24 Wentworth Street Croydon Park
ARBORICULTURAL IMPACT ASSESSMENT

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1 EXECUTIVE SUMMARY

The client has engaged Delaney Smith Consulting Arborist to provide an arboricultural impact assessment for the proposed construction and development at the site address.

The proposed development site is primarily 24 Wentworth Street, Croydon Park, but will include 24C and 24A as well. The development requires a new vehicle crossover outside of 24C to access the proposed underground parking.

The scope of this report is to provide an impact assessment on any trees that may be affected by the proposed development of the vehicle crossover to be located outside 24C Wentworth Street, Croydon Park.

One tree located on the nature strip was assessed and scheduled. The tree T1 is a semi mature *Callistemon viminalis* (Weeping Bottlebrush) of poor structure and fair health. The tree was noted as having a compromised structure due to ongoing lopping under the powerlines. This has led to a canopy consisting of primarily epicormic growth with a permanently modified branch structure.

T1 is recommended for removal to facilitate the proposed development. Relocation and replanting is not considered a viable option for T1 due to the history of poor pruning (lopping) leading to a permanently compromised branch structure and low retention value.

The recommendations of this report do not constitute consent to carry out works. Approval is required in the form of Development Consent to prune or remove trees, as well as the consent of the tree owner where trees are on neighbouring properties

2 INTRODUCTION

The client has engaged Delaney Smith Consulting Arborist branded as Tree Space Consulting to provide a comprehensive arboricultural impact assessment for the proposed construction and development at the site address.

The arboricultural impact assessment report is part of the development application. It determines how trees on or around the site may be impacted by the development works and includes recommendations for managing potential impacts. The report is objective – it does not argue for or against the development.

Australian Standard AS4970-2009 Protection of Trees on Development Sites has been used as a benchmark in the preparation of this report.

The proposed development site is primarily 24 Wentworth Street, Croydon Park, but will include 24C and 24A as well. The development requires a new vehicle crossover outside of 24C to access the proposed underground parking.

2.1 Scope

The scope of this report is to provide information on any trees that may be affected by the proposed development of the vehicle crossover to be located outside 24C Wentworth Street, Croydon Park.

The recommendations and comments in this report are based on the following:

- Determine the trees on the property as well as surrounding properties what may be impacted by the development.
- Conduct a basic ground based visual tree assessment.
- Provide information regarding tree species, dimensions, Landscape amenity value, health and vigour assessment, structural condition, priority rating for all recommended works.
- Ascertain Tree Protection Zones and Structural Root Zones.
- Determine the impact of the development on all assessed trees.
- Outline tree retention and removals required, and specific and general tree protection measures to protect retained trees.

The report will identify trees to be removed or retained and protected. The report will identify possible impacts on trees to be retained. The report may explain design and construction methods proposed to minimize impacts on retained trees where there is encroachment into the calculated TPZ. It will recommend measures necessary to protect the trees throughout all demolition and construction stages.

3 METHODOLOGY

General methodologies for tree assessment and data capture are outlined below:

Measurement	Method
Photos	iPhone camera
Tree Significance and Retention Values	Australian Consulting Arboriculturists (IACA) Significance of a Tree, Assessment Rating System (STARS)©
Tree protection guidelines, TPZ & SRZ guidelines	*Australian Standard AS4970 - 2009 Protection of Trees on Development Sites*
Tree Assessment	Visual Tree Assessment limited to ground based visual assessment (Mattheck, 2007). No internal diagnostics or root investigations conducted. Nylon mallet to sound for any hollows
Tree Identification	Taxonomic features compared with plant profile sheets and published literature
Tree Schedule • **Height** • **Diameter at Breast Height (DBH)** • **Canopy Spread** • **Structural Root Zone (SRZ)**	 • Estimated in metres • Fibreglass long tape • Estimated in metres • SRZ-$(DBH \times 50)^{0.42} \times 0.64$
Tree ID and trunk centres	Client provided site survey and cross checked on site using site reference points
Encroachment calculations	AS4970 – 2009 Calculator https://as4970calculator.web.app/
Site and Soil Overview	eSPADE https://www.environment.nsw.gov.au/eSpade2Webapp
Site plans and proposed development drawings	client provided

3.1 Visual Tree Assessment (VTA)

An assessment of each tree was made using the Visual Tree Assessment (VTA) procedure, outlined in Appendix- VTA Methodology (Mattheck, 2007). All trees were assessed in view from the ground. No aerial inspection or diagnostic testing has been undertaken as part of this assessment. No below ground excavation or penetrative root testing has been undertaken as part of this assessment.

3.2 Significance and Retention (STARS)

Significance and Retention determinations were carried out using the IACA Significance of a Tree, Assessment Rating System method which combines ULE (useful life expectancy of subject tree) and significance rating based on characteristics such as health, form, vigour, cultural, heritage and amenity value (IACA, 2010). The 2 results are placed within a matrix which determines the retention value and outlined in Appendix- IACA STARS Significance.

Determining the significance of a tree can include the following considerations:

- Is the tree a locally native remnant; an endangered species; a part of an endangered ecological community; or does the tree provide critical habitat for an endangered species?

- Is the tree of botanical interest; Is it included in a significant tree register or listed as a heritage item under the Federal State or Local Regulations?
- Is the tree visually prominent in the locality?
- Is the tree well structured?
- Is the tree in good health and/or does it display signs of good vigour?
- Is the tree typically formed for the species?
- Is the tree currently located in a position that will accommodate future growth?

3.3 Impact Assessment

There are two types of zones (as defined by AS 4970-2009) that need to be considered when undertaking an arboricultural impact assessment:

- Tree protection zone (TPZ): The TPZ is the optimal combination of crown and root area that requires protection during the construction process so that the tree can remain viable.
- Structural root zone (SRZ): The SRZ is the area of the root system used for stability, mechanical support, and anchorage of the tree.

Minor encroachment (up to 10%) within the TPZ is acceptable. Examples of minor encroachments are illustrated in **Error! Reference source not found.** with areas of compensation required. Major encroachment (greater than 10%) can be acceptable providing that the Project Arborist can demonstrate that the tree will remain viable. Where retention is not viable, the proposed encroachment is within the SRZ, or the tree is located within the proposed development footprint, the tree shall be recommended for removal.

The impact assessment considers the following levels of encroachment:

- Nil encroachment (0%): No encroachment within the TPZ.
- Minor encroachment: The encroachment is less than 10% of the TPZ
- Major encroachment: The encroachment is greater than 10% of the TPZ
- In Footprint: The tree is located within the proposed development footprint including proposed grade changes or hardscaping.

