ARBORICULTURAL IMPACT ASSESSMENT

Prepared for:
Kristine Marshall (Senior Project Manager)
Taronga Conservation Society Australia

Site:
Bradleys Head Road,
Mosman NSW 2088

Published by:

MATHEW PHILLIPS
Dip. Arboriculture (AQF-5)
M: 0433 085 573
QTRA No.6067
E: sydneyarbor@hotmail.com

Registered User

SYDNEY ARBOR TREES Pty Ltd
ARBORICULTURE/CONSULTATION/HABITAT CREATION
Tel: (02) 96666821
ABN: 39 106 413 610
www.sydneyarbor.com.au

TABLE OF CONTENTS

1 SUMMARY OF ASSESSMENT

This Arboricultural Impact Assessment (AIA) was prepared for Kristine Marshall of Taronga Conservation Society Australia, as an addendum to Sydney Arbor Trees report dated 18th June 2020 and as such should be read in conjunction with that report. This report specifically discusses four tree species further identified to be impacted by the development of the proposed Upper Australia exhibit.

A Visual Tree Assessment (VTA) and site inspection was conducted on the 8th June 2021 with the supplied plans to determine the impact of the proposed development on tree species previously assessed. The supplied plans show that four (4) tree species previously identified for retention will have major encroachments into their Structural Root Zones (SRZ), now requiring removal to facilitate the development. The four (4) tree species are mature locally endemic natives.

Tree 186 has a Medium significance within the landscape, recent modifications to its environment through the removal of a retaining wall within its southern Structural Root Zone (SRZ), and removal of built structures in its northern SRZ have been assessed to have reduced the stability of the tree. The supplied plans show a further major encroachment into the SRZ & TPZ of the subject tree with a proposed asphalt service road. The combined recent demolition and proposed service road will compromise the subject tree greatly, increasing its probability of failure.

Tree 116 has a medium significance within the landscape, the supplied plans show a major encroachment into the SRZ & TPZ of the subject tree with proposed building structures.

Tree 2 has a low significance within the landscape, the supplied plans show a major encroachment into the SRZ & Tree Protection Zone (TPZ) of the subject tree with a proposed deck. The tree has a poor condition with an infestation of termites within the lower trunk. Three mature trees in proximity to this tree have been approved for removal, once removed, increased wind exposure will increase the probability of failure impacting new targets such as the proposed boardwalk and human targets of the exhibit.

Tree 11 has a low significance within the landscape, the supplied plans show a major encroachment into the SRZ & TPZ of the subject tree with a proposed ramp of sandstone spalls transitioning into a boardwalk.

Based on the findings from the recent tree assessments the proposed four tree removals is supported to facilitate the development with approval from the consent authority. Tree species removed shall be offset in accordance with the proposed landscaping plan.

2 INTRODUCTION

Sydney Arbor Trees Pty Ltd have been engaged by Taronga Conservation Society to provide an Addendum AIA, in accordance with the technical requirements of the Secretary's Environmental Assessment Requirement (SEARs), and in support of the SSDA for the proposed development of the Upper Australia Exhibit within Taronga Zoo Mosman. This addendum should be read in conjunction with Sydney Arbor Trees AIA published by Tom Hare, dated 18th June 2020.

In preparing this report, the author has considered the objectives of:

- *The State environmental Planning Policy 'Vegetation in Non-Rural Areas 2017'*
- *AS 4970 Protection of Trees on Development Sites (2009)*
- *AS 4373 Pruning of Amenity Trees (2007), and*
- *Mosman Development Control plan, and*
- *Mosman Local Environmental Plan*

Figure 1 Shows the proposed development site.

3 IMPACT ASSESSMENT

3.1 Tree 2

Tree 2 was identified as a mature *Melaleuca quinquenervia* (Broad-leaved paperbark); The subject tree has a Low significance within the landscape, with a poor condition, the assessment revealed a significant defect with a basal termite infection reducing the structural integrity of the tree. The tree currently has wire structural supports providing structural integrity to the ropes course. Within proximity to the subject tree, three (3) tree species have been approved for removal, Tree 1 to the north east, Tree 3 directly north and Tree 27 to the west currently all provide screening from wind exposure. The combined defect and adjacent tree removals will greatly increase the probability of failure impacting any proposed targets. The supplied plans show a major encroachment into the SRZ of the subject tree with a proposed deck, whilst this structure could be installed with tree sensitive design, the current status of the tree poses a high risk of tree failure impacting targets.

3.2 Tree 11

Tree 11 was identified as a mature *Tristaniopsis laurina* (Water Gum); The subject tree has a low significance within the landscape. The supplied plans show a major encroachment into the SRZ & TPZ of the subject tree with a proposed ramp of sandstone spalls transitioning into a boardwalk. This structure will greatly modify the trees ability to function removing a large portion of its root zone. The canopy on the western side of the tree will require removal to facilitate the proposed ramp. The combined root impact and canopy removal will adversely impact the subject tree.

3.3 Tree 116

Tree 116 was identified as a mature *Eucalyptus botryoides* (Bangalay); The subject tree has a low significance within the landscape. The supplied plans show a major encroachment into the SRZ & TPZ of the subject tree with proposed building structures. These structures form the central building areas. Footings required for the proposed building are within 500mm of the southern tree trunk, with further footings intersecting the SRZ on the western side of the tree trunk. The combined encroachment will remove a significance portion of the subject trees root zone, restricting its ability to function at a basic level.

