



Arboricultural Consultants
ABN: 41 063 751 928

Phone: 9785 4591 Mobile: 0419 71 71 70 PO Box 534, PANANIA NSW 2213
info@nswtrees.com www.nswtreeservices.com.au



ARBORICULTURAL IMPACT ASSESSMENT

DBG

1 Tracey Ave,
CARLINGFORD NSW 2118

Report Reference: AIA – DBG 07/23 Rev B.
5th July, 2023

Prepared by: Sam Allouche

Diploma of Arboriculture (AQF Level 5)

Cert IV in Horticulture (Arboriculture)

Member of Arboriculture Australia | Member of International Society of Arboriculture

Table of Contents

1.0	Introduction	3
2.0	Methodology	3
3.0	Observations	5
3.1	Site Observations.....	5
3.2	Tree Observations & Impact Summary (AS4970:2009)	7
4.0	Indirect Impacts	8
5.0	Discussion.....	9
6.0	Conclusion & Recommendations	10
	Appendix A.....	11
	Tree Location Plan	11
	Appendix B.....	12
	Photographs	12
	Appendix C.....	17
	Tree Assessment & Impacts Evaluation Table Notes.....	17
	Appendix D.....	18
	Indicative TPZ and SRZ (AS 4970/2009)	18
	Appendix E	19
	IACA Significance of a Tree, Assessment Rating System (STARS) (IACA 2010)©	19
	Appendix F	21
	Tree AZ Categories (Version 10.10 ANZ).....	21
	Appendix G.....	22
	Glossary of Terms	22
	Disclaimer	24
	Bibliography.....	25

1.0 Introduction

- I. This Arboricultural Impact Assessment (AIA) was commissioned by DBG , on behalf of property owners of 1 Tracey Ave , Carlingford for trees potentially impacted by a Development Application (DA) to City Of Parramatta for redevelopment of the site .
- II. The proposal entails the demolition of existing structures, and construction of a new child care facility with basement parking.
- III. The Arborist has identified a total of six (6) trees on site, all site trees, and prescribed as per The Hills Shire Council – Tree Management Guidelines for Trees on Private Land 2017, which still applies until such time as a combined DCP is announced for the City of Parramatta.
- IV. All trees are assessed with respect to the Australian *Standard- Protection of trees on development sites (AS 4970:2009)*. Other trees on site are all below the height threshold and not included in this AIA.
- V. The Arborist has made recommendations for those trees in this report to be removed, to facilitate the works, assessed as not having high retention value or significance , and imposing unnecessary design constraints for their retention , particularly in the case of T1 and T5.
- VI. The Arborist recognises that the landscape for a child care centre includes specialised areas to assist in child development that requires uninterrupted areas and where new trees could grow congruently with this.
- VII. This AIA is to be sent to City of Parramatta , as supporting documentation for the DA for final determination of trees to be made.

2.0 Methodology

- I. The Arborist accessed the sites unaccompanied and inspected trees, by way of Visual Tree Assessment (VTA), at ground level only, on 25th January, 2023.
- II. The Arborist uses the trees plotted on survey and plans to guide assessment. Where trees are not plotted on plans, including neighbouring trees ,the Arborist estimates their location based on known reference points on site.
- III. Tree dimensions were estimated by diameter tape or by eye sight.
- IV. No advanced assessment by means subterranean investigation or canopy inspections were undertaken at the time, nor warranted.

- V. Tree species are identified by fruits/nuts and foliage *only*, with no formal testing undertaken.
- VI. Neighbouring trees are observed from the clients site *only*, and observations may be somewhat limited.
- VII. Photographs were taken by the Arborist using a iPhone 13Pro.
- VIII. The Arborist tables the following in 3.2 Tree Observations -Table 1 - Tree Assessment & Impacts Evaluation;
 - a. Genus & species, Common name, age, vigour and crown characteristics, general health and condition, defects and the presence of pest and disease.
 - b. An appraisal of trees with reference to Tree AZ; determination of the worthiness of trees in the planning process, and a Tree Retention Value (STARS Matrix) that assesses the trees significance and value for retention on the site where development occurs. (Refer to Appendix C for further clarification of all scales and values)
 - c. Calculation of Tree Protection Zones (TPZ) and Structural Root Zones (SRZ), proposed setbacks to works and degree of incursion characterised by minor, moderate, major or no impact to trees.
- IX. Findings in Table 1.0 are to be read in conjunction with Notes in Appendix.
- X. Calculations of impacts are undertaken by using an interactive calculator. (Treetec, 2014)
- XI. A Site Plan is included in Appendix A, using Basement Plan provided by the client, and overlaid by the Arborist, to annotate tree locations only.
- XII. A Glossary of terms is provided in the Appendix G of this report, for clarification of Arboricultural terms and meanings
- XIII. The following documentation was used as part of this assessment;

Plan Type/Document	Provided by	Reference	Date
Survey	SJ Surveying Services P/L	Job/File No. 361822	09.12.2022
Basement Plan	DBG	DA 2002 Issue A	29.03.2023
Ground Floor Plan	DBG	DA 2003 Issue A	29.03.2023
First Floor Plan	DBG	DA 2004 Issue A	29.03.2023
Landscape Concept	Outside In	Dwg 01 Rev A Issue DA	10.05.2023

3.0 Observations

3.1 Site Observations

- I. The site is referred to as Lot 26 in DP 225990 in City of Parramatta,
- II. The site is a corner lot, with primary frontage *predominantly* facing east to Tracey Ave, and secondary frontage to Murray Farm Rd. See NSW Planning Portal Maps below with site in yellow outline.

