Arboricultural Impact Assessment and Tree Protection Specification

3 + 4 Llanfoyst Street, Randwick.

Prepared For: **Parseh Holdings P/L.**

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1.0 Introduction

1.1 Background

1.1.1 The property owner has requested this Arboriculture Impact Assessment to detail the health and retention value of those trees located within and adjacent to 3-4 Llanfoyst Street, Randwick. This property is within Randwick Council LGA.

1.1.2 The property was assessed on the 30th November 2023 by George Palmer. The proposed development requires the demolition of the two existing free-standing dwellings to allow for the construction of a four-story block with underground parking and storage.

1.1.3 A total of twenty five (25) trees have been assessed for the purpose of this report. Of these a total of thirteen (13) are required for removal. Of these three (3) have a Moderate Retention Value, with the remainder considered as Low Value.

1.1.4 In preparation of this report the author is aware of and has considered the objectives of Randwick Councils Development Control Plans for Trees and Development, Australian Standard 4970 Protection of Trees on Development Sites (2024), Australian Standard 4373 Pruning Amenity Trees (2007), Safe Work Australia Guide for Managing Risk of Tree Trimming and Removal Work (2016) as well as the principles of silviculture in our urban forest.

1.1.5 This Arboriculture Impact Assessment was based on the following supplied plans and documents only:

- Site and Roof Plan DA1004. Revision D.
- Elevation Sheet 1,2,3 and 4. DA2001-4. Revision D.
- Cross Section DA3001. Revision D.
- Randwick Councils Tree Management Technical manual.
- Randwick Councils DCP 2013.
- Randwick Council LEP 2012.

2.0 The Proposal

2.1 The supplied plans show that the works include the demolition of the two (2) existing freestanding dwellings to allow for the excavation of basement parking and storage and the above ground construction of a four-storey residential apartment block to provide residential housing for multiple families.

3.0 Results

3.1 The Site

3.1.1 The subject site is formally identified as Lots 1 and 2 in DP 449211 with address; 3 and 4 Llanfoyst Street, Randwick.

3.1.2 The site has a total area of 785m2 and is generally rectangular with an eastern street frontage of approximately 30m.

3.1.3 Site topography falls from the western (rear) boundary to the eastern (front) and southern (side) boundaries.

3.1.4 Existing residential construction footprint comprises two (2) double storey freestanding residential dwellings. Both structures are required for demolition.

3.2 The Trees

3.2.1 A total of twenty five (25) trees have been assessed for the purpose of this report. Existing trees documented on and adjacent to the site comprise a range of both native and exotic species. Only one (1) tree has been considered as being of High Value (Tree 14). Thirteen (13) of the remaining trees have been considered as being of Moderate Value (Trees1, 3, 8, 16 and 17-25). The remaining ten (10) trees have been considered as being Low Value.

4.0 Arboricultural Impact Assessment

4.1 **Tree 1** has been identified as a *Cupaniopsis anacardiodes*, or Tuckeroo located on the site's front verge. The tree has grown to approximately 8m in height and is supported on a co dominant basal structure. The tree has been allocated a Moderate Landscape Significance and a retention value of Consider for Removal.

4.1.2 The tree has established on the Llanfoyst Street front verge and under the street's overhead power line infrastructure, requiring reduction and directional pruning. The tree is in fair physiological condition as indicated by reduced crown density and poor reaction wood production.

4.1.3 The supplied plans show that the works required to allow vehicular access to the site will result in a requirement for the trees removal and replacement.

4.2 **Trees 2, 4 and 7** are all *Callistemon viminalis*, or Bottlebrush. These are a common, small native tree species that will have all been planted as part of the site's more recent works. All are less than 7m in height and are supported on trunks of less than 30cm in diameter. All have been allocated a retention value of Consider for Removal. All are located within (Trees 4 and 5) or directly adjacent (Tree 2) the construction footprint and are required for removal.

4.3 **Tree 3** is a *Cupressus macrocarpa* var. or Gold Conifer. The tree has grown to approximately 8m and is supported on multiple leaders and an included basal structure. The tree is out of context in this predominantly native setting. The tree has been allocated a Low retention value and is recommended for removal.

4.4 **Tree 5** is a semi mature *Dracaena marginata*, or Dragon tree. This is an indoor ornamental that will have been planted here as part of the site's more recent works. Although, a well-suited contemporary piece of horticulture this tree is less than 7m and supported on a base of less than 30cm and has been allocated Retention Value of Consider for Removal.

