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ARBORICULTURAL IMPACT ASSESSMENT (AIA)

&

TREE CONSTRAINTS MANAGEMENT PLAN (TCMP)

409 PRIESTDALE ROAD, ROCHEDALE

NOVEMBER 2025

PREPARED FOR

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Limitation

This report is only concerned with the condition and management strategies required for the tree. It includes an assessment based on the site visits and the information that I have been advised.

This report does not take into account the possibility of extreme climatic events not normally expected in this locality. Such events could include, but are not restricted to, severe windstorms, floods, or drought. This report also does not take into account the possibility of future outbreaks of pests or diseases.

Information contained in this report covers only the tree(s) that were examined and reflects the condition of the tree(s) at the time of inspection.

There is no warranty or guarantee, expressed or implied, that problems and/or deficiencies of a tree may not arise in the future.

DETAIL of REVISION AMENDMENTS

Arboricultural Impact Assessment and Tree Constraints Management Plan (AIA & TCMP) Control – the latest approved version of the AIA & TCMP is to be made available for all project personnel in consultation with the project's representative and/or Treescience with respect to the copyright release.

Each new revision to the AIA & TCMP will be distributed to all required personnel for review and approval.

The revision type is noted in the footer of each page. The document will be allocated a new revision type if the changes made affect the overall meaning of the document.

When a new revision to the document is available, a notification email is to be distributed to all project personnel by the project's representative advising of the update.

All individuals working near protected trees, if applicable, are responsible for the implementation and review of the latest AIA & TCMP.

DOCUMENT VERSION CONTROL

REV #	DESCRIPTION	SITE CAPTURE	AUTHOR	REVIEWED BY	APPROVED BY	DATE
2	Arboricultural Impact Assessment & Tree Constraints Management Plan	SM	JJ	KK	JJ	27/03/25
3	Arboricultural Impact Assessment & Tree Constraints Management Plan	SM	JJ	KK	JJ	18/11/2025

DISTRIBUTION

COPY	DESCRIPTION	DATE
Locked PDF	Buildico	18/11/2025
Treescience File Reference	AIA & TCMP_409 Priestdale Rd, Rochedale_Nov 2025_Treescience_V3	18/11/2025

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Jason-jay Naylor (Director/Principal Arboricultural Scientist) for Treescience Pty Ltd atf The Treescience Trust

DEFINITIONS & ABBREVIATIONS

CLIENT	An organisation inviting and receiving tenders and letting contracts. For the purposes of this project – Buildico
CONTRACTOR	An organisation that contracts with a client to carry out consultancy, construction, and related services. For the purposes of this project – Treescience.
LOCAL or STATE GOVERNMENT DEPARTMENT	Brisbane City Council
GOVERNMENT AGENCY	A government department, authority, corporation, or entity established by an Act of the State Parliament
PROJECT TYPE	Proposed subdivision
SUB CONTRACTOR	Organisation that contracts with a principal contractor as the client to carry out construction and related services.

DOCUMENTS REVIEWED

26551_DA04_CONCEPTUAL BULK EARTHWORKS LAYOUT PLAN-[02]
26551_DA05_CONCEPTUAL BULK EARTHWORKS SITE SECTIONS-[02]
1228589_BCC RE: Further Advice (25th July 2025)

NOTE: *This report is to be read in conjunction with the documents reviewed as referenced above unless otherwise stated within the body of the AIA & TCMP.*

EXECUTIVE SUMMARY

The constituted views within this report meet the criteria for tree protection under the local and state Planning Scheme and were performed in accordance with AS4970-2009 by a suitably qualified Arborist (AQF Level 9).

Findings and Recommendations

A total of fifty-six (56) trees were assessed with respect to the proposed sub-division design.

The project area had no direct theme or tree species of botanical significance. Additionally, no tree was classified as a Significant Landscape Tree (SLT).

A total of thirty-seven (37) trees are identified for retention.

A total of nineteen (19) trees were identified for removal.

Trees #3, #4, #6, #7, #8, #64, #65, #67, #68, #78 and #89 were identified as having 'major' manageable TPZ encroachments. The earth works cut is to be modified to no more than 0-200mm cut within a TPZ where applicable. The retaining wall is to be a positioned outside of the trees SRZ and constructed on a pier and beam design.

The palm trees within the neighbouring property #69 to #77 and #79 to #84 have TPZ encroachment which are defined by Treescience and within AS4970-2009 as less concerning based on species and distance to works.

Trees #5, #62, #63, #66, #87, #91 and #92 were identified as having 'minor' manageable TPZ encroachments which are compliant with AS4970-2009 however the retaining wall within the TPZ's is to on a pier and beam design.

Trees #1, #2, #61 & #88 have no works within their respective TPZ's and therefore meet the general guidelines within AS4970-2009.

It is therefore considered based on the material provided, performing a site assessment, and having the relevant industry related experience that there is no arboricultural reason that should preclude this aspect of the proposed construction works which were assessed in accordance with AS4970-2009.

It is critical that all works within the defined TPZ are to be carried out under the direct guidance of Treescience and in accordance with this report.

The recommendations made within this report are subject to approval by the consenting authority.

The following factors were considered in relation to the proposed development:

- potential construction impacts within and/or directly adjacent to a TPZ
- tree species, tree age, tree health, structure, tree significance & construction tolerances
- compliance requirements within AS4970-2009

Therefore, we recommend:

- All works are to be conducted in accordance with this conditional AIA, unless alternative tree preservation measures are developed and approved by the relevant representatives and Treescience.
- That this report is reviewed according to the final development approval and immediately prior to operational works approval.
- Appoint Treescience as the Supervising Project Arborist to perform the 'watching brief' throughout the development to monitor the tree protection requirements and liaise with the consenting authority and relevant representatives.
- The appointed Supervising Project Arborist will assist in supervising where required the associated works within the defined TPZ's and outline the action mitigation measures as required.
- Establish a line of communication between the consenting authority, site Manager and Treescience, prior to any works commencing.
- All contractors to attend a tree preservation induction and then sign and comply with the requirements of a 'Certificate of Recognition and Acceptance' form.
- Ensuring design specifications and construction methodologies consider the tree of critical interest above and below the ground before implementation as outlined within the Arboricultural Work Method Statement(s).
- Employment of careful documented arboricultural supervision and diligent management during the construction process for works within and/or directly adjacent to a TPZ; and
- Ensuring any tender documents for the project reflect the requirement to undertake works and include supervision by Treescience.

Although this report proposes strategies and various specification for tree protection and associated site works, it may require amendments prior to Operational Works commencing, in order to reflect the development approval and any changes in tree health.

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Appendix **ONE:** Tree Protection Signage *example*

Appendix **TWO:** Tree Protection Poster

Appendix **THREE:** Tree Protection Handout

Appendix **FOUR:** Type & Effects of Tree Damage

Appendix **FIVE:** Sept 2024 tree inventory and site plan

Precedent Disclaimer for Consultancy

DEFINITIONS

- *A tree – "A woody perennial plant, typically having a single stem or trunk growing to a considerable height and bearing lateral branches at some distance from the ground. Compare with SHRUB. ~ (in general use) any bush, shrub, or herbaceous plant with tall erect stem, e.g., a banana plant (The New Oxford Dictionary of English, 1st edn (1998)''.*
- *Tree keeper – The land that is, the soil in which the plant was initially planted even if its roots or branches subsequently stray beyond the property boundary.*

KEYWORDS

- *Tree Protection Zone – is a distance from the trunk set aside for the protection of a tree's crown and roots to provide for the viability of the tree(s) nominated for retention*
- *Structural Root Zone – is an area considered essential for tree stability*
- *Consenting Authority – Local and/or State Government*
- *Supervising Project Arborist – an AQF Level 5 Arborist (min 3-5yrs post graduate experience) with industry related experience to guide construction outcomes within a TPZ and has a thorough understanding of the guidelines and principles within AS4970-2009.*

LIST of ABBREVIATIONS

DBH – Diameter at Breast Height @ 1.4m

- *NALL – Natural Assets Local Law*
- *TPZ – Tree Protection Zone*
- *SRZ – Structural Root Zone*
- *PAIA – Preliminary Arboricultural Impact Assessment*
- *AIA – Arboricultural Impact Assessment*
- *TCMP– Tree Constraints Management Plan*
- *AWMS – Arboricultural Work Method Statement.*

NOTE: the area between the tree protection fencing and the tree of critical interest is deemed the exclusion zone for the related tree as outlined within this report unless otherwise advised.

01 INTRODUCTION

Treescience Pty Ltd was engaged by Buildico (Client) to prepare an AIA & TCMP with respect to a tree of critical interest.

In September 2024 Treescience completed a tree inventory as shown in Appendix 5 with a total of ninety (90) trees collected within and/or directly adjacent to the property boundary. Majority of the vegetation is classified as introduced vegetation principally palm varieties with scattered Fig and Leopard trees along the property boundary with confined landscape amenity values. No trees were identified as Significant Landscape Tree (SLT) with respect to Council Natural Asset Local Law quantification nor Koala food trees. Additionally, our tree inventory confirmed very limited sub-tropical species, with the site having no remnants of past orchards practices.

This report has been prepared in accordance with Australian Standards AS4970-2009: Protection of Trees on Development Sites (AS4970-2009) to satisfy the interest of the consenting authority for the proposed redevelopment works at 409 Priestdale Road, Rochedale (the project area) with respect to a tree of critical interest.

Specifically, this updated AIA & TCMP (V3) addresses the provided updated bulk earthwork drawings that are adjacent to the Council-controlled street trees on the Priestdale Road frontage (trees #1 to #8).

The purpose of the report is to assist the Client to set appropriate constraints, in the form of a report, including a tree preservation specification, that will ensure the construction processes and use of the land suitably allows for a tree of critical interest to not only survive but thrive for years to come.

The following factors were considered in relation to the proposed development:

- potential construction impacts within and/or directly adjacent to a TPZ
- tree species, tree age, tree health, structure, tree significance & construction tolerances
- compliance requirements within AS4970-2009

The constituted views within this report meet the criteria for tree protection under the local and state Planning Scheme and were performed in accordance with AS4970-2009 by a suitable qualified Arborist (min AQF Level 9).

It is assumed by Treescience that the reviewed and issued design drawing(s) are final, which the recommendations within this AIA & TCMP are founded.

01.1 client brief.

We request advice from a suitably qualified Arborist (min AQF level 5) to satisfy the interest of the consenting authority regarding the potential impact(s) of the proposed redevelopment and construction outcomes with regards to a tree of critical interest. Specifically, this report addresses Item 3 of the Information Request by Brisbane City Council dated the 25th of July 2025, Application Reference A006530099:

Vegetation

3) An Arboricultural Impact Assessment has been reviewed and it has been identified that the proposal will impact the significant root zones (SRZ) of the street trees due to the proposed cut and location of the retaining wall on the northern boundary.

a) Provide amended plans reducing the amount of works intruding into the SRZ and tree protection zones (TPZ) of the street trees by relocating the retaining walls within proposed lots 1 – 3.

b) Provide an amended Arboricultural Impact Assessment to demonstrate the proposed works and areas of cut within the TPZ has no negative impacts on the long-term health of the street trees.

01.2 reporting compliance outcomes.

Specifically, the intent of the AIA & TCMP was to collect the tree attributes and provide arboricultural relevant information pertaining to the tree of critical interest that would assist in developing appropriate tree management strategies in accordance with AS4970-2009.

This AIA & TCMP considers the physiological needs of a tree and establishes the Tree Protection Zone (TPZ) in accordance with AS4970-2009 that is essential in avoiding injury or damage to a tree during proposed construction works.

The procedures and presentations within this report, therefore, adhere strictly to the good practice standards recognised within the AS4970-2009. AS4970-2009 provides guidance for:

- A balanced approach on deciding which trees are appropriate for retention, and
- Means of protecting and monitoring retained trees during development.

02 SCOPE OF THE REPORT

This report sets out to consider a tree's physical and structural requirements in order to maintain suitable tree health and stability in relation to the pending construction works through identifying and reducing potential conflicts.

This report will provide measures to ensure the protection and long-term survival of the nominated tree(s) above and below the ground. It should be noted that the proposed tree management strategies outlined within this report by Treescience are of a dynamic nature and of changeable character that underscores the flexibility of this working document.

This report outlines the historical documentation of the tree management practices and processes surrounding the proposed construction works adjacent to a tree of critical interest which is nominated for retention.

The application of diligent arboricultural management as outlined in this report will avoid unnecessary tree removal or damage to a tree nominated for retention. This report requires a re-examination according to any subsequent changes to the proposed design based on the document(s) and procedures reviewed by Treescience. The report shall include but not be limited to the following items:

- Demonstrate that any impacts to a tree of critical interest have been assessed and methods have been put in place to either remove, mitigate, or reduce such impacts to a lower level (as practical) for tree(s) proposed to be retained.
- Identify additional feasible mitigation measures that may be implemented during construction works for a protected tree(s) where works are identified within and/or directly adjacent to a TPZ.
- Provide guidance on the protection of retained tree(s).
- Outline the protection materials to be used to mitigate an impact via the installation of fencing, trunk/branch protection, ground protection, tree surgery, tree pruning/removal or plant health care etc., with regards to amelioration and remediation strategies to maintain tree health and encourage root proliferation into surrounding soils from the region where TPZ encroachment has been identified.
- Specify the Arboricultural Work Method Statements (AWMS) pertaining to specific construction parameters on the site and/or within TPZ.
- Identification of requirements for the short and longer-term management.
- Defining responsibilities; and
- Ensure the tree management procedures within this report are in accordance with the AS4970-2009.

03 METHOD, REPORTING STAGES & ASSESSMENT LIMITATIONS

03.1 method.

Prior to any onsite inspection being carried out, a site survey plan and relevant drawings were provided to Treescience in order to help identify and assess the condition of the tree(s) of critical interest and assess any potential impacts to the tree(s) of critical interest within and/or adjacent to the proposed project area.

Since any part of a tree could fall, depending on the physical condition, it would be clearly impracticable to undertake a detailed investigation of every part of every tree. Therefore, the tree of critical interest has been inspected visually while standing at ground level, using binoculars as an aid where appropriate.

Visual Tree Assessment (VTA) criteria were employed to assess the mechanical integrity of the aerial parts of the tree of critical interest as outlined by Mattheck & Breloer (2002); with methods of hazard assessment as determined by Matheny & Clark (1994) and Lonsdale (1999).

The first part of the VTA takes into account biological factors such as vitality (leaves, bark, twig growth etc.), presence of fungi, old branches, wound occlusion, or wound wood development and/or compartmentalisation, and other biological factors that contribute to tree growth.

The second part of the VTA deals with tree structure or the mechanical aspects of trees such as breakages (defect symptoms such as bulges or ribs, wounds, leaning that causes transverse cracks, bark cracks and other abnormalities) and wind throw (root buttresses, soil cracks, sail area, root severance etc.).

Therefore, by applying up-dated arboricultural principles and practices as outlined above, the future health, influencing factors associated with previous and future activities which many have impacted the tree of critical interest has been considered in detail.

Additionally, soil characteristics and tree architecture were generally noted and/or analysed employing standard industry tools such as optical laser equipment, measuring tapes, microscopes, and auger/coring devices etc.

It should be noted that this assessment did not involve a detailed examination of the below ground characteristics or internal tree parts or wood degradation elements.

03.2 stage one reporting.

Completion of the *Tree Inventory and/or Preliminary Arboricultural Report* at the pre-design stage assesses the value and contribution of a tree located within and/or adjacent to the proposed project area, independent of any proposed layout design. This unbiased approach of evaluating a tree will allow the highest quality tree to be retained, which will be capable of tolerating the pressures during the proposed development processes.

This assessment represents the constraints imposed on-site by the existing tree(s), indicating TPZ's, tree dimensions, tree health and structure. This initial information should be used as a design tool to inform the proposed layout and foreseen tree preservation requirements.

03.3 stage two reporting.

In the post planning stage, the *Preliminary Arboricultural Report* will help inform the design team of the potential conflicts associated with the location of established existing tree(s), help establish a satisfactory layout, which will allow a harmonious juxtaposition of the established existing tree(s) with built structures and their associated infrastructure based on the identified guidelines within AS4970-2009.

03.4 stage three reporting.

As a part of the post planning approval stage an *Arboricultural Impact Assessment & Tree Constraints Management Plan* is to be commissioned. This report will determine that the final layout designs have satisfactorily been considered in alliance with a construction methodology to ensure the development can be successfully achieved based on the arboricultural constraints as outlined within AS4970-2009.

The *Arboricultural Impact Assessment & Tree Constraints Management Plan* will review the impacts of the planning conditions, which may include modifications to the TPZ's to meet the legislative requirements for the various State/Local Government Planning Authorities, while ensuring compliance with AS4970-2009.