3.4 Tree 186

Tree 186 was identified as a mature *Eucalyptus robusta* (Swamp mahogany); The subject tree has a medium significance within the landscape. Recent modifications to its environment through the removal of a retaining wall within its southern Structural Root Zone (SRZ), and removal of built structures in its northern SRZ have been assessed to have reduced the stability of the tree. The subject tree root system has been modified by its environment growing west to east laterally to former structures within its SRZ. To the north-east a former platypus enclosure building has been demolished and to the south east a retaining wall structure was removed and replaced with storm water structures and a large retaining wall.

The supplied plans show a further major encroachment into the SRZ & TPZ of the subject tree with a proposed asphalt service road. The service road is proposed within the SRZ and TPZ where the tree root zone has been allowed to grow between the recently removed structures. The combined recent demolition and proposed service road will compromise the subject tree greatly increasing the probability of failure impacting current structures such as the ‘Retreat’ to the south-east and the proposed exhibit to the north-west.

3.5 Tree 2 & 11 Schedule and Encroachment Plan.

UPPER AUSTRALIA TREE SCHEULE																
Tree No.	Genus Species (Common Name)	Height (m)	Canopy Spread				Diameter (m)		SRZ	TPZ	Age Class (STARS)	Health (VTA)	Vigour (STARS)	Condition (STARS)	E.L.E (STARS)	Significance (STARS)	Arborist Notes
			N	E	S	W	@1.4m	Base									
2	Melaleuca quinquenervia (Broad-Leafed Paperbark)	12	6	4	5	5	0.8	0.95	3.2	**9.6**	MATURE	GOOD	LOW	POOR	15>40	LOW	Basal Termite nest. Not impacted by the proposed developemnt.
11	Tristaniopsis laurina (Water Gum)	7	2	3	2	4	0.35	0.45	2.4	**4.2**	MATURE	FAIR	LOW	FAIR	<1-15	LOW	Supplied plans show proposed walkway through SRZ.

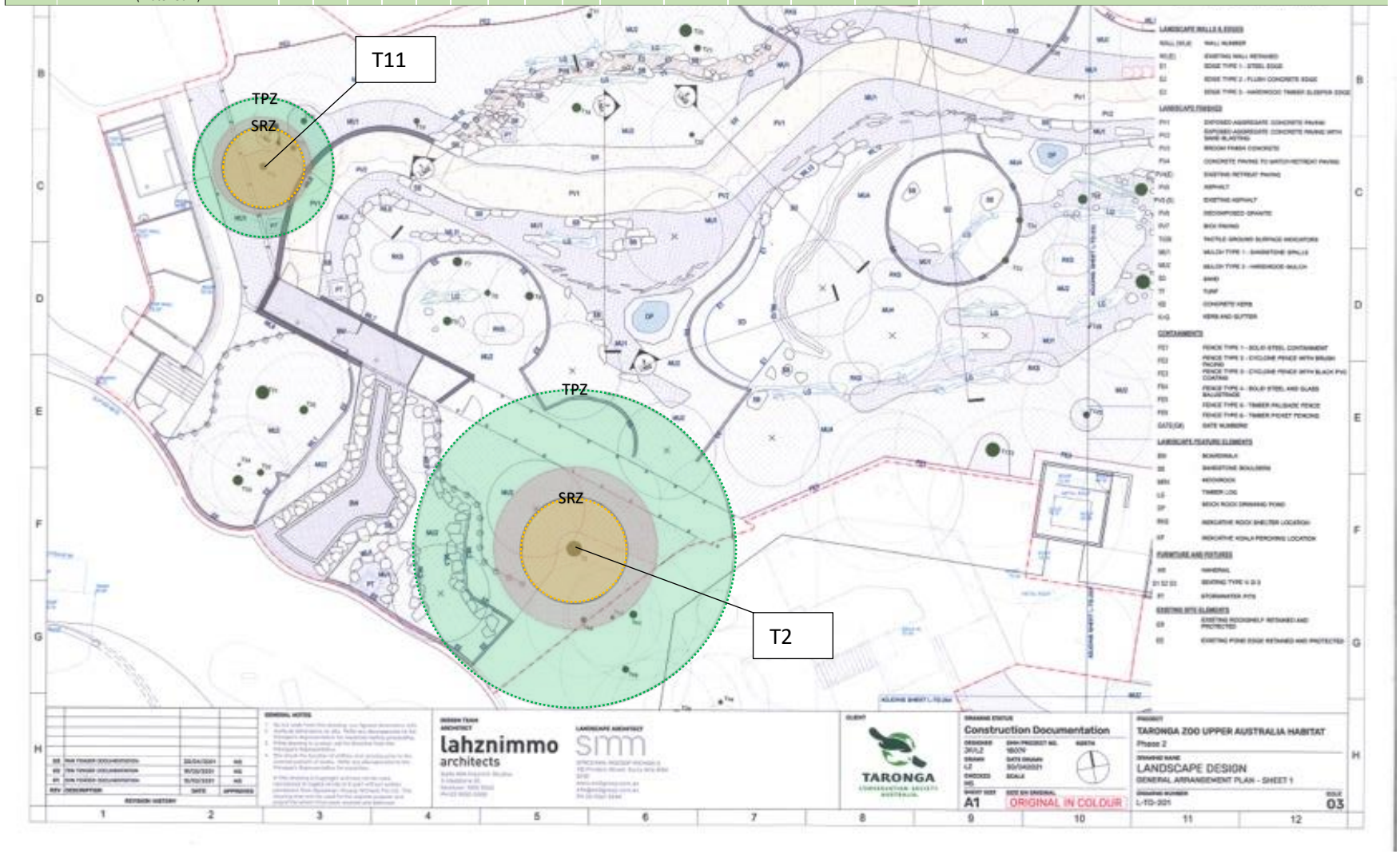


Figure 2 Shows Tree 2 and Tree 11 with TPZ in green and SRZ in orange.