4.5 **Tree 6** is a *Hibiscus rosa-sinensis*, or Hibiscus. This is a common exotic small tree species that has again been planted as part of the site's more recent works and has been allocated a Retention Value of Consider for Removal.

4.6 **Trees 8, 17, 18, 19, 20, 21, 22, 23, 24 and 25** are all *Howea forsteriana,* or Kentia palms. Tree 8 is located adjacent to the site's rear boundary and is required for removal. The remainder are located

within the southern neighbors and documented for retention. All have been allocated a retention Value of Consider for Retention.

4.7 **Trees 9, 10, 11, 12 and 13** have all *Archontophoenix cunninghamiana,* or Bangalow Palms. This is another common palm species that will have been planted as part of the site's more recent works. All have grown to between 5-8m in height and have been allocated a Retention Value of Consider for Removal.

4.8 **Tree 14** is an *Acacia decurrens,* or Black Wattle located within the rear (western) neighbours. This is a relatively fast-growing species that is prone to early decline. This tree has established under the canopy of the neighboring Moreton Bay (Tree 15) and has dead wood throughout its canopy. The tree will likely continue to decline irrespective of the proposed works. The tree has a Retention Value of Consider for Removal. Documented for Retention.

4.9 **Tree 15** is a semi mature *Ficus macrophylla*, or Moreton Bay Fig tree. This is an important endemic tree species that has been considered as High Value. The tree has a number of poorly structured lower canopy limbs and should be considered for selective pruning works. Priority for Retention. Retain.

4.10 **Tree 16** is a well-established *Dypsis decaryi*, or Triangle Palm again located within the rear of the southern neighbors. This is an exotic palm species that has been allocated a Consider for Removal valuation. Documented for Retention.

5.0 Tree Removals + Replacement

5.1 Removal works should be carried out by a practicing arborist.with a minimum qualification equivalent (using Australian Qualifications Framework) of Level 3 Arboriculture or its recognized equivalent. Pruning and removal works should be carried out in accordance with Australian Standard 4373: Pruning of Amenity Trees (2007), Safe Work Australia Guide for Managing Risk or Tree Trimming and Removal Works (2016) as well as all applicable legislation and codes.

5.2 Replacement planting should be supplied in accordance with Australian Standard 2303: Tree Stock for Landscape Use (2015). Standards Australia (2015) Tree Stock for Landscape Use AS2304.

6.0 Methodology

6.1 The assessment of trees has been conducted following a ground-based collection of data to identify signs of tree health, structure and integrity. The recommendations within this report have been based on these observations and the supplied plans only.

6.2 The subject trees have been assessed using Visual Tree Assessment methodology described in The Body Language of Trees – A Handbook for failure Analysis (Matthick et al., 2003). Subject trees have been assessed to provide an understanding of the impacts associated with the proposed works only. No internal diagnostic testing was undertaken as part of this assessment. Trees located outside the property boundary have been assessed from the boundary unless otherwise documented.

6.3 The canopy dimensions are estimates only.

6.4 The locations of subject trees have been determined from plans provided. Trees not shown on plans have been plotted in their approximate location only.

6.5 Tree Protection Zone (TPZ) and Critical Root Zone (CRZ) calculations are based on Australian Standard for the Protection of Trees on Development Sites (2024). The TPZ is as an area defined during site development, where construction activities and access are limited to protect trees and soil from damage, and to sustain tree health and stability. The size and shape of the TPZ should consider tree species response to construction impacts, size, condition, and maturity, in addition to the location of current infrastructure, planned construction, and specific aspects of the site. The CRZ is the area around a tree where the minimum number of roots that are biologically essential to the structural stability and health. There is no universally accepted method to calculate CRZ.

6.6 The health of subject trees was determined by assessing:

- Foliage size and colour.
- Pest and disease infestation.
- Extension growth.
- Crown density.
- Deadwood size and volume.
- Presence of epicormic growth.

6.7 The structural condition of the subject trees was assessed by;

- Visual evidence of structural defects or instability.
- Evidence of previous pruning or physical damage.

6.8 The Useful Life Expectancy (ULE) is used to estimate a trees theoretical longevity in its growing environment. The ULE is based on the tree's species, health, structural condition and site suitability. The tree(s) have been allocated one of the following ULE categories (modified from Barrell, 2001);

- 40 years +
- 15-40 years.
- 5-15 years.
- Less than 5 years.

6.9 The Landscape Significance is based on a quotative assessment of a tree's cultural, environmental, and aesthetic value. This provides a relative measure of a trees Landscape Significance and can be used to determine its Retention Value. Trees are rated under the following categories:

- Very High
- High
- Moderate
- Low
- Insignificant
- Remove irrespective.

