

Arboricultural Impact Assessment



Prepared For
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MCK Architecture & Interiors
Studio 1/91 Campbell Street
SURRY HILLS NSW 2010

SITE ADDRESS
11 SEAFORTH CRESCENT
SEAFORTH NSW 2092

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1 Introduction

1.1 Brief

- 1.1.1 This Arboricultural Impact Assessment (AIA) was prepared by Chantalle Hughes of Treeism Arboricultural Services. This report was commissioned by Stefano Manuelli of MCK Architecture and Interiors, on behalf of the owner of the subject site. The Site is identified as Lot 16 of DP 4889 and is known as 11 Seaforth Crescent, Seaforth, New South Wales. Demolition of existing structures and construction of a new dwelling, pool and associated landscaping is proposed.
- 1.1.2 The purpose of this report is to identify the species of each assessed tree, assess their vigour, condition, landscape prominence and ascribe a Retention Value to each tree.
- 1.1.3 This report identifies the potential impacts the proposal will have on the retention or long-term viability of each tree and aims to provide guidelines for tree retention and protection during development.

1.2 Context

- 1.2.1 Acknowledgement of the original inhabitants of the Northern Sydney area is complex. The Aboriginal Heritage Office (AHO) states... 'Clan names which can be found on most maps for the northern Sydney region of the AHO partner Councils are the following: Gayamaygal, Gamaragal, Garigal, Darramurragal and many more'.....exact clan name knowledge has been lost, or at the very least is hard to find, as traditional inhabitants of Australia were told to 'give up their language, stop practicing ceremony and hide their Aboriginality'.
- 1.2.2 The Department of Planning, Industry and Environment 'Espade' states the site geology as 'Hawkesbury Sandstone consisting of medium to coarse-grained quartz sandstone with minor shale and laminite lenses. Sandstones are either massive or cross-bedded sheet facies with vertical or subvertical joint sets. The combination of bedding planes and widely spaced joints gives sandstone outcrops a distinctive blocky appearance.'
- 1.2.3 Details of vegetation as per Espade states 'Mostly uncleared open-woodland (dry sclerophyll) with pockets of tall open-forest (wet sclerophyll) and closed-forest (rainforest). On exposed crests and ridges there is usually a low open-woodland containing *Eucalyptus* (sic) *gummifera*, *E. oblonga*, *E. haemostoma*, *E. capitellata* and *Banksia serrata*. On the more sheltered sideslopes, a dry sclerophyll open-forest containing *E. sieberi*, *E. piperita*, *Angophora costata* and *Allocasuarina littoralis* predominate. The understorey is dominated by shrub species of the families Epacridaceae, Myrtaceae, Fabaceae and Proteaceae. Within sheltered gullies, wet sclerophyll closed-forests of *Eucalyptus pilularis*, *E. saligna*, *Tristania laurina* and occasionally *Ceratopetalum apetalum* occur *Callicoma serratifolia*, *Backhousia myrtifolia* and *Pteridium esculentum* form a closed scrubby understorey. Many sheltered valley floors are overrun with weeds (garden escapes washed in with sediment). Weed species include small and *Ligustrum* spp., *Lantana camara*, *Ipomoea indica* and *Tradescantia albiflora*.'

1.3 Methodology

- 1.3.1 In preparation for this report, ground level, visual tree assessments¹ or limited VTA (e.g. where access was limited), of twenty-two (22) trees/tree groups was completed by Chantalle Hughes of Treeism Arboricultural Services on 27th May 2025. Inspection details of these trees are provided in Appendix 3 — Schedule of Assessed Trees.
- 1.3.2 The tree heights were visually estimated or measured using a Nikon ForestryPro, unless otherwise noted in Appendix 3, the trunk Diameter at Breast Height were measured at 1.4 metres above ground level (DBH) using a diameter tape unless indicated otherwise. Tree canopy spreads were stepped out with field observations written down, and photographs of the site and trees were taken using an iPhone 16 Pro Max.
- 1.3.3 The Structural Root Zone (SRZ) and the Tree Protection Zone (TPZ) of each tree is calculated using the formula provided within the Australian Standard 4970-2009 Protection of trees on development sites (AS4970).
- 1.3.4 Tree Retention Values (RV) were calculated utilising STARS – Significance of a Tree Assessment Rating System (IACA 2010) [®].
- 1.3.5 Tree data and field observations were entered into a data dictionary on a Trimble TDC600. Data was managed through Terraflex Trimble Connect.

1.4 Plans and Documents Referenced

- 1.4.1 Survey Plan, Reference no. 12370, Revision 00, dated 15/1/2025, authored by Bee & Lethbridge Pty Ltd.
- 1.4.2 Landscape Plans, Drawing no. CP01-D325 – CPO6-D3725, Revision A, dated 26/6/2025, authored by Dangar Barin Smith.
- 1.4.3 Stormwater Services Site Plan, Project no. 24-214, Drawing no. H-DA-02, Revision A, dated 23/6/2025.
- 1.4.4 AS4970-2009 Protection of trees on development sites, Standards Australia.
- 1.4.5 AS4373-2007 Pruning of amenity trees, Standards Australia.
- 1.4.6 This AIA takes account Chapter 2 *Vegetation in Non-Rural Areas* of the State Environmental Planning Policy (Biodiversity and Conservation) 2021 'The SEPP' and Part 3.3.2 – Preservation of Trees or Bushland Vegetation, Manly Development Control Plan, 2013 (MDCP).

1.5 Limitations

- 1.5.1 No Architectural Plans were viewed as part of this assessment.
- 1.5.2 Care has been taken to obtain all information from reliable sources. All data has been verified as far as possible; however, I can neither guarantee nor be responsible for the accuracy of information provided by others.
- 1.5.3 This report is not intended to be a comprehensive tree risk assessment; however, the report may make recommendations, where appropriate, for further assessment, treatment or testing of trees where potential structural problems have been identified, or where below ground investigation may be required.

¹Visual Tree Assessment (VTA) is a procedure of defect analysis developed by Mattheck and Breloer (1994) that uses the growth response and form of trees to detect defects.

- 1.5.4 No aerial inspections, root mapping or woody tissue testing were undertaken as part of this tree assessment.
- 1.5.5 Information contained in this report only reflects the condition of the trees at the time of inspection. Trees are dynamic, living things which can be subject to change without notice in certain circumstances.
- 1.5.6 This AIA is an assessment of impacts to the trees based on the provided and referenced plans only and not of any future proposals for development or unapproved development of the site. This document is not a Tree Protection Specification or Tree Protection Plan.

2 Observations and Discussion

2.1 Threatened Species/Biodiversity Consideration

- 2.1.1 No species of assessed tree is subject to threatened conservation status under Australian and/or State Government legislation (i.e. NSW Threatened Species Conservation Act 1995 and the Commonwealth Environment Protection and Biodiversity Conservation Act 1999).
- 2.1.2 The site is not identified on the NSW Government Biodiversity Values Map and Threshold Tool.

2.2 Assessed Trees

- 2.2.1 Twenty-two (22) trees/tree groups were assessed or identified and are included in this report. Details of these are included in the Schedule of Assessed Trees—Appendix 3.
- 2.2.2 Of the twenty-two (22) assessed trees/tree groups, the following is noted:
 - Eleven (11) assessed trees are located wholly within the subject site—Tree 3, 4, 7-12, 12A, 13 and 16.
 - Two (2) assessed trees are located on Council managed property outside the subject site—Tree 1 (removed) and 2.
 - Three (3) trees are located on the boundary of the subject site and neighbouring property—Tree 4A, 4B and 5.
 - Six (6) assessed trees/tree groups are located wholly on neighbouring property adjacent to the subject site—Tree G3A, 6, 14, 15, 17 and 18.
- 2.2.3 **Tree origin and prescribed/non-prescribed—**
 - Seven (7) trees are locally native species—Tree 3, 5, 6, 8, 11, 12 and 15.
 - Four (4) trees/tree groups are introduced native species—Group 3A, 9 and 12A.
 - Ten (10) trees are introduced exotic species—Tree 1, 2, 4, 4A, 4B, 7, 13, 14, 16, 17 and 18.
 - Ten (10) trees are non-prescribed/exempt under MDCP—Tree 1, 3, 4, 7, 9, 10, 12, 12A, 13 and 16.
 - Should one (1) tree (Tree 4A) be found to be wholly within the subject site then this tree would be considered non-prescribed/exempt under MDCP.

