10th December 2024

Emma Lambert
12 Molong Street
North Curl Curl
NSW 2099

ARBORICULTURAL IMPACT ASSESSMENT – 12 MOLONG STREET, NORTH CURL CURL

Please find enclosed your Arboricultural Impact Assessment with 5 appendices regarding sixteen (16) trees located within and adjacent to 12 Molong Street, North Curl Curl NSW.

Sincerely,

Jamie Oates
Dip. Arb., AQF Level 5

ARBORICULTURAL IMPACT ASSESSMENT:

12 Molong Street
North Curl Curl, NSW

Prepared for -

Emma Lambert

December 2024

EXECUTIVE SUMMARY

Emma Lambert, owner of 12 Molong St North Curl Curl, has commissioned this Arboricultural Impact Assessment (AIA). This AIA concerns 16 trees located within and adjacent to the aforementioned property.

A development involving the demolition of the existing dwelling and swimming pool, the removal of several trees, and the construction of a new dwelling, cabana and swimming pool is proposed at 12 Molong St North Curl Curl.

This Arboricultural Impact Assessment was written by Jamie Oates, AQF Level 5 Arborist, in December 2024.

Zero (0) trees were determined to be of high retention value.

Zero (0) trees were determined to be of medium retention value.

Sixteen (16) trees were determined to be of low retention value. These trees are numbered 11-26.

Zero (0) trees were determined to be hazardous / irreversible decline.

Fifteen (15) trees are recommended for removal to facilitate the proposed development. These trees are numbered 11-23, 25 and 26. All of these trees are of low retention value, and all are located within the site. Council approval is not required to remove these trees as they are all of a species that is considered exempt within Northern Beaches Council.

Trees 24 is a *Syagrus romanzoffiana* (common name: Cocos Palm) and is located within the neighbouring property to the north of the site. The northeast corner of the proposed pool cabana structure incurs very slightly upon the tree protection zone of tree 24. The encroachment is minor and deemed negligible. To ensure that no excavation occurs beyond the footprint for the northeast corner of the pool cabana, tree protection fencing is required to protect the tree protection zone of tree 24.

A complete summary of tree attributes, radial setbacks, retention values and recommendations can be found in appendix 1 – Tree Schedule.

1.0 INTRODUCTION

This Arboricultural Impact Assessment (AIA) is at the request of Emma Lambert (the client). The client wishes to submit a Development Application for a proposed development at 12 Molong St North Curl Curl (the site). The development involves the demolition of the existing dwelling and swimming pool, the removal of several trees, and the construction of a new dwelling, cabana and swimming pool. The client has requested an appraisal of the trees that are potentially affected by the proposed development to assist with the project planning and the DA submission. This AIA concentrates on sixteen (16) trees that are located both within the site and within an adjoining property. This AIA was written by Jamie Oates, an AQF Level 5 Arborist, in December 2024.

1.1 Aims

The aims of this Arboricultural Impact Assessment are to –

- Assess the health and structural condition of each of the 16 subject trees.
- Provide each tree with a retention value which will allow for realistic planning of the proposed development.
- Review the plans of the proposed development in conjunction with the data collected on the trees and detail the impacts, if any, the proposed development shall have on the trees.
- Supply a Tree Protection Plan so as to preserve the health and structural condition of those trees that are to be retained.

2.0 METHODOLOGY

2.1 Site Inspection

- A site inspection was carried out by the AIA's author on 09/12/2024.
- Sixteen (16) trees were selected to be the focus of this AIA. 15 of the 16 trees are located within the site. 1 tree is located within an adjoining residential property.
- Each of the 16 trees were identified and visually assessed from the ground using components of Visual Tree Assessment (VTA[1]).
- When accessible, the trunks of the subject trees were tagged with a numbered acrylic tree tag.
- Photos were taken on the day of site inspection using a smartphone camera.

[1] VTA - Visual Tree Assessment, undertaken by tree professionals, is a recognised (International Society of Arboriculture, Journal of Arboriculture, Vol. 22 No. 6, Nov. 1996) systematic method of identifying tree characteristics and hazard potential. VTA is also an assessment method described by Claus Mattheck in The Body Language of Trees- A handbook for failure analysis. The Stationary Office, London (1994).

