment, 2020)

4.3. Summary of Tree Observations

Complete tree attributes and observations can be found in Appendix B - Tree Assessment Schedule. A total of 118 trees were assessed under 101 tag numbers. Where trees shared similar attributes and were of lower significance, they were grouped together.

Inspected site vegetation consisted of a mix of mostly locally indigenous and native and one exotic weed species. The trees at the eastern boundary appear to have been planted, as have a number of trees located in sporadic landscaped areas throughout the site.

At the southwest corner of the site, there is a garden bed that is located within the adjoining property of 157 Airds Rd, which contains one large, high retention value *Eucalyptus saligna* (Tree 1) and one medium retention value *Casuarina glauca* (Tree 3), both of which have TPZ's that extend within the project area.

Along the eastern boundary of what is currently lot 213/-/DP260735, there is a group of large, planted, locally indigenous and native tree species with high landscape significance. (Trees 8, 9, 10 and 11).

Trees 12-18 consist of *Corymbia citriodora* (Lemon scented gum). They are planted in a narrow garden bed along the southern boundary, with much of the TPZ covered in concrete that separates the subject site from Lot SP35919. Many of these trees (Trees 12, 14, 15, 16 and 18) were assigned high retention values due to their prominence in the landscape. Tree 13 was assigned as Priority for Removal as it was found to contain defects that rendered the tree hazardous, and the group of small trees that comprises Tree 17 was found to be of low retention value.

In the adjoining lot SP35919 at the southwestern corner of the project site, there is a high retention value *Eucalyptus moluccana* (Tree 19) with a TPZ that extends within the project area.

Along the western boundary of lot 213/-/DP260735, there is a sloped landscaped area with two Priority for removal trees (Tree 20 and 22) and one Low Retention Value Tree (Tree 21).

Trees 23-28 are located within a small garden bed on the northern boundary of 213/-/DP260735. It contains two High Retention Value Trees, two Medium Retention Value Trees, one Low Retention Value Tree and one Priority for Removal Tree.

The remainder of the eastern boundary contains what appears to be planted, endemic and native species with clusters of self-sown *Casuarina glauca* and one weed species identified.

High retention value trees within the central and northern area of the site include Trees 30, 31, 32, 37, 43, 44, 48, 50, 51, 52, 54, 55, 59, 60, 63, 66, 70, 76, 77, 78, 79, 81 and 83; a grand total of 23.

One Priority for Removal tree was surveyed within this area due to severe structural defects. (Tree 56 *Eucalyptus saligna*).

At the western boundary, there is a green open space area, owned by Campbelltown Council. The area is largely separated by a large retaining wall that is anticipated to have stopped roots from growing into the project area.

Trees 88, 90, 91, 92, 94, 95, 96, 97, 98, 99 and 100 all have TPZs that extend to within the project site. As the existing retaining wall is proposed to be removed, a subset of these trees will be impacted.

Table 6 summarises the mix of species.

Table 6: Tree Species Summary

Botanical Name	Total
Agonis flexuosa	1
Angophora floribunda	1
Araucaria cunninghamii	1
Casuarina cunninghamiana	33
Casuarina glauca	19
Corymbia citriodora	7
Corymbia maculata	2
Eucalyptus grandis	2
Eucalyptus microcorys	5
Eucalyptus moluccana	1
Eucalyptus punctata	1
Eucalyptus saligna	2
Eucalyptus sideroxylon	1
Eucalyptus sp.	1
Eucalyptus tereticornis	18
Ligustrum lucidum	1
Melaleuca armillaris	3
Melaleuca quinquenervia	1
Melaleuca styphelioides	1
Grand Total	**101**

Table 7 summarises total trees by origin.

Table 7: Tree Origin Summary

Origin	Total
Exotic	1
Indigenous	78
Native	22
Grand Total	**101**

Table 8 summarises the trees' legislated protection status under the CDCP. This assessment considers the size of the tree as being either less than 4m in height or exempt due to their species.

Table 8: Tree Legislated Protection Status

DCP Status	No. of trees	Tree Numbers
Protected	101	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101
Exempt	0	
N/A	0	
Total	**101**	

4.4. Tree Significance

Determined using the Tree Significance - Assessment Criteria of the IACA Significance of a Tree, Assessment Rating System (STARS)© (IACA, 2010); trees 1, 8, 9, 10, 11, 12, 14, 15, 16, 19, 26, 30, 31, 37, 43, 44, 48, 50, 51, 52, 54, 55, 57, 59, 60, 63, 66, 70, 76, 77, 78, 79, 81, 83, 86, 87, 89, 91, 95, 97, 98, 99, 100 and 101 were determined to possess a High Landscape Significance Rating due to them being:

- in good condition and good vigour;
- having a form typical for the species;
- a remnant or is a planted locally indigenous specimen and/or is rare or uncommon in the local area or of botanical interest or of substantial age;
- visually prominent and visible from a considerable distance when viewed from most directions within the landscape due to its size and scale and makes a positive contribution to the local amenity;

Table 9: Landscape Significance Rating

Landscape Value	No. of trees	Tree Numbers
1 (High)	45	1 8 9 10 11 12 14 15 16 19 25 30 31 37 43 44 48 50 51 52 54 55 57 59 60 63 66 70 76 77 78 79 81 83 86 87 89 90 91 95 97 98 99 100 101
2 (Medium)	25	2 3 4 5 6 18 23 24 29 32 34 38 39 40 47 49 53 67 69 74 75 82 88 93 94
3 (Low)	24	7 17 20 21 26 28 33 35 36 41 45 61 62 64 65 68 71 72 73 80 84 85 92 96
4 (Environmental Pest / Noxious Weed)	1	46
5 (Hazardous / Irreversible Decline)	6	13 22 27 42 56 58
Total	**101**	

4.5. Retention Value

Determined using the Retention Value - Priority Matrix of the *IACA Significance of a Tree, Assessment Rating System* (STARS) © (IACA, 2010) which is a matrix assessment of landscape significance and estimated Useful Life Expectancy. Tree retention values are summarised in Table 10.

Table 10: Retention Value

Retention Value	No. of trees	Tree Numbers
High - Priority for Retention	45	1 8 9 10 11 12 14 15 16 18 19 25 30 31 37 43 44 48 50 51 52 54 55 59 60 63 66 70 76 77 78 79 81 83 86 87 89 90 91 93 95 98 99 100 101
Medium - Consider for Retention	22	2 3 4 5 6 23 24 29 32 34 38 39 40 47 49 53 67 69 80 85 88 94
Low - Consider for Removal	25	7 17 21 26 28 33 35 36 41 45 46 57 61 62 64 65 71 72 73 74 75 82 84 92 97
Priority for Removal	9	13 20 22 27 42 56 58 68 96
Total	**101**	

4.6. High Retention Value (HRV) Trees

These trees are considered important for retention and should be retained and protected. Design modification or re-location of buildings should be considered to accommodate the setbacks as prescribed by the Australian Standard AS4970-2009 *Protection of trees on development sites*. Tree sensitive construction must be implemented e.g. pier and beam, etc if works are to proceed within the Tree Protection Zone

4.7. Medium Retention Value (MRV) Trees

These trees may be retained and protected. These are considered less critical; however, their retention should remain a priority with removal considered only if adversely affecting the proposed building/works and all other alternatives have been exhausted.

4.8. Low Retention Value (LRV) Trees

These trees are not important for retention, nor require special works or design modifications to be implemented for their retention.

4.9. Priority for Removal (PFR) Trees

These trees are considered hazardous, or in irreversible decline, or weeds and should be removed irrespective of development.

Tree locations and retention values are shown in Figures 2-5.

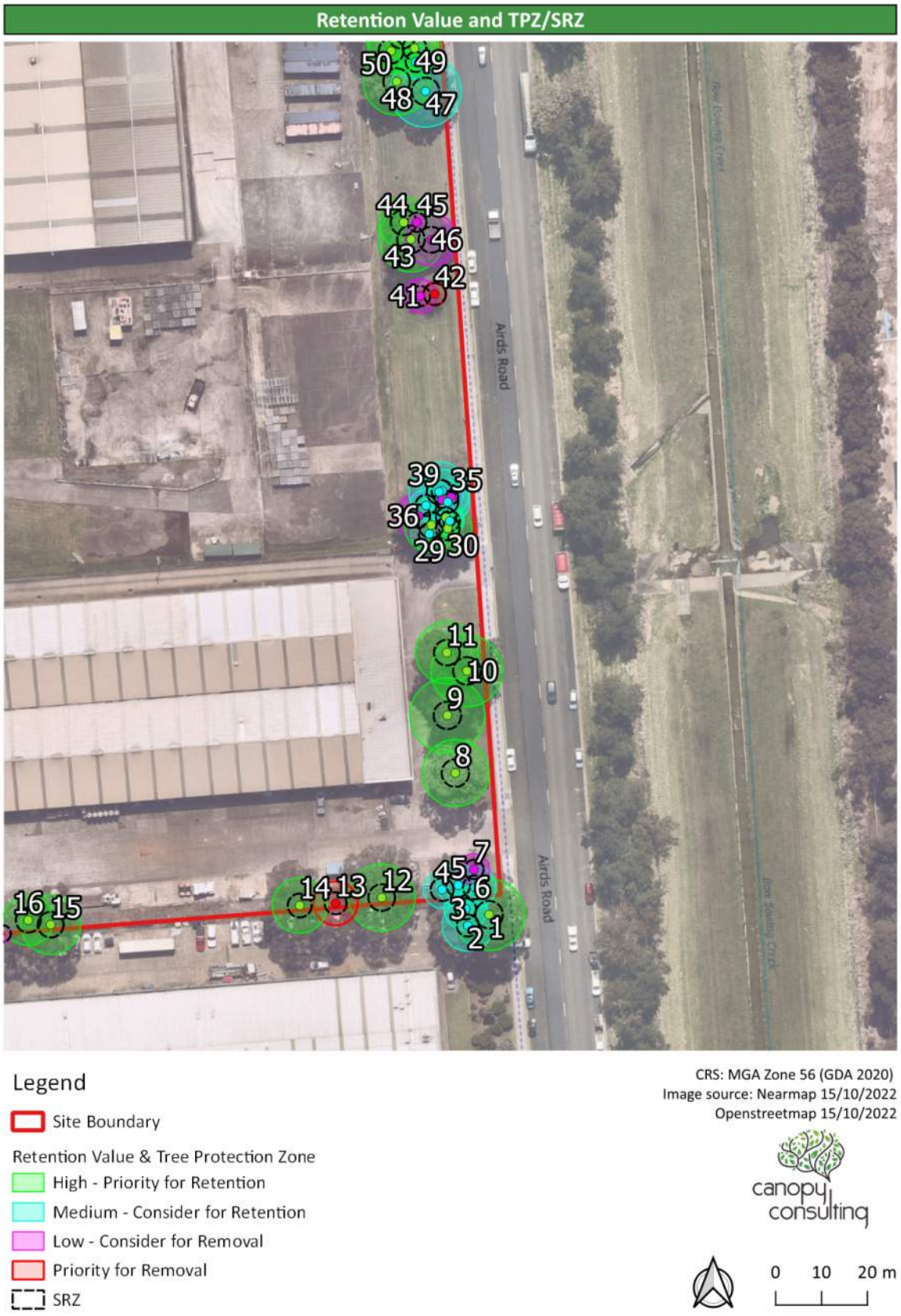

Figure 2: Map showing retention values, tree protection zones and structural root zones.

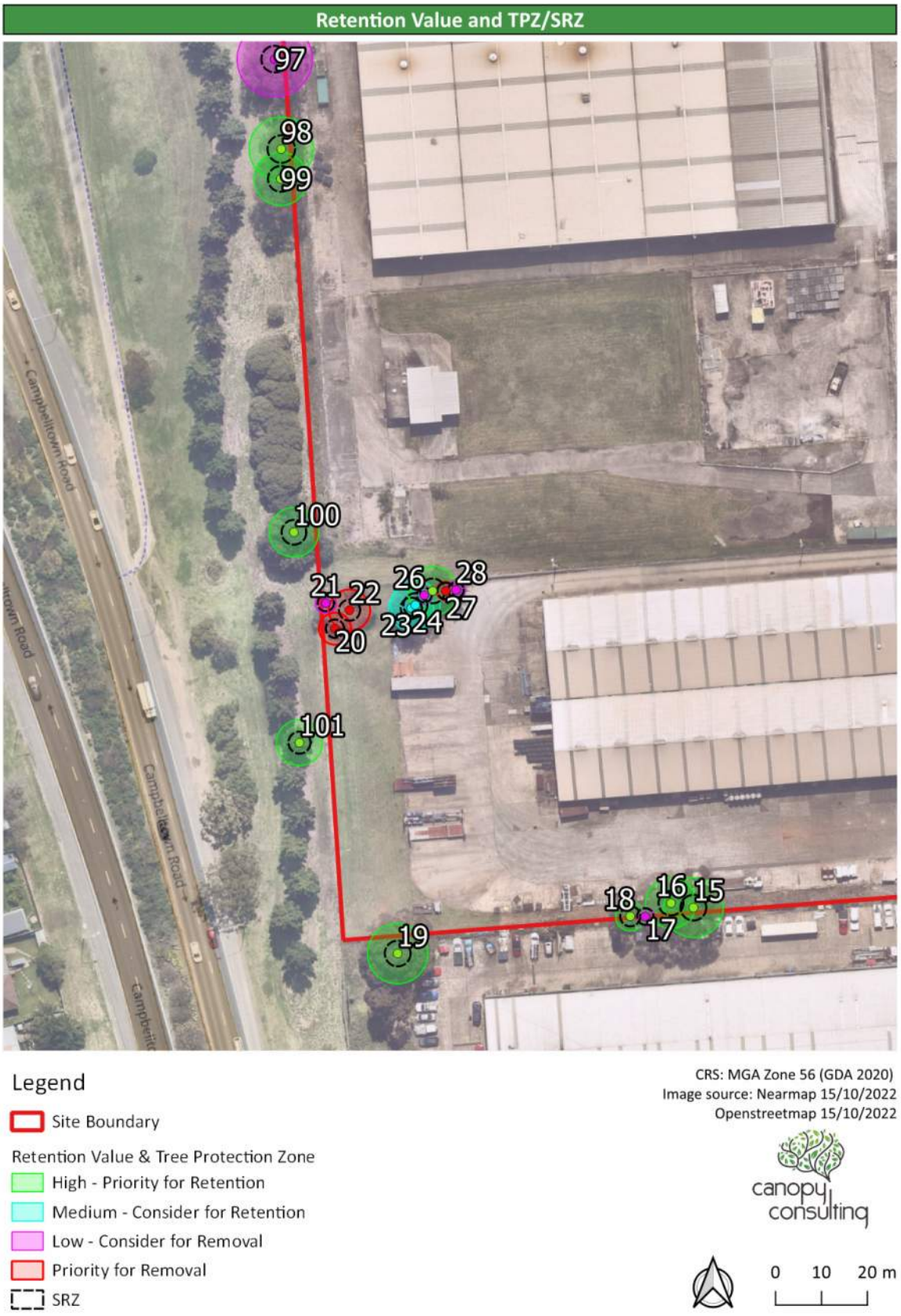

Figure 3: Map showing retention values, tree protection zones and structural root zones.

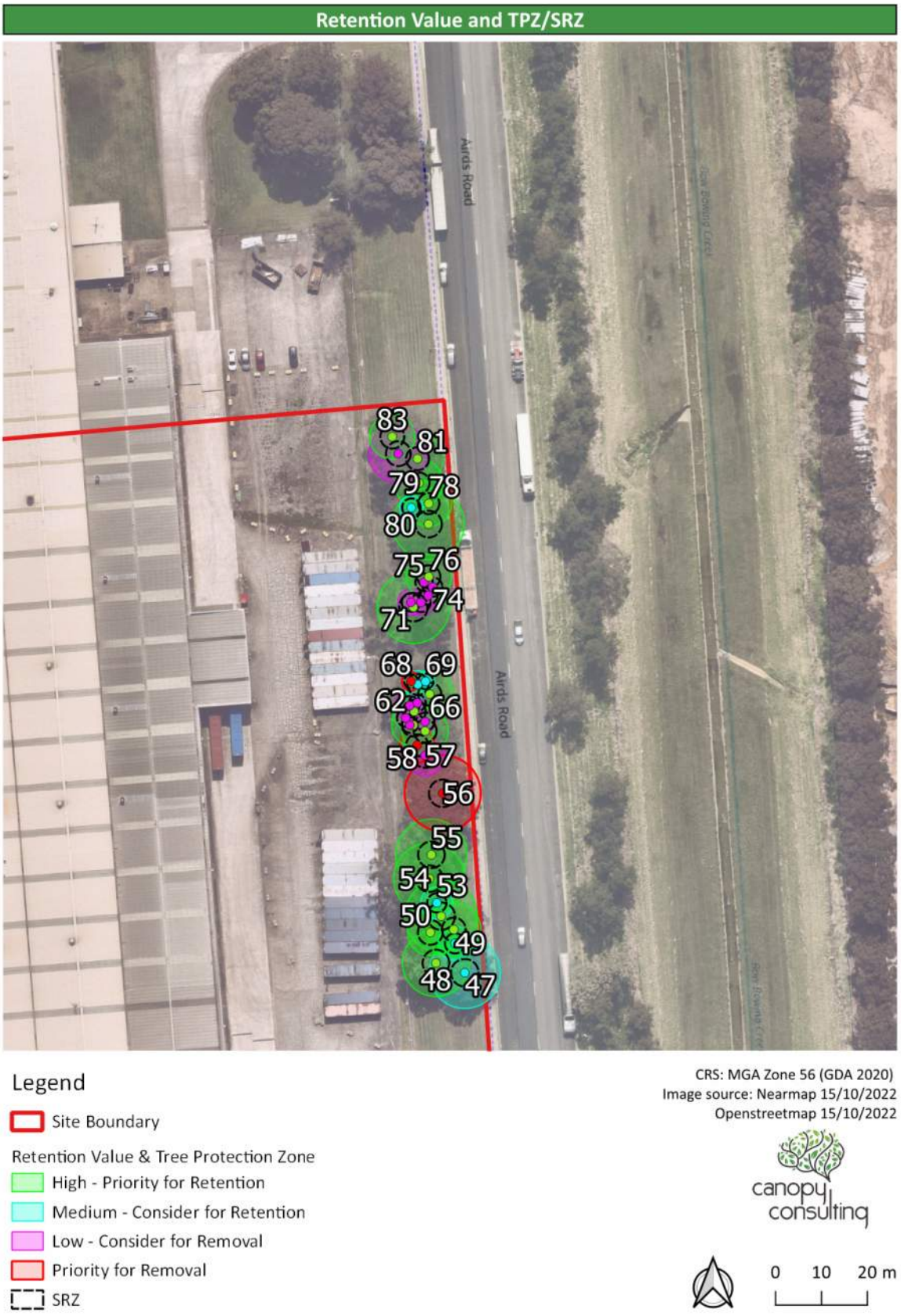

Figure 4: Map showing retention values, tree protection zones and structural root zones.