3.6 Tree 116 & 186 Schedule and Encroachment Plan.

UPPER AUSTRALIA TREE SCHEULE																
Tree No.	Genus Species (Common Name)	Height (m)	Canopy Spread				Diameter (m)		SRZ	TPZ	Age Class (STARS)	Health (VTA)	Vigour (STARS)	Condition (STARS)	E.L.E (STARS)	Significance (STARS)	Arborist Notes
			N	E	S	W	@1.4m	Base									
116	Eucalyptus botryoides (Bangalay)	12	6	7	5	6	0.3	0.4	2.3	**3.6**	MATURE	GOOD	LOW	FAIR	15>40	MEDIUM	Supplied plans show proposed structures in SRZ.
186	Eucalyptus robusta (Swamp Mahogany)	15	8	6	9	5	0.7	0.8	3.0	**8.4**	MATURE	GOOD	GOOD	FAIR	15>40	MEDIUM	Supplied plans show asphalt through SRZ.

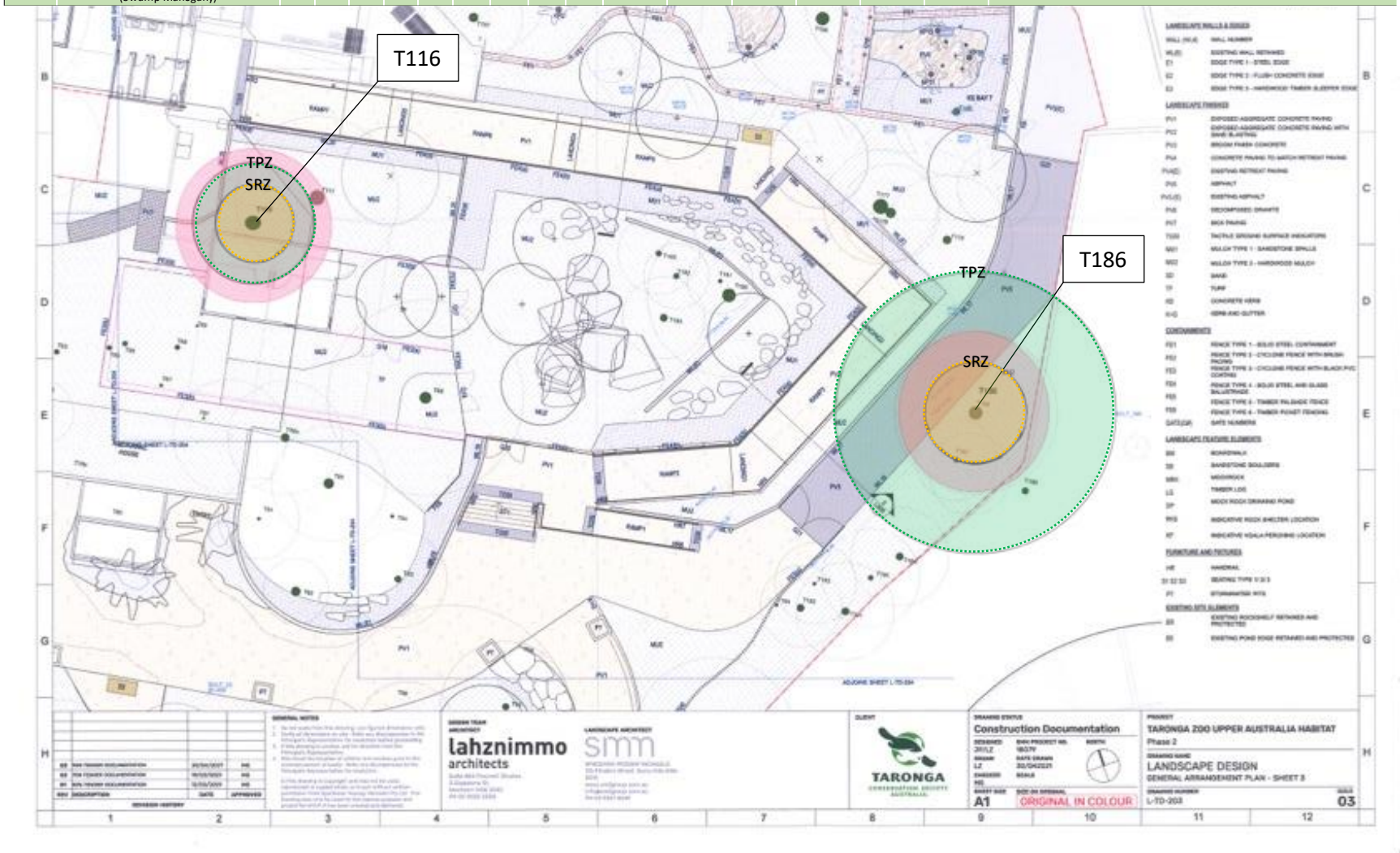


Figure 3 Shows Tree 116 and Tree 186 with TPZ in green and SRZ in oran

4 RECOMMENDATIONS

4.1 The removal of Tree 2, 11, 116 and 186 is supported in order to facilitate the proposed development. Removals should only be conducted under consent from the consent authority.