03.5 stage four reporting.

The conclusion of the approval phase culminates with the implementation of the approved *Arboricultural Impact Assessment & Tree Constraints Management Plan.* A level of on-site Arboricultural supervision is required by a 'Supervising Project Arborist' for the following stages were works are within a TPZ:

- pre-construction – (identify trees for retention, document, and review tree conditions, establish TPZ's, inform all relevant parties of the defined TPZ and mitigation measures plus review any work method statements).

- construction – (supervise all tree clearing works and works that encroach within the defined TPZ's, monitor tree health for trees nominated for retention, provide direction/advice to construction personal and approved contractors where required, ensure tree and root protection measures are maintained for the duration of works).

- post construction – (inspect completed works, specify any remedial or follow-up works as required for tree health purposes, provide on-going monitoring of tree health as required and issue a final certification report).

03.6 summary of the various reporting stages.

Treescience has been involved in this project since stage ONE. Therefore, this report initiates stage FOUR. The recommendations within this report are founded on the provided drawings as acknowledged within the referenced documents reviewed (page 5).

03.7 assessment limitations.

The tree assessment summary presented within this report is based on inspections that were conducted in September 2024 and again in February 2025 using VTA methods.

The weather was clear, and we had an unobstructed view of the tree(s) of critical interest.

04 PROJECT AREA

The landscape is generally made up of insignificant palms, and small shrubs which are made up of a mixture of planted exotic, native and non-native species which have been planted adjacent to the existing structures.

Varying levels of understorey clearing has occurred, along with anthropogenic disturbances resulting in low weed incursion. Therefore, the wider project area is classified as highly modified based on the past and present land use.

The adjacent neighbouring land was classified as a Council controlled road reserve and private neighbouring properties.

05 INDIVIDUAL TREE APPRAISAL

In assessing the tree(s) of critical interest within/and or adjacent to the proposed construction footprint, the following factors have been considered:

- Arboricultural values.
- Future pressure for tree removal and pruning.
- Infrastructure placement.
- Direct impacts from construction and/or demolition activities.
- TPZ encroachments.
- Tree preservation strategies and construction mitigation measures; and
- Future tree management objectives above and below ground.

05.1 arboricultural rating table.

Arboricultural rating relates to the combination of tree condition factors, including health and structure (arboricultural merit), and conveys an amenity value. Amenity relates to the trees biological, functional, and aesthetic characteristics (Hitchmough 1994) within the developing urban landscape context.

CATEGORY	DESCRIPTION
High	Trees of high quality with an estimated remaining life expectancy of at least 30 plus years. A tree of extraordinary qualities which displayed good to fair structure with good vitality which is a good example of the species, or prominent large specimen, or has botanical significance or historical interest or commemorative interest or cultural significance. A single tree which is a part of group or avenue of trees. Generally, a tree that presents prominent arboricultural features with various areas of visual interest within the urban forest. Retention of these trees is highly desirable.
Moderate	Trees of moderate quality with an estimated remaining life expectancy of at least 20 plus years. A tree of moderate qualities which displayed a minimum of fair structure and health with a high emerging potential. A large to moderate tree which contributes to the landscape character, which could have material conservation or other cultural values. The tree could be marginally structurally compromised or display ill health qualities but has the potential to respond to beneficial arboricultural or tree surgery treatment(s). Retention of these trees is desirable.
Low	A tree of depleted and/or little landscape amenity. The tree presented poor health and/or with poor structure with an estimated remaining life expectancy of less than 10 years. The tree is not a significant specimen in its size and could easily be replaced. The tree is functionally inappropriate to a specific location and would be expected to be problematic if retained now or in the near foreseeable future. Basically, the tree is an unremarkable tree of very limited merit or such impaired condition that they do not qualify in higher categories. Retention of such trees may be considered if they do not require a disproportionate expenditure.

CATEGORY	DESCRIPTION
None	A tree that is significantly structurally compromised, dead and/or displayed health problems that cannot be mitigated through beneficial arboricultural treatment(s) and therefore cannot realistically be retained as a living tree in the context of the current land use for longer than 10 years. The tree should be considered for removal. This category excludes stag trees or trees with ecological values.

The following images depict the various tree(s) of critical interest growing environment, canopy morphology, branching arrangements, site characteristics, urban infrastructure and/or area(s) of interest.

Trees #1 to #8

Insignificant palms

Tree #23

Tree #24

Trees #48 & #49

Trees #50 to #54

Tree #90

Tree #60

Trees #61 to #68

Trees #69 to #84

Trees #85 & #86

Tree #87

Trees #88 & #89

Trees #87, #91 & #92

05.2 individual tree attributes and landscape amenity table.

The individual tree attributes and landscape amenity table is a collaboration of the individual tree dimensions, attributes and landscape amenity values pertaining to a tree of critical interest. The following individual tree attributes and landscape amenity table (appendix FIVE) is reflective of the trees of critical interest pertaining to proposed construction footprint area. The palm trees within the project property have been omitted from the following individual tree attributes and landscape amenity table.

Below is the icon used to represent the presence of a palm specimen within the project area.

05.3 individual tree attributes and landscape amenity table summary.
Generally, the tree health was fair as evident by leaf colour, shoot extension, canopy density and production of wound wood.

The structural form generally appeared typical for the species and age class based on their available growing space and above ground influences.

A total of fifty-six (56) trees were assessed with respect to the proposed sub-division design.

The project area had no direct theme or tree species of botanical significance. Additionally, no tree was classified as a Significant Landscape Tree (SLT).

The Leopard trees along Priestdale Rd are classified as Council controlled trees and therefore protected under Council's Natural Asset Local Law (2003). A permit and approval will be required to interfere with the subject trees.

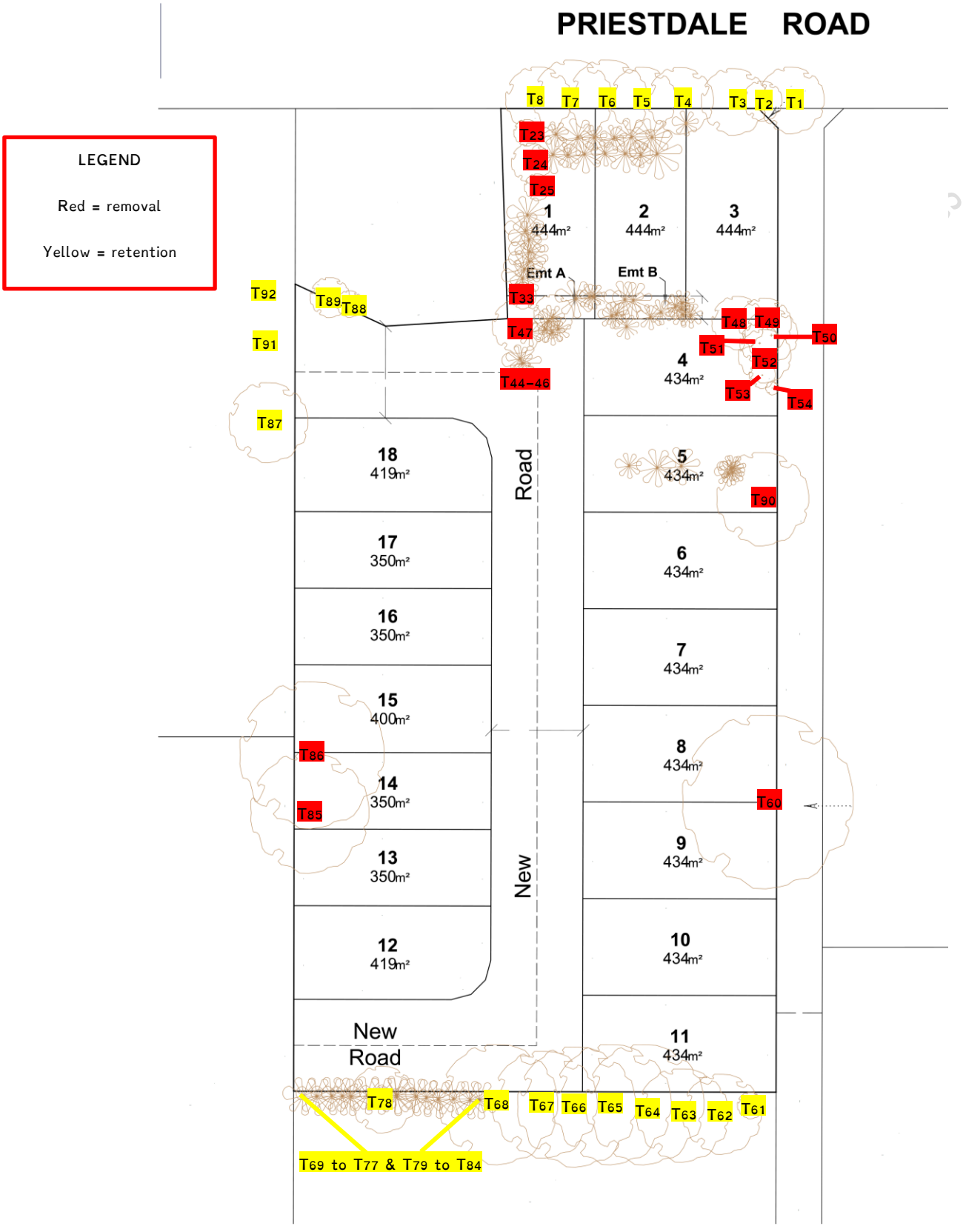
A total of thirty-seven (37) trees are identified for retention from an arboricultural perspective which can be manageable given adequate tree protection measures are implemented in accordance with this conditional report.

A total of nineteen (19) trees were identified for removal. The trees of critical interest were elected for removal and are not suitable for retention based on:

- The identified construction implications.
- Poor construction tolerances.
- Future nuisance.
- Poor tree canopy morphology.
- Compromised structural integrity.
- Insignificant specimen.

It should be noted that no detail fauna survey was undertaken by Treescience, and where general habitat features were observed they have been documented within the individual tree attributes and landscape amenity table.

05.4 tree/site survey. (tree identification number)



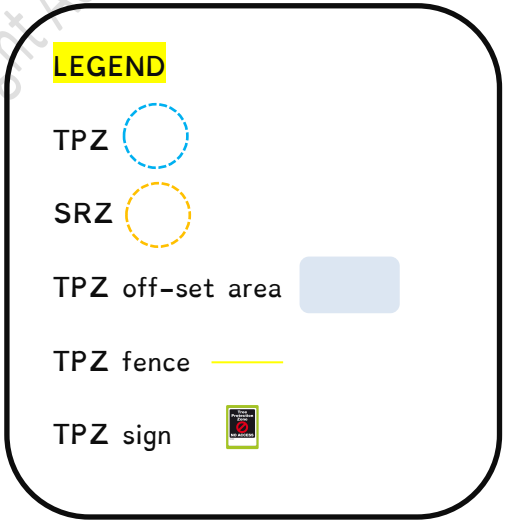
05.5 tree constraints management plan. (approx. scale)

A PRESTART MEETING IS REQUIRED BEFORE THE PROPOSED WORKS COMMENCE, WITH THE APPOINTED PROJECT ARBORIST (min AQF Level 5 with 5 years post graduate experience) AND RELEVANT REPRESENTATIVES.

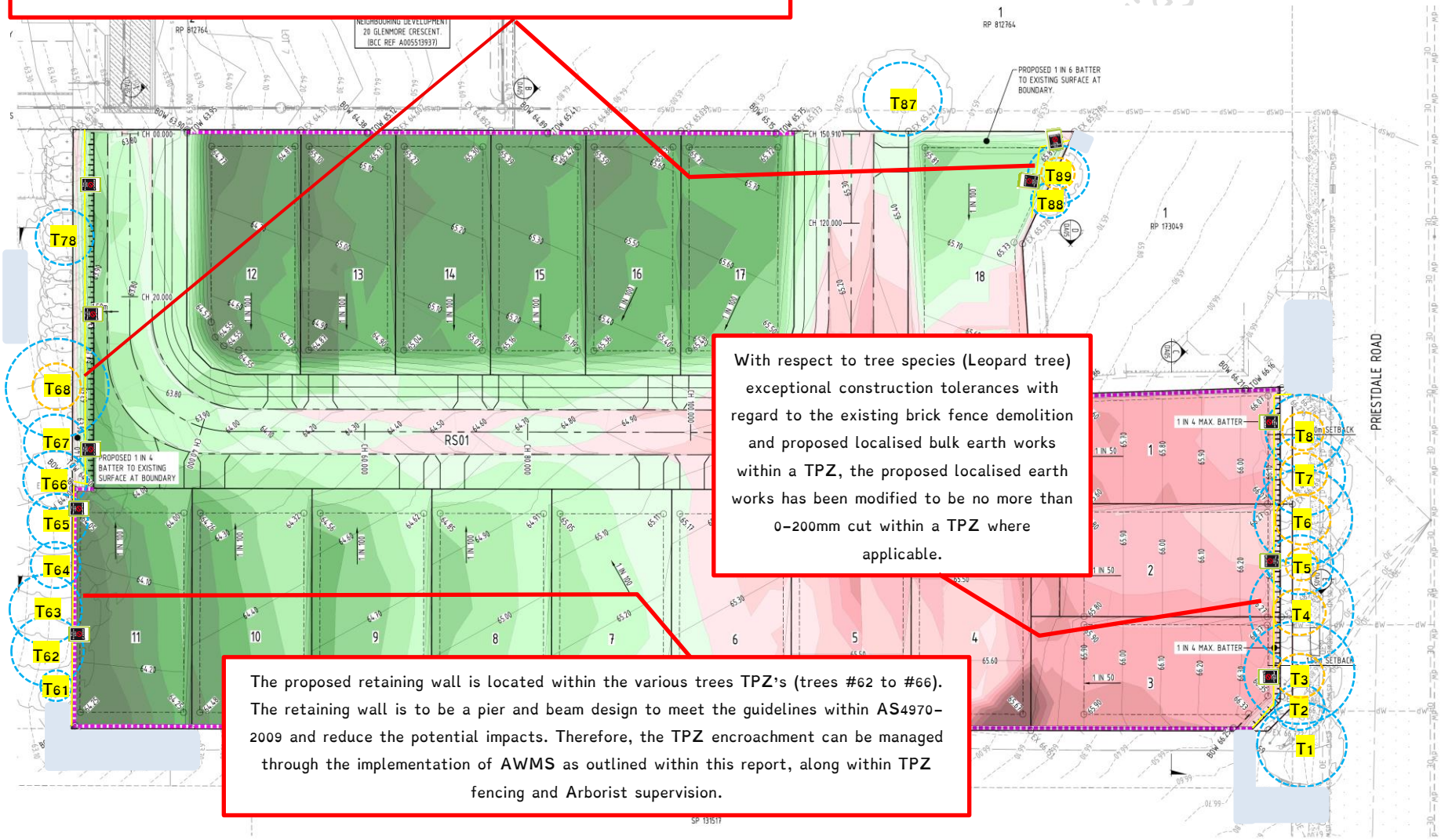
FAILURE TO COMPLY COULD RESULT IN PREMATURE TREE DECLINE AND/OR COMPROMISE A TREE'S STRUCTURAL INTEGRITY.

THE INTERFERENCE OF COUNCIL CONTROLLED VEGETATION MAY REQUIRE APPROVAL FROM THE CONSENTING AUTHORITY.

THE INTERFERENCE OF PRIVATE VEGETATION WILL REQUIRE APPROVAL FROM THE TREE KEEPER.