6.10 Retention Value Rating is determined by considering both ULE and Landscape Significance. The subject tree(s) have been allocated one of the following Retention Values:

- Priority for Retention
- Consider for Retention
- Consider for Removal
- Priority for removal

ULE	LANDSCAPE SIGNIFICANCE				
	VERY HIGH	HIGH	MODERATE	LOW	INSIGNIFICANT
40 years +	*Priority for Retention*	*Priority for Retention*		*Consider for Removal*	*Priority for Removal*
15-40 years		*Priority for Retention*	*Consider for Retention*		
5-15 years	*Consider for Retention*				
Less than 5 years	*Consider for Removal*	*Priority for Removal*			

LANDSCAPE SIGNIFICANCE	DESCRIPTION
VERY HIGH	The subject tree is listed as a Heritage Item under the Local Environmental Plan with a local or state level of significance.
	The subject tree is listed on Council's Significant Tree Register.
	The subject tree is a remnant tree.
HIGH	The subject tree creates a 'sense of place' or is considered 'landmark' tree.
	The subject tree is of local, cultural or historical importance or is widely known.
	The subject tree has been identified by a suitably qualified professional as a species scheduled as a Threatened or Vulnerable Species or forms part of an Endangered Ecological Community associated with the subject site, as defined under the provisions of the Threatened Species Conservation Act 1995 (NSW) or the Environmental Protection and Biodiversity Conservation Act 1999.
	The subject tree is known to provide habitat to a threatened species.
	The subject tree is an excellent representative of the species in terms of aesthetic value.
	The subject tree is of significant size, scale or makes a significant contribution to the canopy cover of the locality.
	The subject tree forms part of the curtilage of a heritage item with a known or documented association with that item.
MODERATE	The subject tree makes a positive contribution to the visual character or amenity of the area.
	The subject tree provides a specific function such as screening or minimising the scale of a building.
	The subject tree has a known habitat value.
	The subject tree is a good representative of the species in terms of aesthetic value.
LOW	The subject tree is an environmental pest species or is exempt under the provisions of the local Council's Tree Management Controls.
	The subject tree makes little or no contribution to the amenity of the locality.
	The subject tree is a poor representative of the species in terms of aesthetic value.
INSIGNIFICANT	The subject tree is declared a Noxious Weed under the Noxious Weeds Act.

The above table was provided by Anna Hopwood of TreeIQ™ and was modified from the Earthscape Criteria for Assessment of Landscape Significance.

T#	Species	Remnant Native, Exotic.	Age Class	Canopy Height and Spread.	Trunk Diameter DBH	Basal Diameter DGL	Landscape Significance	U.L.E	Priority for Retention	TPZ Incursion	SRZ	TPZ	Implications/Locations
T1	Cupaniopsis anacardiodes (Tuckeroo)	N	M	8 x 6m	30cm	42cm	High	15-40yrs	High	100%	2.3m	5m	Located on the sites front verge and under the streets overhead power lines. Reduction pruned and in fair health. Required for removal to allow site access.
T2	Callistemon viminalis (Bottlebrush)	N	SM	5 x 2m	20cm	20cm	Low	-15yrs	Low	40%	1.5m	2m	A common species that will have been planted as part of the sites more recent works. Low Value. Remove.
T3	Chamaecyparis obtusa (False Cypress)	E	M	7 x 4m	30cm	30cm	Moderate	15-40yrs	Low	100%	2.3m	5m	An exotic tree species that is out of context here. Located within the proposed construction footprint and required for removal.
T4	Callistemon viminalis (Bottlebrush)	N	SM	6 x 3m	20cm	20cm	Low	-15yrs	Low	100%	2m	3m	A common species that will have been planted as part of the sites more recent works. Low Value. Remove.
T5	Dracaena marginata (Dragon tree)	E	SM	5 x 3m	20cm	20cm	Low	15-40yrs	Low	100%	2m	4m	A common indoor ornamental that will have been planted here as part of more recent works.
T6	Hibiscus rosa-sinensis.	E	SM	4 x 2m	20cm	25cm	Low	-15yrs	Low	100%	2m	3m	A common and exotic species recommended for removal irrespective.
T7	Callistemon viminalis (Bottlebrush)	N	SM	4 x 4m	20cm	20cm	Low	-15yrs	Low	100%%	1.5m	3m	A common species that will have been planted as part of the sites more recent works. Low Value. Remove.
T8	Howea forsteriana (Kentia palm)	N	SM	8 x 3m	22cm	30cm	Moderate	15-40yrs	Consider for retention.	40%	2m	3m	A well established example of this palm species located within the construction footprint. Required for Removal.
T9	Archontophoenix cunninghamiana (Bangalow Palm)	N	SM	6 x 2m	20cm	20cm	Low	15-40yrs	Consider for retention.		1.5m	2m	Part of a grove of palms located within the construction footprint. Required for Removal.