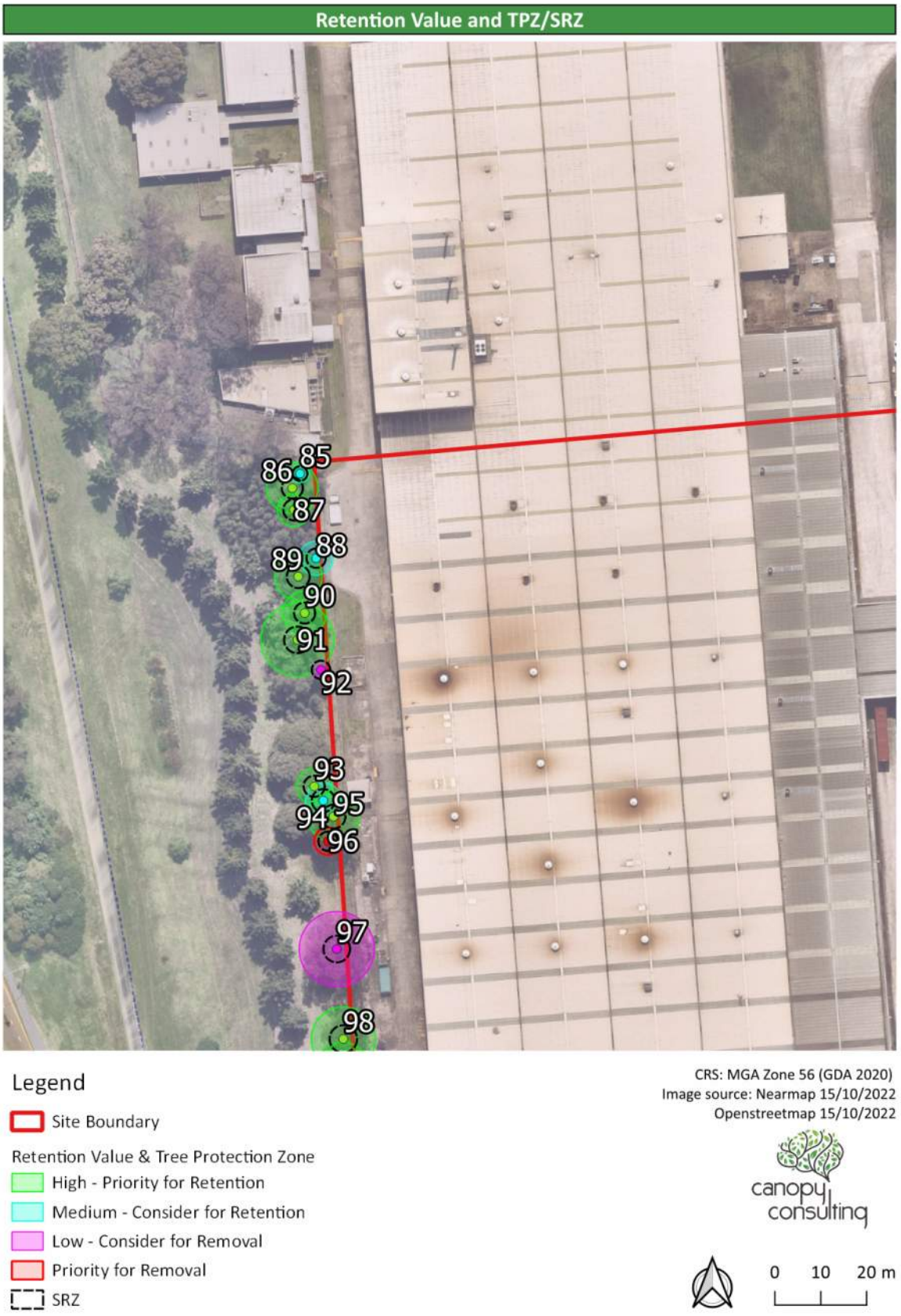

Figure 5: Map showing retention values, tree protection zones and structural root zones.

5. Discussion

5.1. Tree Protection Zone (TPZ)

The Tree Protection Zone (TPZ) is a radial distance measured from the centre of the trunk. Application of the TPZ is intended to ensure the protection of the root system and canopy from potential damage incurred from construction works and ensure the long-term health, stability and landscape viability of each tree to be retained.

Incursions into the TPZ may occur due to excavation, modification of existing ground levels, trenching or inverting the soil profile. Such works may damage part or all of the root system or affect soil structure and growing conditions required for long-term growth.

5.2. Structural Root Zone (SRZ)

The Structural Root Zone (SRZ) is the area required for mechanical support and anchorage of a tree. The woody root growth and soil cohesion in this area are required to hold a tree upright.

Incursions into the SRZ are not recommended as they are likely to result in loss or damage to woody roots which may significantly affect stability. However, fully elevated, pier and beam type construction or hand-dug services are possible within the SRZ.

5.3. Acceptable Encroachments into the TPZ

An encroachment of less than 10% of the entire TPZ is considered minor provided it is outside the SRZ and the area lost is compensated for elsewhere and contiguous to the TPZ.

A major encroachment is considered to be greater than 10% of the entire TPZ area. Where unavoidable, exploratory excavation using non-destructive methods such as pneumatic, hydraulic or hand digging may be required to evaluate the extent of potential damage to the root system and determine whether the tree(s) will remain viable. The area lost to encroachment should be compensated for elsewhere and contiguous to the TPZ.

Additional encroachments within the TPZ are acceptable, provided the arborist can demonstrate the tree(s) will remain viable.

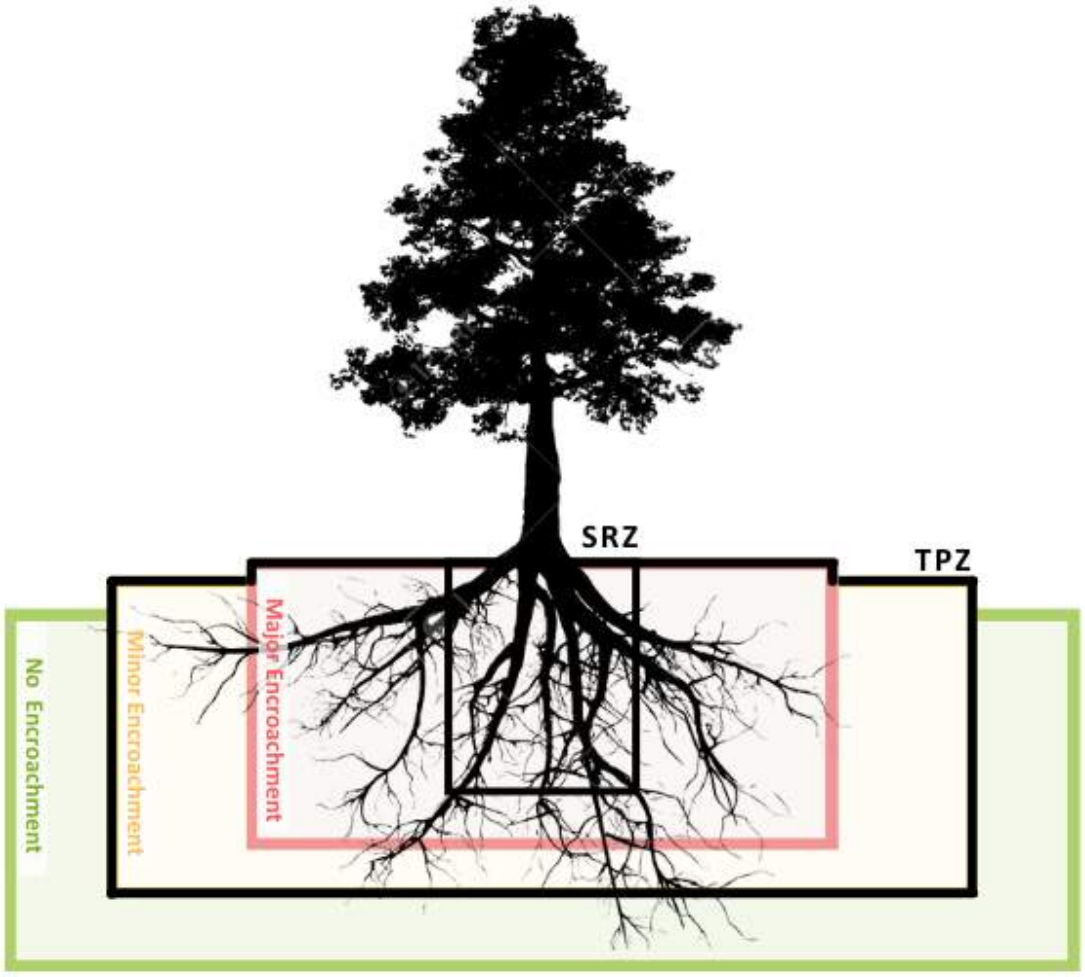

Figure 6: Indicative zones of TPZ and SRZ encroachment.

5.4. Impact Assessment

The following criteria have been considered to determine the impact to site trees that may occur due to the proposed development:

- Existing ground levels (R.L)
- Footprint of the proposed development, temporary structures, and laydown areas.
- Extent of the TPZ/SRZ
- Incursion into the TPZ including any cut, fill, benching and shoring activities beyond the development footprint.
- Incursions to the tree canopy from the building or temporary structures (scaffolding)
- Existing site and soil conditions

The impacts of the proposed development are summarised in Tables 12 and 13[1]. The assessment has divided past and current impact assessments for comparison.

5.5. February 2023 Plan Version

Table 12: Impact Assessment Summary February 2023 Version

		Retention Value				
Recommendation	***Encroachment Type***	**High - Priority for Retention**	**Medium - Consider for Retention**	**Low - Consider for Removal**	**Priority for Removal**	**Grand Total**
Remove	**Major**	35	18	25	9	87
Remove Total		35	18	25	9	87
Retain - generic	**Minor**	5	1			6
	Nil	3	2			5
Retain - generic Total		8	3			11
Retain - specific	**Major**	2	1			3
Retain - specific Total		2	1			3
Grand Total		**45**	**22**	**25**	**9**	**101**

A total of 93 trees combined under 87 tags have major, unmitigable encroachments into their TPZ and SRZ for the proposed driveway, civil works and warehouse footprint and require removal to facilitate the proposed development. Of these:

- 35 are High Retention Value (T8, 9, 10, 11, 12, 14, 15, 16, 18, 25, 30, 31, 37, 43, 44, 48, 50, 51, 52, 54, 55, 59, 60, 63, 66, 70, 76, 77, 78, 79, 81, 83, 95, 98, 99)
- 18 trees are Medium Retention Value (T4, 5, 6, 23, 24, 29, 32, 34, 38, 39, 40, 47, 49, 53, 67, 69, 80, 88)
- 31 trees grouped under 25 tags are Low Retention Value (T7, 17, 21, 26, 28, 33, 35, 36, 41, 45, 46, 57, 61, 62, 64, 65, 71, 72, 73, 74, 75, 82, 84, 92, 97)
- 9 are a Priority for Removal (T13, 20, 22, 27, 42, 56, 58, 68, 96).

Trees 1 and 3 have major TPZ encroachment for bulk earthworks and subsequent landscaping of 14% and 19%, respectively. Both trees are located within the adjoining property to the south. Provided

[1] No tree protection measures may be recommended as the tree(s) are outside the expected area of construction.
Generic tree protection measures include tree protection fencing, trunk and/or branch protection and restriction of activities within the TPZ.
Specific tree protection measures include generic tree protection measures plus supervision of works within the TPZ and may include, in combination:

- The use of root sensitive construction techniques
- Design revision
- Routing services outside the TPZ
- Root mapping

the root zone of this tree is treated with soil amendments prior to construction, it will remain viable. Project arborist supervision is also required during demolition and construction if works are to occur within the fenced TPZ.

One tree numbered 19, located within the adjoining southern property will be subject to a major encroachment of 16%. Provided the root zone of this tree is treated with soil amendments prior to construction, it will remain viable. Project arborist supervision is also required during demolition and construction if works are to occur within the fenced TPZ.

The previous proposed development (February 2023) would see the retention of 25 trees under 14 tag numbers (T1, 2, 3, 19, 85, 86, 87, 89, 90, 91, 93, 94, 100, 101) and removal of 93 under 87 tag numbers (T4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 88, 92, 95, 96, 97, 98, 99).

5.6. November 2023 Version

Table 13: Impact Assessment Summary November 2023 Version

		Tree ID and Retention Value			
Recommendation	**Tag/Tree QTY (Tree QTY)**	**High - Priority for Retention**	**Medium - Consider for Retention**	**Low - Consider for Removal**	**Priority for Removal**
Remove - project impacts	75 (81)	8, 9, 10, 11, 12, 14, 15, 16, 18, 25, 30, 31, 37, 43, 44, 48, 50, 51, 52, 54, 55, 59, 60, 63, 66, 70, 76, 77, 78, 79, 81, 83 Tag QTY: (32) Tree QTY: (32)	4, 5, 6, 23, 24, 29, 32, 34, 38, 39, 40, 53, 67, 69, 80 Tag QTY: (15) Tree QTY: (15)	7, 17, 26, 28, 33, 35, 36, 41, 45, 46, 57, 61, 62, 64, 65, 71, 72, 73, 74, 75, 82, 84 Tag QTY: (22) Tree QTY: (28)	13, 27, 42, 56, 58, 68 Tag QTY: (6) Tree QTY: (6)
Remove - irrespective	3 (3)			21 Tag QTY: (1) Tree QTY: (1)	20, 22 Tag QTY: (2) Tree QTY: (2)
Retain - generic	18 (29)	1, 86, 87, 89, 90, 91, 93, 95, 99, 100, 101 Tag QTY: (11) Tree QTY: (11)	2, 3, 85, 88, 94 Tag QTY: (5) Tree QTY: (16)	92 Tag QTY: (1) Tree QTY: (1)	96 Tag QTY: (1) Tree QTY: (1)
Retain - specific	5 (5)	19, 98 Tag QTY: (2) Tree QTY: (2)	47, 49 Tag QTY: (2) Tree QTY: (2)	97 Tag QTY: (1) Tree QTY: (1)	
Total	**101 (118)**				

Under the current proposal, a total of 81 trees combined under 75 tags have major, unmitigable encroachments into their TPZ and SRZ for the proposed driveway, civil works and warehouse footprint and require removal to facilitate the proposed development. Of these:

- 32 are High Retention Value (T8, 9, 10, 11, 12, 14, 15, 16, 18, 25, 30, 31, 37, 43, 44, 48, 50, 51, 52, 54, 55, 59, 60, 63, 66, 70, 76, 77, 78, 79, 81, 83)
- 15 are Medium Retention Value (T4, 5, 6, 23, 24, 29, 32, 34, 38, 39, 40, 53, 67, 69, 80
- 28 under 22 tag numbers are Low Retention Value (T7, 17, 26, 28, 33, 35, 36, 41, 45, 46, 57, 61, 62, 64, 65, 71, 72, 73, 74, 75, 82, 84)
- 6 are a Priority for Removal (T105, 113, 121, 163, 165, 252)

A total of 3 trees are recommended for removal irrespective of the development due to their health, species and/or structure.

A total of 29 trees grouped under 18 tags can be retained with generic tree protection measures.

A further 5 trees can be retained with specific tree protection measures which include plant health care techniques, and the application of mulch and irrigation prior to and during construction.

The current proposed development would see the removal of a total of 84 trees (78 tags), of which 3 are recommended for removal irrespective of the development.

5.7. Impact Mitigation Measures

TPZ encroachments should be offset and mitigated using a range of possible measures to ensure impacts are minimised and therefore trees remain viable post construction. Mitigation measures should be increased relative to the level of encroachment within the TPZ.

AS 4970-2009 outlines the types of TPZ encroachment and mitigation measures required to ensure long term viability which are summarised in Table 14. These measures are only required if a tree is to be retained.

Table 14: Mitigation Measures

Encroachment Type	Mitigation Measures
Nil	• Where indirect or inadvertent encroachments may occur due to haul routes or machinery movement tree protection should be installed.
Minor	• The area lost to encroachment must be offset elsewhere and contiguous to the TPZ. • Detailed root investigations should not be required. • Tree protection must be installed and maintained.
Major	• The Project Arborist must demonstrate the tree(s) will remain viable. • Root investigations using non-destructive methods may be required to clarify or

Encroachment Type	Mitigation Measures
	confirm the impacts to trees to be retained. • The area lost to encroachment must be offset elsewhere and contiguous to the TPZ. • All works and excavations within the TPZ must be supervised by the Project Arborist. • Tree protection must be installed and maintained for the duration of the project. • Additional measures such as mulching or temporary irrigation may be required.

5.8. Alternative Civil Designs

Alternative civil designs were provided in October 2023 following further ongoing consultation with Canopy Consulting in light of the volume of trees that would be affected under the proposed design.

The alternative design involves modifying proposed bulk earthworks along the western and eastern boundaries.

Comparatively, the revised design aims to retain an additional 9 trees, 3 of which are High Retention Value, 2 of which are Medium Retention Value and 3 Low Retention Value The retention of these tree is subject largely to cultural plant health practices prior to, during and post construction that will promote root growth and offset the area lost to encroachment.