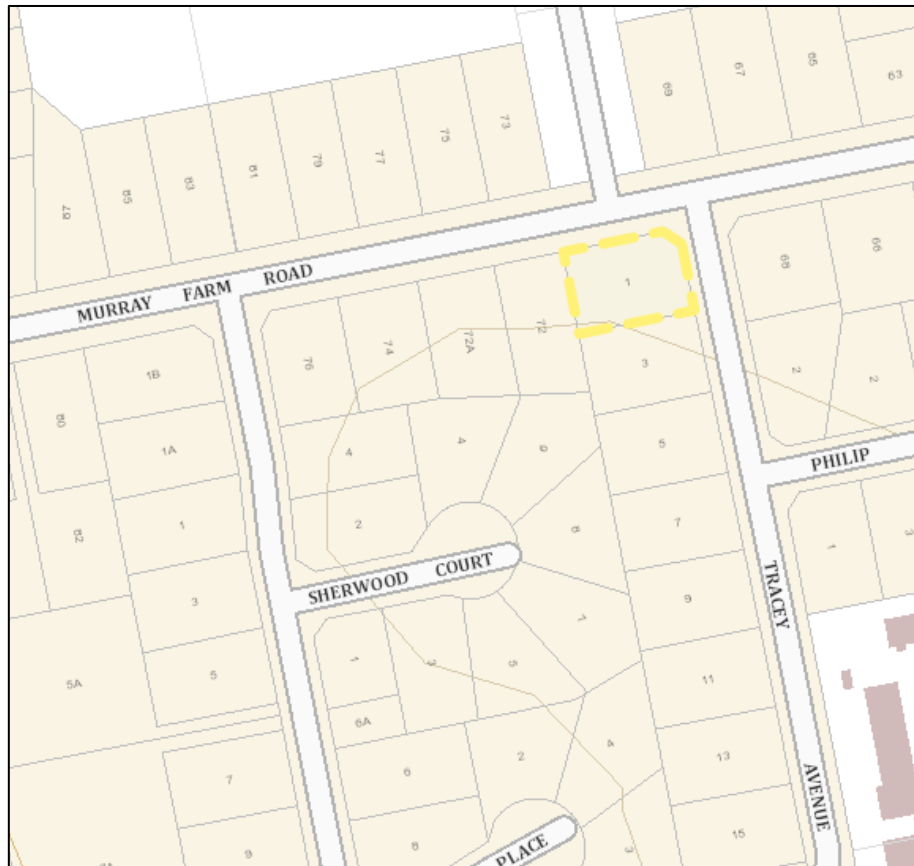


Figure 1: NSW Planning Portal Map

- III. Topography of the site shows a slight drop in RLS on both eastern and northern frontages.
- IV. The site accommodates a freestanding split level brick dwelling , with concrete driveways on both street frontages.
- V. Soil on site is not formally assessed, but eSpade Web indicating it is Glenorie soil landscape containing ""underlain by Wianamatta Group Ashfield Shale and Bringelly Shale formations.....comprised of laminite and dark grey shale [and] calcareous claystone, laminite, fine to medium grained lithic-quartz sandstone". (State of New South Wales - Department of Planning, Industry and Environment 2020)

- VI. Site vegetation appears to be introduced or self seeded trees and shrubs from past landscapes.
- VII. See picture (below) ,courtesy of SIXMaps, with sites highlighted.



Figure 2: SixMaps aerial imagery

3.2 Tree Observations & Impact Summary (AS4970:2009)

ID	Genus Species	Common Name	Height (m)	Spread (m)	Age	Condition	TREEAZ	Retention Value	DBH (mm)	DAB (mm)	TPZ (m)	SRZ (m)	Impacts/ Incursion %	Comments / Impact Summary
													Nil	
1	<i>Picea pungens</i>	Blue spruce	8.8	9x7	M	G	G	M	370	400	4.44	2.25	TL	Tree located on splayed corner of both frontages. Canopy is low set. Tree is listed north Tree is totally consumed by the proposal.
2	<i>Archontophoenix cunninghamiana</i>	Bangalow palm	7	6	M	F	F	L	220	-	4.0	-	Exempt	Located on southern boundary. Tree is exempt as per The Hills Shire Tree Management Manual , as it is with 5m from the existing dwelling.
3	<i>Bauhinia sp.</i>	Bauhinia	6	6	M	F	F	L	150	280	2.0	1.94	TL	Tree located in south western corner of site. Major incursion for basement footprint and tree would be proposed in the play area of the child care centre.
4	<i>Jacaranda mimosifolia</i>	Jacaranda	6	3.5	M	G	G	L	80x3	190	2.0	1.65	TL	Tree located in south western corner of site. Major incursion for basement footprint and tree would be proposed in the play area of the child care centre.
5	<i>Pinus radiata</i>	Radiata Pine	13	10	M	G	G	M	580	630	6.96	2.73	Exempt	Tree located on the western boundary. Canopy is low set. Significant impacts from the basement and tree would locate in the side setback of the facility impeding access down the western boundary. Canopy encroachment is also noted increasing the incursion overall to well over 45%. Tree is exempt as per The Hills Shire Tree Management Manual , as an exempt species
6	<i>Jacaranda mimosifolia</i>	Jacaranda	8	7.5	M	G	G	L	160 90x2	250	2.4	1.85	TL	Tree located in the north west corner of site. Tree is totally consumed by the proposal.