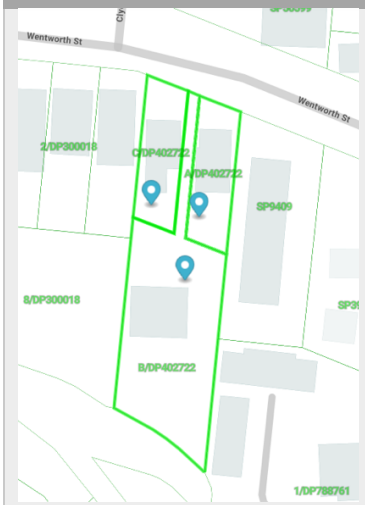
Impact calculations are undertaken by overlaying the TPZ areas of scheduled trees on site with the ground floor layout of the proposed development. Outside of the proposed development footprint, potential impacts are assessed by also considering changes in grade, fill and excavation areas, services and utility lines.

4 FINDINGS

4.1 The Site

The proposed development site is primarily 24 Wentworth Street, Croydon Park, but will include 24C and 24A as well. The development requires a new vehicle crossover outside of 24C to access the proposed underground parking.

Site Summary



Summary of planning controls

Planning controls held within the Planning Database are summarised below. The property may be affected by additional planning controls not outlined in this report. Please contact your council for more information.

Local Environmental Plans	Canterbury-Bankstown Local Environmental Plan 2023 (pub. 23-6-2023)
Land Zoning	R4 - High Density Residential: (pub. 23-6-2023)
Height Of Building	8.5 m
Floor Space Ratio	0.75:1
Minimum Lot Size	460 m²
Heritage	NA
Land Reservation Acquisition	NA
Foreshore Building Line	NA
Acid Sulfate Soils	Class 4
	Class 5
Local Provisions	Area 2

4.2 Tree Management Controls

Croydon Park exists within the Inner West LGA and Canterbury Bankstown LGA. The site address is listed as being within Canterbury Bankstown LGA and as such the tree management controls outlined in Canterbury-Bankstown Development Control Plan 2023 have been applied for this report.

For this report, a prescribed tree as described in Chapter 2.3 of Canterbury-Bankstown Development Control Plan 2023 is:
(a) all trees that are 5m or more in height; and
(b) all mangroves, regardless of size; and
(c) all trees, regardless of size, listed as Vulnerable or Endangered or a component of an Endangered Ecological Community listed under the Biodiversity Conservation Act 2016; and
(d) all trees, regardless of size, listed under the Environmental Protection and Biodiversity Conservation Act 1999; and
(e) all trees, regardless of size, located on land included on the Biodiversity Map under the Canterbury-Bankstown Local Environmental Plan 2023; and
(f) all trees, regardless of size, located on sites listed as a heritage item in Schedule 5 of the Canterbury-Bankstown Local Environmental Plan 2023; and
(g) all trees, regardless of size, located in the foreshore area under the Canterbury Bankstown Local Environmental Plan 2023

4.2.1 Exemptions

Despite clause 2.3, Chapter 2.3 of Canterbury-Bankstown Development Control Plan 2023 does not apply to:
(a) trees located within 3m of the external wall of an approved dwelling, not including a secondary dwelling, measured from the external wall of the approved dwelling to the centre of the trunk of the tree at 1.4m above ground level;
(b) the following tree species:

Scientific Name	Common Name
Acacia baileyana	Cootamundra Wattle
Acacia podalyriifolia	Queensland Silver Wattle
Acacia saligna	Golden Wattle
Ailanthus altissima	Tree of Heaven
Bambusa spp.	Bamboo
Celtis sinensis	Hackberry
Cinnamomum camphora	Camphor Laurel (less than 10m in height)
Citrus limon cvs.	Lemon Tree
Citrus reticulata cvs.	Mandarin Tree
Citrus sinensis cvs	Orange Tree
Citrus x paradisi cvs	Grapefruit Tree
Eriobotrya japonica	Loquat Tree
Erythrina x sykseii	Common Coral Tree
Eucalyptus nicholii	Narrow-leafed Peppermint
Eucalyptus scoparia	Willow Gum
Ficus elastica and cvs.	Rubber Tree
Gleditsia triacanthos	Honey Locust
Ligustrum lucidum	Broad-leaf Privet
Ligustrum sinense	Narrow-leaf Privet
Liquidambar styraciflua	Liquidambar
Malus domestica and cvs.	Apple Tree
Mangifera indica	Mango Tree
Morus spp.	Mulberry Tree
Musa spp.	Banana
Olea europaea subspecies africana	African Olive
Phoenix canariensis	Canary Island Date Palm (with a trunk less than 4m in height)
Phyllostachys spp.	Rhizomatous Bamboo
Pinus radiata	Radiata Pine Tree
Populus spp.	Poplars
Prunus avium / P. cerasus and cvs.	Cherry Tree
Prunus persica and cvs.	Peach Tree
Prunus spp. and cvs.	Plum Tree
Prunus spp. and cvs.	Apricot Tree
Pyrus communis and cvs.	European Pear
Robinia pseudoacacia and cvs	Robinia
Salix spp.	Willow Tree
Schefflera actinophylla	Umbrella Tree
Schinus terebinthifolius	Broad-leaf Pepper Tree
Syagrus romanzoffiana	Cocos Palm
Toxicodendron succedaneum	Rhus Tree
X Cupressocyparis leylandii and cvs.	Leyland Cypress

4.3 Scheduled Trees

The scope of this report is to provide information on any trees that may be affected by the proposed development of the vehicle crossover to be located outside 24C Wentworth Street, Croydon Park.

One tree located on the nature strip was assessed and scheduled . A full schedule of assessment data is provided in Appendix – Tree Data Schedule.

Table 1: Table of assessed and scheduled trees

Tree ID	Tree Species	Height (M)	Spread (M)	DBH (M)	Age Class	Structure	Health	E.L.E	Landscape Significance (STARS)	Retention Value (STARS)	Observations and Defects	Tree Notes	Species Origin
T1	Callistemon viminalis (Weeping Bottlebrush)	0-5	0-5	0.24	Semi Mature	Poor	Fair	15-40yrs	Low	Low	Poor Pruning (powerlines)	poor branch structure, lopped under powerlines, epicormic growth	Native

The tree T1 is a semi mature *Callistemon viminalis* (Weeping Bottlebrush) of poor structure and fair health. The tree was noted as having a compromised structure due to ongoing lopping under the powerlines. This has led to a canopy consisting of primarily epicormic growth with a permanently modified branch structure.