4.2 A Site-Specific Tree Protection Plan should be produced by an AQF-5 Arborist and implemented in order to protect retained tree species of the development site before contractors enter the site or before any works start.

4.3 The Site -Specific Tree Protection Plan shall include the following as a minimum:

4.3.1 Location of tree protection fencing.

4.3.2 Access and egress for personnel and machinery into the site including and pruning specification if trees require canopy lifting.

4.3.3 Location of ground protection where tree protection fencing is reduced.

4.3.4 Locations for site sheds, amenities and stockpiling.

4.3.5 Storage areas for machinery, fuels and chemicals.

4.3.6 The Project Arborist inspection regime and reporting protocols.

4.4 Any works conducted within the Tree Protection Zone of the retained trees shall be supervised by the project Arborist.

4.5 Tree removals shall not adversely impact retained tree species.

4.6 Tree 2, 11, 116 and 186 shall be inspected for fauna using the structure as habitat prior to removals being conducted.

5 STATEMENT OF LIMITITATIONS

5.1 This Assessment report was undertaken by an Arborist with AQF level V (Diploma of Arboriculture) qualification. Mathew Phillips is a registered user of the Quantified Tree Risk Assessment ® (QTRA) methodology. Only registered licence holders having received training and regular updates from Quantified Tree Risk Assessment Limited are permitted to use the QTRA system.

5.2 It is important to note that the QTRA risk assessment does Not evaluate risk exposure during unexpected, unusual, unpredictable, severe, or unseasonal weather, weather at the extremes of the historical distribution. The risk assessment provided is valid for 12 months only.

5.3 This assessment was based on a comprehensive site inspection, observations made at the time of the inspection and information provided by the client and their employees. Any and all conclusions reached, or tree works recommended, do not imply that the tree will withstand adverse natural conditions such as environmental influences, soil failure and erosion, severe storms, works carried out or near it, land development and mechanical impact, miss-management or maintenance or changes in the growing environment, may impact the validity of the conclusions.

5.4 Any written or verbal submission, statements taken from the results, discussions, conclusions or recommendations made herein, may only be used where the whole of the original report is referenced in, and directly attached to that submission, report or presentation.

5.5 All care has been taken to obtain all information from reliable sources. All data collected has been verified insofar as practically possible: however, the author can neither guarantee nor be responsible for the accuracy of information provided by others. Information contained

herein, covers only those trees that were surveyed, examined and scheduled and reflects the condition of those trees at the time of inspection.

5.6 This report is Not a warranty or guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future, but a professional opinion of the current status and condition of the tree. Whilst all care has been taken to prepare this report, the author takes no responsibility for the continued vitality of the tree mentioned or for any damage that it may cause in the future.

If you have any questions regarding this report or require any further information, please contact me on the details below

Regards,

Mathew Phillips
P: 0433 085 573
AQF-5 Consulting Arborist
Dip. Arboriculture
Quantified Tree Risk Assessor ID. 6067
E: sydneyarbor@hotmail.com

QTRA
Registered User

6 REFERENCES

Australian Standard AS4373-2007 Pruning of Amenity Trees. Standards Australia.

Australian Standard AS4970-2009 Protection of trees on development sites. Standards Australia.

Barrell, J (2009) Draft for Practical Tree AZ version 9.02 A+NZ Barrel Tree Consultancy, Bridge House, Ringwood BH24 1EX (n.d.).

Draper, D. B., & Richards, P. A. (2009). *DICTIONARY for MANAGING TREES in URBAN ENVIRONMENTS.* Collingwood: CSIRO publishing.

Lonsdale, D. (1999). *Principles of Tree Hazard Assessment and Management.* London, Great Britian: The Stationary Office (TSO).

Mattheck, C., & Breloer, H. (1997). *The Body Language of Trees. A handbook for Failure Analysis.* London, England: Department of Environment.

SEPP. (2017). *State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017.* Retrieved from Legislation.nsw.gov.au: https://legislation.nsw.gov.au/EPIs/2017-454.p

7 APPENDICES

7.1 Appendix 1: ASSESSMENT METHODOLOGY

Tree species of the subject site were assessed using the Visual Tree Assessment criteria as described in The Body Language of Trees- A Handbook for Failure Analysis. (Mattheck & Breloer, 1997) and the principals of Quantified Tree Risk Assessment. This assessment was limited to a visual examination of the subject trees from ground level only. Internal diagnostic testing, tissue samples, or soil samples were not undertaken as part of this assessment.

7.1.1 Tree Locations, Numbers & Dimensions

Prescribed trees with TPZ's that encroach the subject site were assessed. Tree heights, canopy spreads and trunk diameters were estimated for all prescribed tree species.