4.0 Indirect Impacts

The following are indirect impacts that trees may succumb to during construction related activities. It is imperative that these be taken into consideration and all attempts made to minimise indirect impacts, as they can occur over the duration of construction and indeed accumulate to have significant effect on trees longevity.

- I. Mechanical damage from plant/machinery; Direct wounding and damage of stems and branches by large plant & machinery, including excavator, bob cat, crane, etc., during construction activities will have some impact in the form of cambium damage/abrasion to tree trunks and branch tearing well into collar attachments in turn exposing live woody tissue and predisposing the tree to pest and disease. Similarly, plant/machinery is also responsible for soil compaction within the trees TPZ.
- II. Indirect root injury from soil compaction; When soil is compacted either via building materials/debris stockpiled on the TPZ or TPZ is utilised as a thoroughfare for heavy plant and machinery, the soil inevitable becomes compacted and impacts on the air and moisture uptake and ultimately affecting the gaseous exchange within the drip line that is vital for the trees health and longevity.
- III. Soil contamination; where chemicals, cement, and paint products etc., get washed or spilled into the soil and the tree absorbs the soluble content through its roots in addition lime from cement wash off can alter the soil PH
- IV. Soil grade changes; when the top soil cover down to a depth of approximately 150mm is striped it can illuminate vital feeder roots and can temporarily shock the tree. This process is common particularly during the landscape process. In addition, these fine roots if exposed can prematurely dehydrate and die
- V. Landscaping Impact; Side paths and driveways comprised of concrete and non-porous materials can deprive roots of air and water and affect gaseous exchange. This is particularly true when there has been lack of consideration for trees located on adjacent properties and within close proximity to building envelope. In addition, masonry fence lines require sub grade footings and usually at the expense of root loss of nearby trees. Furthermore, there can be an increase in reflected heat to the remaining trees as a result from surrounding hard surfaces.

5.0 Discussion

- I. The Arborist confirms that the site is devoid of any *significant* trees, but does note that both T1 and T5 do have *some* amenity, in that they are both sizeable Pines, with conical form, that *do* contribute the current site landscape. The Radiata Pine (T5) however is exempt.
- II. These species are commonly planted for landscape amenity, and given their planted locations, that being peripheral and around site boundaries, it is evident that such trees would have been part of past landscape themes, that would have suited the current site usage, that being a single dwelling on a modest sized block, where landscape areas are reasonably balanced to meet the built form.
- III. For T2, it is either inappropriately planted or indeed self-seeded, and given that it is within 5m of the existing dwelling, is exempt.
- IV. For trees 3, 4 and 6, the Arborist notes that they are marginally higher than the prescribed height, are ornamental trees, and not of high significance.
- V. Through consultation with designers, the Arborist notes the challenges brought about by redevelopment of a site for a child care facility, where the required developable area is *significantly* increased, due to the *size* of the new development, upgrading of required facilities, amenities (basement parking) and inclusions associated with the facility itself. As for landscape areas, the Arborist also notes that the Landscape Concept Plan includes dedicated areas in the landscape for children to partake in *specialised* play and use *specific* equipment or landscape elements, to achieve desired learning outcomes as part of their participation, all of which require interrupted area.
- VI. In this case, the inclusion of basement parking, to meet the needs of increased patronage, requires more developable area, with major soil cuts, inevitably at the expense of the natural environment, where essentially all trees are consumed, *wholly*, or to a major degree, such as for T4.
- VII. The bulk soil cut basement that *almost* extends *as far* as the all site boundaries, realistically leaving *less* Deep Soil Zones that could accommodate large established trees. This is particularly true of T1, that although not technically consumed by the basement footprint, is however proposed to be located in a much smaller eastern set back from the boundary, which would both inhibit functional use of this area, as well as require major canopy adjustment of the conical shaped crown, to accommodate the building elevations of the corresponding upper floors.
- VIII. For T1, the Arborist did enter into discussions with the designer with initial concept plans illustrating this tree to be retained, and a valid attempt made to maintain the tree, however there could be no avoiding the SRZ. What also proved challenging was the upper floors, both ground and first floor level, that would come as close as 1.828m

of this tree, making then tree technically exempt in the new context as it is as it locates within 5 metres of an external wall.