Figure 1: The tree T1 located on the nature strip outside of 24C Wentworth Street

4.4 Impact of Proposed Development

The development requires a new vehicle crossover outside of 24C to access the proposed underground parking. The tree T1 is located within the footprint of this proposed crossover.

Table 2: Impact of proposed development

Tree ID	Tree Species	Health	E.L.E	Retention Value (STARS)	Observations and Defects	Notes	Encroachment Type
T1	*Callistemon viminalis* (Weeping Bottlebrush)	Fair	15-40yrs	Low	Poor Pruning (powerlines)	poor branch structure, lopped under powerlines, epicormic growth	located in footprint of proposed vehicle crossover

5 RECOMMENDATIONS

T1 is recommended for removal to facilitate the proposed development. Relocation and replanting is not considered a viable option for T1 due to the history of poor pruning (lopping) leading to a permanently compromised branch structure and low retention value.

Table 3: Recommendations for scheduled trees

Recommendation	Tree Numbers
Removal	T1

All tree work should be carried out a minimum AQF Level 3 Arborist in accordance with Australian Standard AS4373-2007-Pruning of Amenity Trees, NSW Workcover Code of Practice Amenity Tree Industry 1998, Safe Work Guide to Managing Risks of Tree Trimming and Removal Work 2016 and the Work Health and Safety Act 2011.

The recommendations of this report do not constitute consent to carry out works. Approval is required in the form of Development Consent to prune or remove trees, as well as the consent of the tree owner where trees are on neighbouring properties.

6 WORKS CITED

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7 GLOSSARY OF TERMS

Abatement Reduction in hazard, either by remedial tree works and/or removal of target(s).

Abnormal Lean Abnormal departure of trunk from the vertical or near vertical position.

Amenity Value The environmental and landscape benefits of a tree as opposed to its commercial value for timber. Many of these benefits are intangible or difficult to measure.

Arboriculture The care, cultivation and management of individual trees or groups of trees in the landscape primarily for their amenity value.

Arborist A specialist in the cultivation and care of trees and shrubs, including tree surgery, tree identification, the diagnosis, treatment, and prevention of tree diseases, and the control of pests.

Basal Flare The rapid increase in diameter that occurs at the confluence of the trunk and roots, associated with stem and root tissue.

Bifurcation To divide or fork into two parts, usually equal in size and occurring at a narrow angle.

Bleeding/Sap flow The exudation of sap/resin from wounds and/or other injuries, may be accompanied by a foul odour.

Bole The central stem of the tree. Another meaning for trunk.

Bow The gradual curve of a branch or stem.

Bracket Fungi/Fungal Fruiting Body Fruiting of spore producing body of wood decay fungi, forming on the external surface of the stem or trunk.

Branch Attachment The structural linkage of branch to stem.

Branch Collar Wood which forms around branch attachments, frequently more pronounced below the branch.

Brash Wood Type of reaction wood which is weaker than normal due to thin cell walls and decreased fibre content; presence increases the likelihood of failure.

Burl More correctly identified as a Lignotuber (a mass of dormant, tightly arranged buds). It is a generally circular swelling on the main stem or branch; not considered a defect.

Buttress Support of branch, stem or root; usually associated with exaggerated growth.

Buttress Root A large woody root located at the base of the trunk (the root crown) which is important to the overall stability of the tree due to its contributions to basal flare.

Buttress Wood Wood under tension, in a structurally critical portion of a trunk or branch.

Callus Can be detected within weeks after cells on the edge of a wound die and is produced by the enlargement or increased division of cells adjacent to the edge of cell dieback. Often associated with wound wood development post pruning.

Cambium A layer of delicate meristematic cells between the inner bark or phloem and the wood or xylem, which produces new phloem on the outside and new xylem on the inside in stems, roots, etc., originating all secondary growth in plants and forming the annual rings of wood.

Canker A localised area of dead tissue on a stem or branch, caused by fungal or bacterial organisms, characterised by wound wood development on the periphery; may be perennial or annual.

Canopy Parts of the tree above the trunk, including leaves, and lateral and scaffold branches.

Cavity An open wound, often characterised by the presence of decay and resulting in a hollow.

CODIT An acronym for Compartmentalisation of Decay in Trees, this scientific theory was developed by the late Dr. Alex Shigo which now forms the basis of our knowledge of how trees respond to wounding, infection and decay.

Co-dominant Stems Equal in size and relative importance, usually associated with either the trunks/stems or scaffold limbs/branches in the crown. Not necessarily a structural defect.

Compartmentalisation Physiological process which creates the chemical and mechanical boundaries that act to limit the spread of disease and decay organisms within trees (see also CODIT).

Compression Wood Type of reaction wood produced on the underside of branches and leaning trunks.

Coppice To cut a tree to ground level to stimulate regenerative growth.

Core Drill A technique involving creating a series of vertical cores within a tree's root zone which can be filled with a variety of materials to stimulate root initiation and growth. Often used on ageing and/or stressed trees.

Crack Breakage in the stem, involving bark, cambium and xylem.

Crown Parts of the tree above the trunk, including leaves, and lateral and scaffold branches (see also Canopy).

Crown Uplift Pruning technique where lower limbs are removed, thereby raising the overall crown above the ground.

DBH Diameter of the trunk, measured at breast height i.e. 1.4m from ground level.

Deadwood Branch or stem wood bearing no live tissues. (Small deadwood <2cm, medium deadwood 2–10cm, large deadwood >10cm).

Deadwooding The act of removing deadwood from the canopy.

Decay Process of degradation of woody tissues by fungi and bacteria through decomposition of cellulose and lignin.

Decorticate To remove bark, rind, or husk.

Decurrent Referring to crowns which are made up of a system of co-dominant scaffold branches; lacking a central leader.

Defect Any structural weakness or deformity.

Dehisce (of a pod or seed vessel, or a cut or wound) Gape or burst open.

Dieback Death of shoots and branches, generally from tip to base.

Disease/Pathogens A malfunction in, or destruction of tissues within a living organism, usually excluding mechanical damage; in trees, usually caused by pathogenic micro-organisms.

Dominant In crown class, trees whose crowns extend above the general stand canopy and are not restricted by adjacent trees.

DRC (Diameter at Root Crown) The diameter of the very lowest part of the trunk where root buttressing begins and often used to calculate a tree's structural root zone (SRZ).

End Weight The concentration of excessive foliage toward the branch extremity.

Epicormic Growth Shoots which result from adventitious or latent buds, generally initiated in times of distress and are generally poorly attached.