- Notes were recorded on species, height, canopy spread, diameter at breast height (DBH), diameter above root crown (DRC), defects, age class, estimated life expectancy, landscape significance and retention value.
- DBH and DRC measurements were taken using a measuring tape. All heights and crown spreads were estimated.
- No drill testing, soil excavation or soil testing was undertaken by the author.

2.2 Tree Protection Zones (TPZ) and Structural Root Zones (SRZ)

- The methodology for determining Tree Protection Zones (TPZ) and Structural Root Zones (SRZ) has been derived from the Australian Standard AS 4970–2009: *Protection of Trees on Development Sites.*

- The TPZ is defined as a specified area above and below ground, and at a given distance measured radially away from the centre of the tree's trunk. This measurement is set aside for the protection of the tree's roots and crown. It is the area required to provide for the viability and stability of a tree to be retained where it is potentially subject to damage by development. The radius of the TPZ is calculated by multiplying its DBH by 12 (Note: DBH is nominally measured as 1.4m from ground level). TPZ radius = DBH × 12

- AS 4970-2009 specifies that the TPZ of palms and other monocots, cycads and tree ferns should not be less than 1m outside the crown edge projection.

- The SRZ is the area around the base of a tree required for the tree's stability in the ground. The woody root growth and soil cohesion in this area are necessary to hold the tree upright. The SRZ is nominally circular with the trunk at its centre. SRZ radius = $(D \times 50)^{0.42 \times 0.64}$. Palms and other monocots technically don't have an SRZ.

- A minor encroachment is defined as encroachments <10% of the TPZ area and outside the SRZ. A major encroachment is defined as encroachments >10% of the TPZ area or inside the SRZ. When major encroachments occur, the project arborist must demonstrate if the tree would remain viable or requires removal.

2.3 Tree Retention Values

- The determination of tree retention value is done so in accordance with the *Significance of a Tree, Assessment Rating System* (STARS). This system was developed by the Institute of Australian Consulting Arborists (IACA) and uses a scale of High, Medium or Low to determine a tree's significance within the landscape. Once the estimated life expectancy and the landscape significance are determined, the retention value can be assigned. See appendix 4 for further information on STARS.

3.0 OBSERVATIONS

3.1 The Site

- The site is located within the Local Government Area of Northern Beaches Council. The site is zoned R2 Low Density Residential.
- Trees within Northern Beaches Council are protected under The State Environmental Planning Policy 2021 (Biodiversity and Conservation SEPP) through the Warringah Development Control Plan (DCP) 2011 and the Warringah Local Environmental Plan (LEP) 2011. Other planning policies and legislation such as heritage and biodiversity mapping can impose constraints on these planning instruments.
- Part E1 of the Warringah DCP essentially states that trees under 5m in height are exempt from requiring council approval to remove. When measured from the base of the trunk, trees within 2m from an existing approved building are also exempt from requiring council approval to remove. Table 1 in Part E1 of the Warringah DCP outlines the undesirable species that are exempt from requiring council approval to remove.
- The area of the site is 819 m^2. The site currently contains an occupied brick dwelling and a neglected swimming pool area. The woody vegetation on the site consists of numerous exotic specimens, primarily palms, that grow within the existing swimming pool area. Other smaller vegetation (<5m in height) observed within the site, and not discussed in this report, include specimens of *Nerium oleander, Phoenix roebelenii, Doryanthus excelsa, Agave sp., Strelitzia sp., Hibiscus sp., and Dracaena sp.* Grasses and broad leaf weeds are the dominant ground cover. The site topography is relatively flat, especially within the focus area (the rear yard).
- A search via the NSW Planning Portal determined that the site is not located within a Heritage Conservation Area (HCA).
- A search via the NSW Planning Portal determined that the site has not been mapped with Biodiversity Values (BV).
- A search via the Rural Fire Service 10/50 online tool determined that the site is not within a 10/50 vegetation entitlement clearing area[2].
- A search via the NSW Government SEED maps determined the site is not mapped as containing a Threatened Ecological Community. No extant Plant Community Types have been identified within the site. The naturally endemic Plant Community Type (PCT) that formally occurred on the site, prior to clearing, is *Sydney Coastal Sandstone Headland Heath* (PCT 3812). This PCT is mapped along the headland to the east and elsewhere within the wider area.