T10	Archontophoenix cunninghamiana (Bangalow Palm)	N	SM	6 x 2m	20cm	20cm	Low	15-40yrs	Consider for retention.		1.5m	2m	Part of a grove of palms located within the construction footprint. Required for Removal.
T11	Archontophoenix cunninghamiana (Bangalow Palm)	N	SM	7 x 2m	20cm	20cm	Moderate	15-40yrs	Consider for retention.		2m	3m	Part of a grove of similar palms located within the construction footprint. Required for Removal.
T12	Archontophoenix cunninghamiana (Bangalow Palm)	N	SM	6 x 2m	22cm	28cm	Moderate	15-40yrs	Consider for retention.		2m	3m	Part of a grove of similar palms located within the construction footprint. Required for Removal.
T13	Archontophoenix cunninghamiana (Bangalow Palm)	N	SM	7 x 2m	20cm	20cm	Moderate	15-40yrs	Consider for retention.		2m	3m	Part of a grove of similar palms located within the construction footprint. Required for Removal.
T14	Acacia decurrens (Black Wattle)	N	M	12 x 8m	38cm	42cm	Low	-15yrs	Priority for Retention.		2.3m	5m	A mature example of this relatively short lived tree species. In decline. Located outside the CIZ of the proposed. Retain.
T15	Ficus macrophylla (Moreton Bay Fig)	N	SM	14 x 12m	80cm	1m	Very High	15-40yrs	Priority for Retention.		3.5m	12m	The sites highest value tree. Roots may extend into construction footprint. Retain.
T16	Dypsis decari (Triangle palm)	E	SM	4m x 3m	20cm	25cm	Low	15-40yrs	Consider for Removal.		1.5m	2m	A low value palm species located within the neighbouring residence. Retain.
T17 -25	Howea forsteriana (Kentia palm)	N	SM	6 x 2m	20cm	20cm	Moderate	15-40yrs	Consider for retention.		1.5m	2m	A well suited native palm species located within the neighbouring residence. Retain and protect.