EWP Elevated Work Platform.

Excessive Thinning Having relatively little extent from one side of the canopy to the opposite. In relation to pruning; excessive pruning of lateral branches at their point of origin, usually associated with removal of large amounts of live tissue.

Exclude Site Use Implement control measures to prevent people from entering an area that has the capacity to cause harm or damage i.e. due to hazardous trees.

Fasciation (or Cresting) Abnormal twig proliferation.

Flush Cut Pruning technique where both branch and trunk tissue are removed behind the branch collar; considered poor practice.

Frass Bore Dust Excrement and other debris left by wood boring insects.

Fungal Fruiting Body (see Bracket Fungi)

Gall In branches and stems, an abnormal, localised growth, generally seen as a large knob of undifferentiated woody tissues.

Girdling Root A root or roots which circles and constricts the stem or roots causing death of phloem and/or cambial tissue.

Habitat Prune (or King Prune) Reducing or removing the crown of a tree and retaining its trunk as a habitat for wildlife.

Hanger A partially attached (but clearly broken) or unattached branch which remains lodged in the crown.

Hazard A hazard is an action or item that has the capacity to cause harm or damage, which may be more or less serious.

Hydrophobic Used to describe a soil profile that is difficult to rehydrate as water either pools on it, or runs off it. Generally associated with very dry, nutrient-poor soils.

Ilex A tree or shrub of a genus that includes holly and its relatives.

Inappropriate Location The tree's present growing environment is not suitable due to its surroundings, such as buildings, car parks etc. in relation to the inherent characteristics of the tree species.

Included Bark Pattern of development at branch junctions where bark is turned inward rather than pushed out; contrasting with branch bark ridge. Also referred to as Embedded bark. Such a formation generally results in weakened attachment.

Infection The establishment of parasitic micro-organism in the tissues of a tree.

Irrigation The watering of land by artificial means to foster plant growth.

Kino The resin which flows from Eucalypts and its relatives such as *Corymbia sp.* and *Angophora sp.*

Leader The primary terminal shoot or trunk of a tree.

Lean/Leaning Departure of trunk from the vertical or near vertical position.

Lerp A type of Psyllid that commonly predates on many species of Eucalypts and its relatives.

Loading Refers to the mechanical stresses imposed by the weight, orientation etc. of trees and branches in relation to the site, the architecture of the tree and the weather. The amount of loading upon a tree can be directly influenced by its level of exposure to the prevailing winds.

Lopping The removal of the crown of a tree, or a major proportion of it. Incorrect pruning method of removing branches to stubs, resulting in poor form and weak branch unions.

Mycorrhiza A mutual association between certain fungi and the roots of vascular plants often resulting in an increased efficiency in the absorption of mineral nutrients.

Mulch Material laid down over the rooting area to help conserve soil moisture, supress weeds and regulate soil temperature.

Nutrition The elements and compounds required to support healthy plant growth, of which at least 17 are known.

Parasitic and semi parasitic plants Vascular plants such as Mistletoes which infect host plants via the penetration of specialised roots called haustorium to gain access to the host's vascular system for water and mineral nutrients.

Pathogen (See Disease/Pathogens).

Pests/Pest Insects Pests such as Wood Borers, Termites, Leaf Beetles, Gumleaf Skeletoniser, Leafblister Sawfly, Lerps or Elm Leaf Beetle that cause tree decline. There are various methods of treatment to remove pests as well as prevent their return.

Phellinus sp. A genus of bracket forming, wood decaying fungi which occurs in native and exotic species. Whilst the decay associated with this fungus is often localised it has a reputation for being quite destructive.

Phytotoxic A substance which is toxic to plants.

Phloem The part of a vascular bundle consisting of sieve tubes, companion cells, parenchyma, and fibres and forming the food-conducting tissue of a plant.

PICUS Sonic Tomograph A specialised piece of diagnostic equipment generally used to determine the level of internal decay within a branch or trunk using sound waves.

Pollard The removal of the tree canopy, back to the stem or primary branches. Pollarding may involve the removal of the entire canopy in one year, or may be phased over several years.

Poor Pruning Pruning techniques (such as lopping) which are undertaken without regard for the tree's natural biology and which can cause decline, decay and potentially lead to part or whole tree failure.

Potenz Hydrogenous (pH) The measure of soluble Hydrogen ions in a solution which is used to measure its acidity or alkalinity. Affects nutrient availability to plants.

Previous Failures Denotes a tree has previously had a leader or branches fail. Previous failures can result in wounding if a required action is not attended to (see Wound).

Propagate/Propagation To reproduce a plant, sexually by means of seed or asexually by cuttings, grafting or divisions, so that it is genetically identical to the parent (true to type).

Pruning The removal or cutting back of twigs or branches.

Psyllid A common and diverse group of sap-sucking insects related to whiteflies, aphids and scales. They are regularly associated with native plants and most species appear to be host specific or confined to a group of closely related plants. Sustained infestations can lead to tree decline if untreated.

Reactive Growth/Reaction Wood Production of woody tissue in response to altered mechanical loading; often in response to internal defect or decay and loss of strength.

Risk The likelihood that a hazard will cause harm within a variable period of time.

Root Collar/Root Crown The transitional area between the stem/s and roots.

Saprophyte An organism which obtains its nutrition from dead or decaying organic matter. This term is often associated with fungi and with some groups of vascular plants such as Orchids.

Scaffold Limb Primary structural branch of the crown.

Senescence The stage of a tree's life cycle between maturity and death, whereby a tree will naturally decline over a number of years.

Softfall An impact absorbing layer that is laid beneath a finished surface

Soil Compaction Area of compacted soil covering the root system. Affected soil becomes less able to absorb rainfall and water, thus increasing runoff and erosion. Trees have difficulty growing in compacted soil because soil particles are pressed together leaving little space for oxygen and water, which are essential for root growth.

Soil Problems Soil problems such as compaction, salinity, erosion can cause tree decline and potentially lead to tree failure.

Split Breakage in stem, affecting bark, cambium and xylem.

SRZ Structural Root Zone.

Stress In plant physiology, a condition under which one or more physiological functions are not operating within their optimum range, e.g. a lack of soil moisture, inadequate nutrition or extremes of temperature.

Structural Defect Internal or external points of weakness which reduce the structural integrity of branches and/or stems or roots. Defects in roots may impact upon tree stability.

Structural Roots Contribute significantly to the structural support, anchorage and stability of a tree, often found close to the base.

Sucker A shoot which appears from an underground root.