6.0 Conclusion & Recommendations

- I. The Arborist does not deny that the T1 and T5 have some amenity , given size and form, however, they do *not* denote a high retention value , and they do *not* command the design changes that would be required to allow them to remain viable, with T5 exempt. Both the basement and ground /first level would have to be significantly reduced in order to maintain T1, also impacting the placement numbers of children. Indeed, all trees have been assigned low/medium retention value, for different reasons, including individual species, current form and location on site.
- II. The Arborist cannot make judgments on other planning controls, nor on the clients choice of site usage, but takes such factors into consideration when assessing the viability of trees long term with respect to building and associated construction activities.
- III. It is noted that the developable area required for the construction of the child care centre, is *considerably* larger than that of a single dwelling which the site currently accommodates, with the loss of trees inevitable.
- IV. What is recognised as the changed landscape the childcare centre proposes, in that it will make use of both medium to small trees and plantings , creating landscape zones, that complement the new facility, as well as have a functional role to assist the children with their educational and social needs. Whilst no one negates that a well-established tree could contribute to the landscape of the centre, what is recognised here is that working around the T1 , as an established tree with the better retention value, limits the potential for the centre to be able to create a highly specialised outdoor play area for the children, as panne for in the Concept Plan.
- V. The Arborist recommends that all site trees, T1-T6, be removed to facilitate the construction of the child care centre. Tree removal shall be undertaken in accordance with Code of Practice , Amenity Tree Industry 1998, Workcover NSW.

Yours Faithfully,



Sam Allouche

Diploma of Arboriculture (AQF Level 5)

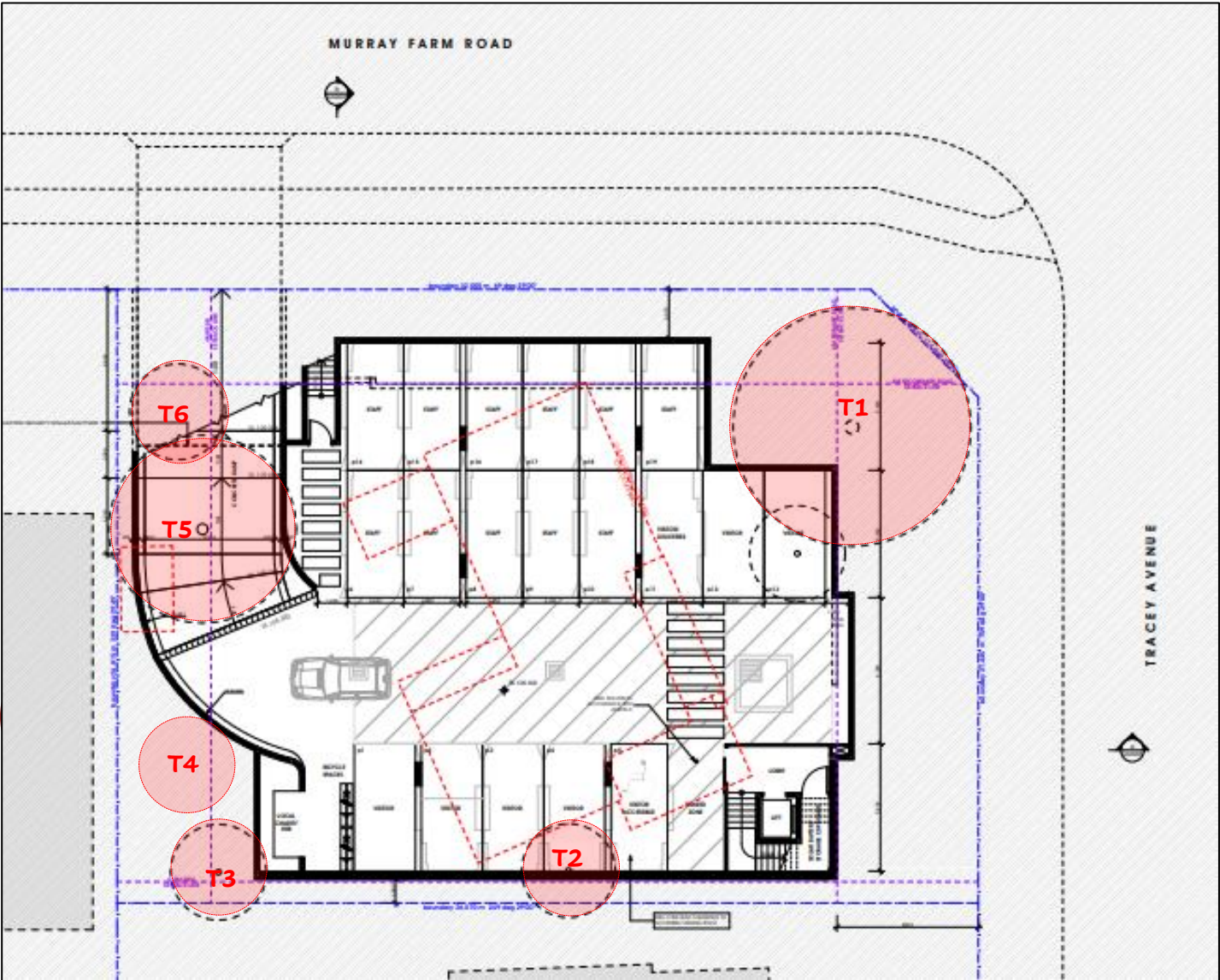
Cert IV in Horticulture

Arboriculture Australia (Consultant Arborist) | Member No. 1469

Member of International Society of Arboriculture | Member No .173439

Appendix A

Tree Location Plan



Appendix B

Photographs



Photograph 1: T1



Photograph 2: T2, Bangalow Palm



Photograph 3: T3, Bauhinia and noting smaller vegetation in background.