7.1.2 Tree Vigour

Ability of a tree to sustain its life processes. This is independent of the condition of a tree but may impact upon it. Vigour can appear to alter rapidly with change of seasons (seasonality) e.g., dormant, deciduous, or semi-deciduous trees. Vigour can be categorized as Good Vigour, High Vigour, Low Vigour and Dormant Tree Vigour.

7.1.2.1 Good Vigour

Ability of a tree to maintain and sustain its life processes. This may be evident by the typical growth of leaves, crown cover and crown density, branches, roots and trunk and resistance to predation. This is independent of the condition of a tree but may impact upon it, and especially the ability of a tree to sustain itself against predation.

7.1.2.2 High Vigour

Accelerated growth of a tree due to incidental or deliberate artificial changes to its growing environment that are seemingly beneficial, but may result in premature aging or failure if the favourable conditions cease, or promote prolonged senescence if the favourable conditions remain, e.g. water from a leaking pipe; water and nutrients from a leaking or disrupted sewer pipe; nutrients from animal waste, a tree growing next to a chicken coop, or a stock feed lot, or a regularly used stockyard; a tree subject to a stringent watering and fertilising program; or some trees may achieve an extended lifespan from continuous pollarding practices over the life of the tree.

7.1.2.3 Low Vigour

Reduced ability of a tree to sustain its life processes. This may be evident by the atypical growth of leaves, reduced crown cover and reduced crown density, branches, roots and trunk, and a deterioration of their functions with reduced resistance to predation. This is independent of the condition of a tree but may impact upon it, and especially the ability of a tree to sustain itself against predation.

7.1.2.4 Dormant Tree Vigour

Determined by existing turgidity in lowest order branches in the outer extremity of the crown, with good bud set and formation, and where the last extension growth is distinct from those most recently preceding it, evident by bud scale scars. Good vigour during dormancy is achieved when such growth is evident on a majority of branches throughout the crown.

7.1.3 Tree Health

The Health of the subject tree(s) was rated as Good, Fair or Poor based on an assessment of the following factors: Foliage size and colour, presence of pest or disease, annual shoot growth, crown density, deadwood size and volume and presence of epicormic or sucker growth.

7.1.4 Age

Most trees have a stable biomass for the major proportion of their life. The estimation of the age of a tree is based on the knowledge of the expected lifespan of the taxa in situ divided into three distinct stages of measurable biomass, when the exact age of the tree from its date of cultivation or planting is unknown and can be categorized as Young, Mature and Over-mature. ***Young*** Tree aged less than <20% of life expectancy, in situ. ***Mature*** Tree aged 20-80% of life expectancy, in situ.
Over-mature Tree aged greater than >80% of life expectancy, in situ, or senescent with or without reduced vigour, and declining gradually or rapidly but irreversibly to death.

7.1.5 Periods of Time

Periods of Time The life span of a tree in the urban environment may often be reduced by the influences of encroachment and the dynamics of the environment and can be categorized as Immediate, Short Term, Medium Term and Long Term. ***Short Term*** A period less than <1–15 years. ***Medium Term*** A period 15–40 years. ***Long Term*** A period greater than >40 years.

7.1.6 Estimated Life Expectancy (ELE)

The ELE is an estimate of the longevity of the subject tree(s) in its landscape context. The ELE is modified where necessary to take into consideration tree(s) health, structural condition and site suitability. The tree(s) have been allocated one of the following ELE categories.
Long >40 years, **Medium 15-40 years**, **Short <1-15 years** and **Dead**.

ELE gives an estimation of how long a tree is likely to remain viable within that landscape based on species, stage of life cycle, health, contribution to the local environment, amenity values, conflicts with adjacent infrastructure and risk to the community. The ELE is also based on the site conditions not significantly being altered and any prescribed maintenance recommendations such as Crown maintenance and Deadwood removal. The age class of the assessed tree/s is dependent on known species characteristics and longevity in the urban environment and partially aids in the assessment of the Estimated life expectancy.

7.1.7 Tree Condition

A tree's crown form and growth habit, as modified by its environment (aspect, suppression by other trees, soils), the stability and viability of the root plate, trunk, and structural branches (first (1^{st}) and possibly second (2^{nd}) order branches, including structural defects such as wounds, cavities or hollows, crooked trunk or weak trunk/branch junctions and the effects of predation by pests and diseases. These may not be directly connected with vigour and it is possible for a tree to be of good vigour but in poor condition. Condition can be categorized as Good Condition, Fair Condition, Poor Condition and Dead.

7.1.7.1 Good Condition

Tree is of good habit, with crown form not severely restricted for space and light, physically free from the adverse effects of predation by pests and diseases, obvious instability, or structural weaknesses, fungal, bacterial or insect infestation and is expected to continue to live in much the same condition as at the time of inspection provided conditions around it for its basic survival do not alter greatly. This may be independent from or contributed to by vigour.

7.1.7.2 Fair Condition

Tree is of good habit or misshapen, a form not severely restricted for space and light, has some physical indication of decline due to the early effects of predation by pests and diseases, fungal, bacterial, or insect infestation, or has suffered physical injury to itself that may be contributing to instability or structural weaknesses, or is faltering due to the modification of the environment essential for its basic survival. Such a tree may recover with remedial works where appropriate, or without intervention may stabilise or improve over time, or in response to the implementation of beneficial changes to its local environment. This may be independent from or contributed to by vigour.