Table 15: Specific Requirements for Additional Tree Retention

Specific Recommendation - Includes Generic Recommendations +	Tag/Tree QTY (Tree QTY)	Tree Numbers
Soil is to be treated with mycorrhizal soil inoculation along with seaweed based soil conditioner. Irrigation and mulch to be installed within the TPZ.	5 (5)	19, 47, 49, 97, 98
Total	**5** **(5)**	

Table 16: Impact Assessment Schedule

Tree no.	Retention Value	Encroachment into TPZ/SRZ	Encroachment Type	Likely Impact	Recommendation	Specific Recommendation
1	High - Priority for Retention	TPZ encroachment for bulk earthworks (5.02%)	Minor	Level of encroachment is less than the permissible 10%. This tree is viable for retention provided tree protection measures are installed and maintained.	Retain - generic	
2	Medium - Consider for Retention	No direct encroachment	Nil	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
3	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (7.05%), driveway and warehouse footprint (.02%)	Minor	Level of encroachment is less than the permissible 10%. This tree is viable for retention provided tree protection measures are installed and maintained.	Retain - generic	
4	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (72.87%), driveway and warehouse footprint (62.08%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
5	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (57.48%), driveway and warehouse footprint (38.01%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
6	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (25.42%), driveway and warehouse footprint (1.67%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for	Remove - project impacts	

Tree no.	Retention Value	Encroachment into TPZ/SRZ	Encroachment Type	Likely Impact	Recommendation	Specific Recommendation
				stability and significantly affect the soil profile.		
7	**Low - Consider for Removal**	TPZ encroachment for bulk earthworks (40.93%), driveway and warehouse footprint (22.39%) which enters the SRZ	**Major**	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
8	**High - Priority for Retention**	TPZ encroachment for bulk earthworks (64.26%), driveway and warehouse footprint (52.69%), stormwater (76.93%) which enters the SRZ	**Major**	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
9	**High - Priority for Retention**	TPZ encroachment for bulk earthworks (70.74%), driveway and warehouse footprint (58.26%), stormwater (62.74%) which enters the SRZ	**Major**	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
10	**High - Priority for Retention**	TPZ encroachment for bulk earthworks (30.92%), driveway and warehouse footprint (19.36%), stormwater (23.52%) which enters the SRZ	**Major**	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	

Tree no.	Retention Value	Encroachment into TPZ/SRZ	Encroachment Type	Likely Impact	Recommendation	Specific Recommendation
11	**High - Priority for Retention**	TPZ encroachment for bulk earthworks (65.05%), driveway and warehouse footprint (51.21%), stormwater (56.57%) which enters the SRZ	**Major**	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
12	**High - Priority for Retention**	TPZ encroachment for bulk earthworks (57.%), driveway and warehouse footprint (55.43%), stormwater (32.27%) which enters the SRZ	**Major**	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
13	**Priority for Removal**	TPZ encroachment for bulk earthworks (54.47%), driveway and warehouse footprint (52.24%), stormwater (17.99%) which enters the SRZ	**Major**	Tree not viable for retention as it within the proposed built footprint.	Remove - project impacts	
14	**High - Priority for Retention**	TPZ encroachment for bulk earthworks (54.92%), driveway and warehouse footprint (53.24%), stormwater (25.07%) which enters the SRZ	**Major**	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
15	**High - Priority for Retention**	TPZ encroachment for bulk earthworks (55.15%), driveway and warehouse footprint (54.28%), stormwater (27.02%) which enters the SRZ	**Major**	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	

Tree no.	Retention Value	Encroachment into TPZ/SRZ	Encroachment Type	Likely Impact	Recommendation	Specific Recommendation
16	High - Priority for Retention	TPZ encroachment for bulk earthworks (71.48%), driveway and warehouse footprint (70.57%), stormwater (38.04%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
17	Low - Consider for Removal	TPZ encroachment for bulk earthworks (31.48%), driveway and warehouse footprint (29.19%) which enters the SRZ	Major	Tree not viable for retention as it within the proposed built footprint.	Remove - project impacts	
18	High - Priority for Retention	TPZ encroachment for bulk earthworks (44.59%), driveway and warehouse footprint (43.17%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
19	High - Priority for Retention	TPZ encroachment for bulk earthworks (10.66%), driveway and warehouse footprint (10.72%)	Major	Level of encroachment marginally exceeds the permissible 10%. This tree is viable for retention provided tree protection measures are installed and maintained and plant health care treatments are employed .	Retain - specific	Soil is to be treated with mycorrhizal soil inoculation along with seaweed based soil conditioner. Irrigation and mulch to be installed within the TPZ.
20	Priority for Removal	No direct encroachment	Nil	Poorly structured tree that should be removed irrespective of the development.	Remove - irrespective	
21	Low - Consider for Removal	No direct encroachment	Nil	Low quality tree that should be removed to increase area for landscape.	Remove - irrespective	
22	Priority for Removal	TPZ encroachment for bulk earthworks (46.01%), driveway and warehouse footprint (45.13%) which enters the SRZ	Major	Poorly structured tree that should be removed irrespective of the development.	Remove - irrespective	

Tree no.	Retention Value	Encroachment into TPZ/SRZ	Encroachment Type	Likely Impact	Recommendation	Specific Recommendation
23	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (100.%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
24	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (100.%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
25	High - Priority for Retention	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (100.%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
26	Low - Consider for Removal	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (100.%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
27	Priority for Removal	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (100.%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	

Tree no.	Retention Value	Encroachment into TPZ/SRZ	Encroachment Type	Likely Impact	Recommendation	Specific Recommendation
28	Low - Consider for Removal	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (100.%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
29	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (65.82%), stormwater (84.05%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
30	High - Priority for Retention	TPZ encroachment for bulk earthworks (65.14%), driveway and warehouse footprint (28.95%), stormwater (27.72%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
31	High - Priority for Retention	TPZ encroachment for bulk earthworks (64.46%), driveway and warehouse footprint (18.71%), stormwater (21.99%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
32	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (52.61%), driveway and warehouse footprint (2.65%), stormwater (5.47%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	

Tree no.	Retention Value	Encroachment into TPZ/SRZ	Encroachment Type	Likely Impact	Recommendation	Specific Recommendation
33	Low - Consider for Removal	TPZ encroachment for bulk earthworks (89.76%), driveway and warehouse footprint (9.43%), stormwater (11.88%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
34	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (56.06%), driveway and warehouse footprint (29.03%), stormwater (24.95%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
35	Low - Consider for Removal	TPZ encroachment for bulk earthworks (26.27%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
36	Low - Consider for Removal	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (94.54%), stormwater (96.01%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
37	High - Priority for Retention	TPZ encroachment for bulk earthworks (91.4%), driveway and warehouse footprint (59.26%), stormwater (67.65%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	

Tree no.	Retention Value	Encroachment into TPZ/SRZ	Encroachment Type	Likely Impact	Recommendation	Specific Recommendation
38	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (87.03%), stormwater (88.86%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
39	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (59.96%), driveway and warehouse footprint (41.4%), stormwater (31.75%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
40	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (49.47%), driveway and warehouse footprint (16.53%), stormwater (17.92%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
41	Low - Consider for Removal	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (49.36%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
42	Priority for Removal	TPZ encroachment for bulk earthworks (100.%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	

Tree no.	Retention Value	Encroachment into TPZ/SRZ	Encroachment Type	Likely Impact	Recommendation	Specific Recommendation
43	High - Priority for Retention	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (100.%), stormwater (67.51%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
44	High - Priority for Retention	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (99.83%), stormwater (62.12%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
45	Low - Consider for Removal	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (100.%), stormwater (6.92%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
46	Low - Consider for Removal	TPZ encroachment for bulk earthworks (90.39%), driveway and warehouse footprint (90.87%), stormwater (35.64%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
47	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (20.63%), driveway and warehouse footprint (14.14%), stormwater (2.46%)	Major	This tree can potentially be retained if its health can be promoted via plant health techniques prior to and during construction in addition to mulching and irrigation within the TPZ during construction.	Retain - specific	Soil is to be treated with mycorrhizal soil inoculation along with seaweed based soil conditioner. Irrigation and mulch to be installed within the TPZ.

Tree no.	Retention Value	Encroachment into TPZ/SRZ	Encroachment Type	Likely Impact	Recommendation	Specific Recommendation
48	High - Priority for Retention	TPZ encroachment for bulk earthworks (68.79%), driveway and warehouse footprint (62.27%), stormwater (43.45%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
49	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (10.92%), driveway and warehouse footprint (4.13%)	Major	Level of encroachment marginally exceeds the permissible 10%. This tree is viable for retention provided tree protection measures are installed and maintained and plant health care treatments are employed .	Retain - specific	Soil is to be treated with mycorrhizal soil inoculation along with seaweed based soil conditioner. Irrigation and mulch to be installed within the TPZ.
50	High - Priority for Retention	TPZ encroachment for bulk earthworks (83.28%), driveway and warehouse footprint (76.21%), stormwater (49.32%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
51	High - Priority for Retention	TPZ encroachment for bulk earthworks (50.72%), driveway and warehouse footprint (45.97%), stormwater (28.78%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
52	High - Priority for Retention	TPZ encroachment for bulk earthworks (25.04%), driveway and warehouse footprint (18.89%), stormwater (2.41%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	

Tree no.	Retention Value	Encroachment into TPZ/SRZ	Encroachment Type	Likely Impact	Recommendation	Specific Recommendation
53	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (64.97%), driveway and warehouse footprint (54.08%), stormwater (16.19%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
54	High - Priority for Retention	TPZ encroachment for bulk earthworks (65.26%), driveway and warehouse footprint (61.84%), stormwater (43.92%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
55	High - Priority for Retention	TPZ encroachment for bulk earthworks (57.77%), driveway and warehouse footprint (55.03%), stormwater (37.04%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
56	Priority for Removal	TPZ encroachment for bulk earthworks (31.06%), driveway and warehouse footprint (28.58%), stormwater (13.01%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
57	Low - Consider for Removal	TPZ encroachment for bulk earthworks (60.35%), driveway and warehouse footprint (55.39%), stormwater (20.81%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	

Tree no.	Retention Value	Encroachment into TPZ/SRZ	Encroachment Type	Likely Impact	Recommendation	Specific Recommendation
58	Priority for Removal	TPZ encroachment for bulk earthworks (85.52%), driveway and warehouse footprint (80.68%), stormwater (40.05%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
59	High - Priority for Retention	TPZ encroachment for bulk earthworks (53.75%), driveway and warehouse footprint (49.33%), stormwater (18.31%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
60	High - Priority for Retention	TPZ encroachment for bulk earthworks (85.%), driveway and warehouse footprint (81.06%), stormwater (47.51%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
61	Low - Consider for Removal	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (100.%), stormwater (68.51%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
62	Low - Consider for Removal	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (100.%), stormwater (86.22%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	

Tree no.	Retention Value	Encroachment into TPZ/SRZ	Encroachment Type	Likely Impact	Recommendation	Specific Recommendation
63	High - Priority for Retention	TPZ encroachment for bulk earthworks (81.15%), driveway and warehouse footprint (76.9%), stormwater (41.38%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
64	Low - Consider for Removal	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (98.21%), stormwater (54.62%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
65	Low - Consider for Removal	TPZ encroachment for bulk earthworks (93.21%), driveway and warehouse footprint (85.01%), stormwater (7.35%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
66	High - Priority for Retention	TPZ encroachment for bulk earthworks (34.17%), driveway and warehouse footprint (30.06%), stormwater (3.87%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
67	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (73.37%), driveway and warehouse footprint (66.31%), stormwater (11.71%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	

Tree no.	Retention Value	Encroachment into TPZ/SRZ	Encroachment Type	Likely Impact	Recommendation	Specific Recommendation
68	Priority for Removal	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (100.%), stormwater (32.62%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
69	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (30.96%), driveway and warehouse footprint (20.69%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
70	High - Priority for Retention	TPZ encroachment for bulk earthworks (72.48%), driveway and warehouse footprint (63.53%), stormwater (35.13%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
71	Low - Consider for Removal	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (74.7%), stormwater (10.85%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
72	Low - Consider for Removal	TPZ encroachment for bulk earthworks (68.65%), driveway and warehouse footprint (27.89%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	

Tree no.	Retention Value	Encroachment into TPZ/SRZ	Encroachment Type	Likely Impact	Recommendation	Specific Recommendation
73	Low - Consider for Removal	TPZ encroachment for bulk earthworks (37.19%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
74	Low - Consider for Removal	TPZ encroachment for bulk earthworks (1.49%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
75	Low - Consider for Removal	TPZ encroachment for bulk earthworks (40.03%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
76	High - Priority for Retention	TPZ encroachment for bulk earthworks (31.2%), driveway and warehouse footprint (11.36%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
77	High - Priority for Retention	TPZ encroachment for bulk earthworks (35.58%), driveway and warehouse footprint (17.56%), stormwater (1.78%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	

Tree no.	Retention Value	Encroachment into TPZ/SRZ	Encroachment Type	Likely Impact	Recommendation	Specific Recommendation
78	High - Priority for Retention	TPZ encroachment for bulk earthworks (23.1%), driveway and warehouse footprint (1.23%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
79	High - Priority for Retention	TPZ encroachment for bulk earthworks (27.1%), driveway and warehouse footprint (17.04%)	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
80	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (95.19%), driveway and warehouse footprint (31.53%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
81	High - Priority for Retention	TPZ encroachment for bulk earthworks (26.2%), driveway and warehouse footprint (16.88%)	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
82	Low - Consider for Removal	TPZ encroachment for bulk earthworks (66.01%), driveway and warehouse footprint (50.87%), stormwater (16.68%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	

Tree no.	Retention Value	Encroachment into TPZ/SRZ	Encroachment Type	Likely Impact	Recommendation	Specific Recommendation
83	High - Priority for Retention	TPZ encroachment for bulk earthworks (61.5%), driveway and warehouse footprint (61.33%), stormwater (2.15%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
84	Low - Consider for Removal	TPZ encroachment for bulk earthworks (53.84%), driveway and warehouse footprint (44.62%) which enters the SRZ	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
85	Medium - Consider for Retention	No direct encroachment	Nil	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
86	High - Priority for Retention	TPZ encroachment for bulk earthworks (.07%)	Minor	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
87	High - Priority for Retention	No direct encroachment	Nil	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
88	Medium - Consider for Retention	No direct encroachment	Nil	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
89	High - Priority for Retention	No direct encroachment	Nil	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
90	High - Priority for Retention	No direct encroachment	Nil	No significant impact expected provided tree protection measures are installed and	Retain - generic	

Tree no.	Retention Value	Encroachment into TPZ/SRZ	Encroachment Type	Likely Impact	Recommendation	Specific Recommendation
				maintained.		
91	High - Priority for Retention	No direct encroachment	Nil	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
92	Low - Consider for Removal	No direct encroachment	Nil	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
93	High - Priority for Retention	No direct encroachment	Nil	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
94	Medium - Consider for Retention	No direct encroachment	Nil	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
95	High - Priority for Retention	TPZ encroachment for bulk earthworks (1.67%)	Minor	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
96	Priority for Removal	No direct encroachment	Nil	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
97	Low - Consider for Removal	TPZ encroachment for bulk earthworks (11.51%), driveway and warehouse footprint (.84%)	Major	Level of encroachment marginally exceeds the permissible 10%. This tree is viable for retention provided tree protection measures are installed and maintained and plant health care treatments are employed .	Retain - specific	Soil is to be treated with mycorrhizal soil inoculation along with seaweed based soil conditioner. Irrigation and mulch to be installed within the TPZ.
98	High - Priority for Retention	TPZ encroachment for bulk earthworks (10.49%)	Major	Level of encroachment marginally exceeds the permissible 10%. This tree is viable for retention provided tree protection measures are installed and maintained and plant health care treatments are employed .	Retain - specific	Soil is to be treated with mycorrhizal soil inoculation along with seaweed based soil conditioner. Irrigation and mulch to be installed within the TPZ.

Tree no.	Retention Value	Encroachment into TPZ/SRZ	Encroachment Type	Likely Impact	Recommendation	Specific Recommendation
99	High - Priority for Retention	TPZ encroachment for bulk earthworks (1.49%)	Minor	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
100	High - Priority for Retention	No direct encroachment	Nil	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
101	High - Priority for Retention	No direct encroachment	Nil	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	