Photograph 4: Foreground, T4, and T5 in the background.



Photograph 5: Taken from Murray Farm Rd, with T5 , and T6

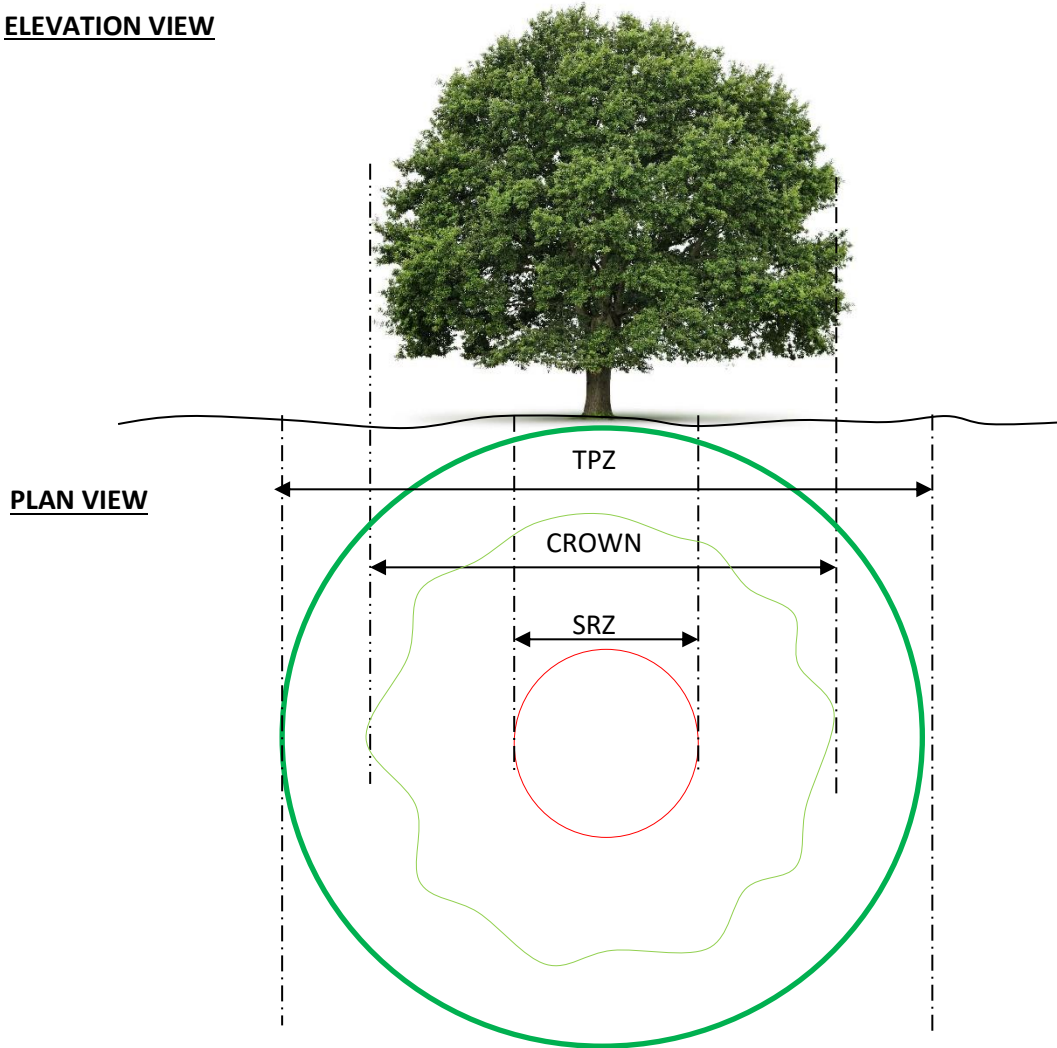
Appendix C

Tree Assessment & Impacts Evaluation Table Notes					
H	Height of tree (estimated)				
S	Spread of tree (estimated)				
Age	Y = Young J= Juvenile M= Mature O=Over mature S=Senescent EM = Early Mature				
Condition	G= Good F=Fair P= Poor D= Dead				
TREES AZ	Categorisation of trees with regards to development Refer to Appendix – Tree AZ				
Retention Value	H=High M=Medium L=Low R=Removal (Refer to Appendix - Significance of a Tree, Assessment Rating System (STARS)©)				
DBH	Diameter at Breast Height (estimated circumference of tree at approximately 1400mm)				
DAB	Diameter at Basal				
TPZ	Calculated area above and below ground at a radial distance form centre of trunk. Exclusion zone for the protection of tree roots and crown to ensure tree viability				
SRZ	Calculated area below ground at a radial distance from centre trunk of tree, required exclusively for tree stability				
Setback	Calculated setback for proposed works from tree, measured at centre of trunk.				
Impacts/Incursion	Calculated degree of incursion				
	<u>Nil</u> No impact	<u>Low</u> 0% - 10%	<u>Major</u> 10% +	<u>Total Loss</u> Lost to proposal	<u>Exempt</u> Can be removed with no formal approval
Tree data/Impacts Summary	Arborist commentary on tree location, health, structure and relationship to development.				