2.2.4 **Retention Value (RV)** — The twelve (12) *prescribed/protected* subject trees/neighbour trees and their respective Retention Value (RV) are identified in Table 1, below. Note: Refer to Appendix 2 for the methodology used to assess the Retention Value of a tree.

Table 1—Tree Identification and Retention Value, where **L** = Low, **M** = Medium, **H** = High, **R** = Removal proposed.

Tree No.	Common Name	RV	Tree No.	Common Name	RV
G2	Oleander	L	8	Cheese Tree	M
3A	Bangalow Palm X 4	M	11	Cheese Tree	H
4A	Golden Cane Palm	M	14	Cocos Palm	L
4B	Dracena	M	15	Moreton Bay Fig	H
5	Cheese Tree	H	17	Cocos Palm	L
6	Cheese Tree	H	18	Cocos Palm	L

3 Impact of the Proposed Development

3.1 Prescribed Trees Proposed for Removal

3.1.1 Two (2) prescribed trees are proposed for removal;

- **Group 2 – Oleander.** This is actually a group of two trees, multiple stems at the base and ascribed a low RV due to being undesirable species. They are located in the footprint of the proposed driveway and could not be retained under the proposal.
- **Tree 8 – Cheese Tree.** This medium RV tree is not impacted by any proposed built form but is requested for removal to create a cohesive, aesthetically pleasing landscape within the immediate area.

3.2 Potential Impacts on Trees Proposed for Retention

- 3.2.1 Under the Australian Standard 4970-2025 Protection of trees on development sites (AS4970), encroachments equal to or less than 10% of the Notional Root Zone (NRZ) are considered to be *minor*. Encroachments greater than 10% and less than or equal to 20% are considered *moderate*. Encroachment is considered *major* if it is greater than 20% of the area of the NRZ or inside the SRZ.
- 3.2.2 To avoid a net loss of soil area and volume, an area equivalent to the encroachment shall be incorporated into the TPZ regardless of level of encroachment, unless the Project Arborist (PA) otherwise demonstrates that the tree will remain viable.
- 3.2.3 In relation to *minor* encroachment, it is unlikely that there will be a significant impact to tree health, longevity or structure.
- 3.2.4 For *moderate* encroachment, the project arborist shall be engaged to review the proposed impact and undertake any other necessary investigation to address the factors listed in Clause 3.3.2 to demonstrate tree viability. This may be through the implementation of suitable design measures and construction controls to mitigate impacts during the development process as part of a TPS and TPP.
- 3.2.5 For *major* encroachment the PA shall be engaged to review the proposed impact and undertake any other necessary investigation to address the factors listed in Clause 3.3.2 to demonstrate tree viability. The PA shall be engaged to explore alternative designs with the design team and/or demonstrate that the tree will remain viable.
- 3.2.6 When determining the potential impacts of encroachment into the NRZ, (i.e determining the Tree Protection Zone {TPZ}) the project arborist should consider the following items listed under Clause 3.3.2 of AS4970-2025:
 - (a) Location and distribution of the roots.
 - (b) The potential loss of root mass resulting from the encroachment (number of roots and diameter of roots).
 - (c) Tree species and tolerance to root disturbance.
 - (d) If the works will result in a temporary (e.g. service trench) or permanent (e.g. basement carpark) loss of available soil volume.
 - (e) Age, health, current size and projected size of the tree.
 - (f) Presence of other trees with overlapping NRZ or grafted roots.
 - (g) Proposed staging and timing of excavation or root-cutting
 - (h) Proposed tree maintenance and tree care activities.
 - (i) Lean and stability of the tree.
 - (j) Soil characteristics and volume, topography and drainage.
 - (k) Presence of existing or past structures, obstacles affecting root growth or recent encroachments.
 - (l) Proposed construction measures that reduce the impact the impact on trees. (Note 1 states – Construction measures such as pier and beam, suspended slabs, cantilevered building sections and screw piles can reduce the impact of encroachment.)

(m) Whether a root investigation is required. The location and distribution of the roots should be determined through minimally destructive investigation methods (pneumatic, hydraulic, hand digging or ground penetrating radar). Photographs should be taken, and, where needed to address geospatial issues, a root zone map prepared. (Note 2 states – Root damage should be minimized during this process. The roots should only be exposed for as long as required to meet the purposes of the investigation.)

3.2.7 Disturbance within the SRZ, and extent of encroachments into the NRZ's of prescribed trees to be retained are summarised in Table 2 below.

Table 2: Estimated encroachments of permanent structures into the SRZ and NRZ of trees proposed for retention. Note 1: These figures are based on the SRZ and NRZ's offsets of the trees as calculated under AS4970 and do not necessarily reflect the actual root zones of the trees. Existing at or below ground structures, site topography and soil hydrology will influence the presence, spread and direction of tree root growth.

Tree No.	Tree	Tree located on site	SRZ affected	NRZ area (m ²)	NRZ encroachment (approx. m ²)	NRZ encroachment (approx. %)
G3A	Bangalow Palm	✓	N/A	13	1.66	12.7
4A & B	Dracena & Golden Cane Palm	X	N/A	13	4.9	37.7
5	Cheese Tree	✓	✓	106	45.4	42.8
6	Cheese Tree	✓	✓	268	103.24	38.5
11	Cheese Tree	✓	X	82	0	0
14	Cocos Palm	X	N/A	13	0	0
15	Moreton Bay Fig	X	X	92	0	0
17	Cocos Palm	X	N/A	13	3.06	25.5
18	Cocos Palm	X	N/A	13	2.54	19.5

See Appendix 7 Tree Encroachment Calculations – visual for plan marked up encroachments for the above trees.

3.2.8 **Group 3A Bangalow Palm** – located on neighbouring property adjoining the subject site.

Structural Root Zone impacts:

- Under AS4970-2025, the SRZ calculation for palms, cycads, tree ferns and the like is not calculated.

Notional Root Zone impacts:

- An encroachment of 12.7% has been estimated for the proposed stairs for part of this group. This is considered *moderate* encroachment under AS4970 (see Appendix 7). This triggers Clause 3.3.4 - TPZ encroachment considerations under AS4970, the most relevant clauses are;
- (c) *Tree species and tolerance to root disturbance* and (k) *Presence of existing or past structures, obstacles affecting root growth or recent encroachments*.
- The palms appear to be retained within a brick retaining wall within the neighbouring property, limiting root ingress into the subject site. Palms has dense, fibrous root balls generally no more than 0.5m from the stem, impact of tree health/condition is not expected.

Pruning impacts:

- No pruning will be required to accommodate works.

3.2.9 **Tree 4A Golden Cane Palm and 4B Dracaena** – located on neighbouring property adjoining the subject site.

Structural Root Zone impacts:

- Under AS4970-2025, the SRZ calculation for palms, cycads, tree ferns and the like is not calculated.

Notional Root Zone impacts:

- All works fall outside the TPZ of these trees.
- The proposed works are not expected to impact tree health or condition.

Pruning impacts:

- No pruning of these trees will be required.

3.2.10 **Tree 5 Cheese Tree** – located on subject site.

Structural Root Zone impacts:

- Proposed Stormwater piping runs through the SRZ. See discussion below.

Notional Root Zone impacts:

- An encroachment of 42.8% has been estimated for the proposed dwelling, pool, walkway, paving, boundary retaining wall and stormwater piping. This is considered *major* encroachment under AS4970 (see Figure 1 page 10). This triggers Clause 3.3.4 - TPZ encroachment considerations under AS4970, the most relevant clauses are;
- (b) *The potential loss of root mass resulting from the encroachment*, (d) *If the works will result in a temporary or permanent loss of available soil volume*, (e) *Age, health, current size and projected size of the tree* and (l) *Proposed construction measures that reduce the impact the impact on trees*.
- The Stormwater and pathway provide the majority of the encroachment, both these are temporary, once the trench has been dug and backfilled roots can use this soil area. The pathway is above grade. Additionally, the paved area will allow water/air infiltration once installed.
- The permanent excavated areas (see pink shading Figure 1 page 10) have been estimated to encroach 10.6m² or 9.6% of the total TPZ area, *minor* encroachment under AS4970.
- Should storm water piping excavation be carried out sympathetically (non-destructive digging (NDD) such as an airspade or hand excavation under direct Project Arborist supervision), with woody roots left to span the trench and piping feed through, minimal root damage should occur.
- Non-destructive digging (NDD) could also be utilised for pier locations for the raised walkway and the Stormwater pit.