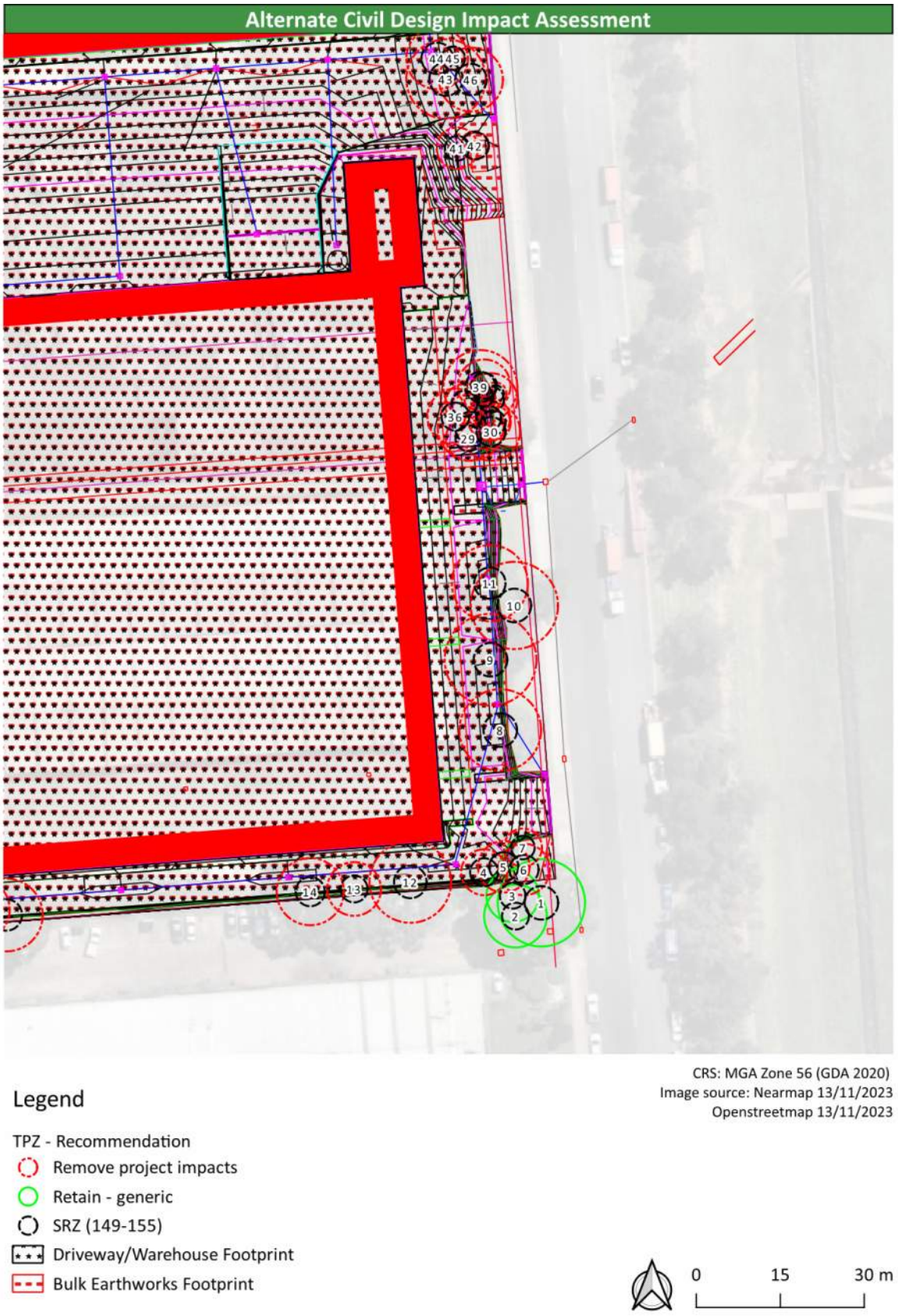

Figure 7: Impact Assessment

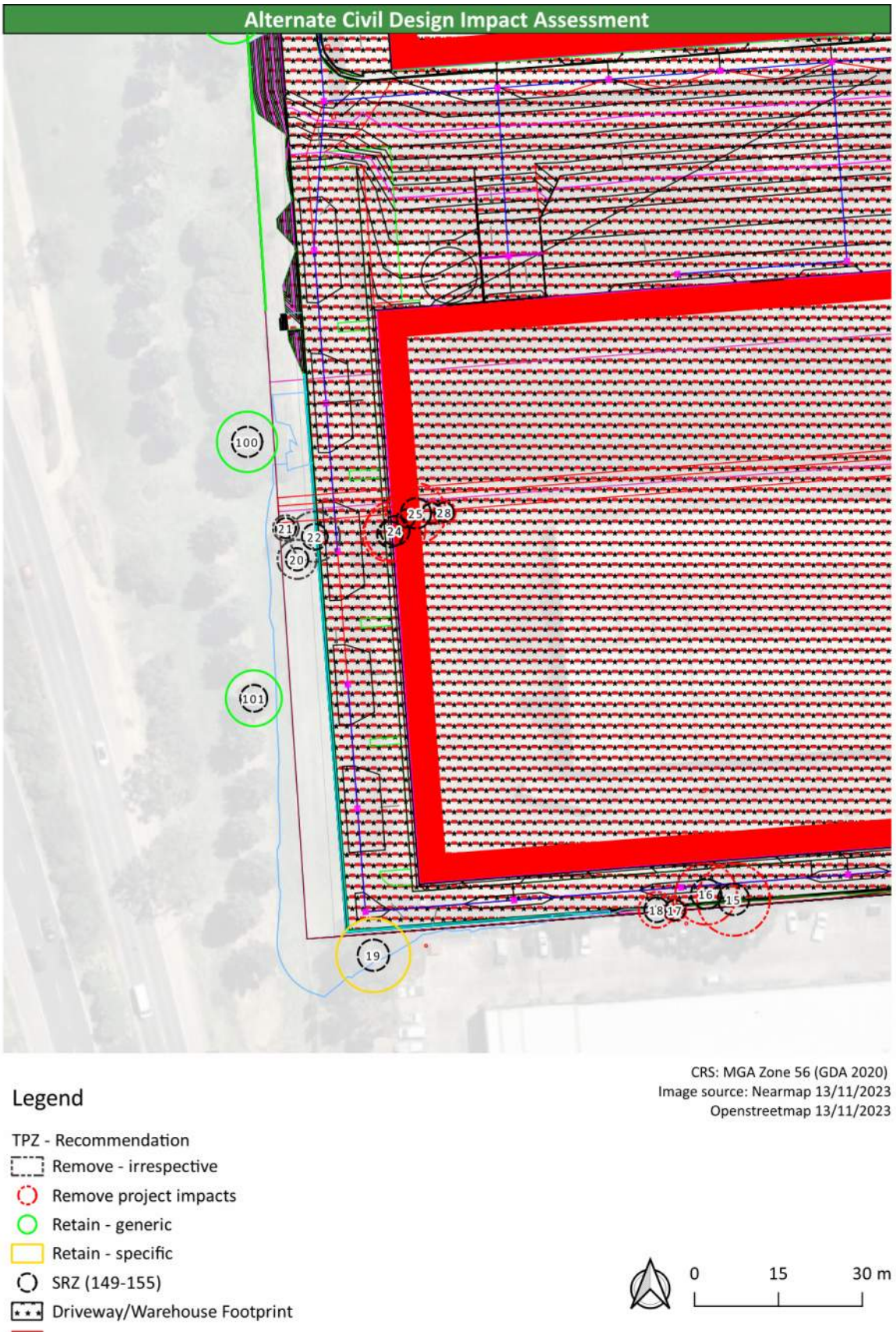

Figure 8: Impact Assessment

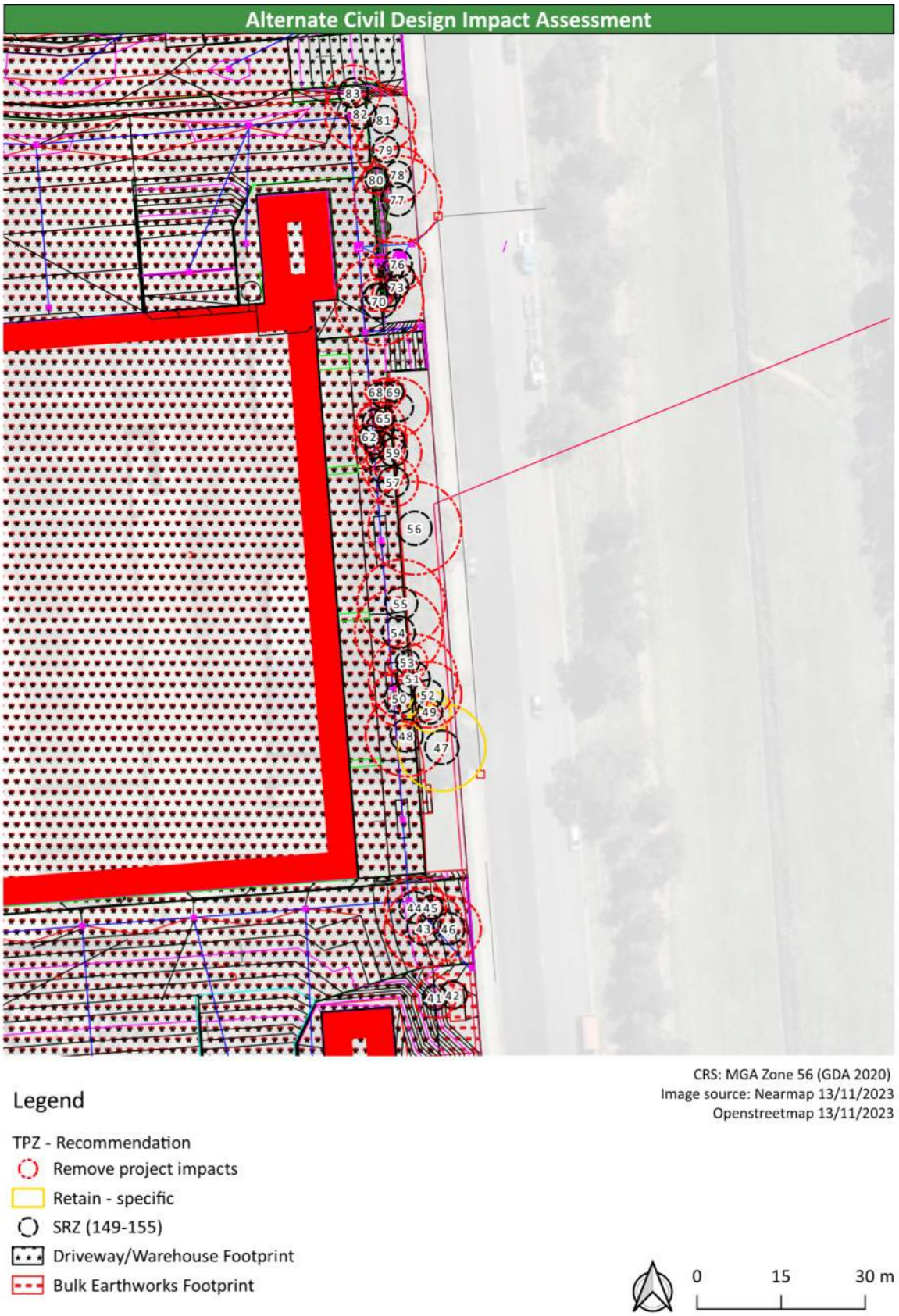

Figure 9: Impact Assessment

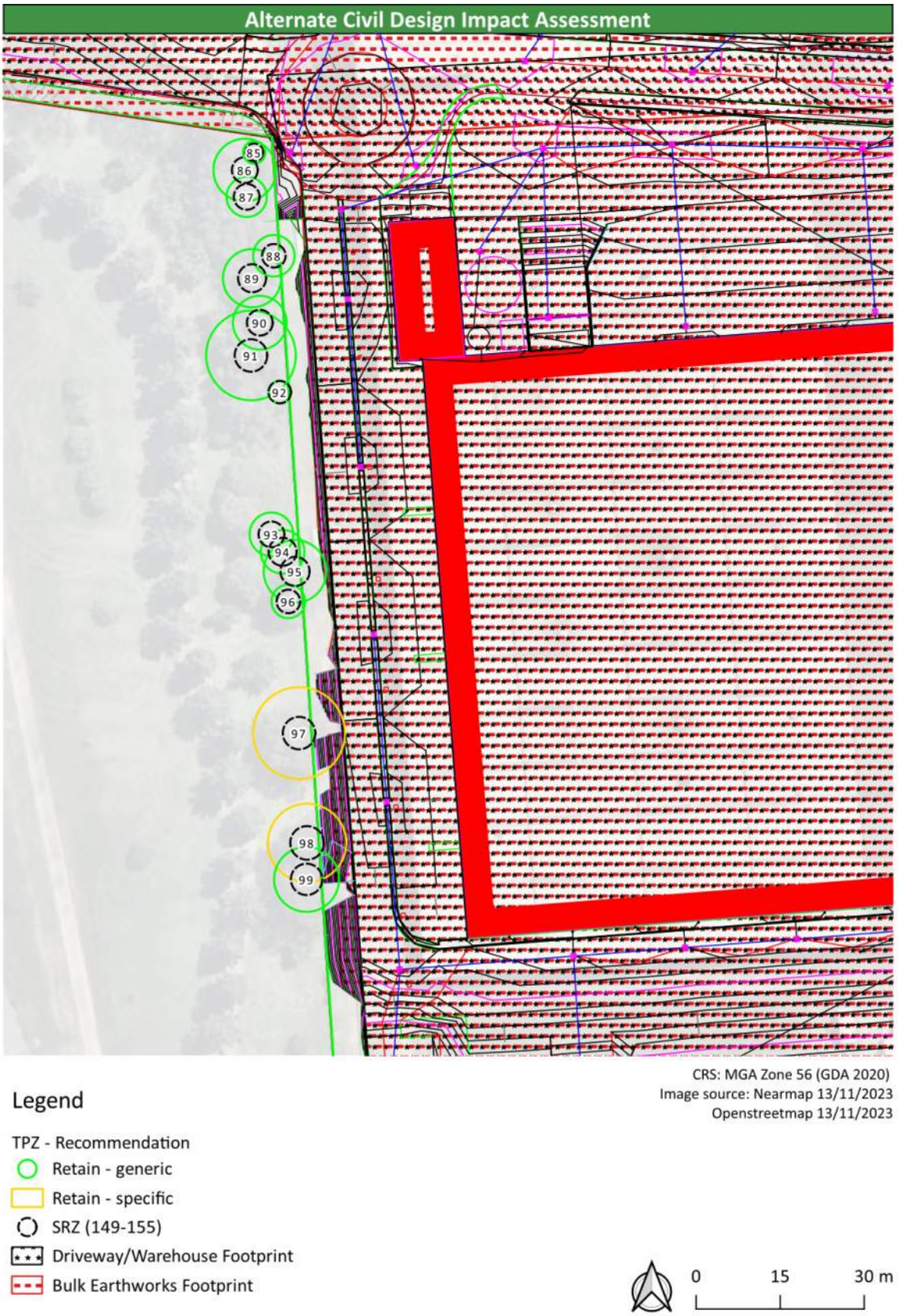

Figure 10: Impact Assessment

6. Recommendations

6.1. Project Arborist

An official "Project Arborist" must be commissioned to oversee the tree protection, any works within the TPZ's and complete regular monitoring compliance certification.

The project arborist must have minimum five (5) years industry experience in the field of arboriculture, horticulture with relevant demonstrated experience in tree management on construction sites, and Diploma level qualifications in arboriculture – AQF Level 5.

6.2. Tree Retention and Removal

The recommendations of this report do not constitute consent to remove trees subject to this report. The council or consent authority should be contacted prior to undertaking works as consent may be required to remove and/or prune the tree(s).

Table 17 summarises tree removal and retention and is shown in the tree removal and retention plan. The current proposal will see the removal of 84 trees in total under 48 tree tags and the retention of 34 under 23 tree tags.

Table 17: Tree Retention and Removal

Recommendation	Tag/Tree QTY (Tree QTY)	Tree Numbers
Remove - project impacts	75 (81)	4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84
Remove - irrespective	3 (3)	20, 21, 22
Retain - generic	18 (29)	1, 2, 3, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 99, 100, 101
Retain - specific	5 (5)	19, 47, 49, 97, 98
Total	**101 (118)**	

Trees marked for removal are to be physically marked with paint prior to site establishment as per the approved TPMP. Before removal, the Project Arborist must confirm that all marked trees correspond with those shown in Appendix B - Tree Assessment Schedule and Appendix C – Tree Protection Management Plan.

Tree removal is to be carried out prior to the erection of protection fencing. Under no circumstances are trees marked for retention within protection areas to be damaged. Vehicles and heavy machinery used by contractors are also to be kept clear of these protection areas.

Stumps to be removed from within protection areas are to be removed in a manner that avoids damaging or disturbing roots of trees to be retained. This may include stump grinding or careful 'picking' of the stumps with machinery. Both methods are to be approved by the Project Arborist.

6.3. Specific Tree Protection Measures

The following recommendations must be implemented prior to, during and post construction.

Table 18: Specific Tree Protection Measures

Specific Recommendation - Includes Generic Recommendations +	Tag/Tree QTY (Tree QTY)	Tree Numbers
Soil is to be treated with mycorrhizal soil inoculation along with seaweed based soil conditioner. Irrigation and mulch to be installed within the TPZ.	5 (5)	19, 47, 49, 97, 98
Total	**5** **(5)**	

6.4. Tree Pruning

No pruning is anticipated. In the event tree pruning is required, the following standard of works should be employed:

- Trees are to be pruned in accordance with AS 4373-2007: *Pruning of Amenity Trees* (Standards Australia, 2007).
- Trees are to be dismantled and/or removed in such a manner as to avoid damage to adjacent or understory vegetation and structures.
- All pruning works should be completed by a minimum AQF Level 3 Arborist or under direct supervision thereof.

In order to offset root loss anticipated for trees 19, 47, 49, 97, 98, the TPZ within the subject and adjoining site is to be treated with the following products at label rates, at least 3 months prior to construction:

- Mycogold Biostim mycorrhizal fungi
- Seamungus granular soil conditioner.

Irrigation is also to be installed within the TPZ of all trees to be retained with the trees to be regularly irrigated.

6.5. Generic Tree Protection

Generic tree protection measures are recommended to restrict construction activities within the TPZ which may adversely affect the health and condition of a tree to be retained. In order of precedence, the following is required for both trees.

1. Install TPZ fencing and signage per the TPMP. Where impractical;
2. Install trunk and ground protection where machine access is required.

Notes:

- All activities within the fenced TPZ are to be supervised by the project arborist.
- TPZ fencing is not to be moved.

6.6. Compliance Inspection and Reporting

Compliance inspections are recommended to be completed on a **quarterly** basis through the construction stage.

Following each inspection, the project arborist shall prepare a document detailing the condition of the trees. These documents should certify whether the works have been completed in compliance with the approved consent conditions relating to tree protection. These reports should contain photographic evidence where necessary.

Inspections are to be conducted by the project arborist at several key points during the construction in order to ensure that protection measures are being adhered to during construction stages and decline in tree health or additional remediation measures can be identified.

Any works within tree protection zones are to be monitored and supervised by the Project Arborist.

6.7. Compliance and Certification Reporting – Hold Points

The following project milestones are recommended to be carried out by the project arborist.

Table 19: Compliance and Certification Table

Construction Stage	Task	Responsibility	Certification	Timing of Inspection
Pre-construction	Indicate clearly (with spray paint or tape on trunks) trees approved for removal only	Principal Contractor	Project Arborist	Prior to site establishment
	Install tree protection measures			
	Induct construction staff into Tree Protection Management Plan			
During Construction	Supervise all excavation works proposed within the TPZ of trees to be retained			As required prior to the works proceeding adjacent to trees to be retained
	Inspection of trees by Project Arborist			Quarterly during construction period
Post-construction	Final Inspection of trees by Project Arborist			Following practical completion of works

6.8. Offset Planting

Any tree approved to be removed from a site should be replaced with a tree of like habit and indigenous to the LGA where possible, planted as near as practicable to the location of the removed tree, grown to maturity and replaced if the planting fails to survive and thrive.

The landscape plan indicates that 60 trees proposed for planting in the landscape plan will be capable of achieving significant physical dimensions to offset the loss of amenity with 98% being locally indigenous species of a 75L pot size. A further 25 *Tristaniopsis laurina* (Kanooka) are to be incorporated into vehicle parking areas in addition to a number of other landscape feature trees. The temporary loss of amenity is, therefore, likely to be offset in the short-to-medium term.

Suggested species for replacement include:

- *Eucalyptus amplifolia* (Cabbage Gum)
- *Eucalyptus tereticornis* (Forest Red Gum)
- *Eucalyptus punctata* (Grey Gum)
- *Eucalyptus baueriana* (Blue Box)

Trees should be sourced from a reputable nursery with stock grown to NATSPEC and Australian Standard AS 2303:2018 *Tree Stock for Landscape Use* criteria.

The trees should be planted and mulched with suitably composted, natural, hardwood mulch as per Figure 11.

Figure 11: Recommended tree planting process. (Arbor Day Foundation, 2020)

6.9. Tree Sensitive Construction Methods

Exploratory Root Investigation

Where trees are intended to be retained, and potential works areas may enter the TPZ or SRZ, determining root location and, therefore the impact on the trees is an important process.

Exploratory root excavation should be undertaken in a manner that causes the least amount of damage to root material in the process. This may include the use of air excavation (air-spade) or hydro or dry-vac excavation. Root investigations should be undertaken at pre-agreed locations that will most effectively guide the design.

Findings of the root investigation should be compiled into a report which identifies significant roots that should be retained and less significant roots that may be appropriate for severance. The size and volume of roots which may be cut must be assessed by an arborist and consider tree physiology, existing site and soil conditions and species traits and tolerance of root pruning.

Fill within Tree Protection Zones

Where unavoidable, fill placed within TPZ of trees to be retained shall be well-drained material equivalent or finer in texture than the existing site topsoil material and should comply with AS 4419:2003 *Soils for Landscaping and Garden Use*.

The fill can be lightly consolidated but not to engineering standards. If fill is to be placed by machinery, this must be done from outside the TPZ or from existing hard stand areas. Alternatively, ground, trunk and branch protection may be used to facilitate machine access.

Pavements within Tree Protection Zones

Any pavements or footpaths within TPZ of trees to be retained should be installed at or above the existing grade to minimise the need for excavation to avoid damage or severance of primary woody roots. The pavement sub-base shall be a coarse, gap-graded material with no fines in order to allow some aeration and moisture infiltration to the root zone. The use of permeable pavements, bonded aggregate or cellular confinement systems should be investigated as alternative construction methods.