Appendix D

Indicative TPZ and SRZ (AS 4970/2009)

ELEVATION VIEW



CALCULATIONS

$$\text{TPZ (Radius)} = \text{DBH} \times 12$$

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

- The Australian Standards provides a formula for calculating both the TPZ and SRZ. The TPZ is a combination of both root and crown area requiring protection for viable tree retention. Basically, it is the area isolated from construction disturbances. The TPZ incorporates the SRZ, the area required for tree stability.
- It should be noted that the TPZs have been calculated with the following in mind; tree characteristics, topography of the site and the TPZ reconfiguration allowance as stated in AS 4970-2009. (Refer to Appendix E for calculation methods of TPZ.) The Standards allow 10% of the radii from one edge of the TPZ to be offset and added to another edge whilst still maintaining total surface area required for TPZ
- TPZ of palms is calculated as no greater than 1m of its radial canopy span and no SRZ is calculated.
- TPZ and SRZ estimated only and cannot be relied on as accurate with trees on neighbouring properties

Appendix E

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

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

Table 1.0 Tree Retention Value - Priority Matrix

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

		Significance				
		1. High	2. Medium	3. Low		
		Significance in Landscape	Significance in Landscape	Significance in Landscape	Environmental Pest / Noxious Weed Species	Hazardous / Irreversible Decline
Estimated Life Expectancy	1. Long >40 years					
	2. Medium 15-40 Years					
	3. Short <1-15 Years					
	Dead					
<p><u>Legend for Matrix Assessment</u></p> 						
	<p>Priority for Retention (High) - These trees are considered important for retention and should be retained and protected. Design modification or re-location of building/s should be considered to accommodate the setbacks as prescribed by the Australian Standard AS4970 <i>Protection of trees on development sites</i>. Tree sensitive construction measures must be implemented e.g. pier and beam etc if works are to proceed within the Tree Protection Zone.</p>					
	<p>Consider for Retention (Medium) - These trees may be retained and protected. These are considered less critical; however their retention should remain priority with removal considered only if adversely affecting the proposed building/works and all other alternatives have been considered and exhausted.</p>					
	<p>Consider for Removal (Low) - These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.</p>					
	<p>Priority for Removal - These trees are considered hazardous, or in irreversible decline, or weeds and should be removed irrespective of development.</p>					

Appendix F

Tree AZ Categories (Version 10.10 ANZ)

Category Z: Unimportant trees not worthy of being a material constraint

Local policy exemptions: Trees that are unsuitable for legal protection for local policy reasons including size, proximity and species

Z1	Young or insignificant small trees, i.e. below the local size threshold for legal protection, etc
Z2	Too close to a building, i.e. exempt from legal protection because of proximity, etc
Z3	Species that cannot be protected for other reasons, i.e. scheduled noxious weeds, out of character in a setting of acknowledged importance, etc
	High risk of death or failure: Trees that are likely to be removed within 10 years because of acute health issues or severe
Z4	Dead, dying, diseased or declining
Z5	Severe damage and/or structural defects where a high risk of failure cannot be satisfactorily reduced by reasonable remedial care, i.e. cavities, decay, included bark, wounds, excessive imbalance, overgrown and vulnerable to adverse weather conditions, etc
Z6	Instability, i.e. poor anchorage, increased exposure, etc
	Excessive nuisance: Trees that are likely to be removed within 10 years because of unacceptable impact on people
Z7	Excessive, severe and intolerable inconvenience to the extent that a locally recognized court or tribunal would be likely to authorize removal, i.e. dominance, debris, interference, etc
Z8	Excessive, severe and intolerable damage to property to the extent that a locally recognized court or tribunal would be likely to authorize removal, i.e. severe structural damage to surfacing and buildings, etc
	Good management: Trees that are likely to be removed within 10 years through responsible management of the tree population
Z9	Severe damage and/or structural defects where a high risk of failure can be temporarily reduced by reasonable remedial care, i.e. cavities, decay, included bark, wounds, excessive imbalance, vulnerable to adverse weather conditions, etc
Z10	Poor condition or location with a low potential for recovery or improvement, i.e. dominated by adjacent trees or buildings, poor architectural framework, etc
Z11	Removal would benefit better adjacent trees, i.e. relieve physical interference, suppression, etc
Z12	Unacceptably expensive to retain, i.e. severe defects requiring excessive levels of maintenance, etc

NOTE: Z trees with a high risk of death/failure (Z4, Z5 & Z6) or causing severe inconvenience (Z7 & Z8) at the time of assessment and need an urgent risk assessment can be designated as ZZ. ZZ trees are likely to be unsuitable for retention and at the bottom of the categorization hierarchy. In contrast, although Z trees are not worthy of influencing new designs, urgent removal is not essential and they could be retained in the short term, if appropriate.

Category A: Important trees suitable for retention for more than 10 years and worthy of being a material constraint

A1	No significant defects and could be retained with minimal remedial care
A2	Minor defects that could be addressed by remedial care and/or work to adjacent trees
A3	Special significance for historical, cultural, commemorative or rarity reasons that would warrant extraordinary efforts to retain for more than 10 years
A4	Trees that may be worthy of legal protection for ecological reasons (Advisory requiring specialist assessment)

NOTE: Category A1 trees that are already large and exceptional, or have the potential to become so with minimal maintenance, can be designated as AA at the discretion of the assessor. Although all A and AA trees are sufficiently important to be material constraints, AA trees are at the top of the categorization hierarchy and should be given the most weight in any selection process.