Suppressed In crown class, trees which have been heavily shaded by others from above or the side and whose crown development is wholly or partially restricted.

Symbiosis A mutual association between two organisms whereby the presence of one is beneficial to the other.

Target Persons or property or other things of value which might be harmed by mechanical failure of the tree or by objects falling from it.

Terminally Reduce Cutting back/reducing branches from their extremity.

Thinning/Excessive Thinning Having relatively little extent from one side of the canopy to the other. In relation to pruning: excessive pruning of lateral branches at their point of origin, usually associated with removal of large amounts of live tissue.

TLE Tree Life Expectancy (see Useful Life Expectancy).

Topping Synonymous with lopping it is the indiscriminate removal of the crown of a tree, or a major proportion of it. Incorrect pruning method of removing branches to stubs, resulting in poor form and weak branch unions.

TPZ Tree Protection Zone.

ULE Useful Life Expectancy refers to an expected period of years that a tree can be retained before its amenity values decline to a point where it may detract from the appearance of the landscape and/or becomes potentially hazardous to people and/or property.

Understorey Vegetation beneath the main canopy.

VTA An acronym for Visual Tree Assessment which is the process undertaken when systematically assessing trees for attributes such as their species, health, age, defects and pest or disease infestations.

Wall 4 A chemical and anatomical barrier formed by the cambium present at the time of wounding, which inhibits the spread of decay into xylem tissue formed after the time of wounding.

Weak Unions A stem or branch union which is exhibiting signs of a potential structural weakness through its growth habit and/or as a result of pest and/or disease infestation.

Weed A plant that is not valued where it is growing and is usually of vigorous growth; especially one that tends to overgrow or suppress desirable plants.

Whorl The particular arrangement of foliage or flower parts around a stem whereby they radiate from a single point.

Windthrow The blowing over of a tree at its roots.

Wound Any injury which induces a compartmentalisation response.

Wound Wood Develops from callus tissue or from uninjured vascular cambium at the margins of injuries/wounds that have damaged or exposed the phloem, vascular cambium or sapwood.

Xylem A compound tissue in vascular plants that helps provide support and that conducts water and nutrients upward from the roots, consisting of tracheids, vessels, parenchyma cells and woody fibres.

8 DISCLAIMER & LIMITATIONS

The observations and recommendations this report can rely on the provided information, including architectural plans and documents, surveys and site plans. Care has been taken to obtain all information from reliable sources; all data has been verified as far as possible. Delaney Smith Consulting Arborist makes no representations, guarantees or warranties as to the accuracy of information provided by others and no warranties are made as to the accuracy or completeness of any reproduction of this report. This report is only valid in its entirety and for the purpose for which it was prepared.

Conditions on the site may change after the tree assessment. This report does not constitute or include a tree risk assessment. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject tree may not arise in the future. Unless stated otherwise:

- Information contained in this report covers only the trees examined and reflects the health and structure of the tree at the time of inspection. The documented observations, results, recommendations, and conclusions given may vary after the site visit due to environmental conditions.
- Observations recorded for trees located within adjacent properties have been made without entering that property. These trees were not subject to a complete visual inspection and defects or abnormalities may be present but not recorded.
- Deciduous trees inspected during winter and all trees obscured by other vegetation are not able to be properly assessed or identified. As a result, measurements and species of deciduous trees are estimated.
- The inspection was limited to visual examination from the base of the subject tree without dissection, excavation, probing or coring (unless specifically noted otherwise).

This report is to be read and considered in its entirety. The subject trees were inspected from the ground using Visual Tree Assessment methodology, no aerial investigations; underground or internal investigations were undertaken. It is the responsibility of the client to implement all recommendations contained in this report.

Information contained in this report covers only the trees examined and reflects the health and structure of the tree at the time of inspection. The documented, observations, results, recommendations, and conclusions given may vary after the site visit due to environmental conditions. Liability will not be accepted for damage to person or property because of natural processes, unforeseeable actions or occurrences.

The assessment is made having regard for the prevailing site conditions; and does not account for the effects that extreme weather events may have on trees.

Information contained in this report reflects the condition of the trees at the time of the inspection. As trees are living organisms their condition will change over time, there is no guarantee that problems or deficiencies of the subject trees may not arise in the future. It must be accepted that living in close proximity to trees involves some level of risk.
No investigation into the presence on the site of threatened or endangered species of shrubs, groundcovers, grasses, herbs or orchids has been undertaken.

This report has been prepared solely for the use by the Client. The Client acknowledges that this assessment, and any opinions, advice or recommendations expressed or given in it, are based on the information supplied by the Client and based on the data observations, measurements and analysis carried out or obtained by the author and referred to in the report.

9 APPENDICES

9.1 Appendix- IACA STARS Significance

IACA Significance of a Tree, Assessment Rating System (STARS)© (IACA 2010)©

In the development of this document IACA acknowledges the contribution and original concept of the Footprint Green Tree Significance & Retention Value Matrix, developed by Footprint Green Pty Ltd in June 2001.

The landscape significance of a tree is an essential criterion to establish the importance that a particular tree may have on a site. However, rating the significance of a tree becomes subjective and difficult to ascertain in a consistent and repetitive fashion due to assessor bias. It is therefore necessary to have a rating system utilising structured qualitative criteria to assist in determining the retention value for a tree. To assist this process all definitions for terms used in the *Tree Significance - Assessment Criteria* and *Tree Retention Value - Priority Matrix*, are taken from the IACA Dictionary for Managing Trees in Urban Environments 2009.

This rating system will assist in the planning processes for proposed works, above and below ground where trees are to be retained on or adjacent a development site. The system uses a scale of *High*, *Medium* and *Low* significance in the landscape. Once the landscape significance of an individual tree has been defined, the retention value can be determined. An example of its use in an Arboricultural report is shown as Appendix A.

Tree Significance - Assessment Criteria

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1. High Significance in landscape

- The tree is in good condition and good vigour;
- The tree has a form typical for the species;
- The tree is a remnant or is a planted locally indigenous specimen and/or is rare or uncommon in the local area or of botanical interest or of substantial age;
- The tree is listed as a Heritage Item, Threatened Species or part of an Endangered ecological community or listed on Councils significant Tree Register;
- The tree is visually prominent and visible from a considerable distance when viewed from most directions within the landscape due to its size and scale and makes a positive contribution to the local amenity;
- The tree supports social and cultural sentiments or spiritual associations, reflected by the broader population or community group or has commemorative values;
- The tree's growth is unrestricted by above and below ground influences, supporting its ability to reach dimensions typical for the taxa *in situ* - tree is appropriate to the site conditions.