Landscaping Works within Tree Protection Zones

The landscape plan is to be checked for compliance with the TPMP. Staged removal of tree protection methods may be required to facilitate landscaping works.

Any landscaping works within the TPZ of trees to be retained are to be under the direct supervision of the Project Arborist. These may include but are not limited to; retaining walls, irrigation and lighting systems, topdressing, planting and paving.

Any landscaping works requiring excavation for drainage or the like is to be undertaken using non-destructive methods previously described.

Trenching for Installation of Underground Services

All underground services should be routed outside the TPZ of trees to be retained. Where unavoidable, services may be installed via alternative methods which may include tree sensitive excavation or Horizontal Directional Drilling (HDD). Where HDD is used, entry and exit pits are to be located outside the TPZ of trees to be retained.

Where excavation or trenching is required to facilitate the installation of underground services within the TPZs of any site trees arborist supervision is required. Works should be undertaken using techniques that are sensitive to tree roots to avoid unnecessary damage. Such techniques include

- Excavation by hand
- Excavation using a high-pressure water jet and vacuum truck
- Excavation using an Air Spade with a vacuum truck.

Machine excavation is prohibited within the TPZs of retained trees unless undertaken at the direct consent from the project arborist and/or the responsible authority.

Where a situation occurs that a significant root (root greater than >50 mm diameter) requires pruning or removal, the root is to be severed with a sharp saw implement by or under the instruction of the Project Arborist.

7. Arboricultural Method Statement – Pre-Construction & Demolition

7.1. Site Establishment

The Project Arborist is to be provided a copy of the Construction Management Plan (CMP) to check for compliance with the TPMP. The CMP should ensure that site sheds, haul roads, laydown areas and sediment control are located outside the TPZ of trees to be retained.

At the completion of site establishment, the Project Arborist is to certify that tree protection measures comply with the TPMP.

7.2. Tree Protection Zone Fencing

The soil area is to be treated with mycorrhizal soil inoculation along with seaweed based soil conditioner prior to construction and every six months during construction. Temporary irrigation and mulch must be installed within the TPZ.

Protective fencing is to be installed as per Appendix C – Draft Tree Protection Management Plan. Fencing is to comply with Australian Standard AS 4687-2007 Temporary fencing and hoardings (Standards Australia, 2007).

Once erected, protective fencing must not be removed or altered without approval from the project arborist. The TPZ fencing should be secured to restrict access.

TPZ fencing is to be a minimum of 1.8m high and mesh or wire between posts must be highly visible. Fence posts and supports should have a diameter greater than 20mm and should ideally be freestanding, otherwise be located clear of the roots.

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.

An example of tree protection fencing is shown in Figure 12.

Any works to be undertaken within the Tree Protection Zone fencing are to be monitored and certified by the project arborist.

Legend:

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

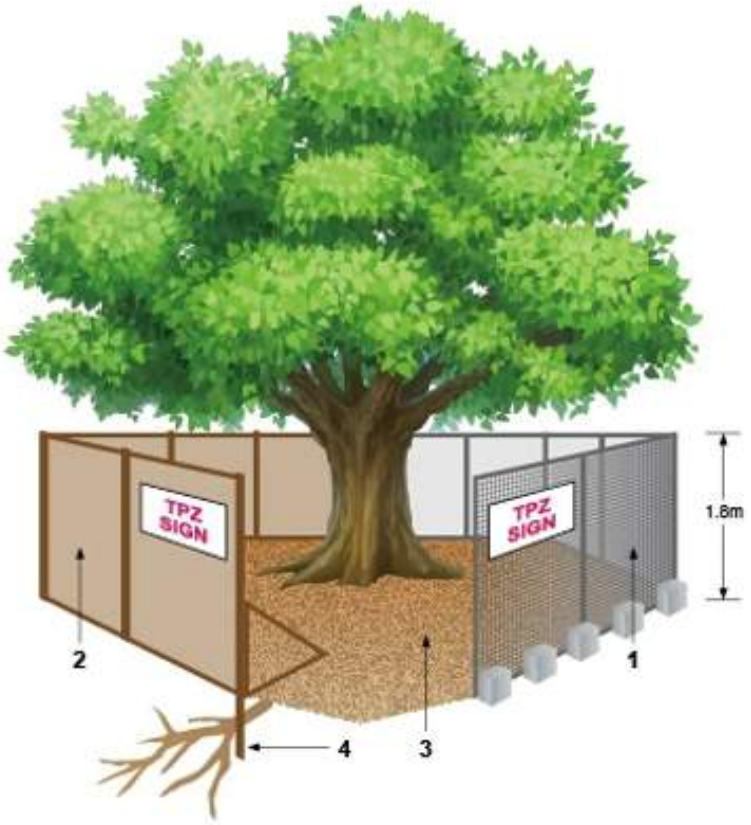

Figure 12: Recommended tree protection fencing measures. (Standards Australia, 2009)

7.3. Prohibited Activities within the TPZ

Activities generally excluded from the TPZ included but are not limited to-

a) Machine excavation including trenching;
b) Excavation for silt fencing;
c) cultivation;
d) storage;
e) preparation of chemicals, including preparation of cement products;
f) parking of vehicles and plant;
g) refuelling;
h) dumping of waste;
i) wash down and cleaning of equipment;
j) placement of fill;
k) lighting of fires;
l) soil level changes;
m) temporary or permanent installation of utilities and signs, and

n) physical damage to the tree.

7.4. Tree Protection Signs

Signs identifying the TPZ are to be installed on the tree protection fencing in 10m intervals. An example is shown below in Figure 13.

Figure 13: Example of tree protection signage. (Standards Australia, 2009)

7.5. Sediment Control

Sediment control within tree protection zones is to be installed to avoid below ground excavation as this may damage roots. Coir logs installed above grade that are pinned to avoid roots are an acceptable method.

7.6. Ground, Trunk and Branch Protection

If temporary access for machinery is required within the TPZ of trees to be retained, ground protection measures will be required. The purpose of ground protection is to prevent root damage and soil compaction. Measures may include a permeable membrane such as geotextile fabric beneath a 100mm thick layer of mulch or crushed rock below rumble boards, or steel plates or track mats as per Figure 14.

Tree trunk/s and/or major branches located within close proximity to works must be wrapped with protective hessian or similar acceptable material to prevent tree injury. Major branches would typically be considered to be of a diameter greater than 100mm diameter.

Timber battens (50 mm x 100 mm x 2000mm or similar) must be placed around tree trunks with battens spaced at 100 mm intervals and fixed against the trunk using metal or durable plastic strapping with connections appropriately finished or covered to protect pedestrians from snagging injury. The hessian and timber battens must not be fixed to the tree. Tree trunk and major branch protection are to remain in place for the duration of works and must be removed at the completion of the project.

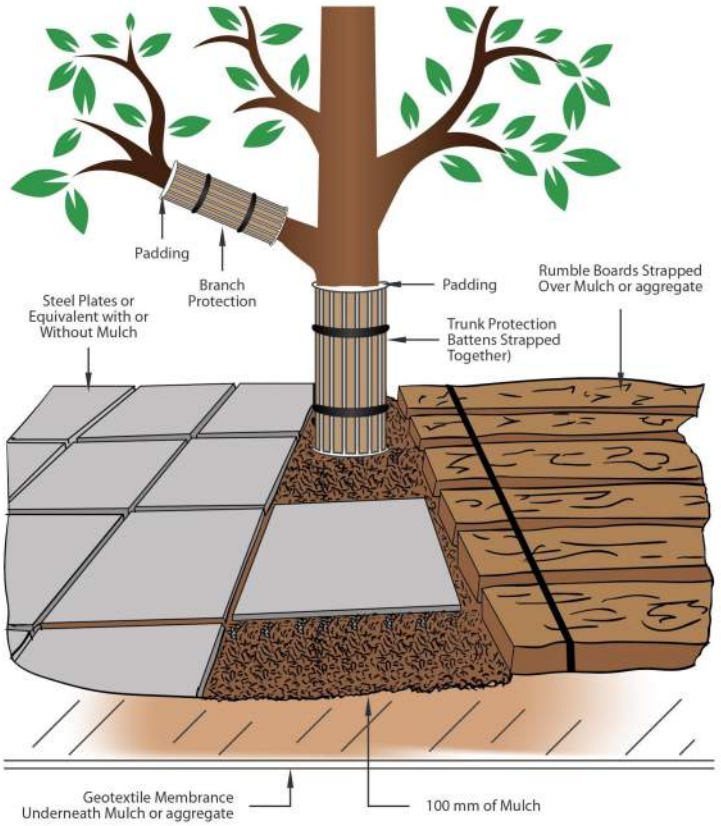

Figure 14: Details of trunk, branch and ground protection. (Standards Australia, 2009)

7.7. Demolition of Existing Hard Stand Areas

Demolition of existing hard stand areas within the TPZ of trees to be retained may be undertaken using machinery but must be under the supervision of the Project Arborist. Demolition of the ground surfaces must be undertaken from existing hard stand areas or ground protection and should commence at the outer extent of the existing surface material and move away from trees to be retained.

7.8. Scaffolding

Where scaffolding is required it should be erected outside the TPZ. Where it is essential for scaffolding to be erected within the TPZ, branch removal should be minimised. This can be achieved by designing scaffolding to avoid branches or tying back branches. Where pruning is unavoidable it must be specified by the project arborist in accordance with AS 4373-2007 Pruning of Amenity Trees. NOTE: Pruning works will require approval by determining authority.

The ground below the scaffolding should be protected by boarding (e.g. scaffold board or plywood sheeting) as shown in Figure 15. Where access is required, a boardwalk or other surface material should be installed to minimise soil compaction. Boarding should be placed over a layer of mulch and impervious sheeting to prevent soil contamination. The boarding should be left in place until the scaffolding is removed.

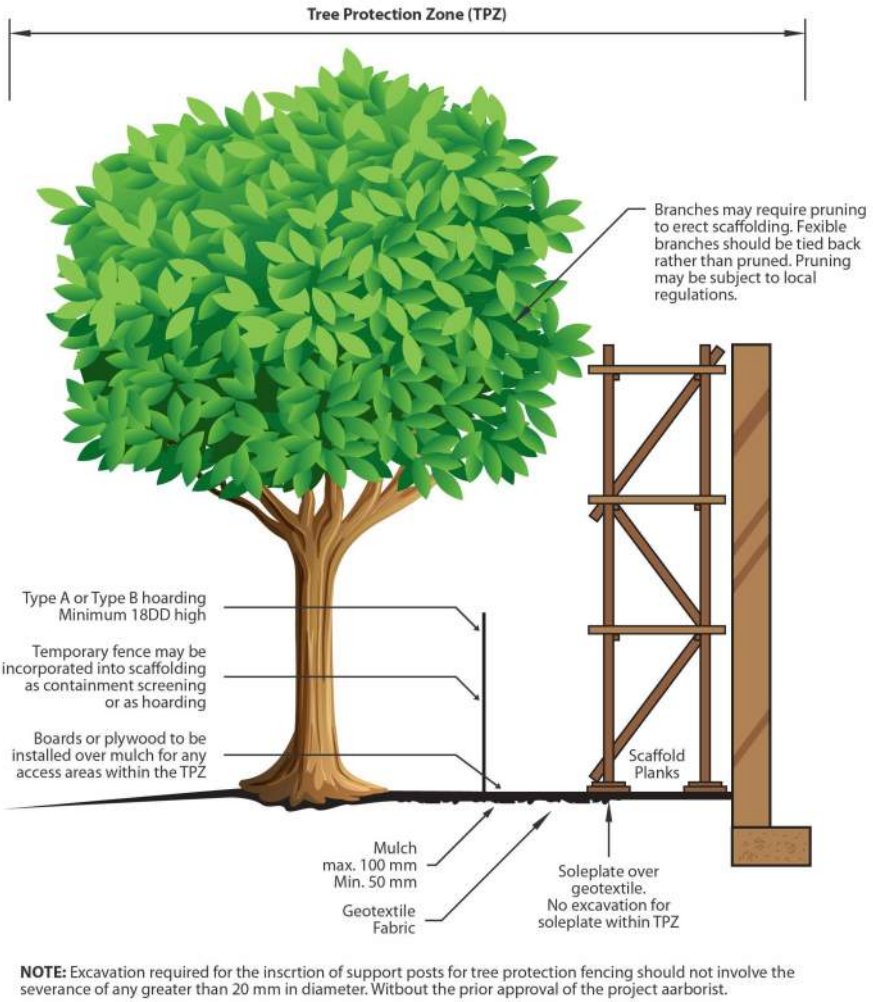

Figure 15: Details of scaffold installation. (Standards Australia, 2009)

8. Arboricultural Method Statement – Construction Stage

8.1. Excavations Within Tree Protection Zones

The Project Arborist is to monitor the impacts of demolition, bulk earthworks, and installation of temporary infrastructure including building, sediment control and drainage works.

Where the extent of encroachment is less than 10% of the TPZ, including any excavations for benching and shoring, excavation may be undertaken using conventional construction methods. 10% of the TPZ is equivalent to one-third of the TPZ radius on one side as shown in Figure 16.

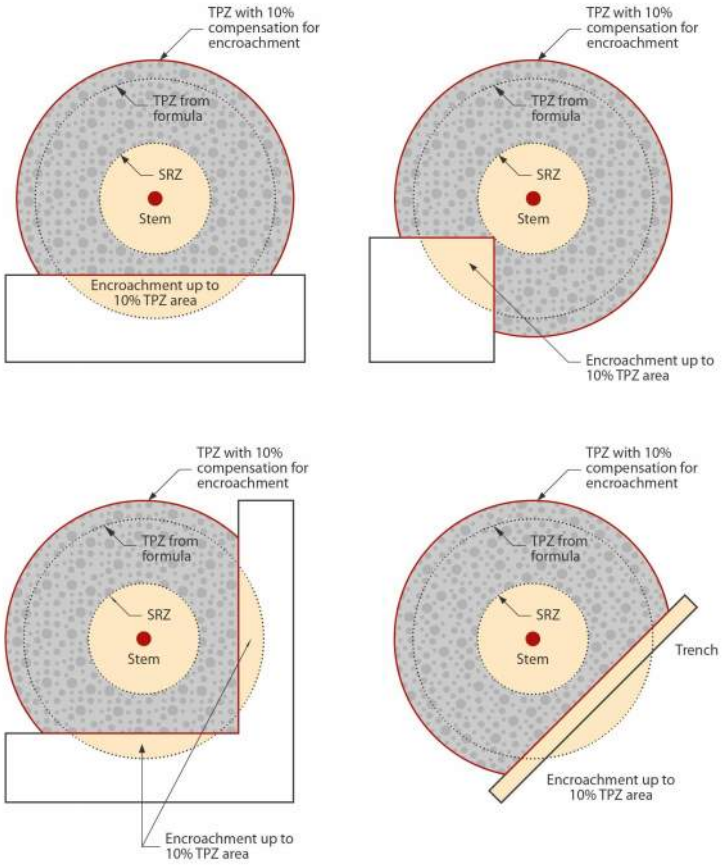

Figure 16: Example of permissible encroachment into the TPZ. (Standards Australia, 2009)

Where the encroachment is to be greater than 10% of the TPZ and prior to any mechanical excavations for building foundations, shoring, retaining wall or pavement subgrade within the TPZ of trees to be retained; exploratory excavation using non-destructive methodology shall be undertaken at the perimeter of the structure, excavation required for shoring, retaining wall or pavement subgrade within the TPZ.

Such techniques include:

- Excavation by hand
- Excavation using a high-pressure water jet and vacuum truck
- Excavation using an Air Spade with a vacuum truck.

The non-destructive excavation shall be undertaken at the outer limits of the structure to the depth of the foundation or excavation, or to a maximum of 800mm below existing surface levels. All care must be taken to prevent the damage or severance of roots greater than 50mm in diameter. Any roots encountered that are less than 50mm in diameter may be cleanly severed with a sharp pruning implement at the interface of the excavation nearest the tree. The exposed root zone is to be kept moist by way of geotextile or hessian placed along the open interface of the excavation nearest the tree.

Where roots greater than 50mm in diameter are encountered during exploratory excavation, advice from the Project Arborist shall be sought.

8.2. Tree Damage

Care is to be taken when operating cranes, piling rigs or similar near trees to avoid damage to tree canopies. Under no circumstances are branches to be torn off by construction equipment.

9. Arboricultural Method Statement – Post-construction

9.1. Defects Liability Period

Completion of outstanding building or landscaping works following the construction period must not injure trees.

9.2. Final Certification

The final inspection by the Project arborist should detail the health and condition of the trees and their growing environment and provide recommendations for any necessary remedial actions. These actions may include pruning in accordance with AS 4373-2007 *Pruning of amenity trees* and/or soil remediation to repair the growing environment.

On project completion, the project arborist shall certify in writing to the Certifying Authority that the conditions of consent relating to tree protection, tree removal, pruning and planting of new trees have been complied with or, if the conditions have been contravened, detail the extent and nature of the departure from the conditions and their impacts on trees.

10. References

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11. Appendix A - IACA Significance of a Tree, Assessment Rating System (STARS) ©

Tree Landscape Significance - Assessment Criteria

1. High Significance in landscape	2. Medium Significance in landscape	3. Low Significance in landscape
The tree is in good condition and good vigour; The tree has a form typical for the species; The tree is a remnant or is a planted locally indigenous specimen and/or is rare or uncommon in the local area or of botanical interest or of substantial age; The tree is listed as a Heritage Item, Threatened Species or part of an Endangered ecological community or listed on Councils significant Tree Register; The tree is visually prominent and visible from a considerable distance when viewed from most directions within the landscape due to its size and scale and makes a positive contribution to the local amenity; The tree supports social and cultural sentiments or spiritual associations, reflected by the broader population or community group or has commemorative values; The tree's growth is unrestricted by above and below ground influences, supporting its ability to reach dimensions typical for the taxa *in situ* - tree is appropriate to the site conditions.	The tree is in fair-good condition and good or low vigour; The tree has form typical or atypical of the species; The tree is a planted locally indigenous or a common species with its taxa commonly planted in the local area The tree is visible from surrounding properties, although not visually prominent as partially obstructed by other vegetation or buildings when viewed from the street, The tree provides a fair contribution to the visual character and amenity of the local area, The tree's growth is moderately restricted by above or below ground influences, reducing its ability to reach dimensions typical for the taxa *in situ*.	The tree is in fair-poor condition and good or low vigour; The tree has form atypical of the species; The tree is not visible or is partly visible from surrounding properties as obstructed by other vegetation or buildings, The tree provides a minor contribution or has a negative impact on the visual character and amenity of the local area, The tree is a young specimen which may or may not have reached dimension to be protected by local Tree Preservation orders or similar protection mechanisms and can easily be replaced with a suitable specimen, The tree's growth is severely restricted by above or below ground influences, unlikely to reach dimensions typical for the taxa *in situ* - tree is inappropriate to the site conditions, The tree is listed as exempt under the provisions of the local Council Tree Preservation Order or similar protection mechanisms, The tree has a wound or defect that has potential to become structurally unsound. **Environmental Pest / Noxious Weed Species** The tree is an Environmental Pest Species due to its invasiveness or poisonous/ allergenic properties, The tree is a declared noxious weed by legislation. **Hazardous/Irreversible Decline** The tree is structurally unsound and/or unstable and is considered potentially dangerous, The tree is dead, or is in irreversible decline, or has the potential to fail or collapse in full or part in the immediate to short term.