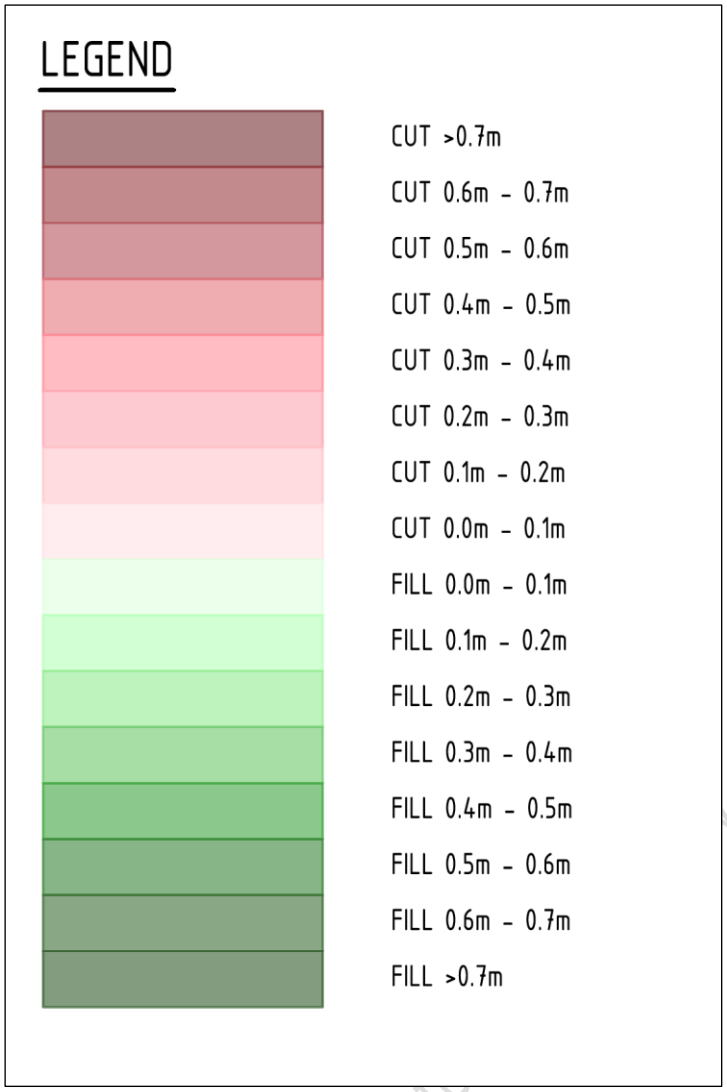


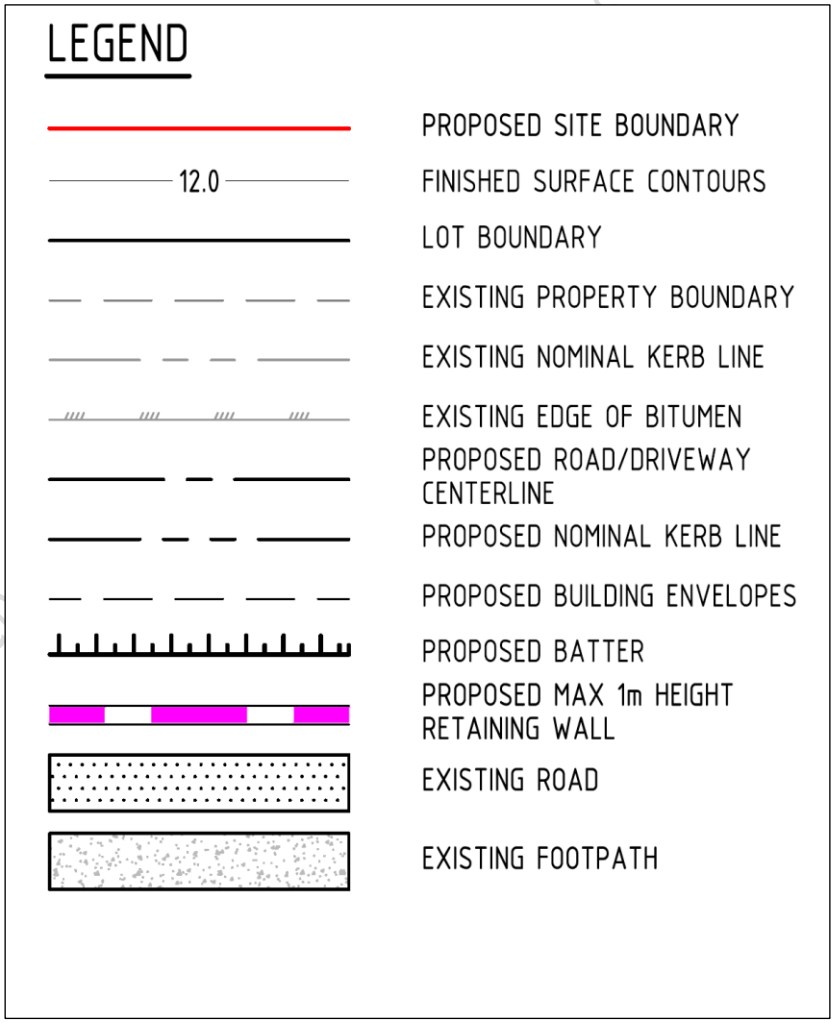
The proposed earth works within the TPZ of trees #68 & #89 is classified as a manageable TPZ encroachment based on proposed fill levels. We are of the professional opinion that the proposed soil fill will not result in premature tree decline nor jeopardise the subject trees' structural integrity. The TPZ encroachment can be managed through the implementation of AWMS as outlined within this report, along within TPZ fencing and Arborist supervision.

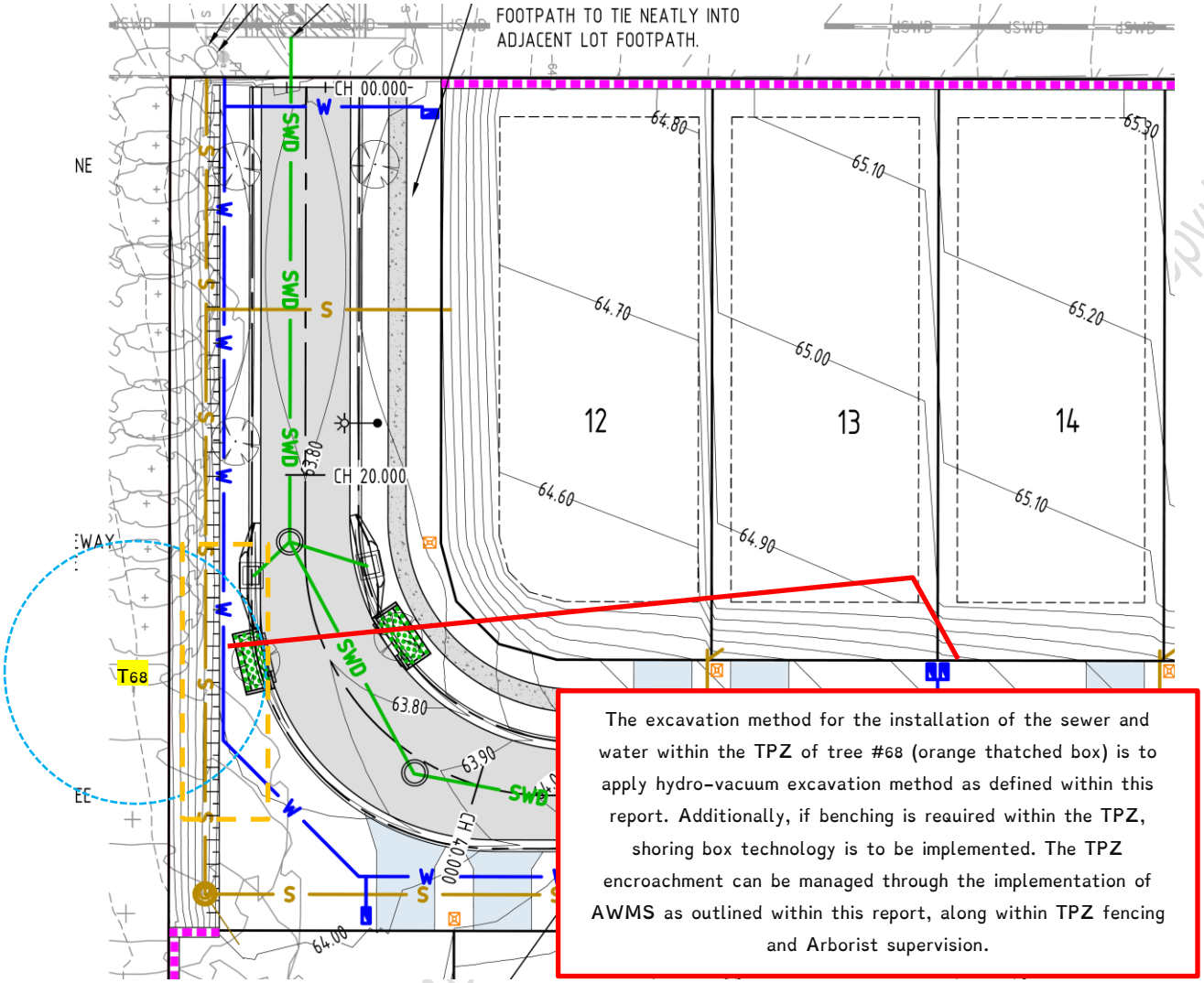


With respect to tree species (Leopard tree) exceptional construction tolerances with regard to the existing brick fence demolition and proposed localised bulk earth works within a TPZ, the proposed localised earth works has been modified to be no more than 0-200mm cut within a TPZ where applicable.

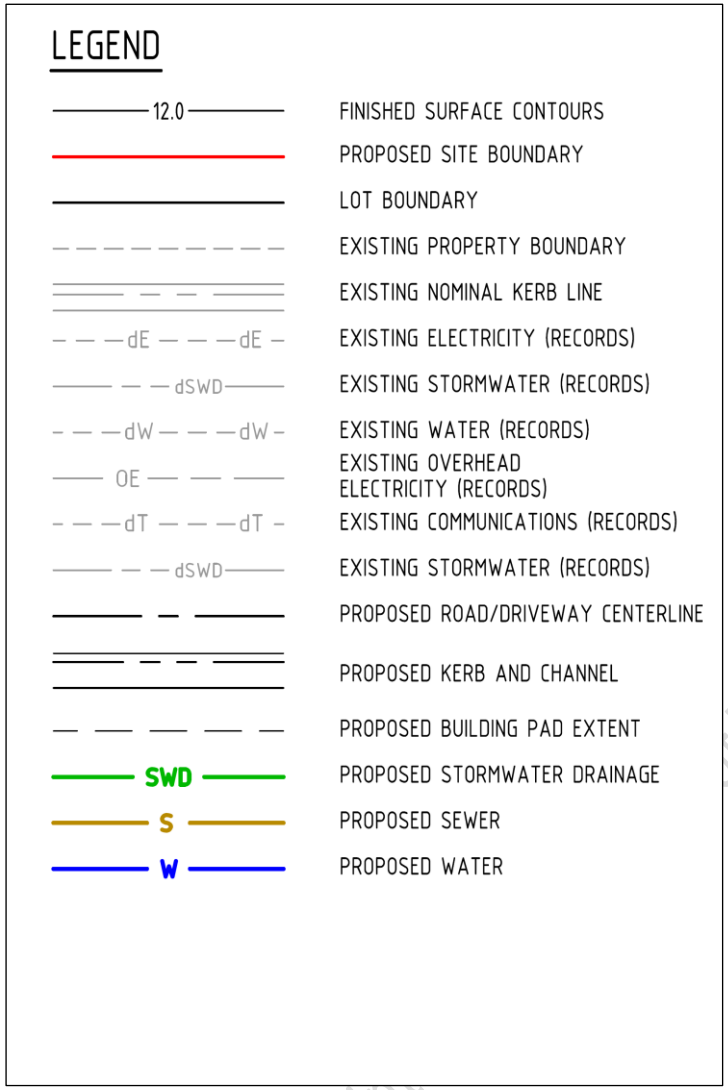
The proposed retaining wall is located within the various trees TPZ's (trees #62 to #66). The retaining wall is to be a pier and beam design to meet the guidelines within AS4970-2009 and reduce the potential impacts. Therefore, the TPZ encroachment can be managed through the implementation of AWMS as outlined within this report, along within TPZ fencing and Arborist supervision.

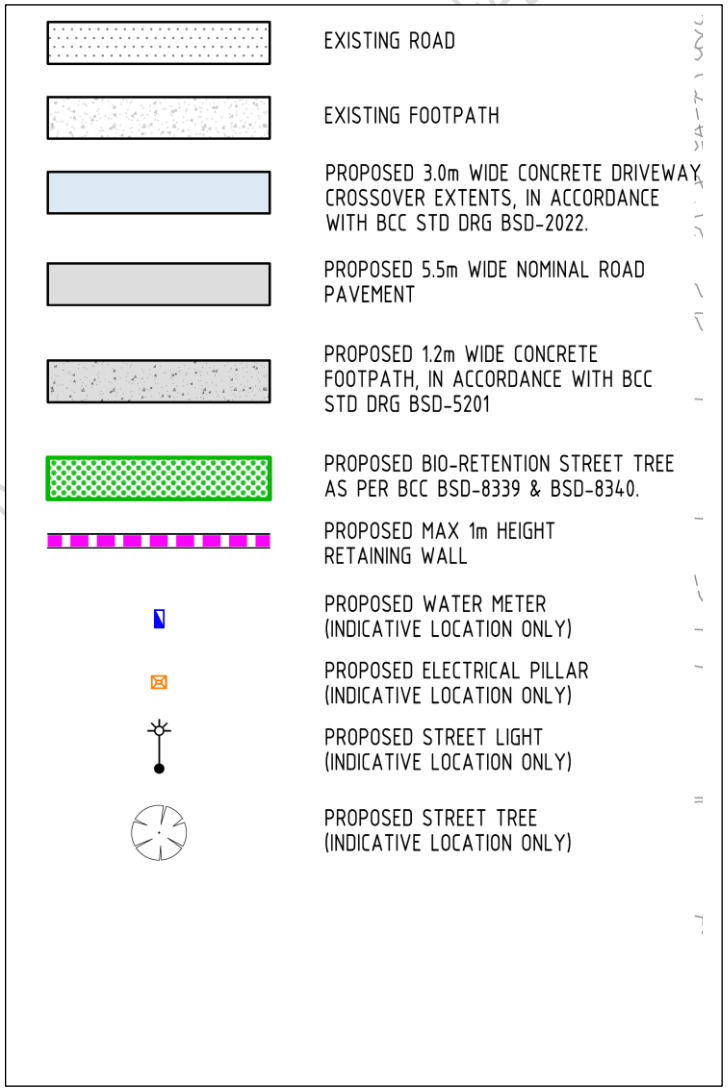






The excavation method for the installation of the sewer and water within the TPZ of tree #68 (orange thatched box) is to apply hydro-vacuum excavation method as defined within this report. Additionally, if benching is required within the TPZ, shoring box technology is to be implemented. The TPZ encroachment can be managed through the implementation of AWMS as outlined within this report, along within TPZ fencing and Arborist supervision.





06 TREE RETENTION VERSE REMOVAL

The existing tree(s) on the site may be classified as either an opportunity or a constraint within the context of the site. The conditions of the tree, dimensions, established location and construction tolerance etc., are some elements that have been considered when assessing what tree is suitable for retention as outlined in the individual tree attributes and landscape amenity table.

Removal of a healthy and suitably structured tree generally relates to the demolition and construction requirements within a defined TPZ. These construction components are assessed as being integral to the functionality of the redevelopment along with considering the elements for long term tree retention.

Due to the identified design constraints, and/or demolition requirements and/or construction outcomes we have been advised by the respective party that it is not feasible or reasonable to move the various aspects of the design components to accommodate an existing tree of critical interest nor undertake comprehensive root investigation exploratory measures.

In other areas where the proposed works are within and/or directly adjacent to a TPZ, tree removal has been limited through detail design, construction planning, works method statement review and/or comprehensive root investigation exploratory measures.

Avoidance of substantial impacts to a tree nominated for retention has been undertaken through individual tree evaluation and design process to avoid direct impacts to a tree nominated for retention, while ensuring the proposed design and construction intent is located outside of a TPZ wherever possible.

07 DEVELOPMENT IMPACTS ON SITE TREE/S IN ACCORDANCE WITH AS4970-2009

During development works, trees often become damaged or killed because of injury they receive throughout the construction phases. This is usually due to root crushing injury, root severance, mechanical injury from collision with above ground parts, soil compaction from vehicular movement or soil contamination through spillage or tipping out of toxic materials within canopy dripline. In order to prevent injury from occurring, a TPZ is established for each tree worthy of retention. The amount of protection required is evaluated and based on several factors in accordance with the guidelines outlined within AS4970-2009 and related industry experience.

07.1 TPZ encroachment considerations.

To meet the tree preservation requirements of Australian Standards AS4970-2009: Protection of Trees on Development Sites, the potential impacts of encroachment into the TPZ's have been considered by Treescience as outlined below:

a) The location and distribution of tree roots has been determined via an onsite assessment and performing non-destructive hand excavation methods on a need by basis.
b) The potential loss of root mass resulting from a TPZ encroachment has been appraised from an arboricultural perspective.
c) The trees' construction tolerance has been categorised and appropriately considered within the context of the proposed design.
d) Tree age, branching architecture, canopy morphology and overall tree form has been considered.
e) Soil characteristics, topography, and drainage etc., are some of the design elements that have been considered.
f) The presence of pre-existing or past structures or obstacles affecting root growth or branching formation has been considered; and
g) Design factors have been considered with regards to the trees' future growth as well as allocated growing space above and below the ground based on our review of the provided design drawing(s).