- This tree has good vigour and appears to have ample resources to adjust to the surrounding changes. Ensuring isolated pier locations do not impact woody roots in excess of 40mm in diameter, the long term viability of this tree is possible.

Pruning impacts:

- Pruning may be required to accommodate the dwelling building works, this will require further assessment.

3.2.11 **Tree 6** Cheese Tree – located on subject site.

Structural Root Zone impacts:

- Proposed Stormwater piping runs through the SRZ. See discussion below.

Notional Root Zone impacts:

- An encroachment of 38.5% has been estimated for the proposed dwelling, pool, walkway, paving, boundary retaining wall and stormwater piping. This is considered *major* encroachment under AS4970 (see Figure 1 next page). This triggers Clause 3.3.4 - TPZ encroachment considerations under AS4970, the most relevant clauses are;
- (b) *The potential loss of root mass resulting from the encroachment*, (d) *If the works will result in a temporary or permanent loss of available soil volume*, (e) *Age, health, current size and projected size of the tree* and (l) *Proposed construction measures that reduce the impact the impact on trees*.
- As discussed for Tree 5, the Stormwater piping and pathway provide the majority of the estimated encroachment. Both of these are considered temporary, once the trench has been dug and backfilled, roots can use this soil area. The pathway is above grade. Additionally, the paved area will allow water/air infiltration once installed.
- The permanent excavated areas (see pink shading Figure 1 next page) have been estimated to encroach 19.4m² or 7.2% of the total TPZ area, *minor* encroachment under AS4970.
- Provided storm water piping excavation be carried out sympathetically (non-destructive digging (NDD) such as an airspade or hand excavation under direct Project Arborist supervision), with woody roots left to span the trench and piping feed through, minimal root damage should occur.
- Non-destructive digging (NDD) could also be utilised for pier locations for the raised walkway and the Stormwater pit.
- Ensuring isolated pier locations are not impacting woody roots in excess of 40mm in diameter), the long term viability of this tree is possible.

Pruning impacts:

- Minor pruning is foreseen, Tree 5 canopy restricts the majority of canopy extension of this tree into the subject site.

3.2.12 **Tree 11** Cheese Tree – located on subject site.

- All works fall outside the calculated SRZ of this specimen.

- All works fall outside the NRZ for this specimen. Impact of tree health/condition is not expected.

- No pruning will be required to accommodate works.

Structural Root Zone impacts:

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Notional Root Zone impacts:

- All works fall outside the NRZ for these trees.

Pruning impacts:

- No pruning will be required to accommodate works in relation to Tree 14. It is possible minor pruning will be required on Tree 15 for inclinor carriage clearances.

3.2.14 **Tree 17 & 18 Cocos Palm** – located on neighbouring property adjoining the subject site.

Structural Root Zone impacts:

- Under AS4970-2025, the SRZ calculation for palms is not calculated.

Notional Root Zone impacts:

- An encroachment of 25.5% for Tree 17 and 19.5% for Tree 18 has been estimated for the proposed retaining wall along the boundary. This is considered *major* encroachment for Tree 17 and *moderate* encroachment for Tree 18 under AS4970 (see Appendix 7).
- Given the wall will be in excess of 1m from the tree stem and the fibrous, dense root systems of palm species, impact of tree health/condition is not expected.

Pruning impacts:

- No pruning will be required to accommodate works.

4 Conclusions

- 4.1.1 A total of twenty-two (22) trees are included in this Arboricultural Impact Assessment.
- 4.1.2 No assessed tree has been identified as endangered or threatened under State or Federal Government legislation, and the site is not identified on the Department of Planning and Environments Biodiversity Values Map (BV).
- 4.1.3 Nine (9) assessed trees were found either removed since site survey was undertaken or non-prescribed trees and will be removed – Tree 1, 3, 4, 7, 9, 10, 12, 12A and 13.
- 4.1.4 Two (2) assessed prescribed trees are proposed for removal under the proposal – Tree 2 and 8.
- 4.1.5 Three (3) assessed trees will incur nil encroachment and impact on tree health is not expected – Tree 11, 14 and 15.
- 4.1.1 One (1) assessed tree group (Group 3A) will incur ‘moderate’ encroachment and five (5) assessed trees will incur *major* encroachment (as per parameters under AS4970 -2025 Protection of trees on development sites). Construction methods in relation to Trees 5 and 6 and species tolerance in relation to Trees 4A & B, 17 and 18 has been considered and long term tree retention has been deemed viable.

5 Recommendations

5.1 Trees Proposed for Removal

- 5.1.1 Any tree removal is to be undertaken in accordance with the NSW WorkCover Code of Practice for the Amenity Tree Industry (1998) and Safe Work Guide to Managing Risks of Tree Trimming and Removal Work 2016. Tree pruning shall be in accordance with the Work Health and Safety Act 2011, the Work Health and Safety (WHS) Regulations 2017 and AS4373 Pruning of Amenity Trees.
- 5.1.2 Any tree pruning/removal is subject to permit approval from the relevant consent authority.

5.2 Project Arboriculturist

- 5.2.1 A Project Arboriculturist (PA) shall be engaged prior to work commencing on the site.
- 5.2.2 A **tree specific Tree Protection Specification (TPS) and Tree Protection Plan (TPP)**, once Councils Conditions of Consent are issued, shall be established to ensure compliance with the relevant Notice of Determination and in line with Construction Plans/Drawings prior to the issue of the Construction Certificate.
- 5.2.3 The PA must have a minimum Australian Qualification Framework Level 5 (AQF5) or above in Arboriculture.
- 5.2.4 Duties of the PA shall include, but not be limited to:
 - Liaising with the Project Manager/Head Contractor/Site Manager to confirm the tree protection and other specific tree protection requirements prior to site works commencing.

- Inspection of Tree Protection Devices and supervision of works as recommended in this report or as specified in any Conditions of Consent associated with an approved development application.
- Provision of Compliance/Occupation Certification if, and when required.

5.3 Minimising Impacts on Trees to be Retained

- A TPS and TPP, once Councils Conditions of Consent are issued, shall be established to ensure compliance with the relevant Notice of Determination.
- This TPS and TPP require referral to Construction Plans/Drawings.
- This TPS and TPP need to be established prior to demolition works.

5.4 General Tree Protection Measures

- 5.4.1 Works within TPZs of trees to be retained shall be done under direct supervision of an AQF Level 5 Consulting Arborist and shall comply with any TPS and TPP.
- 5.4.2 Non-destructive excavation is to be used when working within the TPZ of trees to be retained and must be supervised by an AQF level 5 consulting arborist.
- 5.4.3 Encroachment within the TPZ must be offset with a range of mitigation measures to ensure that impacts to trees to be retained are reduced or restricted wherever possible. Mitigation must be increased relative to the level of encroachment within the TPZ to ensure trees to be retained remain viable. This can mean (but is not limited to) specific watering over warmer months, carbohydrate/mycorrhizal treatments and regular monitoring of tree condition.
- 5.4.4 Activities such as replacing or installing footpaths/driveways/retaining walls shall be done with minimal ground and root disturbance within the TPZs of trees that are proposed to be retained.
- 5.4.5 Any pruning required (including clearances for vehicle movements or other construction impacts) will need to be assessed and supervised by an AQF level 5 consulting arborist and is subject to consent authority approval. This shall be specified in the TPS and TPP.
- 5.4.6 If temporary access for machinery is required within the TPZ of trees to be retained, ground protection measures will be required. The purpose of ground protection is to prevent root damage and soil compaction within the TPZ. Ground protection may include a permeable membrane such as geotextile fabric beneath a layer of mulch (minimum 75-100mm thickness), crushed rock or rumble boards. This is to be directed within the TPP.
- 5.4.7 Any additional construction activities within the TPZ of trees to be retained must be assessed and written in the TPS and TPP. All activities require approval by the Project Arborist and must comply with AS 4970-2025 - Protection of trees on development sites.