The tree is to have a minimum of three (3) criteria in a category to be classified in that group. Note: The assessment criteria are for individual trees only, however, can be applied to a monocultural stand in its entirety e.g. hedge.

Estimated Life Expectancy

1. Long	2. Medium	3. Short	4. Remove
Trees that appear to be retainable with an acceptable level of risk for more than 40 years. Structurally sound trees located in positions that can accommodate future growth. Storm damaged or defective trees that could be made suitable for retention in the long term by remedial tree surgery. Trees of special significance for historical, commemorative, or rarity reasons that would warrant extraordinary efforts to secure their long-term retention.	Trees that appear to be retainable with an acceptable level of risk for 15-40 years. Trees that may only live between 15 and 40 more years. Trees that may live for more than 40 years but would be removed to allow the safe development of more suitable individuals. Trees that may live for more than 40 years but would be removed during the course of normal management for safety or nuisance reasons. Storm damaged or defective trees that require substantial remedial work to make safe and are only suitable for retention in the short term.	Trees that appear to be retainable with an acceptable level of risk for 5-15 years. Trees that may only live between 5 and 15 more years. Trees that may live for more than 15 years but would be removed to allow the safe development of more suitable individuals. Trees that may live for more than 15 years but would be removed during the course of normal management for safety or nuisance reasons. Storm damaged or defective trees that require substantial remedial work to make safe and are only suitable for retention in the short term.	Trees with a high level of risk that would need removing within the next 5 years. Dead trees. Trees that should be removed within the next 5 years. Dying or suppressed or declining trees through disease or inhospitable conditions. Dangerous trees through instability or recent loss of adjacent trees. Dangerous trees through structural defects, including cavities, decay, included bark, wounds, or poor form. Damaged trees that are considered unsafe to retain. Trees that could live for more than 5 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting. Trees that will become dangerous after removal of trees for other reasons.

Tree Retention Value – Priority Matrix

Estimated Life Expectancy	Landscape Significance Rating				
	1 (High)	2 (Medium)	3 (Low)	4 (Environmental Pest / Noxious Weed)	5 (Hazardous / Irreversible Decline)
Long (>40)	High - Priority for Retention	High - Priority for Retention	Medium - Consider for Retention	Low - Consider for Removal	Priority for Removal
Medium (15-40)	High - Priority for Retention	Medium - Consider for Retention	Medium - Consider for Retention / Low - Consider for Removal	Low - Consider for Removal	Priority for Removal
Short (5-15)	Low - Consider for Removal	Low - Consider for Removal	Low - Consider for Removal	Priority for Removal	Priority for Removal
Dead Or Hazardous (0-5)	Low - Consider for Removal	Priority for Removal	Priority for Removal	Priority for Removal	Priority for Removal

Legend for Matrix Assessment

High - Priority for Retention	These trees are considered important for retention and should be retained and protected. Design modification or re-location of buildings should be considered to accommodate the setbacks as prescribed by the Australian Standard AS4979 *Protection of trees on development sites*. Tree sensitive construction must be implemented e.g. pier and beam, etc if works are to proceed within the Tree Protection Zone
Medium - Consider for Retention	These trees may be retained and protected. These are considered less critical; however their retention should remain a priority with removal considered only if adversely affecting the proposed building/works and all other alternatives have been considered exhausted.
Low - Consider for Removal	These trees are not important for retention, nor require special works or design modification to be implemented for their retention.
Priority for Removal	These trees are considered hazardous, or in irreversible decline, or weeds and should be removed irrespective of development.

12. Appendix B - Tree Assessment Schedule

Tree no.	Botanical Name	Common Name	Trees in group	DBH Total (cm)	DRB (cm)	Radial TPZ (m)	TPZ area (m2)	Radial SRZ (m)	Tree Height (m)	Canopy (m)	Vigour	Structural Condition	Age Class	ULE (Yrs.)	Observations	Comments	DCP Status	Origin	STARS Significance Rating	Retention Value	Encroachment into TPZ/SRZ	Within SRZ	Encroachment %	Encroachment Type	Likely Impact	Impact Assessment Recommendation	Additional Tree Protection Measures
1	*Eucalyptus saligna*	Sydney Blue Gum	1	65	78	7.8	191.1	3.0	15	12	Good	Good	Mature	Medium (15-40)	Bird browsing damage, Co-dominant stems, Deadwood moderate (3-10cm diameter), Wound(s)		Protected	Native	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (5.02%)	N	5.02%	Minor	Level of encroachment is less than the permissible 10%. This tree is viable for retention provided tree protection measures are installed and maintained.	Retain - generic	
2	*Casuarina glauca*	Swamp Sheoak	1	47	48	5.6	99.9	2.4	13	6	Good	Fair	Mature	Medium (15-40)	Cavity, Co-dominant stems, Deadwood minor (<3cm diameter), Decay, Wood borer, Wound(s)		Protected	Indigenous	2 (Medium)	Medium - Consider for Retention	No direct encroachment	N	0.00%	Nil	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
3	*Casuarina glauca*	Swamp Sheoak	1	39	41	4.7	68.8	2.3	13	5	Good	Good	Mature	Medium (15-40)	Co-dominant stems, Deadwood minor (<3cm diameter)		Protected	Indigenous	2 (Medium)	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (7.05%), driveway and warehouse footprint (.02%)	N	7.05%	Minor	Level of encroachment is less than the permissible 10%. This tree is viable for retention provided tree protection measures are installed and maintained.	Retain - generic	
4	*Casuarina glauca*	Swamp Sheoak	1	34	50	4.1	52.3	2.5	14	5	Fair	Good	Semi-mature	Medium (15-40)	Deadwood minor (<3cm diameter), Wound(s)		Protected	Indigenous	2 (Medium)	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (72.87%), driveway and warehouse footprint (62.08%) which enters the SRZ	Y	72.87%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
5	*Casuarina glauca*	Swamp Sheoak	1	38	55	4.6	65.3	2.6	12	7	Good	Fair	Semi-mature	Medium (15-40)	Co-dominant stems, Deadwood moderate (3-10cm diameter), Over-extended branch(es)		Protected	Indigenous	2 (Medium)	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (57.48%), driveway and warehouse footprint (38.01%) which enters the SRZ	Y	57.48%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
6	*Casuarina glauca*	Swamp Sheoak	1	38	58	4.6	65.3	2.6	12	6	Good	Fair	Semi-mature	Medium (15-40)	Crossing/rubbing branches, Deadwood minor (<3cm diameter), Suppressed		Protected	Indigenous	2 (Medium)	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (25.42%), driveway and warehouse footprint (1.67%) which enters the SRZ	Y	25.42%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
7	*Eucalyptus sp.*	Eucalypt	1	28	32	3.4	35.5	2.1	8	5	Poor	Fair	Semi-mature	Short (5-15)	Deadwood moderate (3-10cm diameter), Dieback, Girdling roots, Wound(s)		Protected	Native	3 (Low)	Low - Consider for Removal	TPZ encroachment for bulk earthworks (40.93%), driveway and warehouse footprint (22.39%) which enters the SRZ	Y	40.93%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
8	*Eucalyptus microcorys*	Tallowood	1	61	81	7.3	168.3	3.0	20	11	Good	Good	Mature	Long (>40)	Deadwood moderate (3-10cm diameter), Epicormic shoots, Root scalping, Wound(s)		Protected	Native	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (64.26%), driveway and warehouse footprint (52.69%), stormwater (76.93%) which enters the SRZ	Y	76.93%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
9	*Casuarina cunninghamiana*	River Sheoak	1	68	80	8.2	209.2	3.0	20	11	Good	Fair	Mature	Medium (15-40)	Co-dominant stems, Deadwood moderate (3-10cm diameter), Decay, Epicormic shoots, Poor pruning, Previous failure(s)		Protected	Indigenous	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (70.74%), driveway and warehouse footprint (58.26%), stormwater (62.74%) which enters the SRZ	Y	70.74%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
10	*Casuarina glauca*	Swamp Sheoak	1	65	79	7.8	191.1	3.0	20	9	Good	Fair	Mature	Medium (15-40)	Deadwood moderate (3-10cm diameter), Over-extended branch(es), Suppressed, Wound(s)		Protected	Indigenous	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (30.92%), driveway and warehouse footprint (19.36%), stormwater (23.52%) which enters the SRZ	Y	30.92%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
11	*Corymbia maculata*	Spotted Gum	1	57	66	6.8	147.0	2.8	23	12	Good	Good	Mature	Long (>40)	Crossing/rubbing branches, Deadwood moderate (3-10cm diameter)		Protected	Indigenous	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (65.05%), driveway and warehouse footprint (51.21%), stormwater (56.57%) which enters the SRZ	Y	65.05%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
12	*Corymbia citriodora*	Lemon-scented Gum	1	61	73	7.3	168.3	2.9	18	15	Good	Good	Mature	Long (>40)	Deadwood moderate (3-10cm diameter), Epicormic shoots, Over-extended branch(es), Wound(s)		Protected	Native	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (57.%), driveway and warehouse footprint (55.43%), stormwater (32.27%) which enters the SRZ	Y	57.00%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
13	*Corymbia citriodora*	Lemon-scented Gum	1	40	46	4.8	72.4	2.4	17	8	Fair	Poor	Mature	Dead Or Hazardous/Remove (0-5)	Co-dominant stems, Crack or split, Deadwood minor (<3cm diameter), Decay, Included bark, Over-extended branch(es), Previous failure(s), Resin/kino/sap flow, Weak attachments, Wound(s)	Poor branch unions throughout tree, high target area with high likelihood of failure	Protected	Native	5 (Hazardous / Irreversible Decline)	Priority for Removal	TPZ encroachment for bulk earthworks (54.47%), driveway and warehouse footprint (52.24%), stormwater (17.99%) which enters the SRZ	Y	54.47%	Major	Tree not viable for retention as it within the proposed built footprint.	Remove - project impacts	

Tree no.	Botanical Name	Common Name	Trees in group	DBH Total (cm)	DRB (cm)	Radial TPZ (m)	TPZ area (m2)	Radial SRZ (m)	Tree Height (m)	Canopy (m)	Vigour	Structural Condition	Age Class	ULE (Yrs.)	Observations	Comments	DCP Status	Origin	STARS Significance Rating	Retention Value	Encroachment into TPZ/SRZ	Within SRZ	Encroachment %	Encroachment Type	Likely Impact	Impact Assessment Recommendation	Additional Tree Protection Measures
14	*Corymbia citriodora*	Lemon-scented Gum	1	50	57	6.0	113.1	2.6	17	13	Good	Fair	Mature	Medium (15-40)	Co-dominant stems, Crossing/rubbing branches, Deadwood minor (<3cm diameter), Decay, Included bark, Over-extended branch(es), Poor pruning, Previous failure(s), Resin/kino/sap flow, Weak attachments, Wound(s)		Protected	Native	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (54.92%), driveway and warehouse footprint (53.24%), stormwater (25.07%) which enters the SRZ	Y	54.92%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
15	*Corymbia citriodora*	Lemon-scented Gum	1	54	67	6.5	131.9	2.8	16	14	Good	Fair	Mature	Medium (15-40)	Co-dominant stems, Deadwood moderate (3-10cm diameter), Over-extended branch(es), Poor pruning, Weak attachments, Wound(s)		Protected	Native	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (55.15%), driveway and warehouse footprint (54.28%), stormwater (27.02%) which enters the SRZ	Y	55.15%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
16	*Corymbia citriodora*	Lemon-scented Gum	1	46	59	5.5	95.7	2.7	18	16	Good	Fair	Mature	Medium (15-40)	Deadwood moderate (3-10cm diameter), Over-extended branch(es), Previous failure(s), Wound(s)		Protected	Native	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (71.48%), driveway and warehouse footprint (70.57%), stormwater (38.04%) which enters the SRZ	Y	71.48%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
17	*Corymbia citriodora*	Lemon-scented Gum	3	14.87	25	2.0	12.6	1.8	6	2	Good	Poor	Juvenile	Short (5-15)	Damaging infrastructure, Wound(s)	Self sewn suckers growing against existing fence	Protected	Native	3 (Low)	Low - Consider for Removal	TPZ encroachment for bulk earthworks (31.48%), driveway and warehouse footprint (29.19%) which enters the SRZ	Y	31.48%	Major	Tree not viable for retention as it within the proposed built footprint.	Remove - project impacts	
18	*Corymbia citriodora*	Lemon-scented Gum	1	27	36	3.2	33.0	2.2	13	9	Good	Good	Semi-mature	Long (>40)	Deadwood minor (<3cm diameter), Suckers		Protected	Native	2 (Medium)	High - Priority for Retention	TPZ encroachment for bulk earthworks (44.59%), driveway and warehouse footprint (43.17%) which enters the SRZ	Y	44.59%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
19	*Eucalyptus moluccana*	Grey Box	1	55	65	6.6	136.8	2.8	18	14	Good	Good	Mature	Medium (15-40)	Bird browsing damage, Co-dominant stems, Deadwood minor (<3cm diameter), Included bark, Leaf feeding insect, Root scalping, Weak attachments, Wound(s)	Roots extend into subject site.	Protected	Native	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (10.66%), driveway and warehouse footprint (10.72%)	N	10.72%	Major	Level of encroachment marginally exceeds the permissible 10%. This tree is viable for retention provided tree protection measures are installed and maintained and plant health care treatments are employed .	Retain - specific	Soil is to be treated with mycorrhizal soil inoculation along with seaweed based soil conditioner. Irrigation and mulch to be installed within the TPZ.
20	*Melaleuca armillaris*	Bracelet Honey Myrtle	1	29.29	29	3.5	38.8	2.0	6	5	Poor	Poor	Mature	Dead Or Hazardous/Remove (0-5)	Co-dominant stems, Crack or split, Crossing/rubbing branches, Damaging infrastructure, Deadwood moderate (3-10cm diameter), Decay, Dieback, Included bark, Wound(s)		Protected	Native	3 (Low)	Priority for Removal	No direct encroachment	N	0.00%	Nil	Poorly structured tree that should be removed irrespective of the development.	Remove - irrespective	
21	*Melaleuca armillaris*	Bracelet Honey Myrtle	1	19.1	23	2.3	16.5	1.8	5	5	Poor	Poor	Mature	Short (5-15)	Co-dominant stems, Crossing/rubbing branches, Deadwood minor (<3cm diameter), Dieback, Included bark, Weak attachments, Wound(s)		Protected	Native	3 (Low)	Low - Consider for Removal	No direct encroachment	N	0.00%	Nil	Low quality tree that should be removed to increase area for landscape.	Remove - irrespective	
22	*Melaleuca armillaris*	Bracelet Honey Myrtle	1	37.2	40	4.5	62.6	2.3	7	7	Poor	Has failed	Mature	Dead Or Hazardous/Remove (0-5)	Broken Limb, Cavity, Co-dominant stems, Crack or split, Crossing/rubbing branches, Deadwood moderate (3-10cm diameter), Decay, Hanger(s), Included bark, Previous failure(s), Weak attachments, Wound(s)		Protected	Native	5 (Hazardous / Irreversible Decline)	Priority for Removal	TPZ encroachment for bulk earthworks (46.01%), driveway and warehouse footprint (45.13%) which enters the SRZ	Y	46.01%	Major	Poorly structured tree that should be removed irrespective of the development.	Remove - irrespective	
23	*Casuarina cunninghamiana*	River Sheoak	1	41	43	4.9	76.0	2.3	13	5	Good	Good	Mature	Medium (15-40)	Deadwood moderate (3-10cm diameter), Included bark, Weak attachments		Protected	Indigenous	2 (Medium)	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (100.%) which enters the SRZ	Y	100.00%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	

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24	*Casuarina cunninghamiana*	River Sheoak	1	45	54	5.4	91.6	2.6	13	5	Good	Fair	Mature	Medium (15-40)	Co-dominant stems, Deadwood moderate (3-10cm diameter), Included bark, Wound(s)		Protected	Indigenous	2 (Medium)	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (100.%) which enters the SRZ	Y	100.00%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
25	*Casuarina glauca*	Swamp Sheoak	1	45	63	5.4	91.6	2.7	14	7	Good	Good	Mature	Long (>40)			Protected	Indigenous	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (100.%) which enters the SRZ	Y	100.00%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
26	*Casuarina glauca*	Swamp Sheoak	2	13.45	17	2.0	12.6	1.6	6	3	Good	Poor	Juvenile	Short (5-15)	Co-dominant stems, Crack or split, Included bark, Suppressed, Weak attachments	Group of 2 small trees.	Protected	Indigenous	3 (Low)	Low - Consider for Removal	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (100.%) which enters the SRZ	Y	100.00%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
27	*Casuarina glauca*	Swamp Sheoak	1	15	22	2.0	12.6	1.8	5	2	Good	Poor	Juvenile	Dead Or Hazardous/Remove (0-5)	Crack or split, Included bark, Weak attachments	Main union has failed.	Protected	Indigenous	5 (Hazardous / Irreversible Decline)	Priority for Removal	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (100.%) which enters the SRZ	Y	100.00%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
28	*Casuarina glauca*	Swamp Sheoak	1	14	20	2.0	12.6	1.7	6	2	Good	Poor	Juvenile	Short (5-15)	Co-dominant stems, Included bark, Weak attachments	Poorly formed union.	Protected	Indigenous	3 (Low)	Low - Consider for Removal	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (100.%) which enters the SRZ	Y	100.00%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
29	*Casuarina cunninghamiana*	River Sheoak	1	33	42	4.0	49.3	2.3	10	5	Good	Good	Semi-mature	Medium (15-40)	Climbing vine, Co-dominant stems, Suppressed		Protected	Indigenous	2 (Medium)	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (65.82%), stormwater (84.05%) which enters the SRZ	Y	100.00%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
30	*Casuarina glauca*	Swamp Sheoak	1	43.01	54	5.2	83.7	2.6	13	6	Good	Fair	Mature	Medium (15-40)	Co-dominant stems, Included bark		Protected	Indigenous	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (65.14%), driveway and warehouse footprint (28.95%), stormwater (27.72%) which enters the SRZ	Y	65.14%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
31	*Casuarina cunninghamiana*	River Sheoak	1	32	38	3.8	46.3	2.2	14	5	Good	Good	Semi-mature	Long (>40)	Epicormic shoots		Protected	Indigenous	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (64.46%), driveway and warehouse footprint (18.71%), stormwater (21.99%) which enters the SRZ	Y	64.46%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
32	*Casuarina cunninghamiana*	River Sheoak	1	26	38	3.1	30.6	2.2	10	5	Good	Fair	Semi-mature	Medium (15-40)	Suppressed		Protected	Indigenous	2 (Medium)	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (52.61%), driveway and warehouse footprint (2.65%), stormwater (5.47%) which enters the SRZ	Y	52.61%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
33	*Casuarina glauca*	Swamp Sheoak	1	17	20	2.0	13.1	1.7	6	2	Poor	Fair	Juvenile	Short (5-15)	Deadwood minor (<3cm diameter), Dieback, Suppressed		Protected	Indigenous	3 (Low)	Low - Consider for Removal	TPZ encroachment for bulk earthworks (89.76%), driveway and warehouse footprint (9.43%), stormwater (11.88%) which enters the SRZ	Y	89.76%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
34	*Casuarina cunninghamiana*	River Sheoak	1	39.45	44	4.7	70.4	2.3	6	6	Good	Fair	Mature	Medium (15-40)	Co-dominant stems, Included bark, Suppressed		Protected	Indigenous	2 (Medium)	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (56.06%), driveway and warehouse footprint (29.03%), stormwater (24.95%) which enters the SRZ	Y	56.06%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
35	*Casuarina cunninghamiana*	River Sheoak	4	12	16	2.0	12.6	1.5	3	2	Fair	Fair	Juvenile	Short (5-15)	Deadwood moderate (3-10cm diameter), Dieback, Suppressed	Group of 4 small suppressed trees.	Protected	Indigenous	3 (Low)	Low - Consider for Removal	TPZ encroachment for bulk earthworks (26.27%) which enters the SRZ	Y	26.27%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
36	*Casuarina cunninghamiana*	River Sheoak	1	42	50	5.0	79.8	2.5	13	4	Poor	Fair	Mature	Short (5-15)	Deadwood moderate (3-10cm diameter), Dieback	Tree in declining health.	Protected	Indigenous	3 (Low)	Low - Consider for Removal	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (94.54%), stormwater (96.01%) which enters the SRZ	Y	100.00%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	