07.2 TPZ encroachment calculations table.

TREE #	TREE SPECIES	ESTIMATED DISTANCE FROM PROPOSED CONSTRUCTION WORKS TO THE SUBJECT TREE	DBH (mm)	TPZ RADIUS (mm)	SRZ RADIUS (mm)	DISTANCE TO MEET THE 10% ENCROACHMENT (m)	% of TPZ ENCROACHMENT	TPZ ENCROACHMENT MAJOR or MINOR	PROPOSED WORKS WITHIN OR DIRECTLY ADJACENT TO THE TPZ	TPZ OFFSET AREA & CONTIGUOUS or NON-CONTIGUOUS
1	Libidibia ferrea	6.0m	450	5.4	2.4	3.7	0	n/a	Bulk earthworks	n/a
2	Libidibia ferrea	3.0m	250	3	1.8	2.1	0	n/a	Bulk earthworks	n/a
3	Libidibia ferrea	2.6m	500	6	2.5	4.1	23.3	Major	Bulk earthworks	Contiguous
4	Libidibia ferrea	2.6m	500	6	2.5	4.1	23.3	Major	Bulk earthworks	Contiguous

TREE #	TREE SPECIES	ESTIMATED DISTANCE FROM PROPOSED CONSTRUCTION WORKS TO THE SUBJECT TREE	DBH (mm)	TPZ RADIUS (mm)	SRZ RADIUS (mm)	DISTANCE TO MEET THE 10% ENCROACHMENT (m)	% of TPZ ENCROACHMENT	TPZ ENCROACHMENT MAJOR or MINOR	PROPOSED WORKS WITHIN OR DIRECTLY ADJACENT TO THE TPZ	TPZ OFFSET AREA & CONTIGUOUS or NON-CONTIGUOUS
5	Libidibia ferrea	3.0m	300	3.6	2	2.5	4.0	Minor	Bulk earthworks	Contiguous
6	Libidibia ferrea	3.0m	550	6.6	2.6	4.5	22.1	Major	Bulk earthworks	Contiguous
7	Libidibia ferrea	3.0m	450	5.4	2.4	3.7	16.5	Major	Bulk earthworks	Contiguous
8	Libidibia ferrea	2.7m	400	4.8	2.3	3.3	16.2	Major	Bulk earthworks	Contiguous
61	Jacaranda mimosifolia	2.0m	150	2	1.5	1.4	0	n/a	n/a	n/a

TREE #	TREE SPECIES	ESTIMATED DISTANCE FROM PROPOSED CONSTRUCTION WORKS TO THE SUBJECT TREE	DBH (mm)	TPZ RADIUS (mm)	SRZ RADIUS (mm)	DISTANCE TO MEET THE 10% ENCROACHMENT (m)	% of TPZ ENCROACHMENT	TPZ ENCROACHMENT MAJOR or MINOR	PROPOSED WORKS WITHIN OR DIRECTLY ADJACENT TO THE TPZ	TPZ OFFSET AREA & CONTIGUOUS or NON-CONTIGUOUS
62	Liquidambar styraciflua	3.5m	400	4.8	2.3	3.3	8.1	Minor	Localised earthworks & retaining wall	Contiguous
63	Liquidambar styraciflua	3.5m	400	4.8	2.3	3.3	8.1	Minor	Localised earthworks & retaining wall	Contiguous
64	Jacaranda mimosifolia	2.0m	250	3	1.8	2.1	11.0	Major	Localised earthworks & retaining wall	Contiguous
65	Jacaranda mimosifolia	2.0m	300	3.6	2	2.5	16.5	Major	Localised earthworks & retaining wall	Contiguous
66	Jacaranda mimosifolia	3.1m	300	3.6	2	2.5	3	Minor	Localised earthworks & retaining wall	Contiguous
67	Jacaranda mimosifolia	2.2m	300	3.6	2	2.5	13.7	Major	Localised earthworks	Contiguous
68	Jacaranda mimosifolia	2.2m = minor earthworks; 3.5m = inground services	500	6	2.5	4.1	27.2 & 15.1	Major	Localised earthworks & excavation	Contiguous
69–77, 79–84	Dypsis lutescens	1.5m = minor earthworks; 2.6m = inground services	250	3	1.8	2.1	19.6 & 2.9	Major & Minor	Minor grade changes & inground services.	Contiguous
78	Jacaranda mimosifolia	2.0m	300	3.6	2	2.5	16.5	Major	Localised earthworks	Contiguous
87	Grevillea robusta	3.6m	400	4.8	2.3	3.3	7.2	Minor	Localised earthworks	Contiguous
88	Persea americana	1.1m	150	2	1.5	1.4	0	n/a	n/a	n/a

TREE #	TREE SPECIES	ESTIMATED DISTANCE FROM PROPOSED CONSTRUCTION WORKS TO THE SUBJECT TREE	DBH (mm)	TPZ RADIUS (mm)	SRZ RADIUS (mm)	DISTANCE TO MEET THE 10% ENCROACHMENT (m)	% of TPZ ENCROACHMENT	TPZ ENCROACHMENT MAJOR or MINOR	PROPOSED WORKS WITHIN OR DIRECTLY ADJACENT TO THE TPZ	TPZ OFFSET AREA & CONTIGUOUS or NON-CONTIGUOUS
89	Persea americana	1.0m	300	3.6	2	2.5	32.5	Major	Localised earthworks	Contiguous
91	Grevillea robusta	3.5m	400	4.8	2.3	3.3	8.1	Minor	Localised earthworks	Contiguous
92	Grevillea robusta	4.0m	400	4.8	2.3	3.3	4	Minor	Localised earthworks	Contiguous

07.3 TPZ encroachment calculations table summary.

AS4970-2009 guidelines are largely founded on the distance of disturbance from a tree. It should be noted that it is extremely difficult to speculate the volume and/or directional growth of a tree's entire woody root system, particularly in the case of an urban tree. Therefore, the expert view provided by Treescience is that the type and volume of disturbance is more important than the distance from a tree.

A TPZ relates to the root system of the tree and is necessary to maintain the health of the tree during and following the proposed development of the site, by limiting construction activities and machinery access within the TPZ. The TPZ also ensures that the development does not compromise the stability of a tree through root damage.

The TPZ does not indicate the root extent (root spread) of a tree. The TPZ merely designates the area in which soil disturbance must be minimised (and therefore root damaged minimised) in order to maintain the health, longevity, and stability of a tree.

A TPZ is not a 'sterile zone' or an 'exclusion zone' for all activities and development but instead defines the area around a tree in which tree-sensitive design and construction techniques must be employed, in order to maintain the health, longevity and structure of a tree.

The TPZ has been calculated using a method that conforms to AS4970-2009 as outlined within this report. AS4970-2009 allows for the use of species-and-tree-specific data to modify the factorial (up and down) to be more specific to the tree being assessed, i.e., relating to tolerance of the species to root disturbance and the age class of the tree for its species etc.

The TPZ encroachment calculations table provides in meters as a radial measurement, unless otherwise stated, taken from the centre of the trunk region for an individual tree applying the generic matrix within AS4970-2009.

The proposed redevelopment works/construction footprint calculates out as either a major or minor or zero TPZ encroachment for a tree nominated for retention. These results were founded on the broad calculations within the generic matrix within AS4970-2009 based on the distance of disturbance from a tree as opposed to the type of disturbance.

The identified TPZ encroachments principally relates to but not limited to the following proposed construction works:

- demolition;
- construction;
- in-ground services;
- landscape works; and
- tree works.

The SRZ has been calculated applying the matrix within AS4970-2009. This is a formula-based method which uses the diameter of the tree at above the root buttress (effectively at ground level in most trees) multiplied by a non-linear factor.

The SRZ is effectively an 'exclusion zone' for all activities and development, as it defines the area around the tree in which major structural (anchorage) root is likely to occur. Any development occurring within the SRZ must not modify the natural soil in any way, and no encroachment is allowable (without potentially affecting the stability of the tree).

07.4risk mitigation summary and procedures

- The TPZ is marked on the relevant construction drawing(s) along with tree identification numbers.
- With respect to trees #3 to #8 (Leopard tree) exceptional construction tolerances, existing brick fence demolition and proposed localised bulk earth works within a TPZ, the proposed localised earth works is to be no more than 0-200mm cut within a TPZ where applicable.
- The proposed retaining wall is located within the various trees TPZ's (trees #62 to #66) TPZ encroachment. The retaining wall is to be pier and beam design to meet the guidelines within AS4970-2009 and reduce the potential impacts.
- Prior to the commencement of any works, Treescience and relevant representatives are to meet on site to assess and document the status of the trees health and agree on the relevant work method(s) and outline the communication pathway for all works within a TPZ.
- All contractors, site workers, machinery operators are to attend a tree preservation induction and then sign and comply with the requirements of a 'Certificate of Recognition and Acceptance' of the conditional specifications outlined within this report prior to the commencement of works.
- Further detail design drawing/s are to be reviewed by Treescience prior to the commencement of any works within a TPZ.

- If works are within a TPZ, consultation with Treescience is required prior to the commencement of works to discuss the required work method and tree protection measures.

- All proposed excavation works within a TPZ are to be identified through survey pegs and/or marker paint prior to the commencement of works.

- The tree protection fence and/or other protection measures are to be erected prior to the commencement of works and correctly installed for the duration of the project as defined by Treescience.

- Access into a defined TPZ or movement of any TPZ protection barriers will only be permitted in consultation with Treescience.

- No machinery with an upward pointing exhaust is to be operated under a low-lying tree canopy (to avoid heat damage to the tree canopy) where possible for greater than 4hrs.

- All machinery operating within a TPZ requires a spotter and adoption of appropriate steps to mitigate direct impacts with a tree below and above the ground.

- The excavator should be placed as far outside the TPZ area as possible and should reach over into the TPZ toward the trunk region and drag soil back toward the machine to prevent ripping and tearing of tree roots.

- If a Hydro-vacuum machine is required, the machine is to be placed outside of the TPZ where possible, plus have an allocated spotter to ensure the plant does not come into contact with a tree.

- Hydro-vacuum excavation is to occur at low pressure (450PSI) in order to navigate through the root zone without causing damage unless otherwise determined onsite by the Treescience Supervising Project Arborist. The nozzle (or soft tip) is to produce a fine mist and not a cutting nozzle when working within the immediate region of a tree root of critical interest as defined by Treescience. This approach generally reduces the potential of bark being stripped from a root or root severance.

- It is understood that selective tree roots will require removal. The retention and removal of tree roots will occur on a need by basis in direct consultation with Treescience.

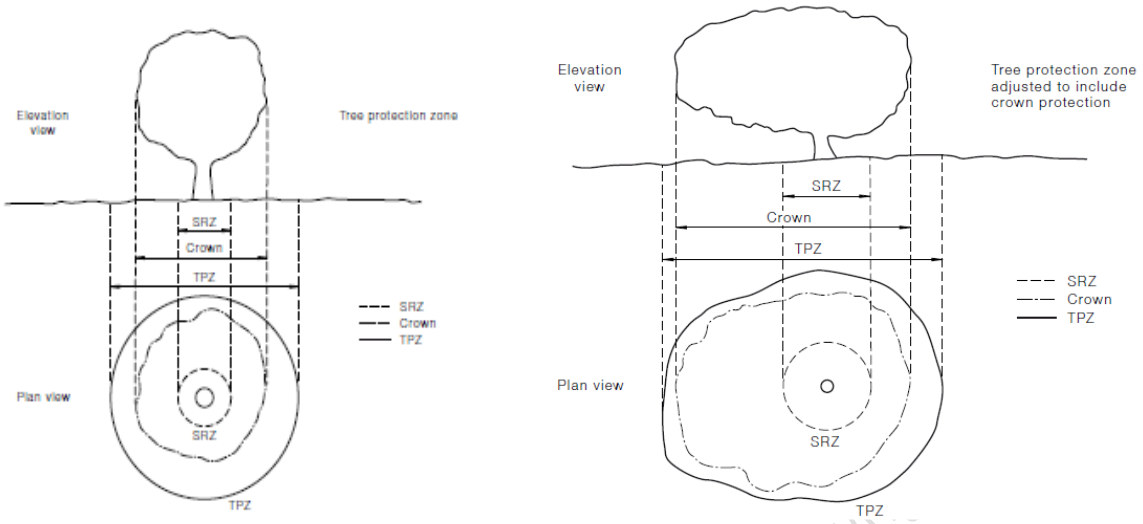
- Backfilling around tree roots, the imported soil is to be comprised of an indigenous topsoil and organic matter with a neutral pH, free from weed growth and harmful materials. The backfilling of soil is to be carefully rammed & watered in and around tree roots to eliminate air pockets.

- No stock piling of bulk or harmful materials is to be placed in a defined TPZ.

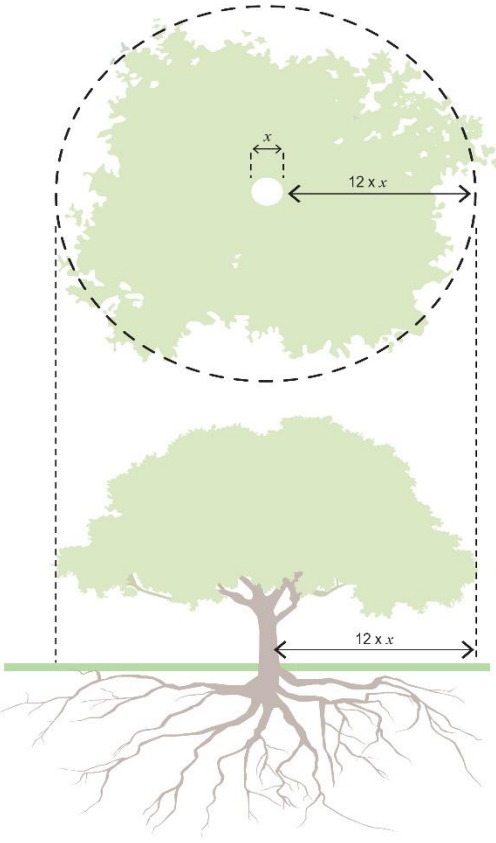
08 UNDERSTANDING THE FUNDAMENTALS OF A TPZ & SRZ

The AS4970-2009 states that the TPZ is "... the principle means of protecting a tree on development sites. The TPZ is a combination of the root area and crown area requiring protection. It is an area isolated from construction disturbances so that the tree remains viable."

The AS4970-2009 states that the Structural Root Zone (SRZ) "... is the area required for tree stability.



Source AS4970-2009 page 14. TPZ and SRZ overview.



An example of how to calculate a TPZ.

The TPZ for individual trees is calculated based on trunk (stem) diameter (DBH), measured at 1.3 metres up from ground level.

The radius of the TPZ is calculated by multiplying the tree's DBH by 12.

For example, a tree with 40cm DBH requires a TPZ of 4.8 metres.

The method provides a TPZ that addresses both tree stability and growth requirements.

TPZ distances are measured as a radius from the centre of the trunk at ground level.

AS4970–2009 recommends an AQF Level 5 Arborist be engaged to determine the impacts on various trees where major TPZ encroachments are identified via non–destructive comprehensive root investigation exploratory measures as outlined within AS4970–2009 07.2 & 07.3*(a)*. The purpose of comprehensive root investigation exploratory measures is to verify the quantity, size, depth, and orientation of the tree roots along the perimeter of the proposed encroachment in order to make an informed judgement in relation to the potential impact on the tree of critical interest.

08.1 AS4970–2009 3.3.2 'minor TPZ encroachment'.

If the proposed encroachment is less than 10% of the area of the TPZ and is outside the SRZ (see Clause 3.3.5), detailed root investigation should not be required. The area lost to this encroachment should be compensated for elsewhere and contiguous within the TPZ.

08.2 AS4970–2009 3.3.3 'major TPZ encroachment'.

If the proposed encroachment is greater than 10% of the TPZ or inside the SRZ (see Clause 3.3.5), the project arborist must demonstrate that the tree(s) would remain viable. The area lost to this encroachment should be compensated for elsewhere and contiguous with the TPZ. This may require root investigation by non–destructive methods and consideration of relevant factors listed in Clause 3.3.4.