7.1.7.3 Poor Condition

Tree is of good habit or misshapen, a form that may be severely restricted for space and light, exhibits symptoms of advanced and irreversible decline such as fungal, or bacterial infestation, major die-back in the branch and foliage crown, structural deterioration from insect damage e.g. termite infestation, or storm damage or lightning strike, ring barking from borer activity in the trunk, root damage or instability of the tree, or damage from physical wounding impacts or abrasion, or from altered local environmental conditions and has been unable to adapt to such changes and may decline further to death regardless of remedial works or other modifications to the local environment that would normally be sufficient to provide for its basic survival if in good to fair condition. Deterioration physically, often characterised by a gradual and continuous reduction in vigour but may be independent of a change in vigour, but characterised by a proportionate increase in susceptibility to, and predation by pests and diseases against which the tree cannot be sustained. Such conditions may also be evident in trees of advanced senescence due to normal phenological processes, without modifications to the growing environment or physical damage having been inflicted upon the tree. This may be independent from or contributed to by vigour.

7.1.7.4 Dead

Tree is no longer capable of performing any of the following processes or is exhibiting any of the following symptoms. Processes, Photosynthesis via its foliage crown (as indicated by the presence of moist, green, or other coloured leaves). Osmosis (the ability of the root system to take up water). Turgidity (the ability of the plant to sustain moisture pressure in its cells). Epicormic shoots or epicormic strands in Eucalypts (the production of new shoots as a response to stress, generated from latent or adventitious buds or from a lignotuber). Symptoms. Permanent leaf loss. Permanent wilting (the loss of turgidity which is marked by desiccation of stems leaves and roots). Abscission of the epidermis (bark desiccates and peels off to the beginning of the sapwood).

7.1.8 Trees & Development

Tree Protection Zones, Tree Protection Measures and Sensitive Construction Methods for the subject tree were based on methods outlined in Australian Standard 4970-2009 Protection of Trees on Development Sites.

7.1.9 The Structural Root Zone (SRZ)

The SRZ is described in AS-4970 as the area around the base of a tree required for the tree's stability in the ground. Severance of structural roots within the SRZ is not recommended as it may lead to the destabilisation and/or demise of the tree.

7.1.10 The Tree Protection Zone (TPZ)

As described within AS-4970 as a combination of the root area and crown area requiring protection. It is an area isolated from construction disturbance, so that the tree remains viable. TPZ's are calculated by multiplying the diameter at breast height by 12. This results in a setback distance radially from the trunk.

7.1.11 Tree Significance

Tree significance was determined using the Tree Significance- Assessment Criteria of the IACA Significance of a Tree Rating System (STARS)© (IACA, 2010), Appendix 2.

TREE SIGNIFICANCE VALUE			
Significance Scale	High	Medium	Low
Tree No.			

Table 1

7.1.12 Tree Retention Value

Tree retention value was determined by using the Retention Value- Priority Matrix of the IACA Significance of a Tree Assessment Rating System (STARS)© (IACA 2010) Appendix 2. The tree retention value is formulated using the IACA Significance of a Tree, Assessment Rating System (STARS) scaled against the Estimated Life Expectancy (ELE or ULE). This rating relates to the tree significance and the tree estimated life expectancy, the result is a retention merit.

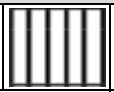
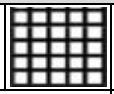
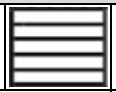
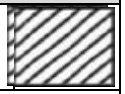
TREE RETENTION VALUE								
Retention Value	**High** Priority for Retention		**Medium** Consider for Retention		**Low** Consider for Removal		**Remove** Priority for Removal	
Retained Tree No.			116 & 186		2 & 11			
Removed Tree No.								