5.5 General Arboricultural advice

5.5.1 Tree and Root Pruning

- Any pruning required is to be assessed and approved by the Council/PA, prior to undertaking any of this type of work.
- Pruning shall not be undertaken by unqualified site personnel at any time.

- Pruning of branches must be undertaken by a minimum AQF Level 3 arborist in accordance with the Australian Standard AS4373-2007 *Pruning of amenity trees*,
- Unless otherwise approved by the Conditions of Development Consent, or by separate application and approval by the consent authority, pruning is to be limited to cutting of limbs less than 80mm diameter, and no more than 10% total live material removed.

5.5.2 Stockpiling and location of site sheds

- The project arboriculturist must be consulted prior to placing any items within a tree's TPZ.
- Where stockpiling must be located within the TPZ offset of trees to be retained, the existing/undisturbed natural ground must be covered with thick, coarse mulch to a minimum 75-100mm thickness.
- Large, or bulky materials (non-contaminating) can be stacked on wooden pallets or boards placed over the mulch.
- Tarpaulins (or similar) placed on boards or pallets on top of mulch shall be used to prevent loose or potentially contaminating materials from moving into the soil profile within the TPZ of trees or within 10m upslope of trees.
- Where site sheds must be located within the TPZ offset of a tree/s, the shed must be fully elevated on all sides with a minimum 300mm between existing ground and the floor/floor bearers. Isolated pad footings must be carefully dug by hand and not damage or sever any roots greater than 20mm diameter.
- Any conflict between footing locations and woody roots (i.e. 20mm Ø plus) must be brought to the attention of the project arboriculturist who is to provide practical alternatives that do not include unnecessary tree root removal.

5.5.3 Fill Material

- Placement of fill material within the TPZ of trees to be retained should be avoided where possible.
- The fill material should be consolidated by hand to minimise compaction of the underlying soil.
- Permeable geotextile may be used beneath the sub-base to prevent migration of the stone into the sub-grade. No fill material shall be placed in direct contact with the trunk.

5.5.4 Pavements

- Pavements should be avoided within the TPZ of trees to be retained where possible.
- Proposed paved areas within the TPZ of trees to be retained is to be placed above grade to minimise excavations within the root zone, avoiding root severance and damage.

5.5.5 Fencing and walls within the TPZ of retained trees.

- Where fencing and/or masonry walls are to be constructed along site boundaries, they must provide for the presence of any living woody tree roots greater than 50mm diameter.
- Hand digging must occur within the SRZ of trees to be retained.

- For masonry walls/fences it may be acceptable to delete continuous concrete strip footings and replace with suspended in-fill panels (e.g. steel or timber pickets, lattice etc) fixed to pillars.

5.5.6 Landscaping within tree root zones.

- The level of introduced planting media into any proposed landscaped areas within the TPZ is not to be greater than 75mm depth, and be of a coarse, sandy material to avoid development of soil layers that may impede water infiltration.
- Appropriate container size of proposed plants within the SRZ of trees should be determined prior to purchase of plants. Otherwise, any proposed landscaping within the SRZ must consist of tubestock only. This is required to ensure that damage to tree roots is avoided.
- Mattocks and similar digging instruments must not be used within the TPZ of the trees. Planting holes should be dug carefully by hand with a garden trowel, or similar small tool.
- Where possible, do not plant large canopy trees beneath, or within 6 - 8m of overhead lines.

5.5.7 Other

- No washing or rinsing of tools or other equipment, preparation of any mortars, cement mixing, or brick cutting is to occur within 8m upslope of any palms or trees to be retained.
- Regular monitoring of the trees during development works for unforeseen changes or decline will help maintain the trees in a healthy state.

6 References

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Report prepared by Chantalle Hughes –

June 2025



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7 Appendices

Appendix 1 – Terms and Definitions

Absorbing Roots: Refers to small, non-woody roots with root hairs or a mycorrhizal association and no bark, responsible for the uptake of most of the water and solutes used by the tree. Absorbing roots are less than two millimetres in diameter.

Age classes

- Y** Young refers to an established but juvenile tree.
- SM** Semi-mature refers to a tree at growth stages between immaturity and full size.
- EM** Early-mature refers to a tree close to full sized still actively growing.
- M** Mature refers to a full sized tree with some capacity for further growth.
- LM** Late-Mature refers to a full sized tree with little capacity for growth that is not yet about to enter decline.
- OM** Over-Mature refers to a full sized tree with little capacity for growth that is entering or has entered decline.

Condition/Structure: refers to the tree's form and growth habit, as modified by its environment (aspect, suppression by other trees, soils) and the state of the scaffold (i.e. trunk and major branches), including structural defects such as cavities, crooked trunks or weak trunk/branch junctions. These are not directly connected with health and it is possible for a tree to be healthy but in poor condition/structure.

Diameter at Standard Height (DSH): Refers to the tree trunk diameter at standard height (1.4 metres above ground level).

Epicormic growth: adventitious branches that are considered to be a weak attachment in the short term due to minimal wood formation. There are generally formed following storm-related branch breakage or poor pruning practices. Should sufficient holding wood form in the long-term this growth is less of an issue.

Health: Refers to the tree's vigour as exhibited by the crown density, leaf colour, presence of epicormic shoots, ability to withstand disease invasion, and the degree of dieback.

Shall: Under AS4970-2025 this is taken to mean '*indicate(s) a statement that is mandatory*'.

Should: Under AS4970-2025 this is taken to mean '*indicate(s) a recommendation*'.

SRZ: refers to the Structural Root Zone of the tree, this is the theoretical area around the base of a tree required for stability.

NRZ: refers to the Notional Root Zone of the tree, this is the area required to maintain tree health/vigour and at times stability.

TPZ: refers to the Tree Protection Zone of the tree of which the NRZ is the starting point. This is a given offset from the trunk, set aside, and is the primary method of protecting trees on development sites. It is a combination of the root area, the canopy, the SRZ is located within it.

Visual Tree Assessment (VTA): a procedure of defect analysis developed by Mattheck and Breloer (1994) that uses the growth response and form of trees to detect defects.

Appendix 2 – STARS – Significance of a Tree Assessment Rating System (IACA 2010)©

Estimated Life Expectancy - STARS refers to an estimated life expectancy of a tree, Treeism utilises the ULE categories (after Barrell 1996, Updated 01/04/01) to clarify how this was obtained/decided.

The five categories and their sub-groups are as follows:

1. Long ULE - tree appeared retainable at the time of assessment for over 40 years with an acceptable degree of risk, assuming reasonable maintenance:
 - a) Structurally sound trees located in positions that can accommodate future growth
 - b) Trees which could be made suitable for long term retention by remedial care
 - c) Trees of special significance which would warrant extraordinary efforts to secure their long term retention
2. Medium ULE - tree appeared to be retainable at the time of assessment for 15 to 40 years with an acceptable degree of risk, assuming reasonable maintenance:
 - a) Trees which may only live from 15 to 40 years
 - b) Trees which may live for more than 40 years but would be removed for safety or nuisance reasons
 - c) Trees which may live for more than 15 years but would be removed to prevent interference with more suitable individuals or to provide space for new planting
 - d) Trees which could be made suitable for retention in the medium term by remedial care
3. Short ULE - tree appeared to be retainable at the time of assessment for 5 to 15 years with an acceptable degree of risk, assuming reasonable maintenance:
 - a) Trees which may only live from 5 to 15 years
 - b) Trees which may live for more than 15 years but would be removed for safety or nuisance reasons
 - c) Trees which may live for more than 15 years but would be removed to prevent interference with more suitable individuals or to provide space for new planting
 - d) Trees which require substantial remediation and are only suitable for retention in the short term.
4. Removal - trees which should be removed within the next 5 years:
 - a) Dead, dying, suppressed or declining trees because of disease or inhospitable conditions
 - b) dangerous trees through instability or recent loss of adjacent trees
 - c) Dangerous trees because of structural defects including cavities, decay, included bark, wounds or poor form
 - d) Damaged trees that are clearly not safe to retain
 - e) Trees which may live for more than 5 years but would be removed to prevent interference with more suitable individuals or to provide space for new planting
 - f) Trees which are damaging or may cause damage to existing structures within the next 5 years
 - g) Trees that will become dangerous after removal of other trees for the reasons given in (a) to (f)
 - h) Trees in categories (a) to (g) that have a high wildlife habitat value and, with appropriate treatment, could be retained subject to regular review
5. Small, young or regularly pruned - Trees that can be reliably moved or replaced:
 - a) small trees less than 5m in height
 - b) young trees less than 15 years old but over 5m in height
 - c) formal hedges and trees intended for regular pruning to artificially control growth

Landscape Significance

The landscape significance of a tree is an essential criterion for establishing 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.