2. Medium Significance in landscape

- The tree is in fair-good condition and good or low vigour;
- The tree has form typical or atypical of the species;
- The tree is a planted locally indigenous or a common species with its taxa commonly planted in the local area
- The tree is visible from surrounding properties, although not visually prominent as partially obstructed by other vegetation or buildings when viewed from the street,
- The tree provides a fair contribution to the visual character and amenity of the local area,
- The tree's growth is moderately restricted by above or below ground influences, reducing its ability to reach dimensions typical for the taxa *in situ*.

3. Low Significance in landscape

- The tree is in fair-poor condition and good or low vigour;
- The tree has form atypical of the species;
- The tree is not visible or is partly visible from surrounding properties as obstructed by other vegetation or buildings,
- The tree provides a minor contribution or has a negative impact on the visual character and amenity of the local area,
- The tree is a young specimen which may or may not have reached dimension to be protected by local Tree Preservation orders or similar protection mechanisms and can easily be replaced with a suitable specimen,
- The tree's growth is severely restricted by above or below ground influences, unlikely to reach dimensions typical for the taxa *in situ* - tree is inappropriate to the site conditions,
- The tree is listed as exempt under the provisions of the local Council Tree Preservation Order or similar protection mechanisms,
- The tree has a wound or defect that has potential to become structurally unsound.

Environmental Pest / Noxious Weed Species

- The tree is an Environmental Pest Species due to its invasiveness or poisonous/ allergenic properties,
- The tree is a declared noxious weed by legislation.

Hazardous/Irreversible Decline

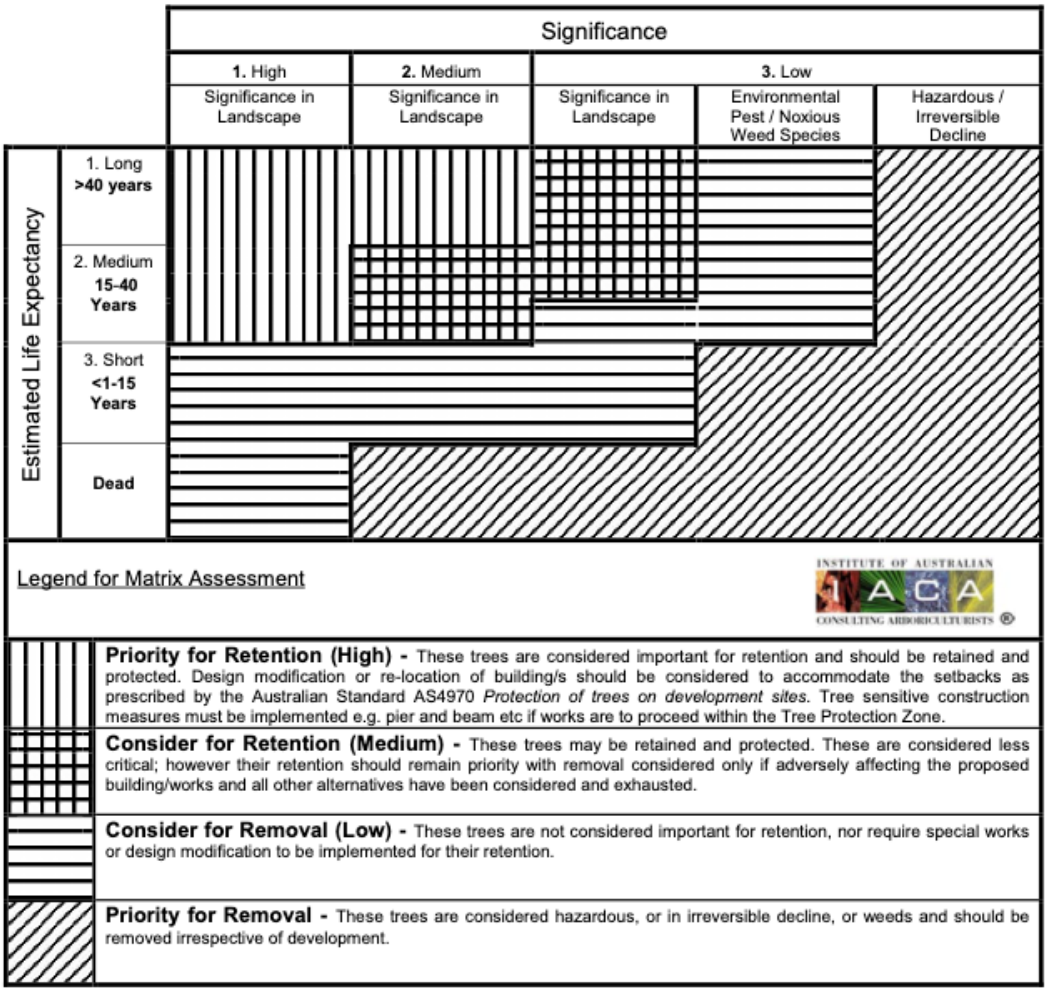
- The tree is structurally unsound and/or unstable and is considered potentially dangerous,
- The tree is dead, or is in irreversible decline, or has the potential to fail or collapse in full or part in the immediate to short term.

The tree is to have a minimum of three (3) criteria in a category to be classified in that group.

Note: The assessment criteria are for individual trees only, however, can be applied to a monocultural stand in its entirety e.g. hedge.

IACA 2010, *IACA Significance of a Tree, Assessment Rating System (STARS)*, Institute of Australian Consulting Arboriculturists, www.iaca.org.au

Table 1.0 Tree Retention Value - Priority Matrix.