Table 2

7.1.13 Documents & Plans Provided

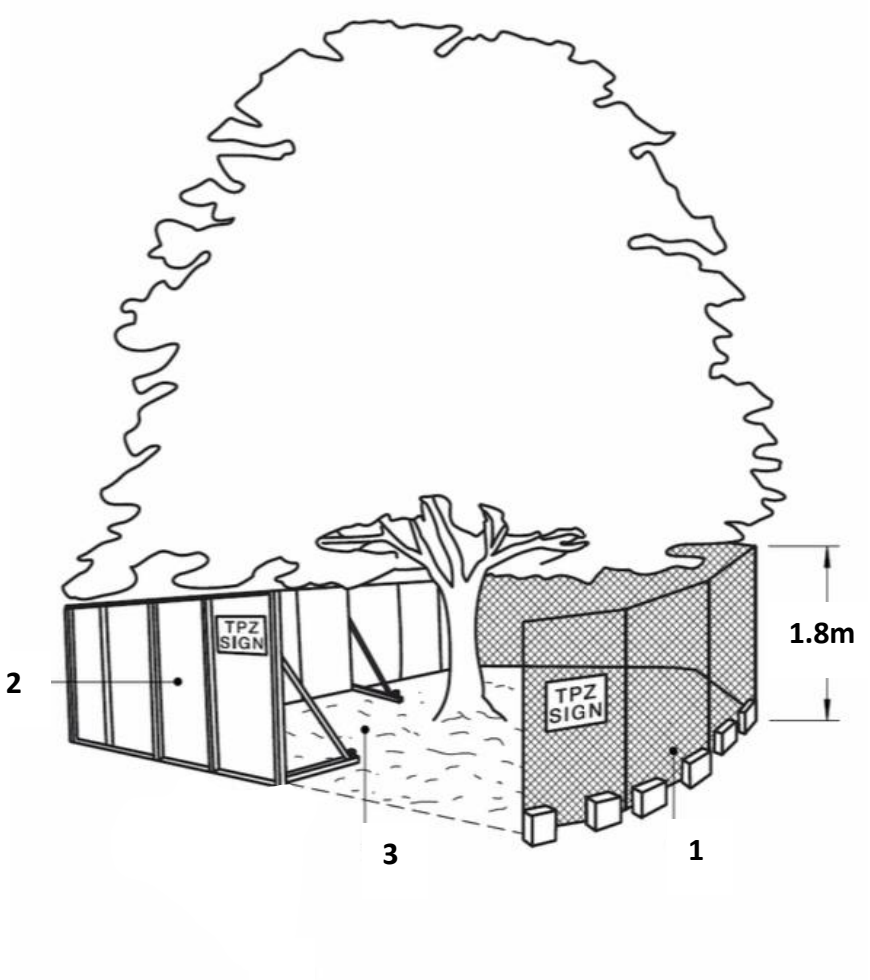
SCHEDULE OF PLANS/DOCUMENTS PROVIDED	
L-TD-201 Landscape Design – General Arrangement Plan L-TD-203 Landscape Design – General Arrangement Plan	Appendix 3

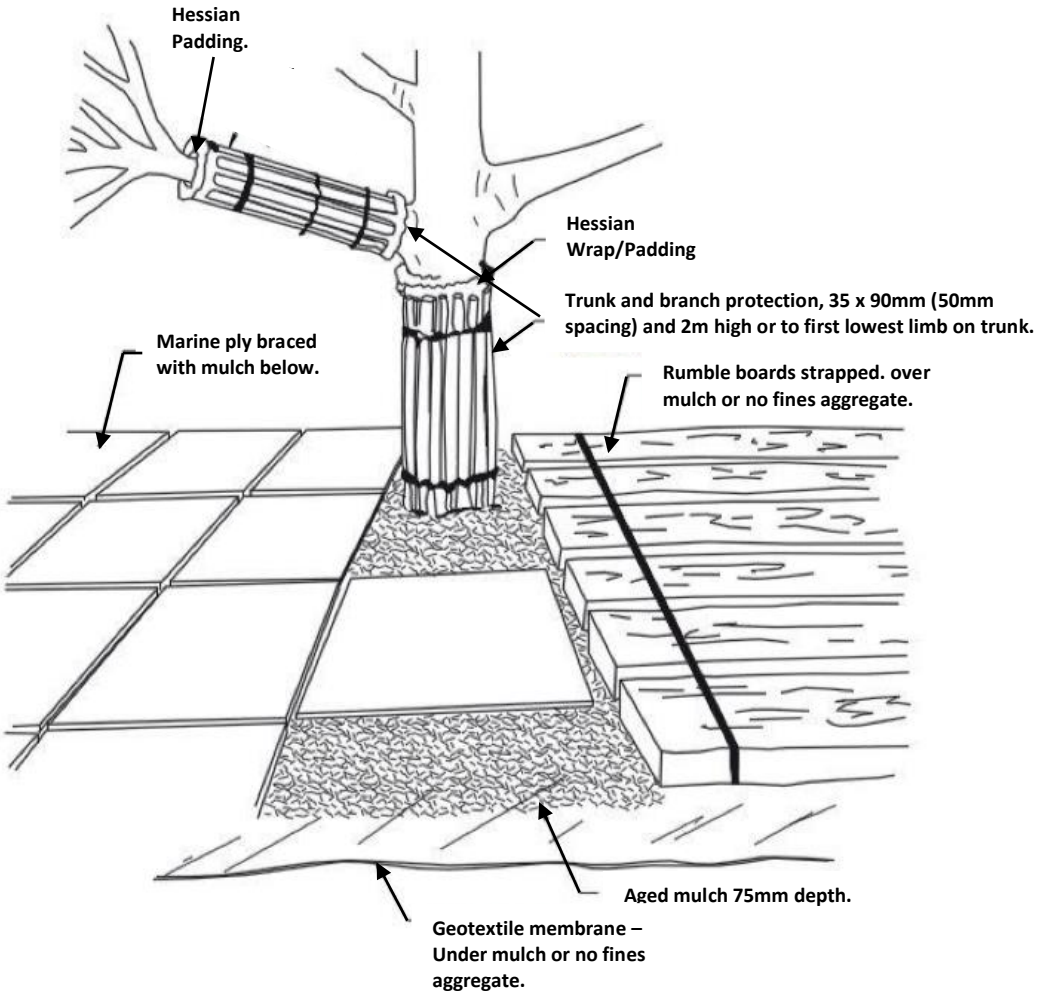
Table 3

7.1.14 Schedule of Tools Used

TOOL	FUNCTION	USED	EXPLANATION
Visual Tree Assessment (VTA)	**Assesses Health and Condition of the subject tree.**	**Yes**	
Diameter Measuring Tape	**Measures trunk diameter to calculate the SRZ and TPZ.**	**No**	
Forestry Laser height Measuring Tool.	**Measures the height of targets.**	**No**	
Sounding Mallet	**Assesses variation in audible noise produced when mallet impacts the external structure.**	**No**	
QTRA	**A tool used by registered QTRA assessors to quantify risk related to tree failures.**	**No**	
IACA S.T.A.R.S	**Assesses Tree Significance within the landscape.**	**YES**	**Appendix 2**
IACA Tree Retention Value Matrix	**Assigns a retention value**	**YES**	**Appendix 2**