08.3 AS4970–2009 3.3.4 'TPZ encroachment considerations'.

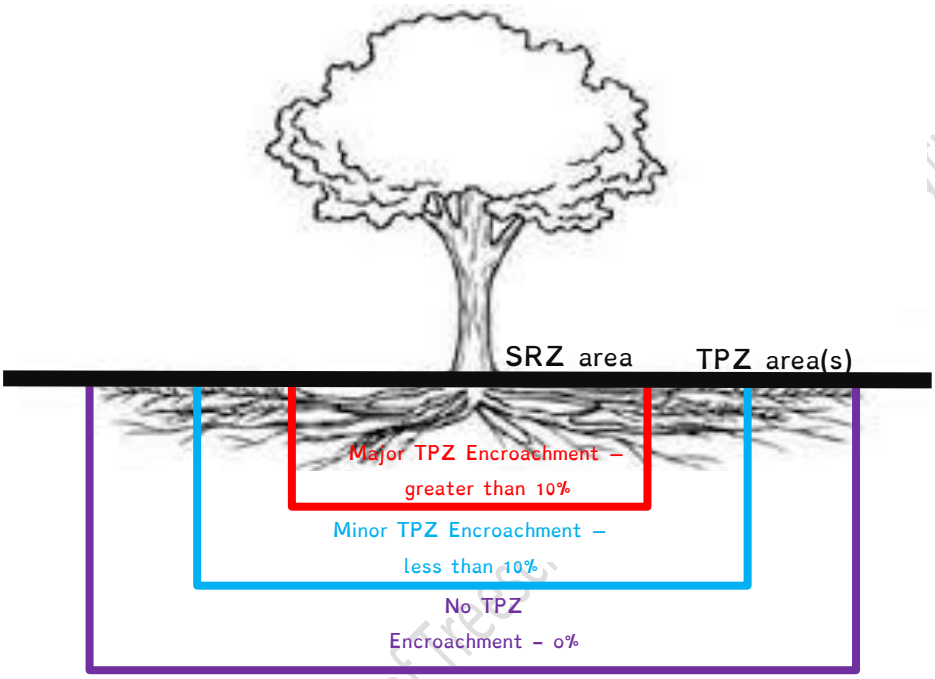
When determining the potential impacts of encroachment into the TPZ, the project arborist should consider the following:

(a) Location and distribution of the roots to be determined through non–destructive investigation methods (pneumatic, hydraulic, hand digging or ground penetrating radar). Photographs should be taken, and a root zone map prepared. NOTE: Regardless of the method, roots must not be cut, bruised, or frayed during the process. It is imperative that exposed roots are kept moist, and the excavation back filled as soon as possible.

08.4 mitigating TPZ encroachment.

Encroachment within a TPZ must be compensated and off–set as contiguous directly adjacent to the TPZ or non–contiguous where possible within the project area.

The mitigation measures must ensure the direct impact(s) to a tree nominated for retention are reduced or restricted. Mitigation measures should be increased relative to the level of encroachment within the TPZ to ensure the tree does not prematurely decline or become structurally compromised and therefore remains viable. With consideration of the guidelines within AS4970-2009, TPZ mitigation measures table (below) generally outlines the mitigation requirements for each category of TPZ encroachment.



The three (3) levels of TPZ encroachment.

08.5 TPZ mitigation measures table.

ENCROACHMENT	OVERVIEW OF MITIGATION MEASURES
No TPZ encroachment (0%)	No mitigation measures are required, and the overall design meets the guidelines within AS4970-2009.
Minor TPZ encroachment (‹10%)	The commissioned report must demonstrate the tree would remain viable and the level of TPZ encroachment has been considered and adequately mitigated. The TPZ area lost within the design must be compensated elsewhere and generally identified as a contiguous off-set. There should be no need for comprehensive root investigation exploratory measures. Arboricultural Work Method(s) are to be developed for the TPZ encroachment area. All works within the TPZ will normally require Project Arborist Supervision (min AQF Level 5 with 5 years post graduate experience). TPZ fence, trunk or branch protection or ground protection must be installed prior to the commencement of works.
Major TPZ encroachment (›10%)	The commissioned report must demonstrate the tree would remain viable with regards to the relevant factors influencing tree health and structure such as but not limited to: ○ Level of disturbance and position from a tree. ○ Tree health and age. ○ A tree's construction tolerance. ○ Root location and distribution. ○ Site constraints. ○ Design factors – overland water flow, reduced growing environment etc. The TPZ area lost within the design must be compensated elsewhere and generally identified as a contiguous or non-contiguous off-set. Comprehensive root investigation exploratory measures are required. Where comprehensive root investigation exploratory measures are a prerequisite, the commissioned report is defined as preliminary and is not to be issued to the respective parties until the recommended comprehensive root investigation exploratory measures are undertaken. The findings from the comprehensive root investigation exploratory measures are to be documented to form compliance with AS4970-2009. Based on the comprehensive root investigation exploratory findings, a Plant Health Care Program may be required before construction works commence. Arboricultural Work Method(s) are to be developed for the TPZ encroachment area. All works within the TPZ will normally require Project Arborist Supervision (min AQF Level 5 with 5 years post graduate experience). TPZ fence, trunk or branch protection or ground protection must be installed prior to the commencement of works.

09 DESIGN REVIEW

The design review carried out by Treescience determined the potential impacts and ascertained how the identified impacts may be mitigated to assist with tree preservation.

The findings of our design review are from an arboricultural perspective. The design review provides the respective parties and consenting authority with information on the measures required to protect a tree which is nominated for retention. Additionally, the design review provides measures to minimise construction impacts when works are within a TPZ and avoid where possible the requirements to remove a tree.

09.1 major TPZ encroachment strategies.

A TPZ encroachment of more than 10% of the area of the recommended TPZ may detrimentally affect the health of a tree by extensively severing or otherwise damaging the root system resulting in pre-mature tree decline and/or compromising a tree's structural integrity.

AS4970-2009, recommends an AQF Level 5 Arborist be engaged to determine the impacts on various trees where major TPZ encroachments are identified. The purpose of the comprehensive root investigation exploratory measures is to verify the quantity, size, depth, and orientation of the tree roots along the perimeter of the proposed encroachment in order to make an informed judgement in relation to the potential impact on the tree of critical interest. With consideration of the proposed work area and foreseen construction implications we believe the requirements for comprehensive root investigation exploratory measures are not mandatory in this instance based on the introduced AWMS's and proposed design modifications.

09.2 minor TPZ encroachment strategies.

The proposed TPZ encroachment meets the broad guidelines within AS4970-2009 being 10% TPZ encroachment or less. Therefore, by modifying the general work practices associated with demolition and/or construction work practices within a TPZ it is our professional opinion that the tree of critical interest which is nominated for retention will not prematurely decline and/or be significantly structurally compromised with regards to the proposed activities within its TPZ.

The existing soil grade associated with a tree nominated for retention TPZ shall not be significantly lowered beyond 150mm without prior design outcomes documented and arboriculturally certified by Treescience.

Additionally, the existing soil grade associated with a tree nominated for retention TPZ shall not be significantly raised beyond 300mm without prior design outcomes documented and arboriculturally certified by Treescience.

09.3 design review and additional tree preservation strategies

The engagement of a Treescience Supervising Project Arborist to perform a 'watching brief' is probably the single most essential component to ensure successful tree preservation, in correlation with the Arboricultural Work Method Statement (AWMS). This will involve regular monitoring and providing of technical tree advice on a need by basis.

The continual monitoring of a tree nominated for retention throughout the construction process by the appointed Treescience Supervising Project Arborist will also aid the minimisation of potential impacts proposed for any works which encroach the TPZ area.

The erection of a substantial temporary TPZ barrier fence is required to protect these sensitive areas and the exact TPZ fencing locations will be confirmed by Treescience prior to the commencement of operational works as outlined within the 'tree constraints management plan'.

09.4 key issues associated with the concept design.

#	CONCEPT DESIGN	TPZ KEY ISSUES & IMPACTS	DESIGN & MITIGATION MEASURES
All trees nominated for retention	Excavation and construction	**Issues:** Damage to root system based on construction requirements **Impacts:** Minor reduction in tree health and possible onset of decay/fungal pathogens to severed tree root/s	Prior to the commencement of any works, the appointed Arborist and relevant representatives are to meet on site to assess and document the status of the tree and define the relevant work methods, outline the communication pathway and the appointed Arborist is to identify the various key areas of interest. Take all necessary steps to conform with AS4970-2009 and this report. Trunk padding and/or TPZ fencing, Arborist Supervision (min AQF level 5), Tree Surgery (pre-emptive root pruning) and Arboricultural Work Method Statement.

#	CONCEPT DESIGN	TPZ KEY ISSUES & IMPACTS	DESIGN & MITIGATION MEASURES
All trees nominated for retention	Machinery movement	**Issues:** Direct contact with trees and cambium damage **Impacts:** Minor reduction in tree health and possible onset of decay/fungal pathogens to from wound sites.	Ensure the machinery is fit for purpose in relation and is not oversized given the confined environment. Machinery spotter is required during works within the TPZ's Trunk padding and/or TPZ fencing, Arborist Supervision (AQF level 5), and Arboricultural Work Method Statements.

10 PROPOSED TREE WORK ACTIVITIES

It should be noted that the proposed tree work activities outlined within this report are of a dynamic nature and of changeable character that underscores the flexibility of this working document and pruning living tree. For all complex tree pruning outcomes it is recommended that Treescience is to oversee such works and provide certification upon completion.

All tree works must form alliance with Australian Standards AS4373-2007: Pruning of Amenity Trees (AS4373-2007) were appropriate. AS4373-2007 states, "the objective of this Standard is to provide arborist, tree workers, government departments, property owners, and contractors with a guide ...". The procedures in this Standard are guided by theories of branch attachment and compartmentalization of decay in trees (CODIT). Therefore, the proposed tree pruning works are to form alliance with AS4373-2007, CODIT theory, Treescience documented tree pruning specifications or that of the asset custodian and any onsite guidance from Treescience.

The proposed tree pruning must be carried out by trained and competent Arborist (minimum AQF Level 3) who has a thorough knowledge of tree physiology and pruning methods in accordance with AS4373-2007.

10.1 tree removal/tree clearing.

The following measures should be employed in addition to general tree protection measures to ensure retained trees are protected during tree removal and site clean-up works:

- Tree removals/clearing works are be carried out in such a way as to prevent damage to above and below-ground parts of any tree nominated for retention.

- If total extraction has the potential to cause direct impact to an adjacent tree nominated for retention and/or vegetation of importance than alternative options with regards to total extraction are to be explored such as poisoning a tree and leaving if standing.

- Stump and root material from a tree nominated for removal that are growing in association with a tree(s) nominated for protection are to be cut to ground level or by other means deemed appropriate by Treescience.; and

- Where possible, mulch from the removed trees should be retained and reused on site.

11 PROPOSED CONSTRUCTION ACTIVITIES

11.1 manual excavation using appropriate machinery within the defined TPZ.
The Treescience Supervising Project Arborist will steer the site works and outline the action mitigation measures as required.

In other defined areas of sensitivity for this project where excavation is required within a defined TPZ, the Treescience Supervising Project Arborist will likely request a combination of a small mud bucket and/or ripper arrangement on an excavator or similar machinery configuration to help conduct comprehensive root investigation measures along the edge closest to the tree of critical interest TPZ to help locate the presence of tree roots in an attempt to prevent unforeseen tree root severance.

Tree roots which are deemed to be removed will be removed by the Treescience Supervising Project Arborist or in combination with the machinery operator on a need by basis. Tree roots which are defined for retention will be clearly marked with marker paint by the Treescience Supervising Project Arborist to help guide/define the machinery operator work practices.

In determining tree root retention, the type of tree, tree canopy formation, tree structure, tree health, soil structure/profile, number of tree roots etc., will be considered on a tree root by tree root process with consideration of the constraints placed on the installation methodology and tree preservation prerequisite.

11.2 shoring box/trench shield.

The proposed trenching has the potential to sever tree roots and as such adversely affects the health and structure of a tree nominated for retention. For this reason, particular care should be taken in routing and methods of installation. Therefore, given the limited construction space, adjacent tree(s) established location, volume of cover and pipe diameter etc., benching and/or battering is not suitable solution with regards to tree preservation.

It should be noted that Treescience is unaware of any Geotechnical Engineering report or soil bore logs which may influence the construction method, planned height of the excavated face and any surcharge loads acting on the excavated face.

Therefore, a shoring method should be applied using an appropriate system such as shields and/or box which is to be approved by the relevant professional. Shoring is a positive ground support system that is commonly used when the location or depth of an excavation makes battering and/or benching impracticable.

A shield is a structure, usually manufactured from steel, which is able to withstand the forces imposed by a ground collapse and protect workers within it. Shields can be permanently installed or portable and designed to move along as work progresses. Figure 1.0 shows a typical trench shield.

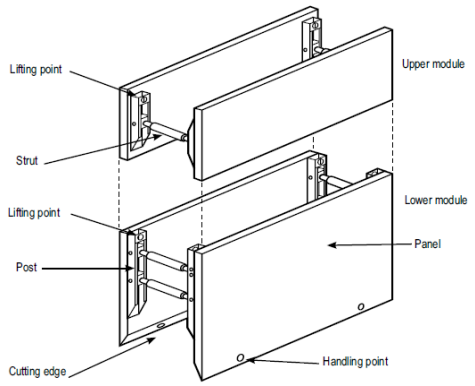


Figure 1.0.

The proposed shields and/or box are to incorporate specific lifting points for installation and removal to reduce the need for further excavation.

11.3 access and stockpiling.

Indicative locations of machinery/vehicular access and site stockpile locations will be determined at the Operational Works Approval pre-start meeting. Confirming most suitable locations on site will need to comply with this report in relation to the TPZ's and potential soil compaction, ensuring retained trees are protected at all times.

If the TPZ is breached a level of investigation measures are implemented prior to verify the present level of soil compaction, determine the requirements for a Plant Heath Care Program and/or other TPZ mitigation measures.

There is to be no stockpiling of machinery, topsoil, fill, construction materials or site rubbish within retained vegetation or the limits of the exclusion fencing.

11.4 boundary fence design.

The boundary fence where within the TPZ of a tree of critical interest are to be constructed on tree sensitive footings, such as post footings or screw piles where possible. The postholes are to be hand dug and no roots greater than 75 millimetres in diameter are to be cut or damaged. If any roots greater than 75 millimetres in diameter are located within a posthole, the hole is to be filled in and re-located to so that the root(s) is not affected.

11.5 landscaping design.

All excavation with the TPZ for landscaping purposes i.e., planting shall be undertaken by hand. Any tree roots discovered (25mm›) are to be left and shall not be cut or otherwise damaged. Where possible, the soil structure within the TPZ shall be preserved.
No large trees are to be planted within the TPZ.

11.6 design summary.

The most significant impacts on a tree of critical interest based on the review carried out by Treescience will be from:

- Excavation and soil grade changes

Perceived minor impacts are:

- Tree removal works.
- Landscape works; and
- General construction activities adjacent to the TPZ.

However general construction works, site storage and access issues also have the potential to impact the trees on the site. Therefore, the intricacies associated with construction works should be addressed at Operation Works by the associated representatives and Treescience to ensure suitable tree preservation measures are adopted with consideration of the design outcomes, site constraints and tree preservation requirements within the project area.

12 ARBORICULTURAL WORK METHOD STATEMENT

The following Arboricultural Work Method Statement (AWMS) outlines the tree protection measures for the general excavation construction works within defined TPZ's. This AIA and AWMS pro-actively identify any impacts from the proposed construction works that could potentially harm a tree nominated for retention.

This working document also informs the appropriate people undertaking the related work tasks of their responsibilities as outlined in the following AWMS for works within a defined TPZ:

- Arboricultural Work Method Statement – Activity: general excavation with a TPZ.
- Arboricultural Work Method Statement – Activity: hydro vacuum excavation within a TPZ.

The following Arboricultural Work Method Statements provides general guidance on the physical protection and appropriate precautionary measures required in order to reduce any detrimental impacts on tree health or compromise the structural integrity of trees which is provided for your consideration. However, it is imperative that construction activities should not transpire until the relevant requirements of this report have been implemented.

These guidelines are by no means fixed as trees are dynamic in nature and each site has different considerations and variations that may alter or eradicate the need for certain steps. Continued consultation with the Supervising Project Arborist throughout works is necessary to ensure compliance and avoid unnecessary costs that may be incurred by attempting to interpret these guidelines without the aid of an arboricultural specialist assigned to the project.

12.1 Arboriculture Work Method Statement – activity: general excavation.

Tree roots which are deemed to be removed will be removed by the Supervising Project Arborist or in combination with the machinery operator. Tree roots which are defined for retention will be clearly marked with marker paint by the Supervising Project Arborist to help guide and define the machinery operator work practices. In determining tree root retention, the type of tree, tree canopy formation, tree structure, tree health, soil structure/profile, number of tree roots etc., will be considered on a tree root by tree root process with consideration of the constraints placed on the design requirements and tree preservation prerequisite.

Arboricultural Work Method Statement (AWMS)

Activity: General Excavation

Description of Works

Excavation with the use of a mechanical device within the Tree Protection Zone (TPZ) of tree(s) nominated for retention.

The methodologies within this AWMS follow a logical sequence of events. Variation to the sequence could significantly reduce the efficiency of the tree protection measures. This method statement should be read in conjunction with the relevant design drawing(s) and supporting technical reports.