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37	*Eucalyptus tereticornis*	Forest Red Gum	1	49.4	65	5.9	110.4	2.8	18	7	Good	Fair	Semi-mature	Medium (15-40)	Co-dominant stems, Deadwood minor (<3cm diameter), Previous failure(s), Wound(s)		Protected	Indigenous	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (91.4%), driveway and warehouse footprint (59.26%), stormwater (67.65%) which enters the SRZ	Y	91.40%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
38	*Eucalyptus tereticornis*	Forest Red Gum	1	29	42	3.5	38.0	2.3	16	7	Fair	Good	Semi-mature	Medium (15-40)	Deadwood moderate (3-10cm diameter), Dieback, Epicormic shoots		Protected	Indigenous	2 (Medium)	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (87.03%), stormwater (88.86%) which enters the SRZ	Y	100.00%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
39	*Eucalyptus tereticornis*	Forest Red Gum	1	55	59	6.6	136.8	2.7	16	10	Good	Fair	Mature	Medium (15-40)	Included bark, Weak attachments	Lowest scaffold branch is poorly attached.	Protected	Indigenous	2 (Medium)	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (59.96%), driveway and warehouse footprint (41.4%), stormwater (31.75%) which enters the SRZ	Y	59.96%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
40	*Eucalyptus tereticornis*	Forest Red Gum	1	39	42	4.7	68.8	2.3	11	5	Fair	Good	Semi-mature	Medium (15-40)	Co-dominant stems, Deadwood moderate (3-10cm diameter), Dieback, Epicormic shoots, Suppressed		Protected	Indigenous	2 (Medium)	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (49.47%), driveway and warehouse footprint (16.53%), stormwater (17.92%) which enters the SRZ	Y	49.47%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
41	*Melaleuca quinquenervia*	Broad-leaved Paperbark	1	31	37	3.7	43.5	2.2	4	4	Fair	Good	Semi-mature	Short (5-15)	Deadwood minor (<3cm diameter), Dieback		Protected	Indigenous	3 (Low)	Low - Consider for Removal	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (49.36%) which enters the SRZ	Y	100.00%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
42	*Agonis flexuosa*	Willow Myrtle	1	20.59	45	2.5	19.2	2.4	4	4	Poor	Poor	Semi-mature	Dead Or Hazardous/Remove (0-5)	Co-dominant stems, Damaging infrastructure, Dieback	Tree in advanced decline.	Protected	Indigenous	5 (Hazardous / Irreversible Decline)	Priority for Removal	TPZ encroachment for bulk earthworks (100.%) which enters the SRZ	Y	100.00%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
43	*Casuarina cunninghamiana*	River Sheoak	1	58.88	77	7.1	156.8	3.0	12	8	Good	Fair	Mature	Long (>40)	Climbing vine, Co-dominant stems, Wound(s)		Protected	Indigenous	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (100.%), stormwater (67.51%) which enters the SRZ	Y	100.00%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
44	*Casuarina cunninghamiana*	River Sheoak	1	46	65	5.5	95.7	2.8	12	6	Good	Good	Mature	Long (>40)	Climbing vine		Protected	Indigenous	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (99.83%), stormwater (62.12%) which enters the SRZ	Y	100.00%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
45	*Casuarina cunninghamiana*	River Sheoak	1	17	34	2.0	13.1	2.1	6	2	Fair	Good	Semi-mature	Short (5-15)	Climbing vine, Deadwood moderate (3-10cm diameter), Dieback, Epicormic shoots, Suppressed		Protected	Indigenous	3 (Low)	Low - Consider for Removal	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (100.%), stormwater (6.92%) which enters the SRZ	Y	100.00%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
46	*Ligustrum lucidum*	Broadleaf Privet	1	47.68	70	5.7	102.8	2.8	7	2	Good	Fair	Mature	Medium (15-40)	Co-dominant stems, Crossing/rubbing branches, Environmental/Declared Weed		Protected	Exotic	4 (Environmental Pest / Noxious Weed)	Low - Consider for Removal	TPZ encroachment for bulk earthworks (90.39%), driveway and warehouse footprint (90.87%), stormwater (35.64%) which enters the SRZ	Y	90.87%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
47	*Eucalyptus microcorys*	Tallowood	1	65.31	80	7.8	193.0	3.0	14	7	Fair	Fair	Mature	Medium (15-40)	Co-dominant stems, Deadwood moderate (3-10cm diameter), Dieback, Epicormic shoots		Protected	Native	2 (Medium)	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (20.63%), driveway and warehouse footprint (14.14%), stormwater (2.46%)	N	20.63%	Major	This tree can potentially be retained if its health can be promoted via plant health techniques prior to and during construction in addition to mulching and irrigation within the TPZ during construction.	Retain - specific	Soil is to be treated with mycorrhizal soil inoculation along with seaweed based soil conditioner. Irrigation and mulch to be installed within the TPZ.
48	*Eucalyptus microcorys*	Tallowood	1	61	74	7.3	168.3	2.9	15	8	Good	Fair		Medium (15-40)	Co-dominant stems, Deadwood moderate (3-10cm diameter), Epicormic shoots, Previous failure(s)		Protected	Native	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (68.79%), driveway and warehouse footprint (62.27%), stormwater (43.45%) which enters the SRZ	Y	68.79%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
49	*Eucalyptus tereticornis*	Forest Red Gum	1	30.53	37	3.7	42.2	2.2	8	8	Fair	Fair	Semi-mature	Medium (15-40)	Deadwood moderate (3-10cm diameter), Dieback, Epicormic shoots, Suppressed		Protected	Indigenous	2 (Medium)	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (10.92%), driveway and warehouse footprint (4.13%)	N	10.92%	Major	Level of encroachment marginally exceeds the permissible 10%. This tree is viable for retention provided tree protection measures are installed and maintained and plant health care treatments are employed .	Retain - specific	Soil is to be treated with mycorrhizal soil inoculation along with seaweed based soil conditioner. Irrigation and mulch to be installed within the TPZ.

Tree no.	Botanical Name	Common Name	Trees in group	DBH Total (cm)	DRB (cm)	Radial TPZ (m)	TPZ area (m2)	Radial SRZ (m)	Tree Height (m)	Canopy (m)	Vigour	Structural Condition	Age Class	ULE (Yrs.)	Observations	Comments	DCP Status	Origin	STARS Significance Rating	Retention Value	Encroachment into TPZ/SRZ	Within SRZ	Encroachment %	Encroachment Type	Likely Impact	Impact Assessment Recommendation	Additional Tree Protection Measures
50	*Eucalyptus tereticornis*	Forest Red Gum	1	41.63	61	5.0	78.4	2.7	17	5	Good	Fair	Semi-mature	Long (>40)	Co-dominant stems, Deadwood moderate (3-10cm diameter)		Protected	Indigenous	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (83.28%), driveway and warehouse footprint (76.21%), stormwater (49.32%) which enters the SRZ	Y	83.28%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
51	*Eucalyptus tereticornis*	Forest Red Gum	1	66	78	7.9	197.1	3.0	14	8	Good	Fair	Mature	Medium (15-40)	Climbing vine, Co-dominant stems, Deadwood moderate (3-10cm diameter)		Protected	Indigenous	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (50.72%), driveway and warehouse footprint (45.97%), stormwater (28.78%) which enters the SRZ	Y	50.72%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
52	*Eucalyptus sideroxylon*	Mugga, Red Ironbark	1	49	54	5.9	108.6	2.6	13	6	Good	Fair	Mature	Medium (15-40)	Previous failure(s), Suppressed		Protected	Indigenous	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (25.04%), driveway and warehouse footprint (18.89%), stormwater (2.41%) which enters the SRZ	Y	25.04%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
53	*Eucalyptus grandis*	Flooded Gum	1	29	33	3.5	38.0	2.1	6	3	Good	Good	Semi-mature	Medium (15-40)	Suppressed		Protected	Native	2 (Medium)	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (64.97%), driveway and warehouse footprint (54.08%), stormwater (16.19%) which enters the SRZ	Y	64.97%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
54	*Eucalyptus grandis*	Flooded Gum	1	65	75	7.8	191.1	2.9	22	13	Good	Fair	Mature	Long (>40)	Previous failure(s), Wound(s)		Protected	Native	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (65.26%), driveway and warehouse footprint (61.84%), stormwater (43.92%) which enters the SRZ	Y	65.26%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
55	*Eucalyptus microcorys*	Tallowood	1	65	75	7.8	191.1	2.9	17	11	Good	Good	Mature	Long (>40)	Deadwood moderate (3-10cm diameter)		Protected	Native	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (57.77%), driveway and warehouse footprint (55.03%), stormwater (37.04%) which enters the SRZ	Y	57.77%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
56	*Eucalyptus saligna*	Sydney Blue Gum	1	69	79	8.3	215.4	3.0	20	11	Fair	Poor	Mature	Dead Or Hazardous/Remove (0-5)	Co-dominant stems, Deadwood major (>10cm diameter), Decay, Dieback, Fungal fruiting body(s), Included bark, Previous failure(s), Weak attachments, Wood borer, Wound(s)	Singificant cavity with decay in lower trunk that extends into the main stem union. Tree of hazardous structure. Lorikeets observed within trunk cavity.	Protected	Native	5 (Hazardous / Irreversible Decline)	Priority for Removal	TPZ encroachment for bulk earthworks (31.06%), driveway and warehouse footprint (28.58%), stormwater (13.01%) which enters the SRZ	Y	31.06%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
57	*Casuarina cunninghamiana*	River Sheoak	1	36.88	61	4.4	61.5	2.7	13	8	Fair	Fair	Mature	Short (5-15)	Co-dominant stems, Deadwood moderate (3-10cm diameter), Decay, Epicormic shoots, Mechanical damage, Previous failure(s), Weak attachments, Wound(s)		Protected	Indigenous	1 (High)	Low - Consider for Removal	TPZ encroachment for bulk earthworks (60.35%), driveway and warehouse footprint (55.39%), stormwater (20.81%) which enters the SRZ	Y	60.35%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
58	*Casuarina cunninghamiana*	River Sheoak	1	31.83	48	3.8	45.8	2.4	12	4	Poor	Poor	Mature	Short (5-15)	Co-dominant stems, Deadwood minor (<3cm diameter), Decay, Included bark, Previous failure(s), Weak attachments, Wound(s)		Protected	Indigenous	5 (Hazardous / Irreversible Decline)	Priority for Removal	TPZ encroachment for bulk earthworks (85.52%), driveway and warehouse footprint (80.68%), stormwater (40.05%) which enters the SRZ	Y	85.52%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
59	*Eucalyptus microcorys*	Tallowood	1	42	50	5.0	79.8	2.5	18	7	Good	Fair	Mature	Medium (15-40)	Crossing/rubbing branches, Deadwood moderate (3-10cm diameter), Hanger(s), Suppressed		Protected	Native	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (53.75%), driveway and warehouse footprint (49.33%), stormwater (18.31%) which enters the SRZ	Y	53.75%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
60	*Casuarina cunninghamiana*	River Sheoak	1	39	50	4.7	68.8	2.5	10	6	Fair	Fair	Mature	Medium (15-40)	Deadwood moderate (3-10cm diameter), Weak attachments, Wound(s)		Protected	Indigenous	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (85.%), driveway and warehouse footprint (81.06%), stormwater (47.51%) which enters the SRZ	Y	85.00%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
61	*Casuarina cunninghamiana*	River Sheoak	1	16	20	2.0	12.6	1.7	8	3	Poor	Fair	Juvenile	Short (5-15)	Crossing/rubbing branches, Deadwood moderate (3-10cm diameter), Decay, Previous failure(s), Wound(s)		Protected	Indigenous	3 (Low)	Low - Consider for Removal	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (100.%), stormwater (68.51%) which enters the SRZ	Y	100.00%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	

Tree no.	Botanical Name	Common Name	Trees in group	DBH Total (cm)	DRB (cm)	Radial TPZ (m)	TPZ area (m2)	Radial SRZ (m)	Tree Height (m)	Canopy (m)	Vigour	Structural Condition	Age Class	ULE (Yrs.)	Observations	Comments	DCP Status	Origin	STARS Significance Rating	Retention Value	Encroachment into TPZ/SRZ	Within SRZ	Encroachment %	Encroachment Type	Likely Impact	Impact Assessment Recommendation	Additional Tree Protection Measures
62	*Casuarina cunninghamiana*	River Sheoak	1	18	27	2.2	14.7	1.9	6	3	Poor	Fair	Juvenile	Short (5-15)	Crossing/rubbing branches, Deadwood moderate (3-10cm diameter), Decay, Previous failure(s), Wound(s)		Protected	Indigenous	3 (Low)	Low - Consider for Removal	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (100.%), stormwater (86.22%) which enters the SRZ	Y	100.00%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
63	*Casuarina glauca*	Swamp Sheoak	1	38	49	4.6	65.3	2.5	15	8	Good	Good	Mature	Long (>40)	Deadwood moderate (3-10cm diameter), Wound(s)		Protected	Indigenous	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (81.15%), driveway and warehouse footprint (76.9%), stormwater (41.38%) which enters the SRZ	Y	81.15%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
64	*Casuarina cunninghamiana*	River Sheoak	1	27	33	3.2	33.0	2.1	13	3	Poor	Poor	Semi-mature	Short (5-15)	Co-dominant stems, Crossing/rubbing branches, Deadwood moderate (3-10cm diameter), Included bark, Previous failure(s), Suppressed, Weak attachments		Protected	Indigenous	3 (Low)	Low - Consider for Removal	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (98.21%), stormwater (54.62%) which enters the SRZ	Y	100.00%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
65	*Casuarina cunninghamiana*	River Sheoak	1	16	24	2.0	12.6	1.8	11	3	Fair	Fair	Semi-mature	Short (5-15)	Deadwood minor (<3cm diameter), Decay, Previous failure(s), Suppressed, Wound(s)		Protected	Indigenous	3 (Low)	Low - Consider for Removal	TPZ encroachment for bulk earthworks (93.21%), driveway and warehouse footprint (85.01%), stormwater (7.35%) which enters the SRZ	Y	93.21%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
66	*Casuarina cunninghamiana*	River Sheoak	1	43	51	5.2	83.6	2.5	15	7	Fair	Fair	Mature	Medium (15-40)	Co-dominant stems, Crossing/rubbing branches, Deadwood moderate (3-10cm diameter), Included bark, Previous failure(s), Weak attachments, Wound(s)		Protected	Indigenous	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (34.17%), driveway and warehouse footprint (30.06%), stormwater (3.87%) which enters the SRZ	Y	34.17%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
67	*Casuarina cunninghamiana*	River Sheoak	1	25.08	43	3.0	28.5	2.3	11	5	Fair	Fair	Semi-mature	Medium (15-40)	Co-dominant stems, Crossing/rubbing branches, Deadwood moderate (3-10cm diameter), Epicormic shoots, Previous failure(s), Wood borer, Wound(s)		Protected	Indigenous	2 (Medium)	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (73.37%), driveway and warehouse footprint (66.31%), stormwater (11.71%) which enters the SRZ	Y	73.37%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
68	*Casuarina glauca*	Swamp Sheoak	1	13	16	2.0	12.6	1.5	7	4	Poor	Poor	Juvenile	Dead Or Hazardous/Remove (0-5)	Deadwood moderate (3-10cm diameter), Dieback, Wound(s)		Protected	Indigenous	3 (Low)	Priority for Removal	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (100.%), stormwater (32.62%) which enters the SRZ	Y	100.00%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
69	*Casuarina glauca*	Swamp Sheoak	1	14.42	20	2.0	12.6	1.7	8	3	Good	Fair	Juvenile	Medium (15-40)	Co-dominant stems, Included bark, Weak attachments		Protected	Indigenous	2 (Medium)	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (30.96%), driveway and warehouse footprint (20.69%) which enters the SRZ	Y	30.96%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
70	*Eucalyptus punctata*	Grey Gum	1	66	85	7.9	197.1	3.1	18	14	Fair	Fair	Mature	Medium (15-40)	Deadwood moderate (3-10cm diameter), Previous failure(s), Resin/kino/sap flow, Wood borer, Wound(s)		Protected	Indigenous	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (72.48%), driveway and warehouse footprint (63.53%), stormwater (35.13%) which enters the SRZ	Y	72.48%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
71	*Casuarina cunninghamiana*	River Sheoak	1	23.85	30	2.9	25.7	2.0	9	5	Poor	Poor	Semi-mature	Short (5-15)	Cavity, Co-dominant stems, Crack or split, Deadwood moderate (3-10cm diameter), Decay, Previous failure(s), Wound(s)		Protected	Indigenous	3 (Low)	Low - Consider for Removal	TPZ encroachment for bulk earthworks (100.%), driveway and warehouse footprint (74.7%), stormwater (10.85%) which enters the SRZ	Y	100.00%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
72	*Casuarina cunninghamiana*	River Sheoak	1	24.08	32	2.9	26.2	2.1	9	5	Poor	Poor	Semi-mature	Short (5-15)	Cavity, Co-dominant stems, Crack or split, Deadwood moderate (3-10cm diameter), Decay, Previous failure(s), Wound(s)		Protected	Indigenous	3 (Low)	Low - Consider for Removal	TPZ encroachment for bulk earthworks (68.65%), driveway and warehouse footprint (27.89%) which enters the SRZ	Y	68.65%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
73	*Casuarina cunninghamiana*	River Sheoak	1	16	30	2.0	12.6	2.0	9	5	Poor	Poor	Semi-mature	Short (5-15)	Cavity, Co-dominant stems, Crack or split, Deadwood moderate (3-10cm diameter), Decay, Previous failure(s), Wound(s)		Protected	Indigenous	3 (Low)	Low - Consider for Removal	TPZ encroachment for bulk earthworks (37.19%) which enters the SRZ	Y	37.19%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	