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 and *Useful Life Expectancy* of an individual tree has been defined, the retention value can be determined.

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.

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

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 designed for individual trees only but can be applied to a monocultural stand in its entirety e.g. hedge.

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 Tree Pty Ltd and Andrew Morton in June 2001.


		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					
Legend for Matrix Assessment 						
	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.					
	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.					
	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.					
	Priority for Removal -These trees are considered hazardous, or in irreversible decline, or weeds and should be removed irrespective of development.					

Table 1 - 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

Appendix 3 – Schedule of Assessed Trees – Site inspection 27/5/2025, 11 Seaforth Crescent, Seaforth.

Tree No.	Genus & species Common Name	Ht (m)	Sp (m)	DSH (mm)	AB (mm)	Age	V	C	Comments	ULE	TSR	RV	SRZ (m)	NRZ (m)	NRZ (area)	NRZ encroachment (approx. %)
1	Removed	-	-	-	-	-	-	-	Located on Council managed land. Gone/previously removed.	-	L	L	-	-	-	N/A
G2	<i>Nerium oleander</i> Oleander	5	8	-	*350	M	G	G	Located on Council managed land. Introduced exotic species. Multiple stems from base. Weed species.	2C	L	L	2.1	4.2	55	100
3	<i>Ficus macrophylla</i> Moreton Bay Fig	2	4	-	*220	EM	G	F-P	Located on subject site. Locally native species. Suspect self-sown, growing out of rock. Possibly cut back previously.	2A	L	L	-	-	-	N/A
G3A	<i>Archontophoenix cunninghamiana</i> Bangalow Palm x 4	7-13	5	*100-150	N/A	M	G	G	Located on neighbouring property. Introduced native species. Unsurveyed, within 5m of works. Four (4) specimens.	2A	M	M	N/A	2.0	13	10.2
4	<i>Chamaecyparis lawsoniana</i> Lawson's Cypress	10	10	*220	-	M	G	G	Located on subject site. Exempt Species under MDCP. Introduced exotic species. Unsurveyed. DBH at 0.5m AGL, low branching, another four (4) conifers hard against low wall to SSE of stem.	2A	M	M	-	-	-	N/A
4A	<i>Dypsis lutescens</i> Golden Cane Palm	4	6	multiple	N/A	M	G	G	Unsure if on subject side or neighbours, unsurveyed. Introduced exotic species.	2A	M	M	N/A	2.0	13	37.7
4B	<i>Dracena marginata</i> Dracena	7	8	400/350	N/A	M	G	G	Unsure if on subject side or neighbours, unsurveyed. Introduced exotic species.	2A	M	M	N/A	2.0	13	37.7
5	<i>Glochidion ferdinandi</i> Cheese Tree	13	16	*280/280 /280 (485)	610	M	G	G-F	Located on boundary with neighbouring property. Locally native species. Branches extensively over subject site. Top appears to have been lopped. Three large stems at 1.2m AGL estimated DBH as surrounding vegetation limiting access.	2A	H	H	2.7	5.8	106	
6	<i>Glochidion ferdinandi</i> Cheese Tree	15	16	770	840	M	G	G	Located on neighbouring property. Locally native species. Located atop rock. Some branching over site.	2A	H	H	3.1	9.2	268	
7	<i>Phoenix canariensis</i> Canary Island Date Palm	8	-	-	-	M	G	G	Located on subject site. Exempt Species under MDCP. Introduced exotic species.	2A	M	M	-	-	-	N/A
8	<i>Glochidion ferdinandi</i> Cheese Tree	14	8	440	560	M	G	F	Located on subject site. Locally native species. Heavily pruned appears lopped, at base of rock. Twisted form.	2A	M	M	2.6	5.3	88	0
9	<i>Archontophoenix cunninghamiana</i> Bangalow Palm	12	-	-	-	-	-	-	Located on subject site. Exempt Species under MDCP. Introduced native species.	2A	M	M	-	-	-	N/A
10	Removed	-	-	-	-	-	-	-	Located on subject site. Gone/previously removed.	-	L	L	-	-	-	N/A
11	<i>Glochidion ferdinandi</i> Cheese Tree	15	12	*425	*500	M	G	G-F	Located on subject site. Locally native species. No access to base of tree.	2A	H	H	2.5	5.1	82	0
12	<i>Glochidion ferdinandi</i> Cheese Tree	14	-	-	-	OM	P	P	Located on subject site. Locally native species. Dead with vine up stem.	4A	L	L	-	-	-	N/A
12A	<i>Ficus benjamina</i> Weeping Fig x 2	10	6	-	390 & 490	M	G	F	Located on subject site. Exempt Species under MDCP. Introduced native species.	2A	M	M	-	-	-	N/A
13	<i>Syagrus romanzoffiana</i> Cocos Palm	12	-	-	N/A	-	-	-	Located on subject site. Exempt Species under MDCP. Introduced exotic species.	2C	L	L	N/A	-	-	N/A
14	<i>Syagrus romanzoffiana</i> Cocos Palm	10	5	*110	N/A	-	-	-	Located on neighbouring property. Introduced exotic species.	2C	L	L	N/A	2.0	13	0

Tree No.	Genus & species Common Name	Ht (m)	Sp (m)	DSH (mm)	AB (mm)	Age	V	C	Comments	ULE	TSR	RV	SRZ (m)	NRZ (m)	NRZ (area)	NRZ encroachment (approx. %)
15	<i>Ficus macrophylla</i> Moreton Bay Fig	14	14	*450	*500	M	G	G	Located on neighbouring property. Locally native species. Sat on rock and over 5m. Branching over subject site.	2A	H	H	2.5	5.4	92	0
16	<i>Ligustrum</i> spp. Privett	4	-	-	-	-	-	-	No tree found, Privett in area. Introduced exotic species.	2C	L	L	-	-	-	N/A
17	<i>Syagrus romanzoffiana</i> Cocos Palm	12	5	*120	N/A	M	G	G	Located on neighbouring property. Introduced exotic species. No access. Unsurveyed.	2C	L	L	N/A	2.0	13	0
18	<i>Syagrus romanzoffiana</i> Cocos Palm	12	5	*120	N/A	M	G	G	Located on neighbouring property. Introduced exotic species. No access. Unsurveyed.	2C	L	L	N/A	2.0	13	0

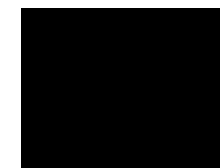
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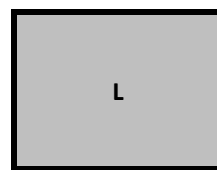
Trees to be retained.



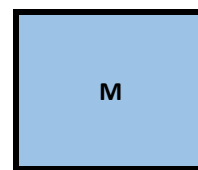
Dead/non-prescribed tree or palm on site that may be removed or retained without Development Consent or Tree Management Permit.



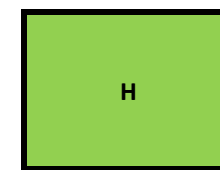
Trees proposed for removal.



Low Retention Value-These trees are not considered important for retention.



Medium Retention Value-These trees may be retained & protected.



High Retention Value -These trees are considered important for retention and should be retained and protected.

* DSH is visually estimated (usually adjoining trees or those that are hard to access). AB – above *buttress roots*. AGL - above ground level. Figures in brackets indicates the determined DSH and NRZ for a multi-stemmed tree based on the formula shown in Appendix A of AS4970-2025. Under AS4970-2025, the NRZ calculation for palms, cycads, tree ferns and the like is not calculated, but shall not be less than 2m, SRZ is not calculated/utilised.

H refers to the approximate height of a tree in metres, from base of stem to top of tree crown.

Sp refers to the approximate and average spread in metres of branches/canopy (the 'crown') of a tree.

DSH refers to the approximate diameter of tree stem at standard height i.e. 1.4 metres above ground (unless otherwise noted) and expressed in millimetres. Figures in brackets indicate the minimum NRZ allowable as per Section 3.2 Calculating the Notional Root Zone AS4970-2025.