Work Method

1. All site works/plant operators are to receive tree protection site induction by the Site Manager and/or Treescience Supervising Project Arborist if deemed necessary.
2. No vehicle or plant with upward pointing exhausts are to be operated under the subject tree canopy (to avoid heat damage to the tree canopy) where possible.
3. No vehicle or plant is to be operated within the designated Tree Protection Zone (TPZ) unless authorisation has been obtained by the Treescience Supervising Project Arborist.
4. No bulk or harmful materials such as concrete wash is to be placed in a defined TPZ.
5. Access into a defined TPZ or movement of the protection barriers/fencing will only be permitted in consultation with the Treescience Supervising Project Arborist.
6. The excavator bucket is to be inverted so that it presses down into the soil, severing any roots that may have been missed rather than lifting and tearing roots toward the lower trunk region when working near trees.
7. Ensure a spotter is available to confirm that any vehicles and machinery do not come into contact with any tree nominated for preservation.
8. All tree roots that are uncovered when excavating which are less than 50mm in diameter are to be cut cleanly and straight by the Treescience Supervising Project Arborist and all root pruning must be documented.
9. Hand digging must occur if machinery is not capable of work in and around tree roots deemed worthy of retention without causing damage as determined by the Treescience Supervising Project Arborist on a case-by-case basis.
10. Where air spades/water knife are to be used to aid identification of tree roots, the pressure must be reduced to mitigate the potential of bark being stripped from the roots or the occurrence of root severance.
11. Water is not to be used for cutting purposes unless instructed by the Treescience Supervising Project Arborist and in consultation with the relevant representatives.
12. If the area of excavation has an extensive network of tree roots or a tree root with a 50mm diameter or greater, the area of excavation is to be backfilled within 12hrs of opening without causing damage to tree roots or covered using wet hessian, to ensure the tree roots retain moisture and do not dry out. The hessian is to be comprised from 100% Jute which is a natural fibre & will rot down over time.
13. When backfilling around tree roots, the subject soil is to be comprised of an indigenous topsoil and organic matter with a neutral pH, free from weed growth and harmful materials. The backfilling of soil is to be carefully rammed & watered in and around tree roots to eliminate air pockets.
14. All works within the defined exclusion zone as outlined within this report requires authorisation by the Treescience Supervising Project Arborist.

Reporting of Incidents

All damage to protective barriers or accidental damage to trees (above or below ground) no matter how insignificant it may seem, must be reported to the relevant representative and the Treescience Supervising Project Arborist immediately. A record of the damage is to be made by the Site Manager and reported to the relevant representatives and the Treescience Supervising Project Arborist.

Name:	Date:	Signature:	Name:	Date:	Signature:

12.2 Arboriculture Work Method Statement – activity: hydro vacuum excavation.

Wet Vacuum Excavation makes use of a high-pressure washer to break apart soil. If wet vacuum excavation technique is employed, the volume (PSI) of water is to be reduced so that it reduces the potential of damage to tree roots. When using water for high pressure excavation, the nozzle (or soft tip) is to produce a fine mist and not a cutting nozzle. This reduces the potential of bark being stripped from the roots or root severance.

Dry Vacuum Excavation makes use of high-pressure air and is to be used in conjunction with an air spade as required. It should be noted that access to water for misting purposes maybe required. The methodologies within this method statement follow a logical sequence of events. Variation to the sequence could significantly reduce the efficiency of the tree protection measures. This method statement should be read in conjunction with the relevant design drawing(s) and supporting technical reports.

Arboricultural Work Method Statement (AWMS)

Activity: Hydro Vacuum Excavation

Description of Works

Hydro Vacuum Excavation within the Tree Protection Zone (TPZ) of tree/s nominated for retention.

The methodologies within this method statement follow a logical sequence of events. Variation to the sequence could significantly reduce the efficiency of the tree protection measures. This method statement should be read in conjunction with the relevant design drawing(s) and supporting technical reports.

Work Method

1. All site works/plant operators are to receive tree protection site induction by the Site Manager and/or the Treescience Supervising Project Arborist if deemed necessary.
2. No vehicle or plant with upward pointing exhaust is to be operated under the subject tree canopy (to avoid heat damage to the tree canopy) where possible.
3. No vehicle or plant is to be operated within the designated Tree Protection Zone (TPZ) unless authorisation has been obtained by the Treescience Supervising Project Arborist.
4. No bulk or harmful materials such as concrete wash is to be placed in a defined TPZ.
5. Access into the TPZ or movement of the protection barriers will only be permitted in consultation with the Treescience Supervising Project Arborist.
6. All works within the TPZ are to occur in the presence of the Treescience Supervising Project Arborist.
7. The underground infrastructure alignment within the TPZ or SRZ is to be marked out by marker paint or survey pegs prior to installation of underground infrastructure and reviewed on-site in consultation with the relevant representatives and the Treescience Supervising Project Arborist.
8. Vacuum Excavation is to occur at low pressure (@450PSI) for a depth of 0-1000mm in order to navigate through the root zone without causing damage unless otherwise determined onsite by the Supervising Project Arborist.
9. All roots encountered are to be left undamaged and in situ across the trench created.
10. Any tree roots that may require severance which are less than 50mm in diameter are to be assessed before they are cut cleanly and straight by Treescience Supervising Project Arborist.
11. If the area of excavation has an extensive network of tree roots or a tree root with a 50mm diameter or greater, the area of excavation is to be backfilled within 12hrs of opening without causing damage to tree roots or covered using wet hessian, to ensure the tree roots retain moisture and do not dry out. The hessian is to be comprised from 100% Jute which is a natural fibre and will rot down over time. The hessian is to be watered down every hour at the discretion of the Treescience Supervising Project Arborist, weather, and temperature dependant.
12. When backfilling around tree roots, the subject soil is to be comprised of an indigenous topsoil and organic matter with a neutral pH value, free from weed growth and harmful materials. The backfilling of soil is to be carefully rammed and watered in around tree roots to eliminate air pockets.
13. If concrete or similar materials are being used within the excavated area and the excavated area has an extensive network of tree roots or a tree root with a 50mm diameter or greater, it is to be lined with a solid plastic material to a minimum depth of 1000mm to prevent chemicals and lime in the concrete from contaminating/burning the subject tree roots.
14. All works within the defined exclusion zone as outlined within this report requires authorisation by the Treescience Supervising Project Arborist.

Reporting of Incidents

All damage to protective barriers or accidental damage to trees (above or below ground) no matter how insignificant it may seem, must be reported to the relevant representative and the Treescience Supervising Project Arborist immediately. A record of the damage is to be made by the Site Manager and reported to the relevant representatives and the Treescience Supervising Project Arborist.

Name:	Date:	Signature:	Name:	Date:	Signature:

If difficulties are identified within the proposed AWMS a meeting is to be held immediately with the project manager and the Supervising Project Arborist to discuss alternatives with consideration of the tree preservation requirements in accordance with Australian Standards AS4970-2009: Protection of Trees on Development Sites.

13 TREE-SPECIFIC MITIGATION MEASURES FOR PRE-START CERTIFICATION

This section outlines the identified steps for tree-specific mitigation measures from the impact assessment of the proposed operational works adjacent to a tree, within and/or adjacent to the project area in accordance with AS4970-2009.

AS4970-2009 highlights the requirements for tree protection where construction works will transpire and is considered general information only. The exact tree specific mitigation measures required for this project will be addressed at Operational Works by Treescience and the relevant representatives and must be certificated prior to the commencement of any proposed works.

13.1 establishing the TPZ.

The TPZ helps protect tree roots from preventable incidents such as but not limited to soil compaction damage, mechanical damage and chemical spills and are critical to ensure the viability of a tree of critical interest. Tree protection materials such as barriers and/or ground protection are to be installed prior to the commencement of any construction activity being undertaken on site including but not limited to:

- Any materials or machinery brought onto site; and
- Development or stripping of soil.

Furthermore, no construction activities should take place until the relevant requirements of this report have been implemented. The exact extent/design of the tree protection fencing will be nominated by the Treescience Supervising Project Arborist and relevant representatives in accordance with the development approval, site constraints and tree protection requirements following the industry guidelines set out within AS4970-2009 and approved reports/drawings.

Any proposed activities within a defined TPZ as outlined within this report requires approval by the Treescience Supervising Project Arborist prior to any works commencing in this region. The contractor will be required to identify all activities and control measures to ensure a tree of critical interest is adequately protected and considered above and below the ground, with tree protection to form a part of the everyday site induction manual. All inductees must be made aware of a tree of critical interest that is to be retained and the prohibited activities. Entry into the fenced TPZ areas by persons, vehicles or machinery is not permitted without consent from the Treescience Supervising Project Arborist and in consultation with the relevant representatives.

13.2 prohibited activities within a defined TPZ.

For the protection of tree(s), roots, and natural soil condition from preventable incidents such as but not limited to soil compaction, mechanical damage and chemical spills, no construction activities are to be undertaken within the fenced TPZ which may have any harmful effect on the protected tree(s). Machinery and other equipment must be kept away from the tree(s), branches, trunks, and roots, as well as any potentially harmful activities outside of the TPZ that may impact the protected tree(s) such as but not limited to soil erosion, radiant heat from machinery exhausts and polluting agents draining into the protected area.

Activities generally excluded from the defined TPZ include the following but not limited to:

a) Re-positioning or removal of the tree protection materials at any time during the construction work unless approval has been obtained by the Supervising Arborist. The tree protection materials will only be removed once these works have been fully completed.

b) Any construction activities within the fenced TPZ which may have any harmful effect on the protected tree.

c) Compaction occurring within the TPZ.

d) Harmful activities outside of the TPZ's e.g., soil erosion, radiant heat from machinery exhausts and polluting agents draining into the protected area.

e) Machine excavation including trenching.

f) Excavation for silt fencing.

g) Cultivation.

h) Storage.

i) Preparation of chemicals, including preparation of cement products, including outside of the TPZ where polluting agents may drain into the protected area.

j) Parking of vehicles and plant.

k) Refuelling.

l) Dumping of waste, including outside of the TPZ where polluting agents may drain into the protected area.

m) Wash down and cleaning of equipment, including outside of the TPZ where polluting agents may drain into the protected area.

n) Placement of fill.

o) Lighting of fires.

p) Soil level changes.

q) Soil compaction activities.

r) Temporary or permanent installation of utilities and signs; and/or

s) Physical damage to a tree.

Note: The tree protection materials will not be re-positioned at any time during the construction work unless approval has been obtained by the Treescience Supervising Project Arborist. Furthermore, the tree protection materials will only be removed once these works have been fully completed. Entry into the fenced TPZ areas by persons, vehicles or machinery is not permitted without consent from Treescience and in consultation with the relevant representatives.

13.3 tree protection fencing design.

The tree protection fence should be erected prior to the commencement of works and correct installation confirmed by the Supervising Project Arborist. The tree protection fencing should be installed at the edge of the defined TPZ and/or near the interface of the earth works and/or in consultation with relevant representatives and Treescience.

The tree protection fencing shall be suitably robust and securely braced to provide sufficient protection for the tree(s) nominated for retention and shall be maintained in good order for the duration of the development/construction period. Inspection of the tree protection fencing should be undertaken frequently by the Project Manager and/or Treescience.

The performance requirements for the tree protection fencing will be determined by the type of activity that will take place within the TPZ, topography, and length of the construction period in consultation with the relevant representatives and Treescience.

Typically, the performance requirement for the tree protection fencing will be:

- Tree protection fencing shall only be removed, altered, or relocated with the authorisation from Treescience.
- Installation, removal and, where required, replacement of tree protection fencing will be supervised and signed off by the relevant representative and Treescience.
- The area between the tree protection fencing and the tree of critical interest is deemed the defined TPZ or exclusion zone unless otherwise advised by Treescience; and
- The defined TPZ should be secured to restrict access in and around the tree nominated for retention.

The tree protection fencing is to be of an agreed design/construction style in consultation with the consenting authority, relevant representatives and Treescience with consideration of the overall TPZ area, defined TPZ, topography, and length of the development/construction period. It should be noted that existing perimeter fencing, and other structures may be suitable as part of the overall protective fencing design.

Ideally, tree protection fencing shall consist of 1.8-metre-high temporary/relocatable galvanised steel mesh panels in accordance with Australian Standards AS4687-2007: Temporary fencing and hoardings.

The tree protection fence is to be supported by steel poles, concrete anchor blocks and clamped at the top of each pair of panels. The tree protection fence must have a lockable opening for access. A tree of critical interest woody roots shall not be damaged during the installation, modifying, and dismantling of the tree protection fence.

Shade cloth material shall be attached to the outer surface of the tree protection fence were deemed necessary in consultation with the relevant representatives and Treescience. The purpose of the shade cloth is to reduce the transport of dust, other matter, and liquids into the protected area. The shade cloth material shall be transparent to provide visibility into the defined TPZ where possible.

NOTE: pre-start TPZ Fencing Certification will be issued prior to the commencement of any proposed works.

13.4 TPZ signage.

Tree protection signage should be attached to the tree protection fencing and be displayed in prominent positions.

The TPZ sign shall be repeated at fifteen (15) metre intervals or closer where the TPZ fence changes direction. The signage shall be installed prior to the commencement of works on-site and shall be maintained in good condition for the duration of the development period.

Below is an example of a tree protection fence sign design.

NOTE: pre-start TPZ Signage Certification will be issued prior to the commencement of any proposed works.

13.5 site inductions and awareness briefings.

Site inductions and awareness of staff is proposed in accordance with the general provisions of the report and will convey the importance of avoiding damage to any retained vegetation.

The following documentation will be incorporated as part of site inductions and awareness training:

- Tree Protection Fence Signage, refer to Appendix ONE.
- Tree Protection Poster, refer to Appendix TWO.
- Tree Protection Handouts, refer to Appendix THREE.
- Types and Effects of Tree Damage Appendix FOUR.

Toolbox talks are proposed for specific tree protection training for construction personnel involved in tree impact works to convey the importance of the project's requirements not to damage any trees that have been identified for retention and define the tree preservation strategies.

Where, due to unavoidable site constraints, pedestrian traffic or plant and vehicular routes are required through TPZ's, protection of soil and roots should be addressed through a combination of fencing, mulching, and buffering material layer over the ground.

The TPZ area of interest should be mulched with good quality composted wood chip/leaf matter that generally complies with Australian Standards AS4454-2012: Composts, Soil Conditioners and Mulches (AS4454-2012).

14 WHEN TO CONSULT WITH THE SUPERVISING PROJECT ARBORIST

The Project Manager is to consult with the appointed Treescience Supervising Project Arborist when any of the following occurs:

- If there needs to be any deviation from the approved final plans regarding any of the construction activities within defined TPZ's.
- If access is required within the defined TPZ/fenced TPZ.
- If the nominated tree for protection foliage starts to wilt or changes colour.
- If any cracks or splits appear in the branches or trunks (especially if this accompanied by the exudation of sap, liquids, or discolouration of the bark) of the tree nominated for protection.
- If any damage occurs to any part of the tree nominated for protection.
- The appearance of any infestation by insects, fungi or any other unusual displays within/upon the tree nominated for protection; and/or
- There is a need to move or dismantle the trunk padding, tree protection fencing, ground protection materials and any other associated materials that negates the pre-start certification.

Note: A guide to understanding some commonly encountered tree impacts and their potential effects is provided in the report's Appendices and should form part of your site induction material.

15 DESIGN CONSIDERATIONS

Treescience reviewed the proposed redevelopment and various tree(s) of critical interest while considering the elements associated with urban landscape amenity as listed below:

- the preservation of local amenity.
- screening of views to and from the site.
- a balance to the scale and bulk of structures.

Furthermore, the various tree(s) of critical interest were assessed against the transition of the use of the land to ensure appropriateness and suitability within the urban environment.

16 SYNPOSIS & CONCLUSIONS

Given the importance of protecting a tree of critical interest which is nominated for retention during the course of construction works, this report insists on suitable arrangements being made and kept in place. However, there needs to be an element of realism in such situations and therefore Treescience underscores the flexibility when working with trees.

Treescience concluding remarks are based on our detail tree assessment, contemporary arboricultural research, the guidelines within AS4970-2009 and industry experience.

Successfully retaining a tree on any redevelopment site depends on several controls being in place and determination and willingness by all parties is required. Primarily, the Site/Project Manager will have overall responsibility to ensure all control measures are observed and correctly implemented. Therefore, the engagement of a Treescience to perform a 'watching brief' is the single most essential component to help ensure successful tree preservation is up-held on a need-by-need basis. This will involve regular monitoring with the provision of technical tree advice and/or supervision where works are within a defined TPZ, along with monitoring and certifications for the various stages as a minimum.

The identified construction impacts within and/or adjacent to a tree of critical interest which has been nominated for retention are considered manageable but dependent upon:

- Employment of careful documented arboricultural supervision and diligent management during the construction process.
- Ensuring design specifications and construction methodologies consider the tree nominated for protection above and below the ground as outlined within this report; and
- Ensure that any tender documents for the project reflect the requirements for tree preservation, including TPZ fencing, trunk/branch protection, ground protection, appropriate AWMS's, arboricultural supervision, monthly monitoring, and relevant certifications.