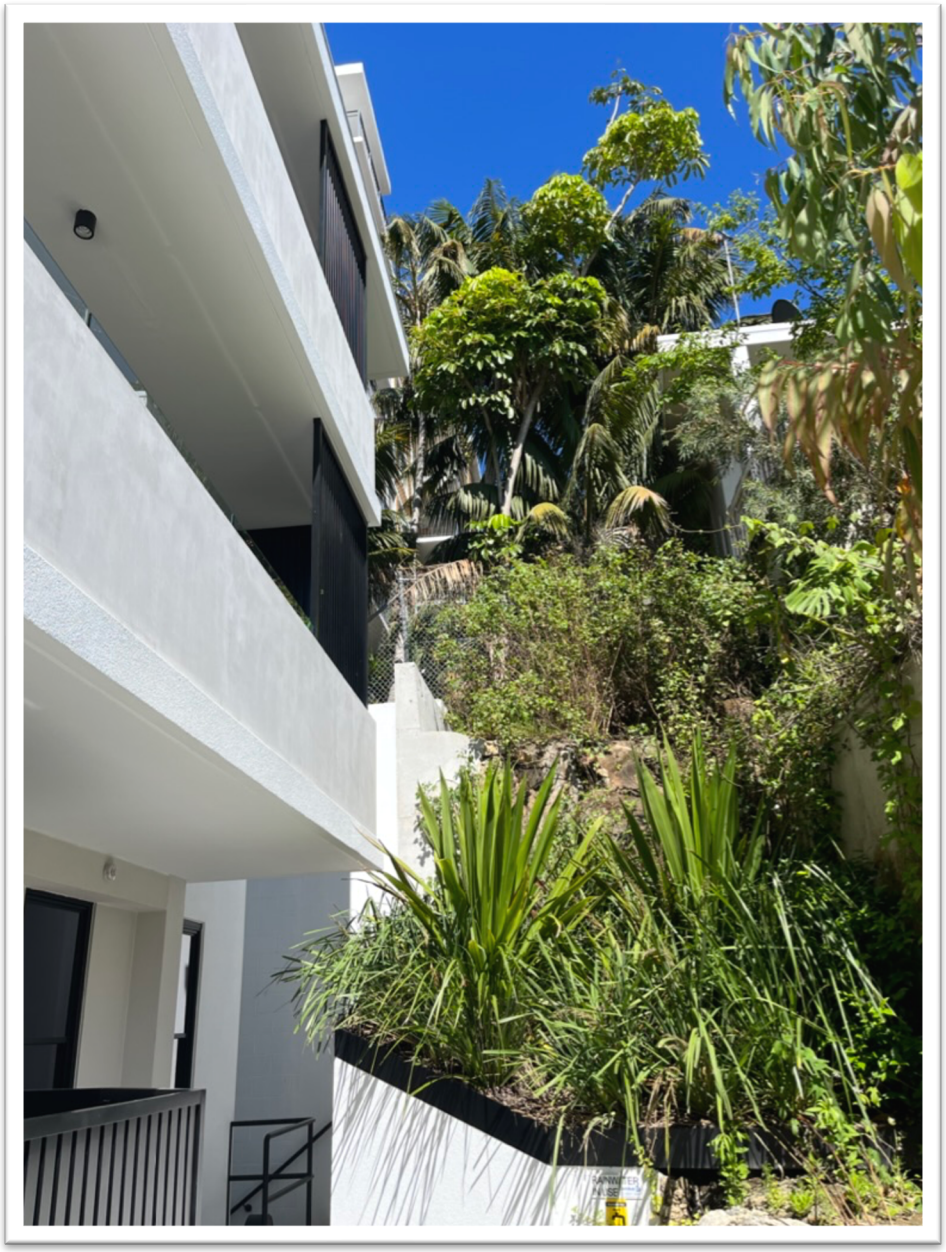


Figure 1 Shows the location of the neighboring trees

Figure 2 Shows Tree 1 located on the front verge and required for removal.

Figure 3 Shows the palms adjacent to the sites rear boundary.