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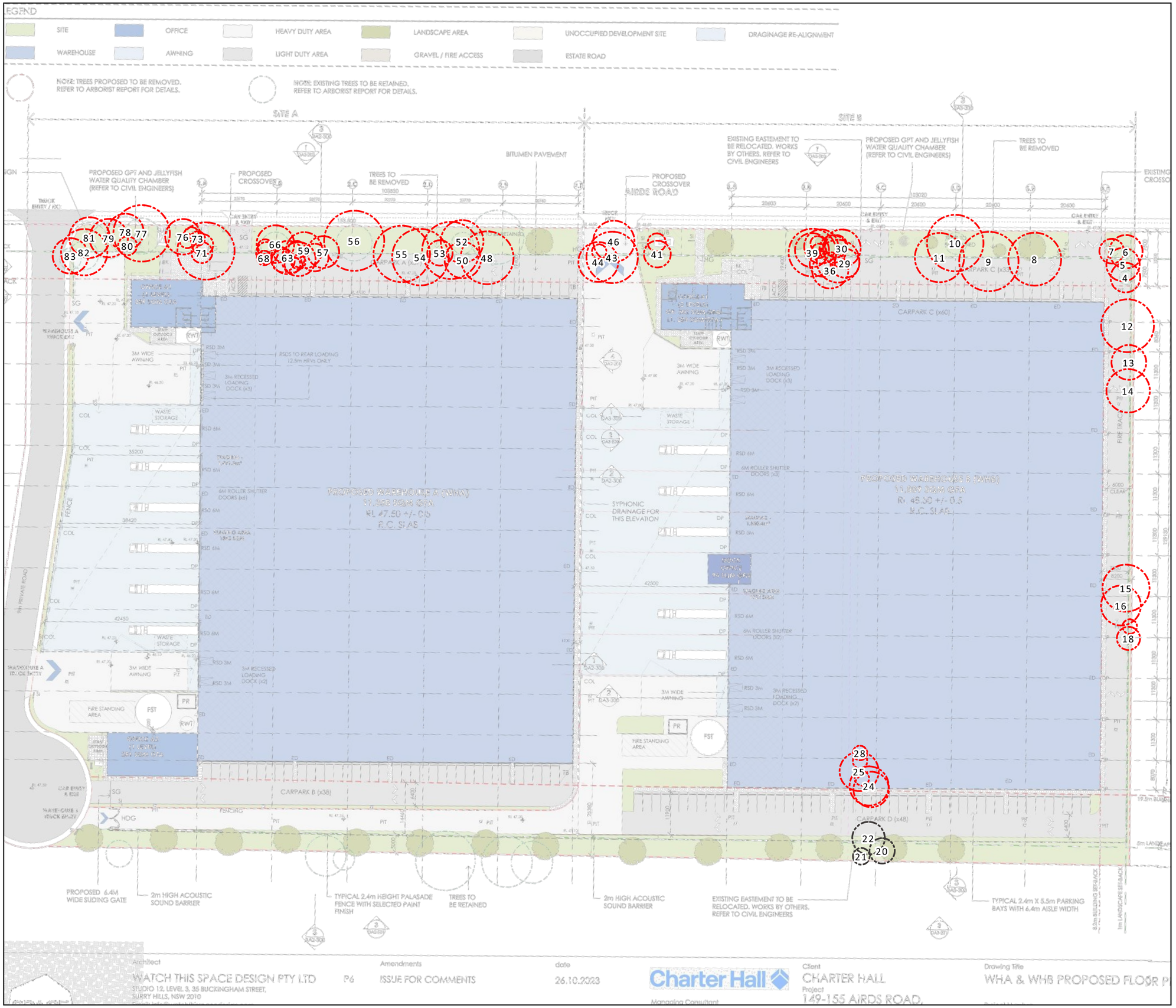
74	*Casuarina cunninghamiana*	River Sheoak	1	17	34	2.0	13.1	2.1	9	5	Poor	Poor	Semi-mature	Short (5-15)	Co-dominant stems, Crack or split, Deadwood minor (<3cm diameter), Epicormic shoots, Included bark, Previous failure(s), Wound(s)		Protected	Indigenous	2 (Medium)	Low - Consider for Removal	TPZ encroachment for bulk earthworks (1.49%) which enters the SRZ	Y	1.49%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
75	*Casuarina cunninghamiana*	River Sheoak	1	16	28	2.0	12.6	1.9	9	5	Poor	Poor	Semi-mature	Short (5-15)	Co-dominant stems, Crack or split, Deadwood minor (<3cm diameter), Epicormic shoots, Included bark, Previous failure(s), Wound(s)		Protected	Indigenous	2 (Medium)	Low - Consider for Removal	TPZ encroachment for bulk earthworks (40.03%) which enters the SRZ	Y	40.03%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
76	*Casuarina cunninghamiana*	River Sheoak	1	41.05	49	4.9	76.2	2.5	9	5	Fair	Fair	Mature	Medium (15-40)	Co-dominant stems, Crossing/rubbing branches, Deadwood moderate (3-10cm diameter), Included bark, Previous failure(s), Weak attachments, Wound(s)		Protected	Indigenous	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (31.2%), driveway and warehouse footprint (11.36%) which enters the SRZ	Y	31.20%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
77	*Eucalyptus tereticornis*	Forest Red Gum	1	65	72	7.8	191.1	2.9	19	12	Good	Good	Mature	Medium (15-40)	Deadwood moderate (3-10cm diameter), Wound(s)		Protected	Indigenous	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (35.58%), driveway and warehouse footprint (17.56%), stormwater (1.78%) which enters the SRZ	Y	35.58%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
78	*Eucalyptus tereticornis*	Forest Red Gum	1	41.34	43	5.0	77.3	2.3	18	7	Good	Fair	Semi-mature	Medium (15-40)	Co-dominant stems, Deadwood minor (<3cm diameter), Suppressed, Wound(s)		Protected	Indigenous	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (23.1%), driveway and warehouse footprint (1.23%) which enters the SRZ	Y	23.10%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
79	*Eucalyptus tereticornis*	Forest Red Gum	1	44.2	43	5.3	88.4	2.3	15	6	Good	Good	Mature	Long (>40)	Co-dominant stems, Deadwood moderate (3-10cm diameter)		Protected	Indigenous	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (27.1%), driveway and warehouse footprint (17.04%)	N	27.10%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
80	*Casuarina glauca*	Swamp Sheoak	1	22	30	2.6	21.9	2.0	7	2	Good	Good	Juvenile	Medium (15-40)			Protected	Indigenous	3 (Low)	Medium - Consider for Retention	TPZ encroachment for bulk earthworks (95.19%), driveway and warehouse footprint (31.53%) which enters the SRZ	Y	95.19%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
81	*Eucalyptus tereticornis*	Forest Red Gum	1	47	51	5.6	99.9	2.5	14	7	Good	Fair	Mature	Medium (15-40)	Co-dominant stems, Deadwood moderate (3-10cm diameter)		Protected	Indigenous	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (26.2%), driveway and warehouse footprint (16.88%)	N	26.20%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
82	*Eucalyptus tereticornis*	Forest Red Gum	1	53	62	6.4	127.1	2.7	14	9	Fair	Fair	Mature	Short (5-15)	Co-dominant stems, Deadwood moderate (3-10cm diameter), Decay, Dieback, Epicormic shoots, Fungal fruiting body(s), Wound(s)	Fungal fruiting body in lower trunk limits ULE.	Protected	Indigenous	2 (Medium)	Low - Consider for Removal	TPZ encroachment for bulk earthworks (66.01%), driveway and warehouse footprint (50.87%), stormwater (16.68%) which enters the SRZ	Y	66.01%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
83	*Eucalyptus tereticornis*	Forest Red Gum	1	41	55	4.9	76.0	2.6	11	4	Good	Good	Semi-mature	Long (>40)	Co-dominant stems, Suppressed, Wound(s)		Protected	Indigenous	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (61.5%), driveway and warehouse footprint (61.33%), stormwater (2.15%) which enters the SRZ	Y	61.50%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
84	*Casuarina cunninghamiana*	River Sheoak	1	20	30	2.4	18.1	2.0	8	3	Poor	Poor	Semi-mature	Short (5-15)	Deadwood moderate (3-10cm diameter), Epicormic shoots, Suppressed, Wound(s)		Protected	Indigenous	3 (Low)	Low - Consider for Removal	TPZ encroachment for bulk earthworks (53.84%), driveway and warehouse footprint (44.62%) which enters the SRZ	Y	53.84%	Major	Tree not viable for retention due to the impacts of bulk earthworks and/or being within the building and driveway envelope. These works will damage roots required for stability and significantly affect the soil profile.	Remove - project impacts	
85	*Casuarina glauca*	Swamp Sheoak	12	12	17	2.0	12.6	1.6	9	1	Good	Good	Young	Long (>40)		Group of 12 small trees.	Protected	Indigenous	3 (Low)	Medium - Consider for Retention	No direct encroachment	N	0.00%	Nil	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
86	*Casuarina glauca*	Swamp Sheoak	1	47	44	5.6	99.9	2.3	14	4	Good	Fair	Mature	Long (>40)	Deadwood minor (<3cm diameter)		Protected	Indigenous	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (.07%)	N	0.07%	Minor	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
87	*Casuarina cunninghamiana*	River Sheoak	1	30	40	3.6	40.7	2.3	11	5	Good	Good	Semi-mature	Long (>40)	Climbing vine, Suppressed		Protected	Indigenous	1 (High)	High - Priority for Retention	No direct encroachment	N	0.00%	Nil	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	

Tree no.	Botanical Name	Common Name	Trees in group	DBH Total (cm)	DRB (cm)	Radial TPZ (m)	TPZ area (m2)	Radial SRZ (m)	Tree Height (m)	Canopy (m)	Vigour	Structural Condition	Age Class	ULE (Yrs.)	Observations	Comments	DCP Status	Origin	STARS Significance Rating	Retention Value	Encroachment into TPZ/SRZ	Within SRZ	Encroachment %	Encroachment Type	Likely Impact	Impact Assessment Recommendation	Additional Tree Protection Measures
88	*Eucalyptus tereticornis*	Forest Red Gum	1	31	33	3.7	43.5	2.1	12	5	Fair	Good	Semi-mature	Medium (15-40)	Co-dominant stems, Deadwood minor (<3cm diameter), Wound(s)		Protected	Indigenous	2 (Medium)	Medium - Consider for Retention	No direct encroachment	N	0.00%	Nil	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
89	*Casuarina cunninghamiana*	River Sheoak	1	43	50	5.2	83.6	2.5	18	8	Good	Good	Mature	Medium (15-40)	Co-dominant stems, Deadwood moderate (3-10cm diameter), Previous failure(s)		Protected	Indigenous	1 (High)	High - Priority for Retention	No direct encroachment	N	0.00%	Nil	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
90	*Casuarina cunninghamiana*	River Sheoak	1	39.66	42	4.8	71.2	2.3	12	6	Good	Good	Mature	Medium (15-40)	Co-dominant stems, Deadwood moderate (3-10cm diameter), Previous failure(s)		Protected	Indigenous	1 (High)	High - Priority for Retention	No direct encroachment	N	0.00%	Nil	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
91	*Casuarina cunninghamiana*	River Sheoak	1	66.81	73	8.0	201.9	2.9	15	9	Good	Fair	Mature	Long (>40)	Climbing vine, Co-dominant stems, Wound(s)		Protected	Indigenous	1 (High)	High - Priority for Retention	No direct encroachment	N	0.00%	Nil	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
92	*Casuarina glauca*	Swamp Sheoak	1	14.87	30	2.0	12.6	2.0	11	4	Fair	Fair	Juvenile	Short (5-15)	Climbing vine, Co-dominant stems		Protected	Indigenous	3 (Low)	Low - Consider for Removal	No direct encroachment	N	0.00%	Nil	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
93	*Melaleuca styphelioides*	Prickly-leaved Paperbark	1	32.57	42	3.9	48.0	2.3	12	7	Good	Good	Semi-mature	Long (>40)	Co-dominant stems		Protected	Indigenous	2 (Medium)	High - Priority for Retention	No direct encroachment	N	0.00%	Nil	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
94	*Corymbia maculata*	Spotted Gum	1	32.8	49	3.9	48.7	2.5	18	8	Fair	Fair	Semi-mature	Medium (15-40)	Co-dominant stems, Deadwood minor (<3cm diameter), Resin/kino/sap flow, Wood borer, Wound(s)		Protected	Indigenous	2 (Medium)	Medium - Consider for Retention	No direct encroachment	N	0.00%	Nil	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
95	*Eucalyptus tereticornis*	Forest Red Gum	1	47	55	5.6	99.9	2.6	18	10	Good	Good	Mature	Long (>40)	Deadwood moderate (3-10cm diameter)		Protected	Indigenous	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (1.67%)	N	1.67%	Minor	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
96	*Angophora floribunda*	Rough-barked Apple	1	25	35	3.0	28.3	2.1	7	4	Poor	Poor	Semi-mature	Dead Or Hazardous/Remove (0-5)	Deadwood major (>10cm diameter), Decay, Dieback, Epicormic shoots, Fungal fruiting body(s), Suppressed, Wound(s)		Protected	Indigenous	3 (Low)	Priority for Removal	No direct encroachment	N	0.00%	Nil	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
97	*Eucalyptus tereticornis*	Forest Red Gum	1	68.45	75	8.2	212.0	2.9	15	12	Good	Fair	Mature	Short (5-15)	Co-dominant stems, Decay, Fungal fruiting body(s), Previous failure(s), Wound(s)	Wound at base with fungal fruiting body limits ULE.	Protected	Indigenous	1 (High)	Low - Consider for Removal	TPZ encroachment for bulk earthworks (11.51%), driveway and warehouse footprint (.84%)	N	11.51%	Major	Level of encroachment marginally exceeds the permissible 10%. This tree is viable for retention provided tree protection measures are installed and maintained and plant health care treatments are employed .	Retain - specific	Soil is to be treated with mycorrhizal soil inoculation along with seaweed based soil conditioner. Irrigation and mulch to be installed within the TPZ.
98	*Eucalyptus tereticornis*	Forest Red Gum	1	58	82	7.0	152.2	3.0	10	13	Good	Fair	Mature	Long (>40)	Co-dominant stems, Hanger(s), Included bark		Protected	Indigenous	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (10.49%)	N	10.49%	Major	Level of encroachment marginally exceeds the permissible 10%. This tree is viable for retention provided tree protection measures are installed and maintained and plant health care treatments are employed .	Retain - specific	Soil is to be treated with mycorrhizal soil inoculation along with seaweed based soil conditioner. Irrigation and mulch to be installed within the TPZ.
99	*Eucalyptus tereticornis*	Forest Red Gum	1	48	65	5.8	104.2	2.8	20	13	Good	Good	Mature	Long (>40)	Co-dominant stems, Crossing/rubbing branches, Deadwood moderate (3-10cm diameter), Suckers		Protected	Indigenous	1 (High)	High - Priority for Retention	TPZ encroachment for bulk earthworks (1.49%)	N	1.49%	Minor	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
100	*Casuarina cunninghamiana*	River Sheoak	1	45	60	5.4	91.6	2.7	14	10	Good	Good	Mature	Long (>40)	Deadwood minor (<3cm diameter)		Protected	Indigenous	1 (High)	High - Priority for Retention	No direct encroachment	N	0.00%	Nil	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	
101	*Araucaria cunninghamii*	Hoop Pine	1	42	47	5.0	79.8	2.4	12	6	Good	Good	Semi-mature	Long (>40)			Protected	Native	1 (High)	High - Priority for Retention	No direct encroachment	N	0.00%	Nil	No significant impact expected provided tree protection measures are installed and maintained.	Retain - generic	

13. Appendix C – Tree Protection Management Plan



REV	DESCRIPTION	DATE
A	DA	12/01/2023
B	DA	13/11/2023

NOTES:
FINAL RECOMMENDATIONS ARE SUBJECT TO APPROVAL BY THE CONSENT AUTHORITY. THIS DOCUMENT DOES NOT PROVIDE PERMISSION TO REMOVE OR DAMAGE TREES.

LEGEND

TPZ - Recommendation

- Remove - irrespective
- Remove project impacts

DRAWN: KH
DWG NO: TRP.01
SCALE: 1:1000@A3

10 0 10 20 m

PROJECT:
PROPOSED WAREHOUSE DEVELOPMENT

DWG:
DRAFT TREE REMOVAL PLAN

CLIENT: CHARTER HALL
SITE: 149 AIRDS ROAD, MINTO NSW

PO Box 902
Five Dock NSW 2046
E: info@canopyconsulting.com.au
P: 1300 1 CANOPY

canopy consulting

REV	DESCRIPTION	DATE
A	DA	12/01/2023
B	DA	13/11/2023

NOTES:
THIS PLAN IS TO BE REVISED FOLLOWING DETAILED DESIGN

LEGEND

TPZ - Recommendations

- Retain - generic
- Retain - specific
- TPZ Fencing

LOCATION OF TPZ REQUIRED FOR DEMOLITION. SUBSEQUENT MODIFICATIONS TO ITS POSITION MAY BE REQUIRED DURING CONSTRUCTION

Specific Recommendation - Includes Generic Recommendations +	Tag/Tree QTY (Tree QTY)	Tree Numbers
Soil is to be treated with mycorrhizal soil inoculation along with seaweed based soil conditioner. Irrigation and mulch to be installed within the TPZ.	5 (5)	19, 47, 49, 97, 98
Total	**5 (5)**	

DRAWN: KH
DWG NO: TPMP.01
SCALE: 1:1000@A3

5 0 5 10 15 m

PROJECT:
PROPOSED WAREHOUSE DEVELOPMENT

DWG:
DRAFT TREE PROTECTION MANAGEMENT PLAN

CLIENT: CHARTER HALL
SITE: 149 AIRDS ROAD, MINTO NSW

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