It must be noted that AS4970-2009 guidelines are largely founded on the distance of disturbance from a tree. It should be noted that it is extremely difficult to speculate the volume and/or directional growth of a tree's entire woody root system. Therefore, the expert view provided by Treescience is that the type and volume of disturbance is more important than the distance from a tree.

The recommended minimum TPZ is marked as a clearly defined thatched line on all construction certificate drawings. The thatched line is keyed 'Tree Protection Zone'.

It is recommended that all trees identified for retention within reason are photographed prior to the commencement of development works as evidence that the tree(s) being retained displayed equal or greater health than before the development commenced.

A total of fifty-six (56) trees were assessed with respect to the proposed sub-division design.

The project area had no direct theme or tree species of botanical significance. Additionally, no tree was classified as a Significant Landscape Tree (SLT).

The Leopard trees along Priestdale Rd are classified as Council controlled trees and therefore protected under Council's Natural Asset Local Law (2003). A permit and approval will be required to interfere with the subject trees.

A total of thirty-seven (37) trees are identified for retention.

A total of nineteen (19) trees were identified for removal.

Trees #3, #4, #6, #7, #8, #64, #65, #67, #68, #78 and #89 were identified as having 'major' manageable TPZ encroachments. The earth works cut is to be modified to no more than 0-200mm cut within a TPZ where applicable. The retaining wall is to be a positioned outside of the trees SRZ and constructed on a pier and beam design.

The palm trees within the neighbouring property #69 to #77 and #79 to #84 have TPZ encroachment which are defined by Treescience and within AS4970-2009 as less concerning based on species and distance to works.

Trees #5, #62, #63, #66, #87, #91 and #92 were identified as having 'minor' manageable TPZ encroachments which are compliant with AS4970-2009 however the retaining wall within the TPZ's is to on a pier and beam design.

Trees #1, #2, #61 & #88 have no works within their respective TPZ's and therefore meet the general guidelines within AS4970-2009.

We are of the professional opinion that the identified Arboricultural Work Method Statements (AWMS's) adequately considers a tree of critical interest, and such works pertaining to the proposed construction outcomes will not result in premature tree decline or destabilise a tree of critical interest.

We are of the professional opinion that the proposed design satisfactorily accounts for a tree of critical interest above and below as outlined within the tree constraints management plan.

The final TPZ fence locations will be determined at the pre-start in consultation with the relevant representatives and Treescience.

It is imperative that all works within the defined TPZ are to be carried out under the direct guidance of a Treescience Supervising Project Arborist.

The findings and any associated recommendations detailed within the report are of a professional opinion of an experienced Arboriculturist and are the view of Treescience. This is based on the review of the information provided by The Client, and the provided brief.

It is assumed by Treescience that the reviewed and issued design drawings are final, which the recommendations within this report are founded.

The recommendations made within this report are subject to approval by the consenting authority.

The constituted views within this report were formed by a suitably qualified Arborist (AQF Level 9).

There are no questions falling outside my expertise, and the report is not incomplete or inaccurate in any respect.

I have made all the inquiries that I believe are desirable and appropriate and no matters of significance which I regard as relevant have to my knowledge been withheld.

16.1 response to RFI

Vegetation
3) An Arboricultural Impact Assessment has been reviewed and it has been identified that the proposal will impact the significant root zones (SRZ) of the street trees due to the proposed cut and location of the retaining wall on the northern boundary.

a) Provide amended plans reducing the amount of works intruding into the SRZ and tree protection zones (TPZ) of the street trees by relocating the retaining walls within proposed lots 1 – 3.

b) Provide an amended Arboricultural Impact Assessment to demonstrate the proposed works and areas of cut within the TPZ has no negative impacts on the long-term health of the street trees.

The redesign of the 1.5m earthworks set back from the boundary in addition to the removal of the proposed retaining wall adjacent to the eight (8) Council-controlled street trees, has mitigated the previous SRZ encroachments.

Therefore, trees #1 and #2 have no works within the TPZ, tree #5 has a minor TPZ encroachment and trees #3, #4, #6 #7 and #8 have major TPZ encroachments that relate to the adjacent localised earthworks.

From an Arboricultural perspective and with respect to the guidelines within AS4970-2009, it is our professional opinion that the TPZ encroachments from the localised earthworks adjacent to the subject trees is manageable and will not have a negative impact on the long-term health of the subject trees.

Furthermore, the species (*Libidibia ferrea*- Leopard tree) have exceptional construction tolerance and, therefore, the recommendations, TPZ protection measures and the identified AWMS outlined within this adequately considers the trees of critical interest, and such works pertaining to the proposed construction outcomes will not result in premature tree decline or destabilise the trees of critical interest.

We are of the professional opinion that the proposed design satisfactorily accounts for the trees of critical interest above and below as outlined within the tree constraints management plan.

17 IMPLEMENTATIONS OF THE AIA & TCMP

Consideration has been given to the proposed layout, the condition of a tree of critical interest and the final use of the site with a focus on providing a desirable, balanced environment.

The findings and any associated recommendation detailed within the report are considered to be reasonable, practicable and in the interests of promoting sensible arboricultural management.

The recommendations are of a professional opinion of an experienced Arboriculturist (AQF Level 9) and are the view of Treescience. This is based on a review of the information provided by The Client, the brief, and a survey of the site/tree.

It is therefore recommended:

- That this report is reviewed according to the final development approval and immediately prior to operational works approval.
- Appoint Treescience as the Supervising Project Arborist to perform the 'watching brief.
- Establish a line of communication between the consenting authority, site Manager, relevant representatives and Treescience, prior to any works commencing; and
- All contractors to attend a tree preservation induction and then sign and comply with the requirements of a 'Certificate of Recognition and Acceptance' of the conditional specifications outlined within this report.

17.1 pre-start/site specific induction of the arboricultural requirements.

- Check that all documentation is in place recognising the tree(s) nominated for retention and the defined TPZ's.
- Prior to demolition and/or site establishment, indicate clearly using flagging tape or spray paint on the tree trunks mark the tree(s) for removal.
- Ensure the AIA & TCMP is a controlled document.
- Installation of the tree & root protection steps in accordance with this report.
- Certification of tree & root protection installation; and
- Undertake a tree preservation site induction.

17.2 during construction.

- Treescience in consultation with Project Manager, Site Engineer or relevant representative will initiate and manage any remedial work or actions as required during.
- An auditable system of arboricultural site monitoring will be implemented for trees nominated for protection on or adjacent to the construction site that have been identified within this report; and
- Monthly audits of all construction work relating to a tree nominated for retention with established TPZ.

17.3 post construction stage.

- Treescience in consultation with Project Manager, Site Engineer or relevant representative will initiate and manage any remedial work or actions as required at the end of the construction stage; and
- Upon completion of all construction activities, Treescience will produce a final certification report indicating that all of the provisions within this report have been compliant, and works have been performed in accordance with State and Local Government requirements and AS4970-2009.

The findings and recommendation contained within this report are valid for a period of twelve months given trees are living organisms and their condition can change significantly over a relatively short period of time.

Additional information

This report describes the role of the Treescience in the protection of a tree nominated for retention within and/or directly adjacent to the project area which has been documented within this report, as well as methods and materials required as a minimum for the duration of the project.

Moreover, this report has clearly defined and quantifies the level of professional advice and tree protection methods that will be required.

The purpose of this report is to provide consistent and uniform standards and minimum guidelines for retention and protection of a tree nominated for retention with regards to construction works within or directly adjacent to a TPZ.

Please read carefully and follow the guidelines as well-meaning individuals usually cause serious damage to trees during construction. This can sometimes result in death, severe short and long-term decline, or physical failure of the tree.

Thank you for the opportunity to provide advice on this matter and if you have any questions about this report, please contact Treescience on 1300 731 859.

Yours Faithfully

Treescience Pty Ltd

Jason-jay Naylor (Director/Principal Arboricultural Scientist) for Treescience Pty Ltd atf The Treescience Trust

Caveat

Unless states otherwise:

This report cannot be used within a court of law or any legal situation without the prior consent of Treescience Pty Ltd atf The Treescience Trust which will not be unreasonably withheld.

CERTIFICATION of PERFORMANCE

I am university educated and certify I have formal qualifications that meet and exceed AQF level 9 in Arboriculture. I have a master's degree with credentials and experience in all areas pertaining to urban forestry and detailed legal matters.

I have inspected the tree(s) and/or the property referred to in this report and have stated my findings accurately to the best of my ability. The extent of the evaluation and appraisal is stated in the report.

That I have no current or prospective interest in the vegetation or the property that is the subject of this report, and I have no personal interest or bias with respect to the parties involved.

That the analysis, opinions, and conclusions stated herein are my own, and are based on current scientific procedures and facts.

That my compensation is not contingent upon the reporting of a predetermined conclusion that favours the cause of the client or any other party, nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events.

That my analysis, opinions, and conclusions were developed, and the report has been prepared according to commonly accepted arboricultural practices.

I further certify that I am a registered approved tree consultant for the 'Queensland Arboricultural Association' (#1481), an active financial member of the world governing body 'International Society of Arboriculture' where I have been a practicing certified international Arborist since 2006 and therefore meet the minimum qualification for writing arboricultural reports under the AQF (Australian Qualification Framework – Level 5).

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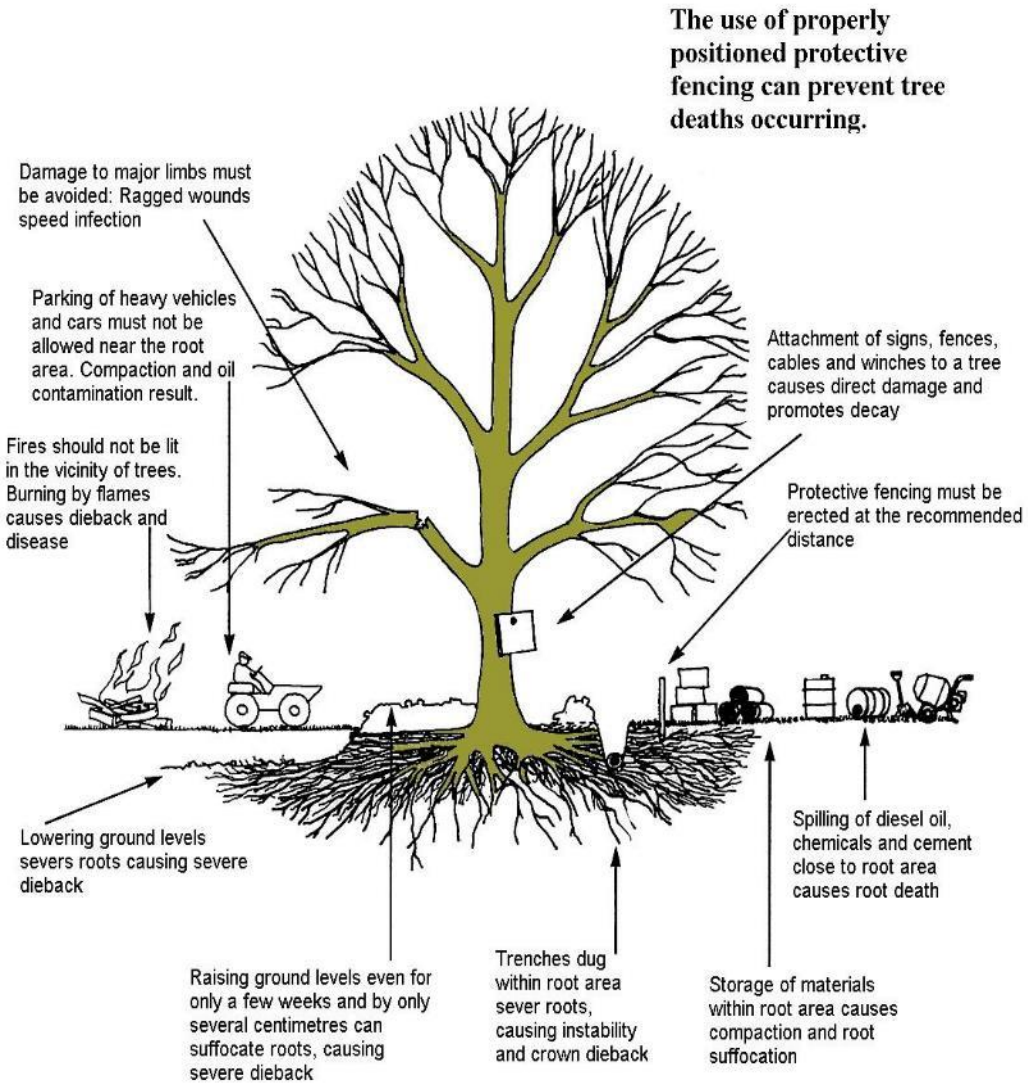
APPENDIX ONE: tree protection signage

APPENDIX TWO: tree protection poster

Common causes of Tree Death



Project Arborist/team – Treescience 1300 731 859

APPENDIX THREE: tree protection handout

The Tree Protection Information Handout will be available at formal site inductions.

Construction and Trees

Why do we need to erect fencing around trees?

The fencing is designed to protect the tree/s and their roots from the harmful effects commonly associated with construction work, for example, any direct and indirect damage to the tree and its roots from, soil compaction, storage of materials, radiant heat (e.g., from machinery exhausts) chemicals and any other polluting agents draining into the protected area e.g., contaminated water from cleaning.

The major cause of damage to trees on construction sites is due to **compaction of the soil around their roots.**

- Roots use the spaces between soil particles to obtain oxygen, water, and nutrients.
- Heavy plant and machinery compresses (compacts) the soil, squashing out the air spaces, effectively suffocating the roots.
- Compacted soil stays compacted i.e., it does not recover on its own.
- The main symptom of the loss or damage of roots is often seen as die-back of the ends of the branches.
- Symptoms such as die-back may take several years to appear.
- The fencing type and distances are specified by an Arborist by referring to the appropriate Australian standards.

The installation and maintenance of protective fencing is a condition of the permit approvals and substantial fines apply for the unauthorised interference of any tree protective fencing and materials.

APPENDIX FOUR: type and effects of tree damage

The table below has been provided in order to convey some of the most common causes of development related damage to trees and their various parts.

Examples of damage relating to construction work	Crown Die Back	Root Death	Tree Instability	Loss of Vigor	Susceptibility to pest and diseases	Reduction in the availability of water and nutrients
Root damage / loss	Yes	Yes	Yes	Yes	Yes	/
Soil Compaction	Yes	Yes	/	Yes	Yes	Yes
Excavation within root zone	Yes	Yes	Yes	Yes	Yes	Yes
Physical damage to trunk or branches	/	/	/	/	Yes	/
Changes to ground levels (filling or grading)	Yes	Yes	Yes	Yes	Yes	Yes
Contamination of the ground with toxic materials	Yes	Yes	/	Yes	Yes	/
Installation of impermeable surfaces	Yes	Yes	/	Yes	Yes	/
Fluctuations or permanent changes to the water table	Yes	Yes	Yes	Yes	Yes	Yes
Fires and Heat	Yes	Yes	/	Yes	Yes	/

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APPENDIX FIVE: Sept 2024 tree inventory and site plan.