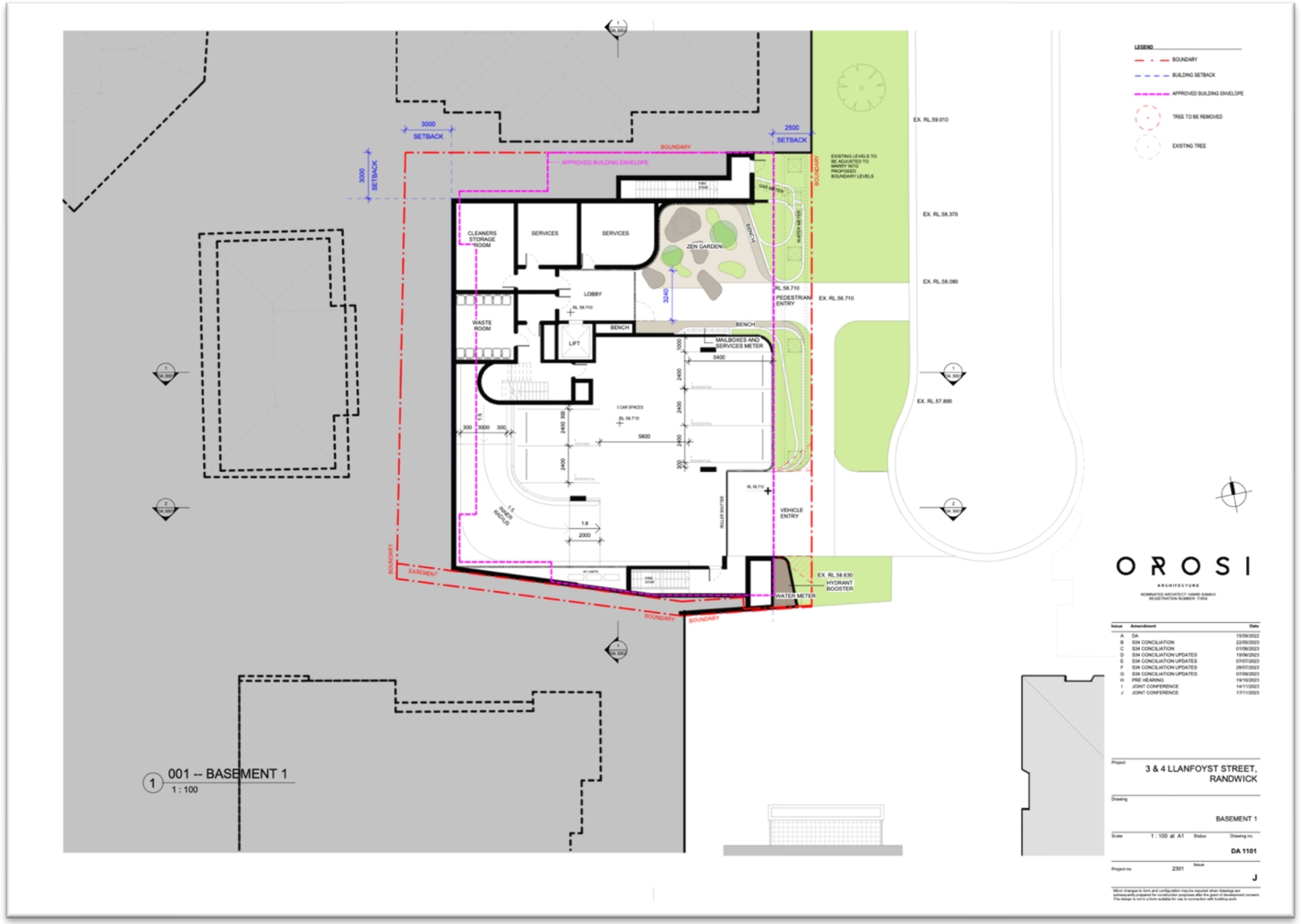


Figure 4 Shows the basement excavation footprint**.**

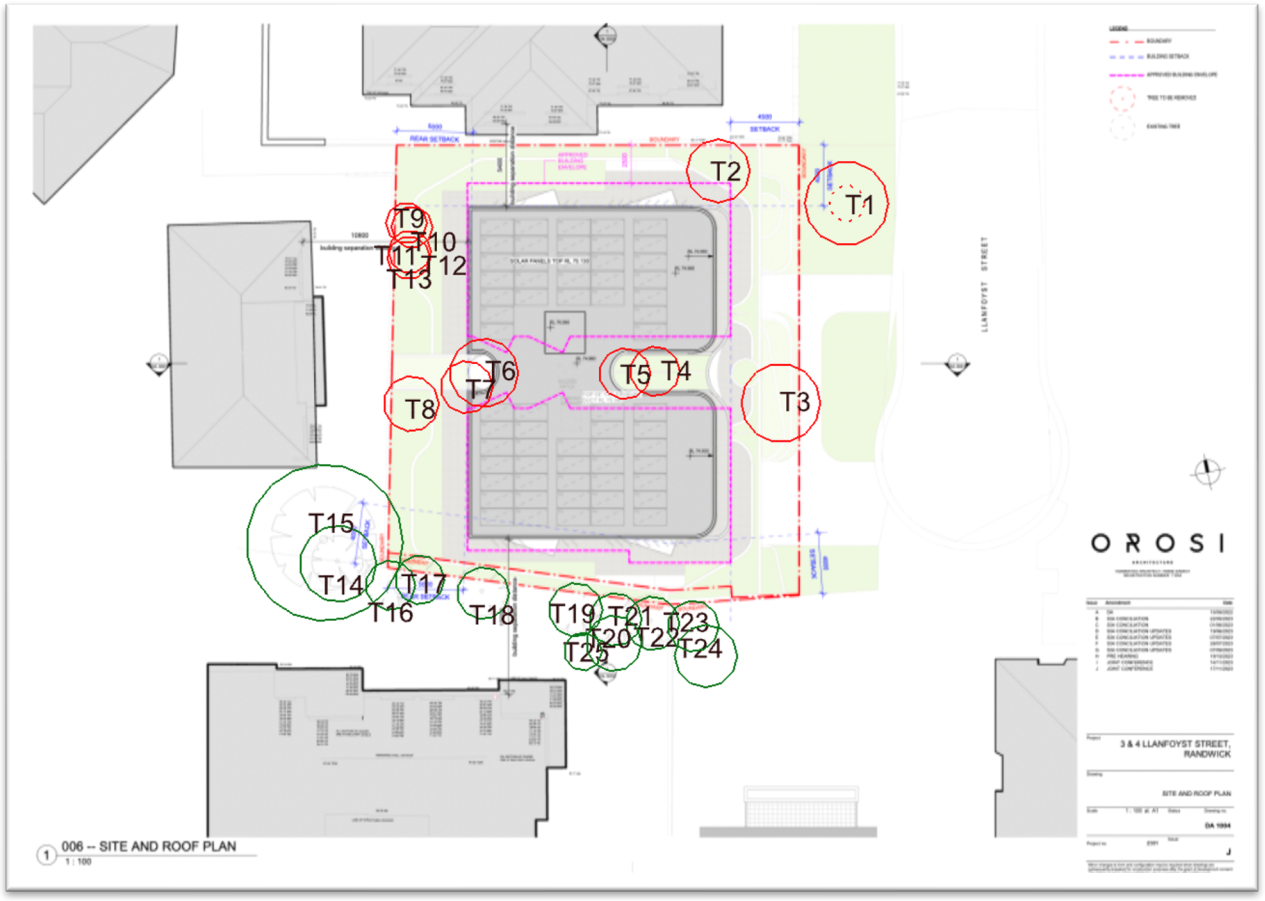


Figure 5 Shows those trees documented in relation to the proposed.

APPENDIX C: PROTECTION of TREES on DEVELOPMENT SITES.

6.1 Appointment of Site Arborist

A site arborist shall be appointed prior to the commencement of work on site. The Site Arborist shall clearly mark out all trees to be removed and ensure that all trees documented for retention are preserved with the implementation of the following tree protection measures. The Site Arborist shall have a minimum qualification equivalent to a NSW TAFE Certificate Level 5 or above in Arboriculture.

6.2 Inspection Points

Give 5 working days notice to allow inspections to be undertaken at the following stages;

Inspection Point	Inspection Personnel
Installation of Tree Protection Zones including Tree Protection Fencing, Silt Fencing and Signage	Site Arborist
Modification of the Tree Protection Zone	Site Arborist
Works within the Tree Protection Zone	Site Arborist
Completion of Construction Works	Site Arborist Site Supervisor.

6.3 Education

Contractors and site workers shall receive a copy of these specifications prior to the commencement of work. Contractors and site workers undertaking any works within a TPZ shall sign the site log to confirm that they have read and understand these specifications prior to their undertaking.

6.4 Tree Protection Zones

Where applicable, all trees to be retained through the construction process shall be protected from mechanical damage and the indirect impacts of the construction process with the installation of Tree Protection Zones.
Unless otherwise stated, the following activities must not be carried out within a TPZ;

- modification of existing soil levels
- excavation or trenching
- cultivation of soil
- mechanical removal of vegetation
- movement of natural rock