Age refer to Appendix 1 -Terms and Definitions for more detail.

V refers to the tree's vigour (health) Refer to Appendix 1 -Terms and Definitions for more detail. G- Good, F-Fair, P-Poor.

C refers to the tree's structural condition. Refer to Appendix 1 -Terms and Definitions for more detail.

ULE refers to the estimated *Useful Life Expectancy* of a tree. Refer to Appendices 2 for details.

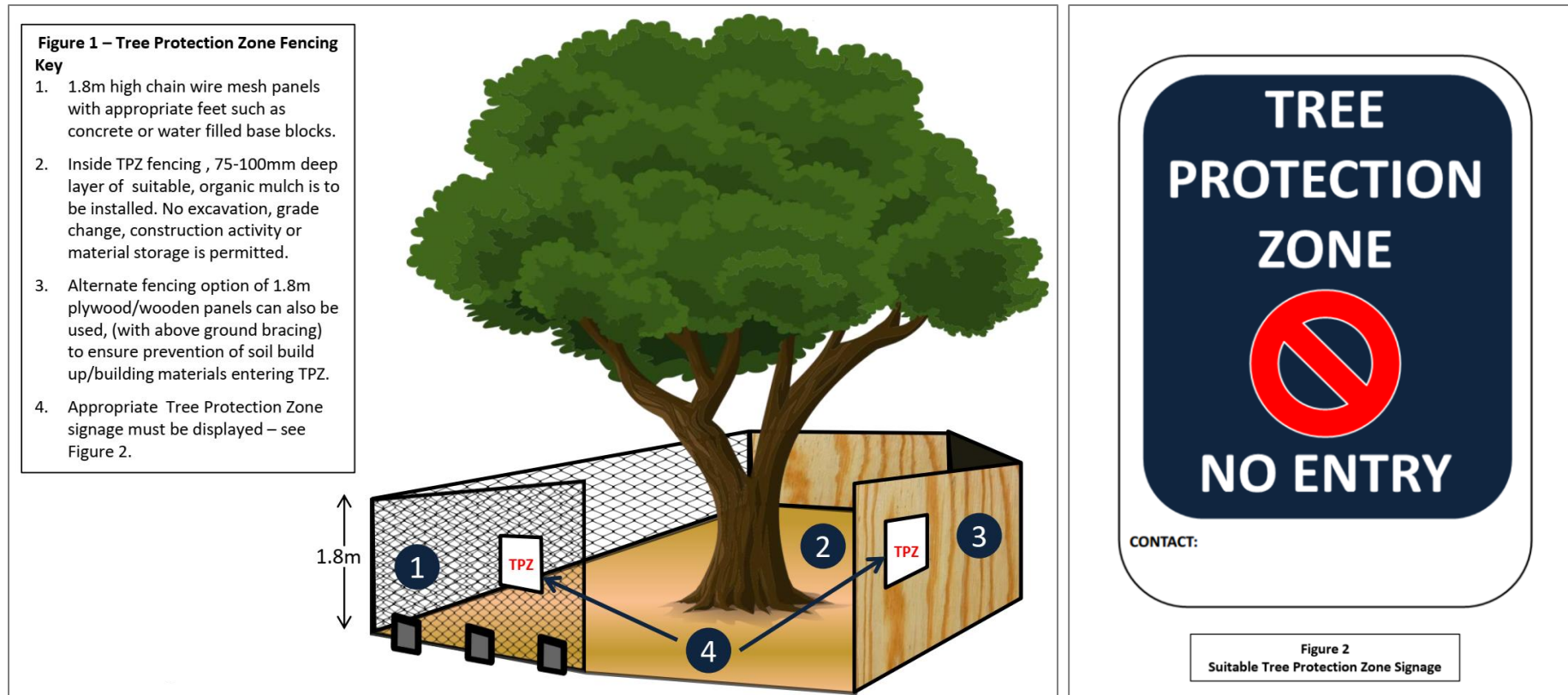
TSR The *Tree Significance Rating* considers the importance of the tree because of its prominence in the landscape and its amenity value, from the point of view of public benefit. Refer to Appendix 2 – Significance of a Tree Assessment Rating for more detail.

RV Refers to the retention value of a tree, based on the tree's ULE *and* Tree Significance. Refer to Appendix 2 – Significance of a Tree Assessment Rating for more detail.

SRZ Structural Root Zone (SRZ) refers to the critical area required to maintain stability of the tree. Refer to Appendix 1 -Terms and Definitions for more detail.

NRZ Notional Root Zone (NRZ) refers to the zone enclosed by a radius of 12 times DSH that is a primary trigger for Arboricultural input on a development site. Refer to Appendix 1 -Terms and Definitions for more detail.

Appendix 4 – Tree Protection Devices



Figures 1 & 2 – Tree Protection Fencing and appropriate signage.

Figure 3 - Stem, Branch & Ground protection measures

Key

1. Padding (such as geotextile membrane, natural hessian, rubber, or carpet to protect bark).
2. Battens/boards for branch/stem protection, strapped together NOT nailed into bark/tree. Minimum 2m in height on stem where feasible.
3. Ground protection base 75-100mm of fit for purpose mulch.
4. If machinery is required to move within the TPZ then steel rumble boards (4a) or wide, timber sheeting/boards thrashed together (4b) is to be placed over mulch layer (preferably with geotextile base layer), this to spread the weight and minimise soil compaction

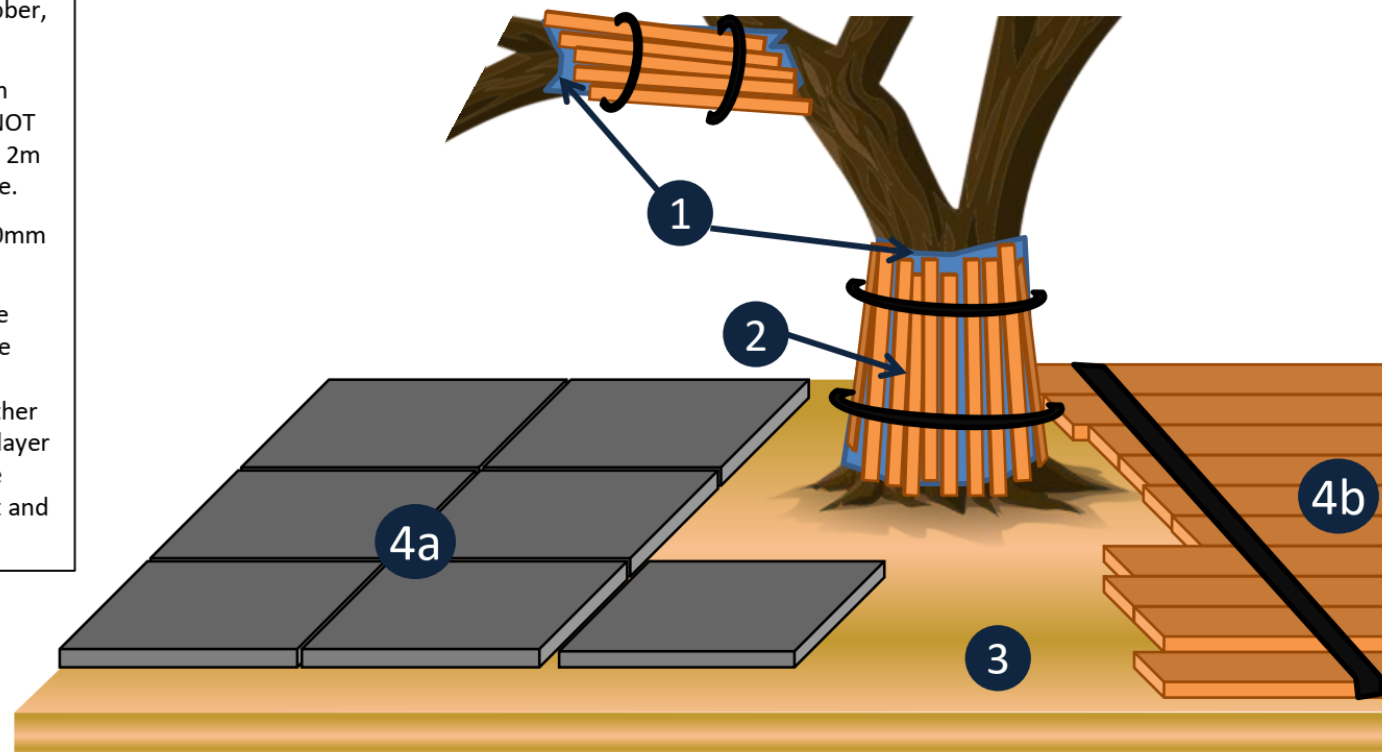


Figure 3 – Stem and ground protection measures.