TreeAZ is designed by Barrell Tree Consultancy (www.barrelltreecare.co.uk) and is reproduced with their permission

Appendix G

Glossary of Terms

Taken from: Draper, D. B and Richards, P.A. (2009) *Dictionary for Managing Trees in Urban Environments*, CSIRO Publishing, Victoria, Australia

Arborist An individual with competence to cultivate, care and maintain trees from amenity or utility purposes.

Basal Proximal end of the trunk or branch, e.g. trunk wound extending to the ground is a basal wound, or as epicormic shoots arising from lignotuber

Branch failure The structural collapse of a branch that is physically weakened by wounding or from the actions of pests and diseases or overcome by loading forces in excess of its load – bearing capacity.

Buttress A flange of adaptive wood occurring at a junction of a trunk and root or trunk and branch in response to addition loading.

Callus wood Undifferentiated and unligified wood that forms initially after wounding around the margins of a wound separating damaged existing wood from the later forming lignified wood or wound wood.

Canker A wound created by repeated localized killing of the vascular cambium and bark by wood decay fungi and bacteria usually marked by concentric disfiguration. The wound may appear as a depression as each successive growth increment develops around the lesion forming a wound margin (Shigo 1991, p. 140)

Canopy cover The amount of area of land covered by the lateral spread of the tree canopy, when viewed from above that land.

Codominant stem Two or more first order structural branches or lower order branches of similar dimensions arising from about the same position from a trunk or stem.

Crown Of an individual tree all the parts arising above the trunk where it terminates by its division forming branches, e.g. the branches, leaves, flowers and fruits; or the total amount of foliage supported by the branches.

Decline The response of the tree to a reduction of energy levels resulting from stress. Recovery from a decline is difficult and slow, and decline is usually irreversible.

Diameter at Breast Height (DBH) Measurement of a trunk width calculated at a given distance from above ground from the base of the tree often measured at 1.4m.

Dominance A tendency in a leading shoot to maintain a faster rate of apical elongation and expansion other than other nearby lateral shoots, and the tendency also for a tree to maintain a taller crown than its neighbours (Lonsdale 1999, p.313)

Dripline A line formed around the edge of a tree by the lateral extent of the crown.

Dynamic Load Loading force that is moving and changes over time, e.g. from wind movement (James 2003, p. 166)

Endemic A native plant usually with a restricted occurrence limited to a particular country, geographic region or area and often further confined to a specific habitat.

Epicormic Branch derived from an epicormic shoot

Frass The granular wood particles produced from borer insects and can be categorized as fine frass, medium frass, and coarse frass with the different types being of different sizes and caused by different insects.

Habitat tree A tree providing a niche supporting the life processes of a plant or animal

Hazard The threat of danger to people or property from a tree or tree part resulting from changes in the physical condition, growing environment, or existing physical attributes of the tree, e.g. included bark, soil erosion, or thorns or poisonous parts, respectively.

Included bark The bark on the inner side of the branch union, or in within a concave crotch that is unable to be lost from the tree and accumulates or is trapped by acutely divergent branches forming a compression fork

Indigenous A native plant usually with a broad distribution in a particular country, geographic region or area. See also Endemic, Locally indigenous and non-locally indigenous.

In situ Occurring in its original place, e.g. soil level, remnant vegetation, the place from where a tree was transplanted, or where a tree is growing.

Irreversible decline The decline of a tree where it has progressively deteriorated to a point where no remedial works will be sufficient to prevent its demise, usually of poor form and low vigour.

Isolated tree A tree growing as a solitary specimen in an exposed location away from other trees as a result of natural or artificial causes and may be naturally occurring.

Kino The extractive polyphenols (tannins) formed in veins in a cambial zone as a defense in response to wounding in eucalypts. Often visible as an exudate when the kino veins rupture or are injured (Boland, *et al.* 2006, p. 691)

Lignotuber A woody tuber developed in the axils of the cotyledons.

Loading Weight that is carried, e.g. as bending stress on a branch.

Locally Indigenous A native plant as remnant vegetation, self-sown or planted in an area or region where it occurred originally.

Longevity Long lived, referring to a plant living for a long period of time.

Mechanical wound -Wound inflicted by abrasion, by mechanical device

Naturalised A plant introduced from another country or region to a place where it was not previously indigenous where it has escaped from agriculture or horticulture or as a garden escape and has sustained itself unassisted and given rise to successive generations of viable progeny.

Necrotic Dead area of tissue that may be localized e.g. on leaves, branches, bark or roots

Negligence With regard to trees, failure to take reasonable care to prevent hazardous situations from occurring which may result in injury to people or damage to property (Lonsdale 1999, p. 317)

Noxious weed A plant species of any taxa declared a weed by legislation. Treatment for the control or eradication of such weeds is usually prescribed by legislation...