- storage of materials, plant or equipment
- erection of site sheds
- affixing signage or hoarding to trees
- disposal of chemical waste or construction material
- any activity that may directly or indirectly affect the health of these or surrounding trees.

Note: If access to a TPZ is required as part of the approved development, prior authorisation is required by the Site Arborist.

6.5 Tree Protection Fencing

Tree Protection Fencing shall be installed at the perimeter of the TPZ. As a minimum the Tree Protection Fencing shall be 1.8 meters high temporary chain supported by steel stakes. This shall be fastened and supported to prevent sideways movement. The trees woody roots shall not be damaged during the installation of this Tree Protection Fencing.
This Tree Protection Fencing shall be erected prior to the commencement of works on site and shall be maintained for the duration of the construction process.

6.6 Signage

Tree Protection Signage shall be attached the the TPZ and displayed in a prominent location. These signs shall be repeated in 10m intervals or closer where the fence changes direction. These shall be a minimum of a 72 font size and each sign at-least 600 x 500mm.

6.7 Mulching

The area within the TPZ shall be mulched and maintained with 80mm of leaf litter mulch for the duration of the construction process. This mulch shall be spread by hand to limit the impact on underlying roots and shall be installed prior to the commencement of works on site.

6.8 Site Arborist

The Site Arborist shall inspect and approve the TPZ including mulching. signage, Tree Protection Fencing, Silt fencing and Signage prior to the commencement of works on site.

6.9 Site Management

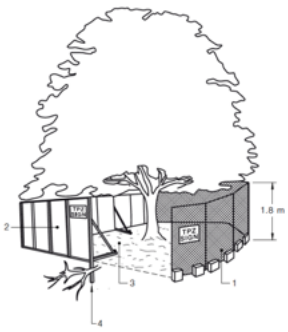
Materials and waste storage, site sheds and temporary services shall not be located within the TPZ unless specified. Storage points shall be covered when not in use and be no greater than 2m in height.