USE OF THIS DOCUMENT AND REFERENCING

The IACA Significance of a Tree, Assessment Rating System (STARS) is free to use, but only in its entirety and must be cited as follows:

IACA, 2010, *IACA Significance of a Tree, Assessment Rating System (STARS)*, Institute of Australian Consulting Arboriculturists, Australia, www.iaca.org.au

REFERENCES

Australia ICOMOS Inc. 1999, *The Burra Charter – The Australian ICOMOS Charter for Places of Cultural Significance*, International Council of Monuments and Sites, www.icomos.org/australia

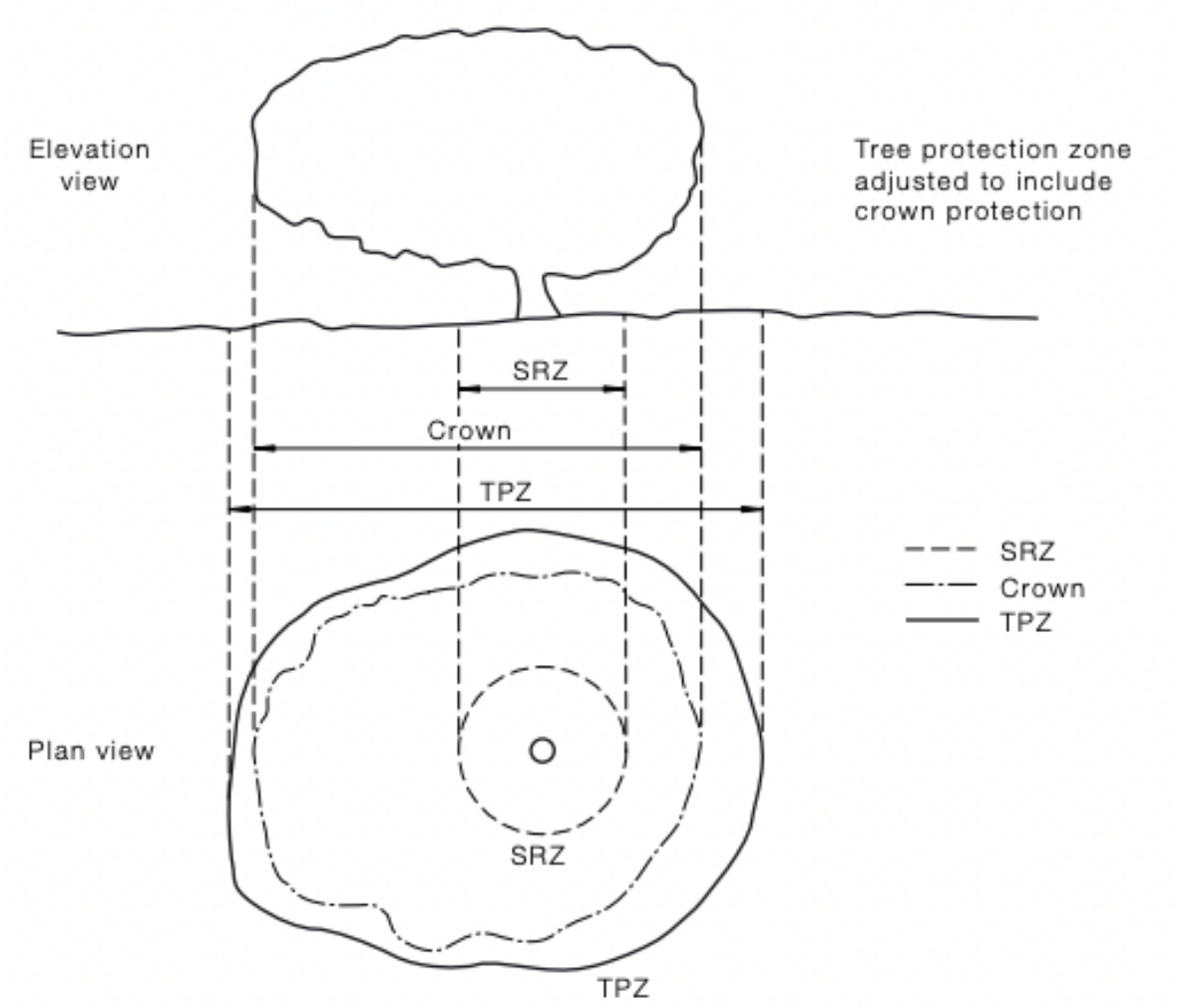
Draper BD and Richards PA 2009, *Dictionary for Managing Trees in Urban Environments*, Institute of Australian Consulting Arboriculturists (IACA), CSIRO Publishing, Collingwood, Victoria, Australia.

Footprint Green Pty Ltd 2001, *Footprint Green Tree Significance & Retention Value Matrix*, Avalon, NSW Australia, www.footprintgreen.com.au

IACA 2010, *IACA Significance of a Tree, Assessment Rating System (STARS)*, Institute of Australian Consulting Arboriculturists, www.iaca.org.au

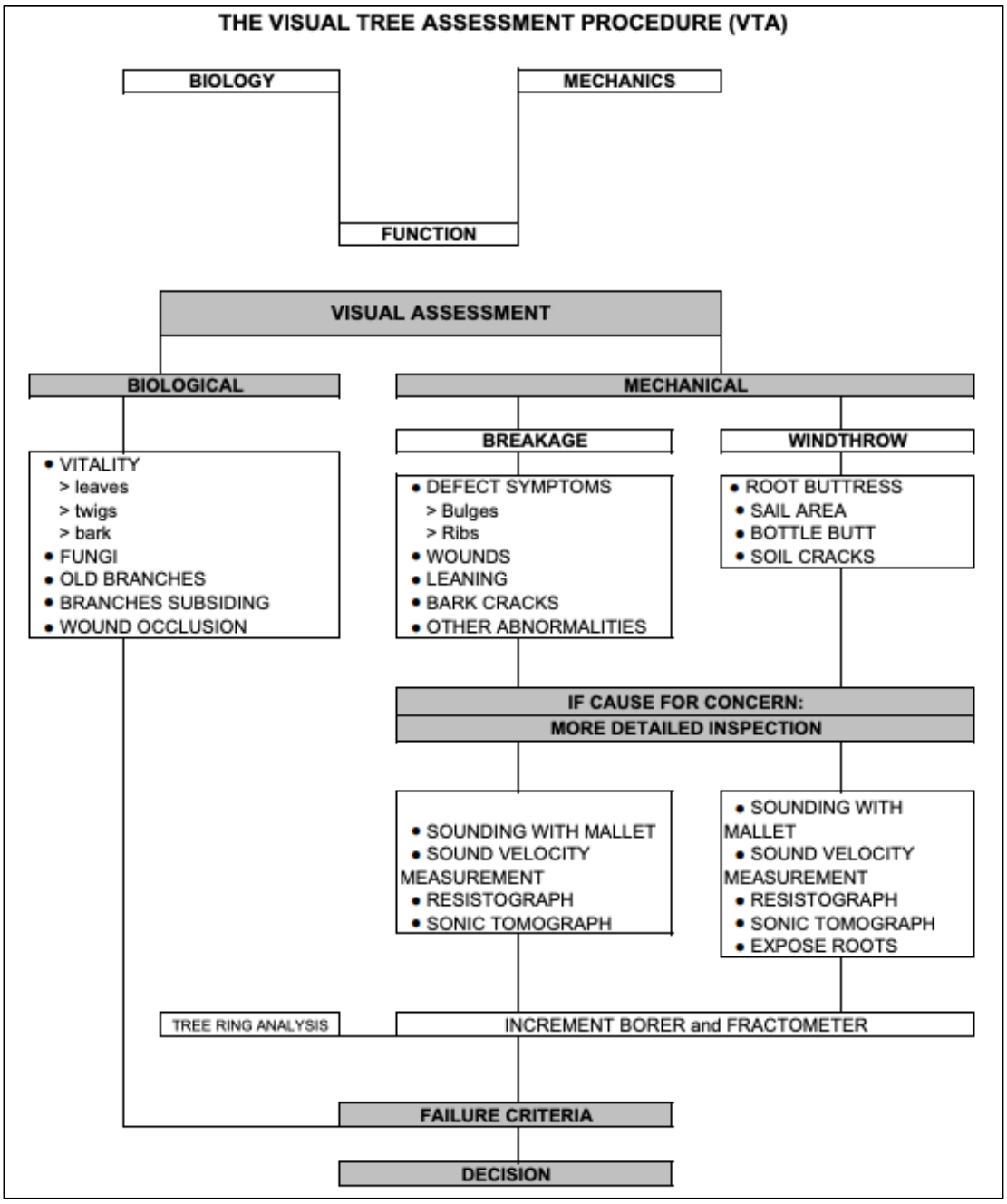
(IACA, 2010)