7.2 APPENDIX 2 Physical Tree Protection





1 = Chain mesh fencing, concrete feet (Shade cloth council dependent)
2 = Hoarding/timber fencing alternative (CBD)
3 = Aged quality mulch (75mm max depth) extent of TPZ (where practical) no construction unless supervised by AQF-5 Arborist. No grade changes, no surface changes, no storage of materials permitted and no excavation to occur as part of the site establishment related to tree protection.

7.3 APPENDIX 3: Significance of a Tree, Assessment Rating System

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

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

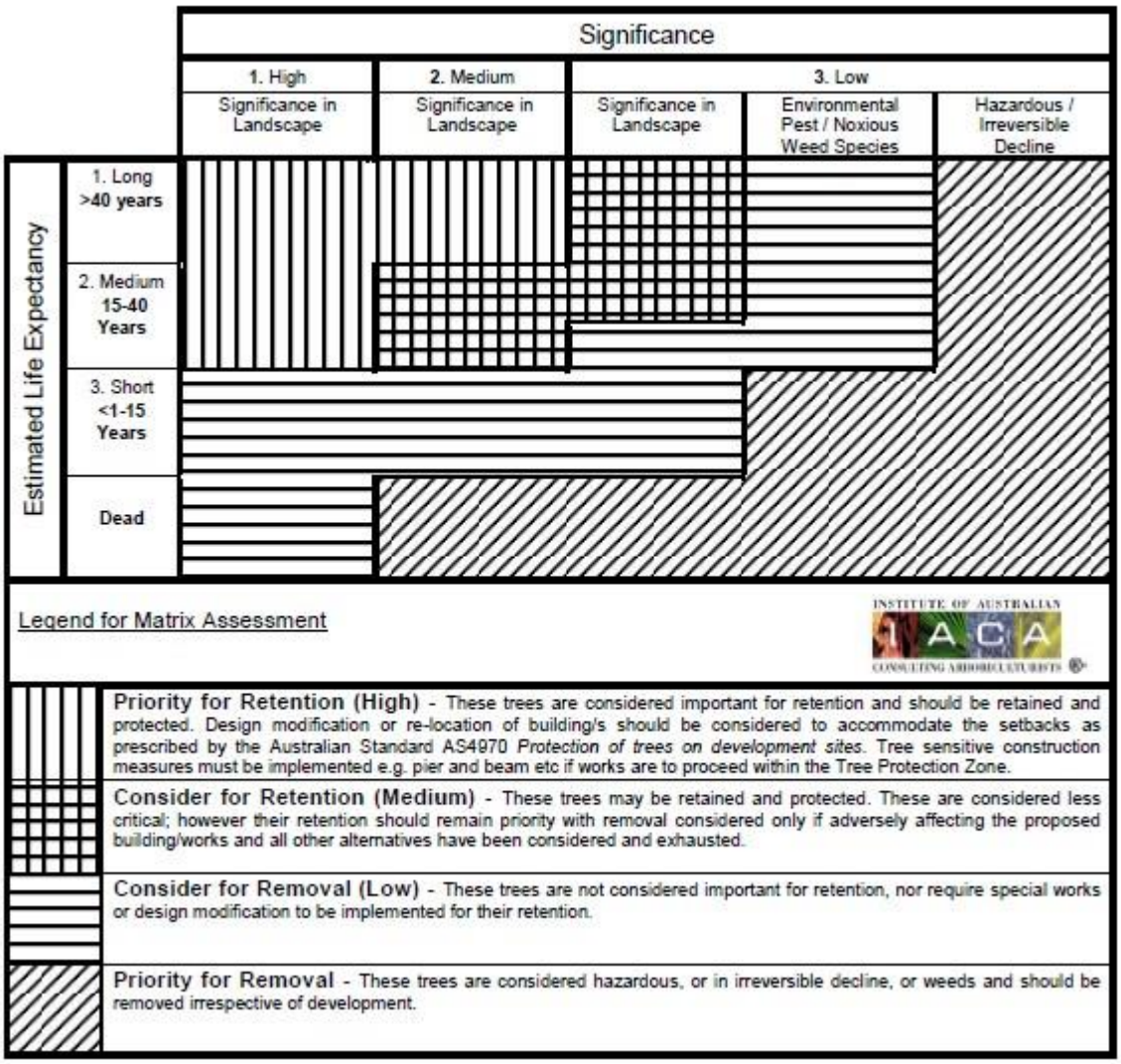
- The tree is structurally unsound and/or unstable and is considered potentially dangerous,
- The tree is dead, or is in irreversible decline, or has the potential to fail or collapse in full or part in the immediate to short term.

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.a

7.4 APPENDIX 4: IACA Tree Retention Value- Priority Matrix



IACA 2010, Significance of a tree, Assessment rating System (STARS), Institute of Australian Consulting Arboriculturists, 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