Remnant A plant /s of any taxa and their progeny as part of the floristics of the recognised endemic ecological community remaining in a given location after alteration of the site or its modification or fragmentation by activities on that land or on adjacent land

Useful Life Expectancy (ULE) A system used to determine the time a tree can be expected to be usefully retained

Shedding - Shedding of plant organs when it is mature or aged, by the formation of a corky layer across its base. This may be influenced by stress, drought, senescence, declining condition, reduced vigour and also occurs

Stability Resistance to change especially from loading forces or physical modifications to a trees growing environment

Stress A factor in a plants environment that can have adverse impacts on its life processes e.g. altered soil conditions, root damage, toxicity, drought or water logging. The impact of stress may be reversible given good arboricultural practices that may lead to plant decline.

Structural defect A weak point in or on a tree causing its structural deterioration diminishing its stability in full or part

Structural integrity The ability of a load bearing part of a tree, and its resistance to loading forces

Structural roots- Roots supporting the infrastructure of the root plate providing strength and stability of the tree.

Symbiotic An association between different species usually but not always mutually beneficial.

Termite leads Tunnels of mud on the stem and between the bark created by termites that may be active or inactive.

Tree Protection Zone (TPZ) A combination of RPZ and CPZ as an area around the tree set aside for the protection of a tree and a sufficient proportion of its growing environment above and below ground established prior to demolition or construction and maintained until the completion of works to allow for its viable retention including stability.

Visual Tree Assessment (VTA) A visual inspection of a tree from the ground. Such assessment should only be undertaken by suitably competent practitioners.

Disclaimer

This report has been compiled using knowledge & expertise relating to trees, and makes recommendations based on this. It should be noted that trees are affected by many elements, environmental and situational, some of which cannot be predicted or foreseen even by Qualified Arborists.

The client when reading this report should take the following factors into consideration;

- ❖ It is not feasible to assume that Arborists identify all hazards or risks associated with trees at the time of consultation or indeed in this report.
- ❖ This Assessment is valid for 3 months from the date stipulated on the report, and may need to be updated after this.
- ❖ Regular maintenance and monitoring by a Qualified Arborist will minimize the risks associated with tree and contribute to its longevity in its growing environment, however there is no guarantee that all risks are to be eliminated and that the tree is not privy to external factors that will impact on the tree after it has been assessed by our service.
- ❖ The report is compiled in good faith, where any information given to our service is correct and true, and where interested parties and /or stakeholders are notified. This includes title and ownership of property, orders as directed by relevant authorities, development application determinations and other matters that affect the tree/s in question.
- ❖ The Arborist shall not be required to give testimony or to attend court by reason of this report unless other arrangements are made prior.
- ❖ This Arborist Report does not issue permission for any recommendations made in this report, particularly where trees are to be removed. Permission must be sought and obtained from Council and owner/s of trees.
- ❖ Any treatments recommended by the Arborist cannot be guaranteed, due to the volatile environment in which trees are growing.
- ❖ Clients may choose to accept or disregard the recommendations of the Arborist, or to seek additional advice.
- ❖ This report is intended for the Recipient, no part of this report is to be copied or altered without the authors permission

Bibliography

- Australian Standards, 2009. *“Protection of Trees on Development Sites”*, (AS 4970-2009) Standards Australia, Sydney, Australia.
- Australian Standards, 2007. *“Pruning of Amenity Trees”*, (AS 4373/2007) Standards Australia, Sydney, Australia
- Barrell, J.D., (2009) TreeAZ. Detailed guidance on its use. Version 10.10 – ANZ. United Kingdom
- Botanica (2001), *Trees & Shrubs*, Random House, Australia
- Cronin, L. (2002), *Australian Trees*, 2nd edition, Envirobook, Australia
- Draper, D. B and Richards, P.A. (2009), *Dictionary for Managing Trees in Urban Environments*, CSIRO Publishing, Victoria, Australia
- Environmental Protection & Biodiversity Conservation Act 1999 (Commonwealth Government) http://www.austlii.edu.au/au/legis/cth/consol_act/epabca1999588/
- Footprint Green Pty Ltd. 2001, *Footprint Green Tree Significance & Retention Value Matrix* , Avalon, NSW Australia, www.footprintgreen.com.au
- Holliday, I. ,and Watton, G. (2002) *Gardeners Companion to Eucalypts 4th revised Edition* Reed New Holland, Australia
- IACA, 2010, *IACA Significance of a Tree, Assessment Rating System (STARS)*, Institute of Australian Consulting Arboriculturists, Australia, www.iaca.org.au
- Matheny, N. & Clark, J (1994). *A Photographic guide to Hazard Trees in Urban Areas*. 2nd Edition. Illinois, (USA).
- Matheny, N. & Clark, J (1998). *Trees & Development, A technical Guide to Preservation of Trees during Land Development*. International Society of Arboriculture, Champaign, USA.
- Matheny, N. & Clark, J (2004), *Arboriculture*. Fourth Edition. Pearson Education Incorporated. New Jersey, USA.
- Mattheck, C. (1999). *Body Language of trees*. Forschungszentrum Karlsruhe, Germany
- State of New South Wales (Department of Planning, Industry and Environment, 2020) [www.eSPADE v2.1 \(nsw.gov.au\)](http://www.eSPADE v2.1 (nsw.gov.au)).
- Treetec (2014) www.treetec.net.au . Melbourne, Australia