9.2 Appendix- TPZ and SRZ Illustration



(AS4970:2009 Protection of Trees on Development Sites, 2009)

9.3 Appendix- VTA Methodology



(Mattheck, 2007)

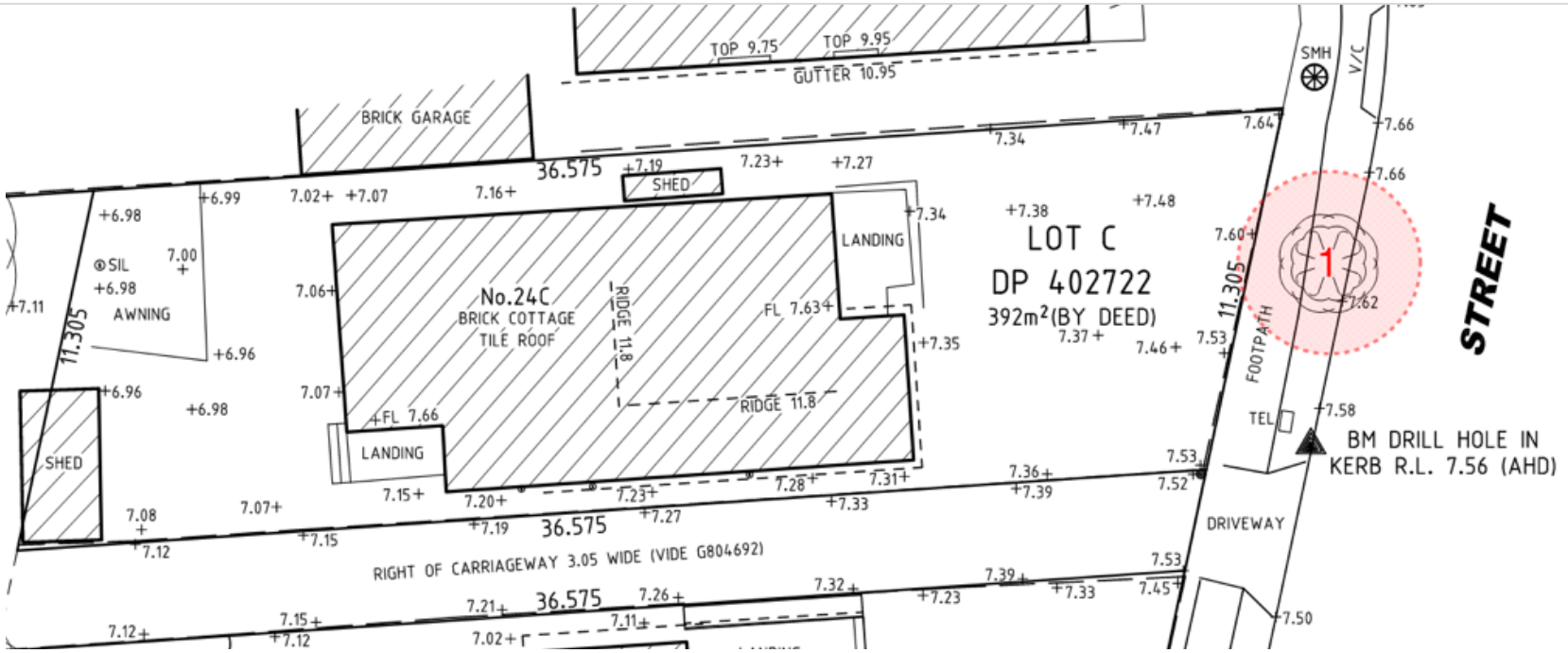
9.4 Appendix – Tree Data Schedule

Tree ID	Tree Species	Height (M)	Spread (M)	DBH (M)	DRB (M)	TPZ Radius (M)	TPZ Area (M2)	SRZ Radius (M)	SRZ Area (M2)	Age Class	Structure	Health	E.L.E	Landscape Significance (STARS)	Retention Value (STARS)	Observations and Defects	Tree Notes	Species Origin
T1	Callistemon viminalis (Weeping Bottlebrush)	0-5	0-5	0.24	0.26	2.88	26.1	1.9	11.2	Semi Mature	Poor	Fair	15-40yrs	Low	Low	Poor Pruning (powerlines)	poor branch structure, lopped under powerlines, epicormic growth	Native

9.5 Appendix- Tree Impacts Schedule

Tree ID	Tree Species	Height (M)	TPZ Area (M2)	SRZ Radius (M)	SRZ Area (M2)	In Development Footprint	In SRZ	TPZ Encroachment (M2)	TPZ Encroachment %	In Footprint/ Major/ Minor/ Nil	Encroachment Type	Retain/ Remove
T1	Callistemon viminalis (Weeping Bottlebrush)	0-5	26.1	1.9	11.2	Yes			100%	In Footprint	located in footprint of proposed vehicle crossover	Remove

9.6 Appendix – Tree Location Plan



Key	
1	Tree ID
	TPZ tree to be removed

Tree Location Plan
Delaney Smith Tree Space Consulting
24 Wentworth St, Croydon Park NSW 2133
Based on Site Survey by AB Dimensions Engineering Surveyors Site Survey 30/12/2021

TREE SPACE CONSULTING