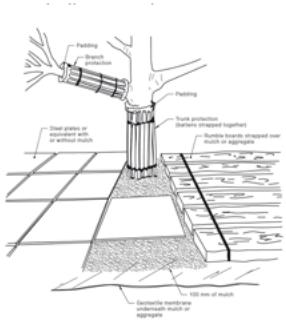
6.10 Works Within the TPZ

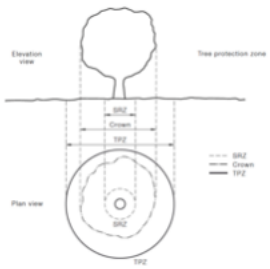
The TPZ may need to be modified during the works to allow access between the protected tree and the proposed construction. The TPZ shall remain as specified and only those works detailed in the proposed construction undertaken.

6.11 Completion of Works within Specified TPZ

Upon the completion of works within a TPZ the protective fencing shall be reinstated as specified. Where the construction of new structures does not allow for the reinstallation of fencing the TPZ shall be modified by the Site Arborist.







Australian Standards: AS4970 for the Protection of Trees on Development Sites.

APPENDIX D: GLOSSARY

COMMON NAME/GENUS SPECIES CULTIVAR – Common names can vary with selected texts. Where species is unknown, “sp.” indicated after genus. Where cultivar is unknown “cv” indicated after species. The number in brackets e.g. (x9) after the species indicates the number of trees in this tree group.

DBH – Diameter at Breast Height. Tree trunk diameter measured at breast height (1.4 metres above ground level). Fabric diameter tape is used which assumes a circular cross section. Multiple measurements indicate multiple trunks. More than three trunks are indicated as “multi”. Where DBH measurement cannot be taken at 1.4m the height at which it has been taken is indicated in the Comments column.

CANOPY SPREAD RADIUS – Average canopy radius (widest + narrowest 2). Circular canopy depictions on Tree Plan/Survey are indicative only. Where canopy spread was significantly skewed, all four cardinal point measurements were recorded.

AGE CLASS – Immature (IM), Semi-mature (SM), Mature (M), Over-mature (OM). Assessment of the tree’s current Age. A Mature (M) tree has reached a near stable size (biomass) above and below ground. Trees can have a Mature age class for >90% of life span. Over-mature (OM) trees show symptoms of irreversible decline and decreasing biomass.

VIGOUR–Good(G),Fair(F)orPoor(P). The general appearance of the canopy/foliage of the tree at the time of inspection. Vigour can vary with the season and rainfall frequency. A tree can have Good vigour but be hazardous due to Poor condition. A tree in Good vigour has the ability to sustain its life processes. Vigour is synonymous with health.

CONDITION – Good (G), Fair (F) or Poor (P). The general form and structure of the trunk/s and branching. Trunk lean, trunk/branch structural defects, canopy skewness or other hazard features are considered.

SRZ RADIUS – Structural Root Zone. The area around a tree required for tree stability. Earthworks should be prohibited within the SRZ.. The area is calculated from the formula and graph at Figure 1 of AS4970-2009. The SRZ graph has been adapted from the work of Claus Mattheck (1994). DBH has been used instead of stem diameter above root buttress in the calculation ofSRZ. 0.1m has been added to SRZ to allow for minor increases in stem diameter.

TPZ RADIUS – Tree Protection Zone. Radial offset (m) of twelve times (12X) trunk DBH measured from centre of trunk (for trees less than 0.3 metre DBH minimum TPZ is 2.0 metres). To satisfactorily retain the tree construction activity (both soil cut and fill) must be restricted within this offset. TPZ offsets are rounded to the nearest 0.1 metre. Existing constraints to root spread can vary TPZ. Generally an area equivalent to the TPZ should be available to the tree post development. Encroachment occupying up to 10% of the TPZ area is acceptable without detailed root zone assessment. Encroachments greater than 10% require specific arboricultural assessment.

SULE – Safe Useful Life Expectancy. A systematic pre-development tree assessment procedure developed by Jeremy Barrell, Hampshire, England. The SULE method used in this assessment has been adapted for simplified use within the field. It gives a length of time that the Arborist feels a particular tree can be retained with an acceptable level of risk based on the information available at the time of the inspection. SULE ratings are Long (retainable for 40 years or more with an acceptable level of risk), Medium (retainable for 16-39 years), Short (retainable for 5-15 years) and Removal (tree requiring immediate removal due to imminent hazard or absolute unsuitability).

RECOMMENDATIONS – Retain (R), Retain Plus (R+), Transplant (T) or Remove (Rm).

COMMENTS – Comments relating to the location, surroundings and hazard potential of the trees at the time of inspection and where applicable the reason for removal.

APPENDIX E: BIBLIOGRAPHY + REFERENCES

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