Plate 1 – Group 2 – Require removal to allow for driveway.



Plate 2 – Group 2 – Require removal to allow for driveway. Note no tree is survey location of Tree 1.



Plate 3– Tree 3 – Tree 3 is regrowth from a stump.



Plate 4– Group 3A as noted. Located on neighbouring property.

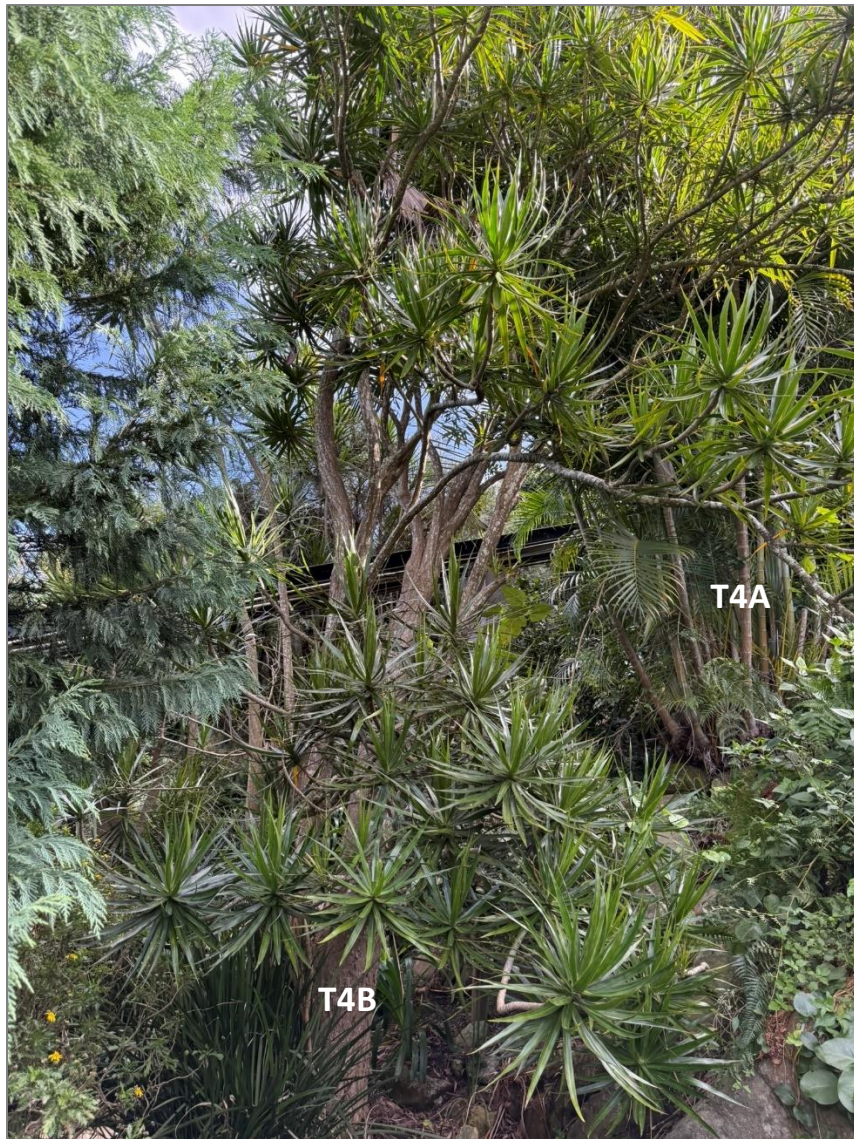


Plate 5 – Tree 4A & 4B – Trees not on Survey Plan.



Plate 6 – Tree 4, 5 and 7 noted.



Plate 7 & Inset –Tree 5, base of stem and inset notes extent of canopy over site. Located on the boundary of the subject site and neighbouring property.



Plate 8 –Base of stem of Tree 6. Located on neighbouring property.



Plate 9 –Tree 7 and 8. Located on subject site.



Plate 10 –Tree 8 and 11. Located on subject site.



Plate 11 –Tree 9, dead tree with vine up stem, located on subject site.

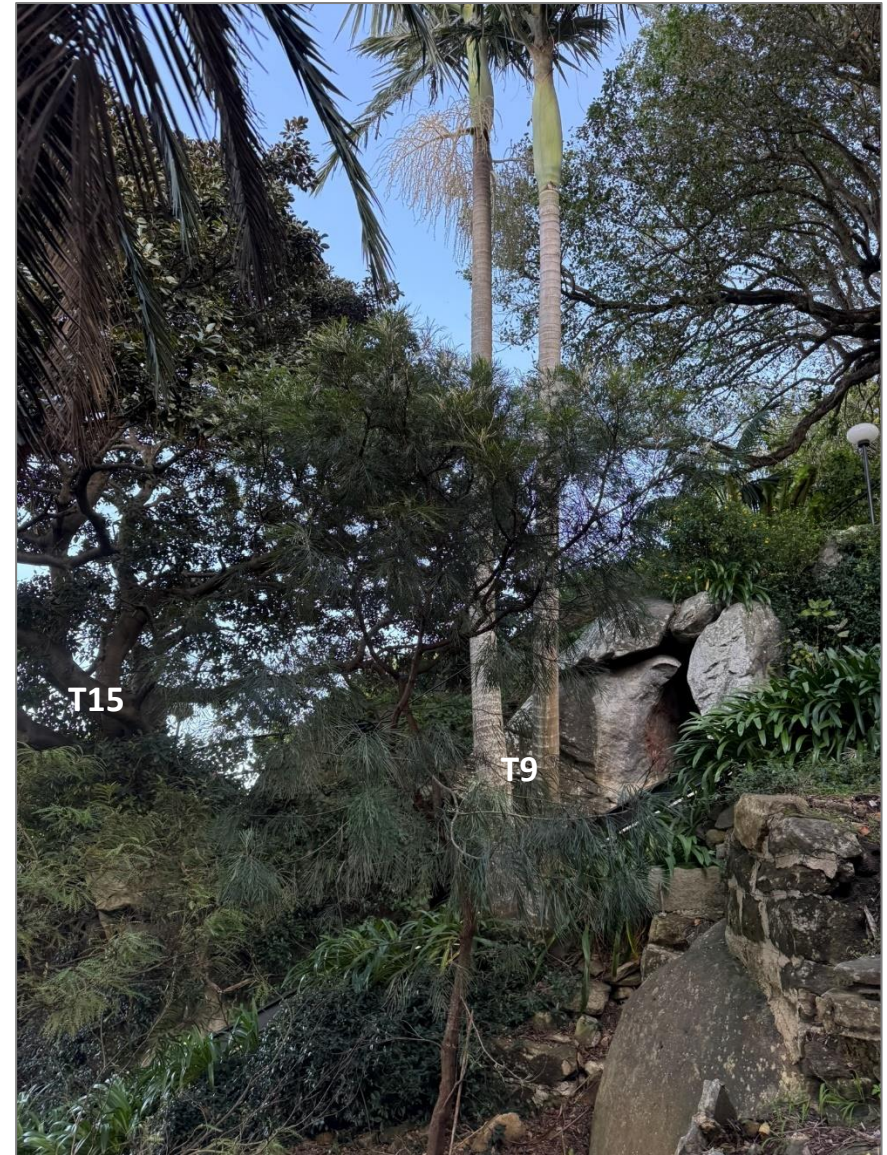


Plate 12 –Tree 9 and 15 noted. Tree 9 on subject site, Tree 15, located on neighbouring site but canopy overhangs property.



Plate 13 –Tree 13 appears to be on neighbouring site but survey has it located on subject site.



Plate 14 –Tree 14 located on neighbouring site.



Plate 15 & Inset –Tree 12A & 13. Tree 12A (two trees) are located on subject site.