Date	Tree number	Botanical Name	Common Name	Tree age	DBH (mm)	TPZ radius (m)	Tree height (m)	Average canopy width (m)	Health	Tree structure	Arboricultural values	Construction tolerance	Ecological values	Comments
Sept _2024	1	Libidibia ferrea	Leopard Tree	Mature	450	5.4	10	10	Fair	Fair	Moderate	Fair	Nothing observed	Council tree
Sept _2024	2	Libidibia ferrea	Leopard Tree	Early mature	250	3	6	4	Fair	Fair	Moderate	Fair	Nothing observed	Council tree
Sept _2024	3	Libidibia ferrea	Leopard Tree	Mature	500	6	12	13	Fair	Fair	Moderate	Fair	Nothing observed	Council tree
Sept _2024	4	Libidibia ferrea	Leopard Tree	Mature	500	6	12	12	Fair	Fair	Moderate	Fair	Nothing observed	Council tree
Sept _2024	5	Libidibia ferrea	Leopard Tree	Early mature	300	3.6	11	9	Fair	Fair	Moderate	Fair	Nothing observed	Council tree
Sept _2024	6	Libidibia ferrea	Leopard Tree	Mature	550	6.6	12	10	Poor	Fair	Moderate	Fair	Nothing observed	Council tree
Sept _2024	7	Libidibia ferrea	Leopard Tree	Mature	450	5.4	12	14	Poor	Fair	Moderate	Fair	Nothing observed	Council tree
Sept _2024	8	Libidibia ferrea	Leopard Tree	Early mature	400	4.8	7	6	Poor	Poor	Low	Fair/poor	Nothing observed	Council tree
Sept _2024	9	Dypsis lutescens	Golden Cane Palm	Early mature	300	3.6	6	4	Fair	Fair	Low	Good	Nothing observed	
Sept _2024	10	Livistona australis	Cabbage Tree Palm	Early mature	200	2.4	8	4	Good	Good	Moderate	Fair	Nothing observed	
Sept _2024	11	Roystonea regia	Cuban Royal Palm	Mature	350	4.2	12	5	Good	Good	Moderate	Fair	Nothing observed	
Sept _2024	12	Livistona australis	Cabbage Tree Palm	Early mature	200	2.4	8	4	Good	Good	Moderate	Fair	Nothing observed	

Date	Tree number	Botanical Name	Common Name	Tree age	DBH (mm)	TPZ radius (m)	Tree height (m)	Average canopy width (m)	Health	Tree structure	Arboricultural values	Construction tolerance	Ecological values	Comments
Sept _2024	13	Livistona australis	Cabbage Tree Palm	Early mature	200	2.4	5	4	Good	Good	Moderate	Fair	Nothing observed	
Sept _2024	14	Roystonea regia	Cuban Royal Palm	Mature	400	4.8	10	5	Good	Good	Moderate	Fair	Nothing observed	
Sept _2024	15	Archontophoenix alexandrae	Alexandra Palm	Mature	200	2.4	12	4	Good	Good	Moderate	Fair	Nothing observed	
Sept _2024	16	Archontophoenix alexandrae	Alexandra Palm	Mature	200	2.4	11	4	Good	Good	Moderate	Fair	Nothing observed	
Sept _2024	17	Archontophoenix alexandrae	Alexandra Palm	Mature	200	2.4	12	3	Good	Good	Moderate	Fair	Nothing observed	
Sept _2024	18	Roystonea regia	Cuban Royal Palm	Mature	350	4.2	12	4	Good	Good	Moderate	Fair	Nothing observed	
Sept _2024	19	Livistona australis	Cabbage Tree Palm	Early mature	250	3	7	4	Good	Good	Moderate	Fair	Nothing observed	
Sept _2024	20	Livistona australis	Cabbage Tree Palm	Early mature	200	2.4	6	4	Good	Good	Moderate	Fair	Nothing observed	
Sept _2024	21	Roystonea regia	Cuban Royal Palm	Mature	400	4.8	11	5	Good	Good	Moderate	Fair	Nothing observed	
Sept _2024	22	Livistona australis	Cabbage Tree Palm	Early mature	200	2.4	6	4	Good	Good	Moderate	Fair	Nothing observed	
Sept _2024	23	Syzygium jambos	Lilly Pilly	Early mature	100	2	4	3	Good	Fair	Low	Fair	Nothing observed	
Sept _2024	24	Syzygium australe	Lilly Pilly	Early mature	200	2.4	5	5	Good	Fair	Moderate	Fair	Nothing observed	
Sept _2024	25	Syzygium jambos	Lilly Pilly	Early mature	150	2	6	6	Fair	Fair	Low	Fair	Nothing observed	
Sept _2024	26	Dypsis lutescens	Golden Cane Palm	Early mature	200	2.4	8	4	Fair	Fair	Low	Good	Nothing observed	

Date	Tree number	Botanical Name	Common Name	Tree age	DBH (mm)	TPZ radius (m)	Tree height (m)	Average canopy width (m)	Health	Tree structure	Arboricultural values	Construction tolerance	Ecological values	Comments
Sept _2024	27	Dypsis lutescens	Golden Cane Palm	Early mature	250	3	8	3	Fair	Fair	Low	Good	Nothing observed	
Sept _2024	28	Dypsis lutescens	Golden Cane Palm	Early mature	300	3.6	8	3	Fair	Fair	Low	Good	Nothing observed	
Sept _2024	29	Dypsis lutescens	Golden Cane Palm	Early mature	300	3.6	8	3	Fair	Fair	Low	Good	Nothing observed	
Sept _2024	30	Dypsis lutescens	Golden Cane Palm	Early mature	300	3.6	8	3	Fair	Fair	Low	Good	Nothing observed	
Sept _2024	31	Dypsis lutescens	Golden Cane Palm	Early mature	300	3.6	8	3	Fair	Fair	Low	Good	Nothing observed	
Sept _2024	32	Dypsis lutescens	Golden Cane Palm	Early mature	350	4.2	8	3	Fair	Fair	Low	Good	Nothing observed	
Sept _2024	33	Alphitonia excelsa	Soap Tree	Early mature	200	2.4	6	3	Fair	Fair	Moderate	Fair	Nothing observed	Codominant near ground level
Sept _2024	34	Archontophoenix alexandrae	Alexandra Palm	Early mature	150	2	8	2	Good	Good	Low	Fair	Nothing observed	
Sept _2024	35	Dypsis lutescens	Golden Cane Palm	Early mature	250	3	6	4	Fair	Fair	Low	Good	Nothing observed	
Sept _2024	36	Dypsis lutescens	Golden Cane Palm	Early mature	250	3	6	4	Fair	Fair	Low	Good	Nothing observed	
Sept _2024	37	Archontophoenix alexandrae	Alexandra Palm	Early mature	150	2	8	3	Good	Good	Low	Fair	Nothing observed	
Sept _2024	38	Archontophoenix alexandrae	Alexandra Palm	Early mature	150	2	11	4	Good	Good	Low	Fair	Nothing observed	
Sept _2024	39	Archontophoenix alexandrae	Alexandra Palm	Mature	200	2.4	13	4	Good	Good	Moderate	Fair	Nothing observed	
Sept _2024	40	Dypsis lutescens	Golden Cane Palm	Early mature	300	3.6	8	3	Fair	Fair	Low	Good	Nothing observed	

Date	Tree number	Botanical Name	Common Name	Tree age	DBH (mm)	TPZ radius (m)	Tree height (m)	Average canopy width (m)	Health	Tree structure	Arboricultural values	Construction tolerance	Ecological values	Comments
Sept _2024	41	Dypsis lutescens	Golden Cane Palm	Early mature	300	3.6	8	3	Fair	Fair	Low	Good	Nothing observed	
Sept _2024	42	Dypsis lutescens	Golden Cane Palm	Early mature	300	3.6	8	3	Fair	Fair	Low	Good	Nothing observed	
Sept _2024	43	Archontophoenix alexandrae	Alexandra Palm	Early mature	150	2	9	4	Good	Good	Low	Fair	Nothing observed	
Sept _2024	44	Calliandra surinamensis	Powder Puff Flower	Early mature	150	2	6	4	Fair	Fair	Low	Good	Nothing observed	
Sept _2024	45	Calliandra surinamensis	Powder Puff Flower	Early mature	200	2.4	4	7	Fair	Fair	Low	Good	Nothing observed	
Sept _2024	46	Calliandra surinamensis	Powder Puff Flower	Early mature	150	2	5	6	Fair	Fair	Low	Good	Nothing observed	
Sept _2024	47	Alphitonia excelsa	Soap Tree	Early mature	250	3	9	5	Fair	Fair	Moderate	Fair	Nothing observed	
Sept _2024	48	Heptapleurum arboricola	Dwarf Umbrella Tree	Mature	150	2	6	5	Good	Fair	None	Good	Nothing observed	
Sept _2024	49	Heptapleurum arboricola	Dwarf Umbrella Tree	Mature	150	2	5	5	Good	Fair	None	Good	Nothing observed	
Sept _2024	50	Heptapleurum arboricola	Dwarf Umbrella Tree	Mature	200	2.4	7	4	Fair	Fair	None	Good	Nothing observed	
Sept _2024	51	Heptapleurum arboricola	Dwarf Umbrella Tree	Mature	150	2	6	3	Fair	Fair	None	Good	Nothing observed	
Sept _2024	52	Heptapleurum arboricola	Dwarf Umbrella Tree	Mature	200	2.4	6	4	Fair	Fair	None	Good	Nothing observed	

Date	Tree number	Botanical Name	Common Name	Tree age	DBH (mm)	TPZ radius (m)	Tree height (m)	Average canopy width (m)	Health	Tree structure	Arboricultural values	Construction tolerance	Ecological values	Comments
Sept _2024	53	Heptapleurum arboricola	Dwarf Umbrella Tree	Mature	200	2.4	6	4	Fair	Fair	None	Good	Nothing observed	
Sept _2024	54	Celtis sinensis	Chinese Elm Tree	Early mature	100	2	6	2	Fair	Fair	None	Good	Nothing observed	Environmental weed species
Sept _2024	55	Dypsis lutescens	Golden Cane Palm	Early mature	300	3.6	6	4	Fair	Fair	Low	Good	Nothing observed	
Sept _2024	56	Dypsis lutescens	Golden Cane Palm	Early mature	100	2	3	1	Fair	Fair	Low	Good	Nothing observed	
Sept _2024	57	Archontophoenix alexandrae	Alexandra Palm	Mature	200	2.4	10	4	Good	Good	Moderate	Fair	Nothing observed	
Sept _2024	58	Archontophoenix alexandrae	Alexandra Palm	Mature	250	3	12	5	Good	Good	Moderate	Fair	Nothing observed	
Sept _2024	59	Archontophoenix alexandrae	Alexandra Palm	Mature	200	2.4	11	4	Good	Good	Moderate	Fair	Nothing observed	
Sept _2024	60	Ficus benjamina	Fig Tree	Mature	650	7.8	15	18	Fair	Fair	Moderate	Excellent	Nothing observed	History of poor pruning, epicormic growth and elongated branching.
Sept _2024	61	Jacaranda mimosifolia	Jacaranda	Early mature	150	2	4	2	Fair	Fair	Low	Fair	Nothing observed	Located in adjacent southern neighbouring property
Sept _2024	62	Liquidambar styraciflua	Sweet Gum	Mature	400	4.8	15	7	Fair	Fair	Moderate	Fair	Nothing observed	Located in adjacent southern neighbouring property
Sept _2024	63	Liquidambar styraciflua	Sweet Gum	Mature	400	4.8	15	6	Fair	Fair	Moderate	Fair	Nothing observed	Located in adjacent southern neighbouring property

Date	Tree number	Botanical Name	Common Name	Tree age	DBH (mm)	TPZ radius (m)	Tree height (m)	Average canopy width (m)	Health	Tree structure	Arboricultural values	Construction tolerance	Ecological values	Comments
Sept _2024	64	Jacaranda mimosifolia	Jacaranda	Early mature	250	3	9	7	Fair	Fair	Moderate	Fair	Nothing observed	Located in adjacent southern neighbouring property
Sept _2024	65	Jacaranda mimosifolia	Jacaranda	Early mature	300	3.6	9	10	Fair	Fair	Moderate	Fair	Nothing observed	Located in adjacent southern neighbouring property
Sept _2024	66	Jacaranda mimosifolia	Jacaranda	Early mature	300	3.6	9	10	Fair	Fair	Moderate	Fair	Nothing observed	Located in adjacent southern neighbouring property
Sept _2024	67	Jacaranda mimosifolia	Jacaranda	Early mature	300	3.6	9	10	Fair	Fair	Moderate	Fair	Nothing observed	Located in adjacent southern neighbouring property
Sept _2024	68	Jacaranda mimosifolia	Jacaranda	Mature	500	6	14	14	Fair	Fair	Moderate	Fair	Nothing observed	Located in adjacent southern neighbouring property
Sept _2024	69	Dypsis lutescens	Golden Cane Palm	Mature	250	3	8	3	Fair	Fair	Low	Good	Nothing observed	Located in adjacent southern neighbouring property
Sept _2024	70	Dypsis lutescens	Golden Cane Palm	Mature	250	3	8	3	Fair	Fair	Low	Good	Nothing observed	Located in adjacent southern neighbouring property
Sept _2024	71	Dypsis lutescens	Golden Cane Palm	Mature	250	3	8	3	Fair	Fair	Low	Good	Nothing observed	Located in adjacent southern neighbouring property
Sept _2024	72	Dypsis lutescens	Golden Cane Palm	Mature	250	3	8	3	Fair	Fair	Low	Good	Nothing observed	Located in adjacent southern neighbouring property

Date	Tree number	Botanical Name	Common Name	Tree age	DBH (mm)	TPZ radius (m)	Tree height (m)	Average canopy width (m)	Health	Tree structure	Arboricultural values	Construction tolerance	Ecological values	Comments
Sept _2024	73	Dypsis lutescens	Golden Cane Palm	Mature	250	3	8	3	Fair	Fair	Low	Good	Nothing observed	Located in adjacent southern neighbouring property
Sept _2024	74	Dypsis lutescens	Golden Cane Palm	Mature	250	3	8	3	Fair	Fair	Low	Good	Nothing observed	Located in adjacent southern neighbouring property
Sept _2024	75	Dypsis lutescens	Golden Cane Palm	Mature	250	3	8	3	Fair	Fair	Low	Good	Nothing observed	Located in adjacent southern neighbouring property
Sept _2024	76	Dypsis lutescens	Golden Cane Palm	Mature	250	3	8	3	Fair	Fair	Low	Good	Nothing observed	Located in adjacent southern neighbouring property
Sept _2024	77	Dypsis lutescens	Golden Cane Palm	Mature	250	3	8	3	Fair	Fair	Low	Good	Nothing observed	Located in adjacent southern neighbouring property
Sept _2024	78	Jacaranda mimosifolia	Jacaranda	Early mature	300	3.6	8	3	Poor	Fair	Moderate	Fair	Nothing observed	Located in adjacent southern neighbouring property
Sept _2024	79	Dypsis lutescens	Golden Cane Palm	Mature	250	3	8	3	Fair	Fair	Low	Good	Nothing observed	Located in adjacent southern neighbouring property
Sept _2024	80	Dypsis lutescens	Golden Cane Palm	Mature	250	3	8	3	Fair	Fair	Low	Good	Nothing observed	Located in adjacent southern neighbouring property
Sept _2024	81	Dypsis lutescens	Golden Cane Palm	Mature	250	3	8	3	Fair	Fair	Low	Good	Nothing observed	Located in adjacent southern neighbouring property

Date	Tree number	Botanical Name	Common Name	Tree age	DBH (mm)	TPZ radius (m)	Tree height (m)	Average canopy width (m)	Health	Tree structure	Arboricultural values	Construction tolerance	Ecological values	Comments
Sept _2024	82	Dypsis lutescens	Golden Cane Palm	Mature	250	3	8	3	Fair	Fair	Low	Good	Nothing observed	Located in adjacent southern neighbouring property
Sept _2024	83	Dypsis lutescens	Golden Cane Palm	Mature	250	3	8	3	Fair	Fair	Low	Good	Nothing observed	Located in adjacent southern neighbouring property
Sept _2024	84	Dypsis lutescens	Golden Cane Palm	Mature	250	3	8	3	Fair	Fair	Low	Good	Nothing observed	Located in adjacent southern neighbouring property
Sept _2024	85	Ficus benjamina	Fig Tree	Mature	500	6	14	17	Fair	Fair	Moderate	Excellent	Nothing observed	
Sept _2024	86	Corymbia torelliana	Cadaghi	Mature	550	6.6	14	13	Fair	Fair	Moderate	Good	Nothing observed	
Sept _2024	87	Grevillea robusta	Silky Oak	Mature	400	4.8	10	5	Fair	Fair	Moderate	Fair	Nothing observed	Located in adjacent western property
Sept _2024	88	Persea americana	Avocado	Early mature	150	2	7	3	Fair	Fair	Low	Fair	Nothing observed	Located in adjacent north-western property
Sept _2024	89	Persea americana	Avocado	Mature	300	3.6	11	6	Fair	Fair	Moderate	Fair	Nothing observed	Located in adjacent north-western property
Sept _2024	90	Libidibia ferrea	Leopard Tree	Early mature	350	4.2	13	11	Fair	Fair	Moderate	Fair	Nothing observed	

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PRECEDENT DISCLAIMER for CONSULTANCY

Clients may choose to accept and/or disregard the recommendation formulated within this report.

The devices and techniques used to develop this report have been selected to minimise the reporting costs, while ensuring that the reporting information and the subsequent recommendation outlines within the report are suitable to the specific site.

This disclaimer is governed by the law in force in the states of Queensland and New South Wales, Australia.

Report assumptions:

- Any legal description provided of Treescience Pty Ltd atf The Treescience Trust (Treescience). is assumed to be correct. Any titles and ownerships to any property are assumed to be correct. No responsibility is assumed for matter outside the consultant's control.
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- To the authors knowledge all facts, matter, and all assumptions upon which the report document proceeds have been stated within the body of the report document and all opinion contained within the report document will be fully researched and referenced and any such opinion not duly researched is based upon the authors experience and observation.