Plate 16 –Tree 17 and 18, located on neighbouring property.

Appendix 6 – Tree Location Plan

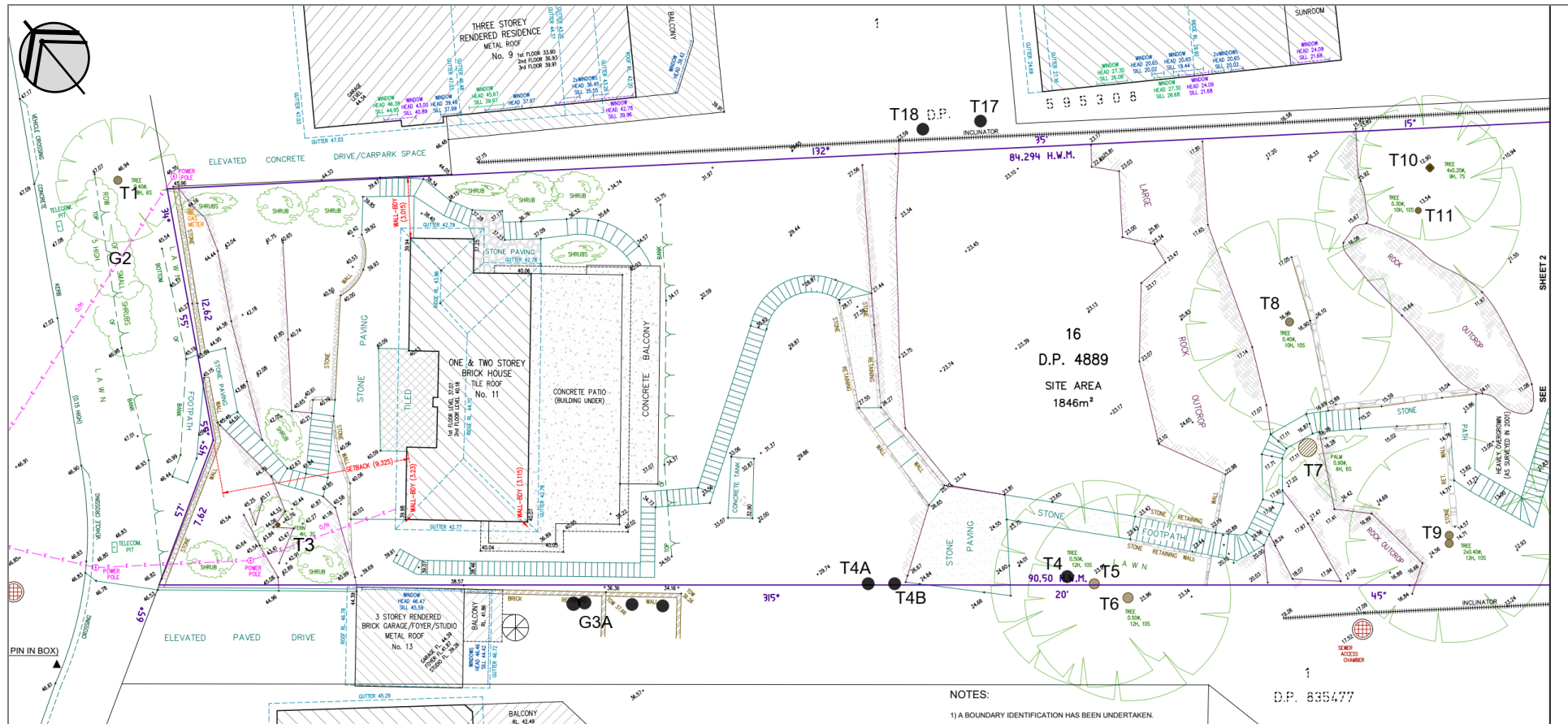


Figure 1 – Excerpt of Survey Plan, ref no. 12370, Rev 00, dated 15/1/2025, Sheet 1 of 3, authored by Bee & Lethbridge Pty Ltd. Marked up by C Hughes. NOT TO SCALE.

Appendix 7 – Tree Encroachment Calculations – visual

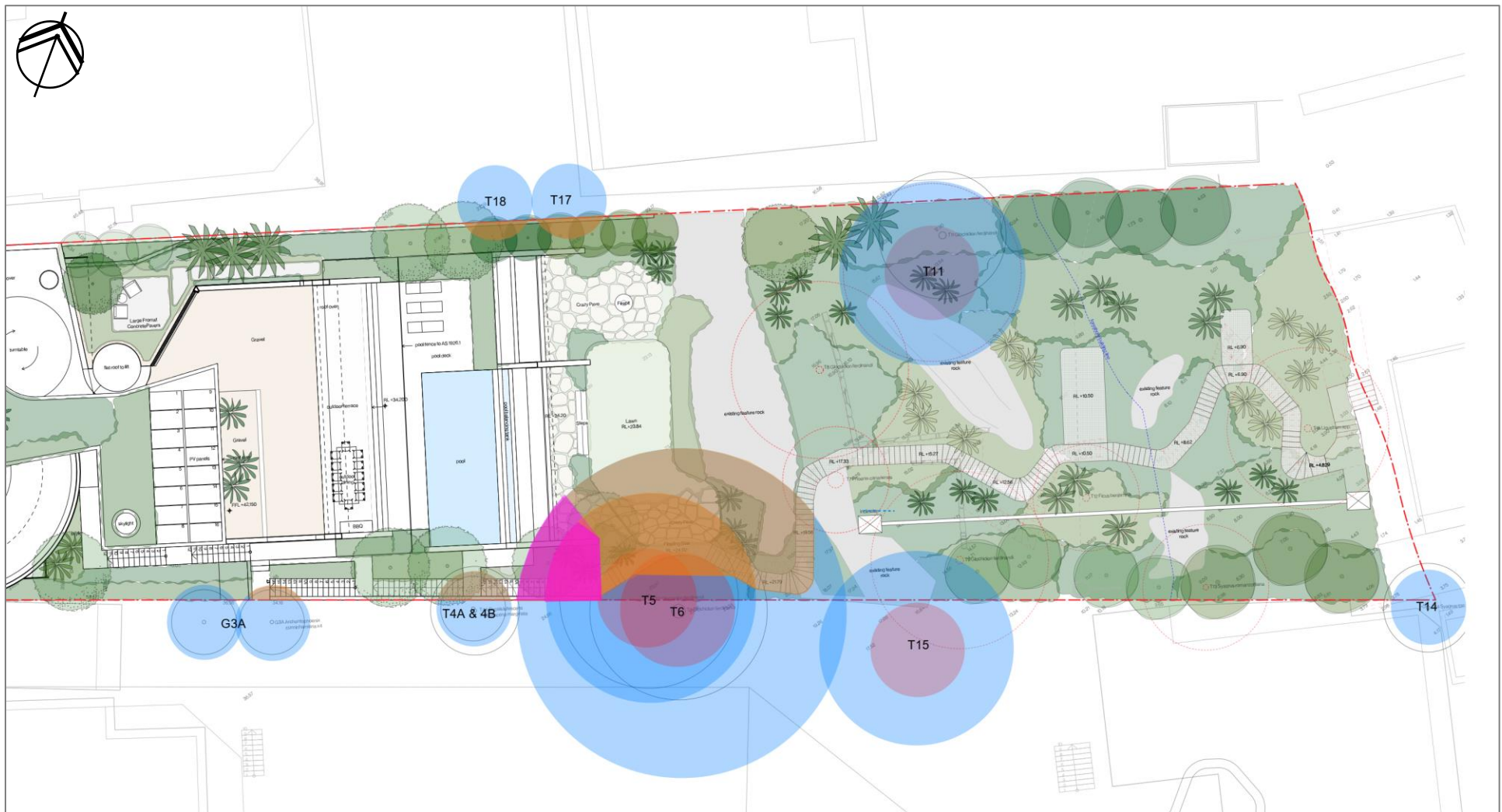


Figure 2 – Excerpt of Landscape Site Plan, dwg no. CP01-D3725, dated 26/6/2025 authored by Danger Baron Smith. Marked up by Treeism. Blue circles indicate NRZ, red circle SRZ. Pink shading permanent encroachment within Tree 5 & 6 NRZ, orange shading estimated encroachment. NOT TO SCALE.