[2] NSW RFS 10/50 legislation allows property owners in designated areas to clear trees and vegetation within 10 meters of a home and shrubs within 50 meters.

Figure 1 – The subject site, outlined in red, in relation to the wider area. (source: Six Maps)

Figure 2 – The subject site is outlined in blue. (source: geo.seed.nsw.gov.au)

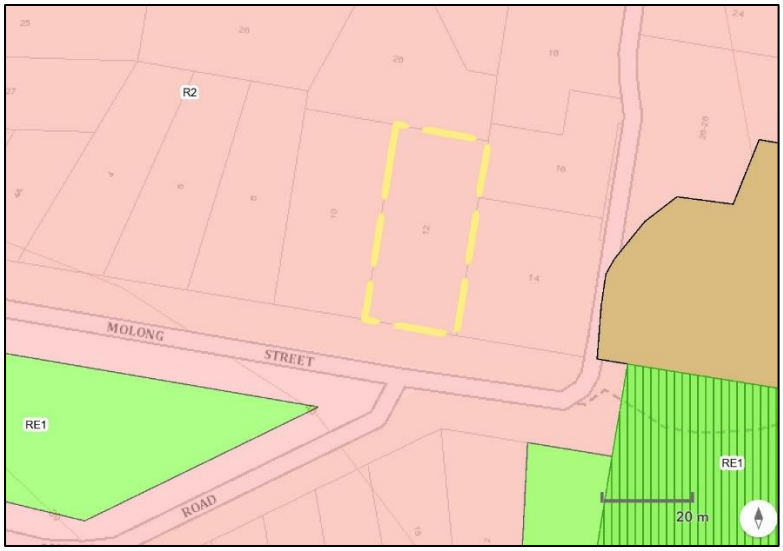


Figure 3 – Zoning map. The site is outlined in yellow. (source: NSW Planning Portal).

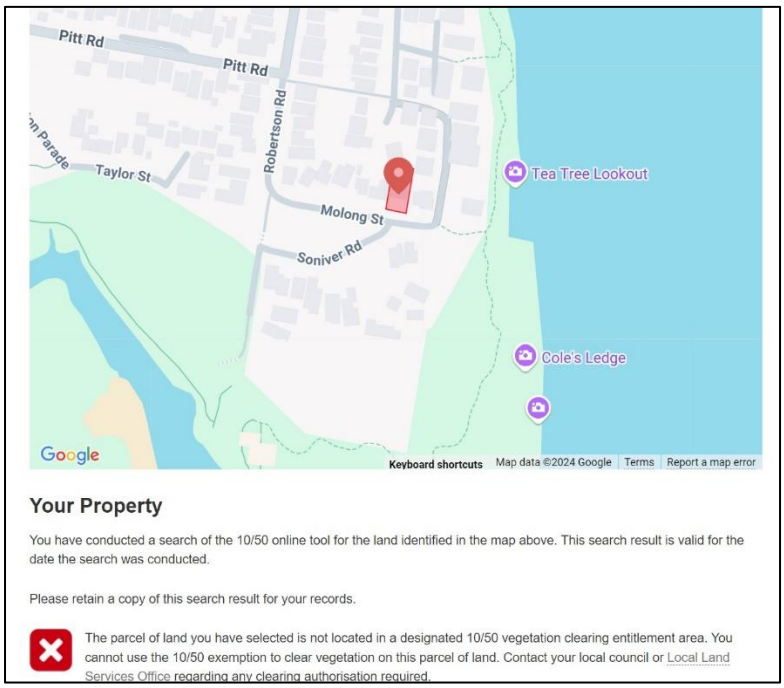


Figure 4 - 10/50 search results. (source: RFS online tool – accessed 10/12/2024)

Figure 5 – The remaining endemic Plant Community Type (PCT) 3812 layered over SEED mapping. The site is identified by the red dot. (source: geo.seed.nsw.gov.au/)

3.2 The Trees

Sixteen (16) trees have been included in this AIA. The subject trees have been numbered 11-26. Where access allowed, trees were tagged with a round, numbered acrylic tree tag, which was nailed to the trunks.
Complete attributes for each tree can be found in Appendix 1 – Tree Schedule.

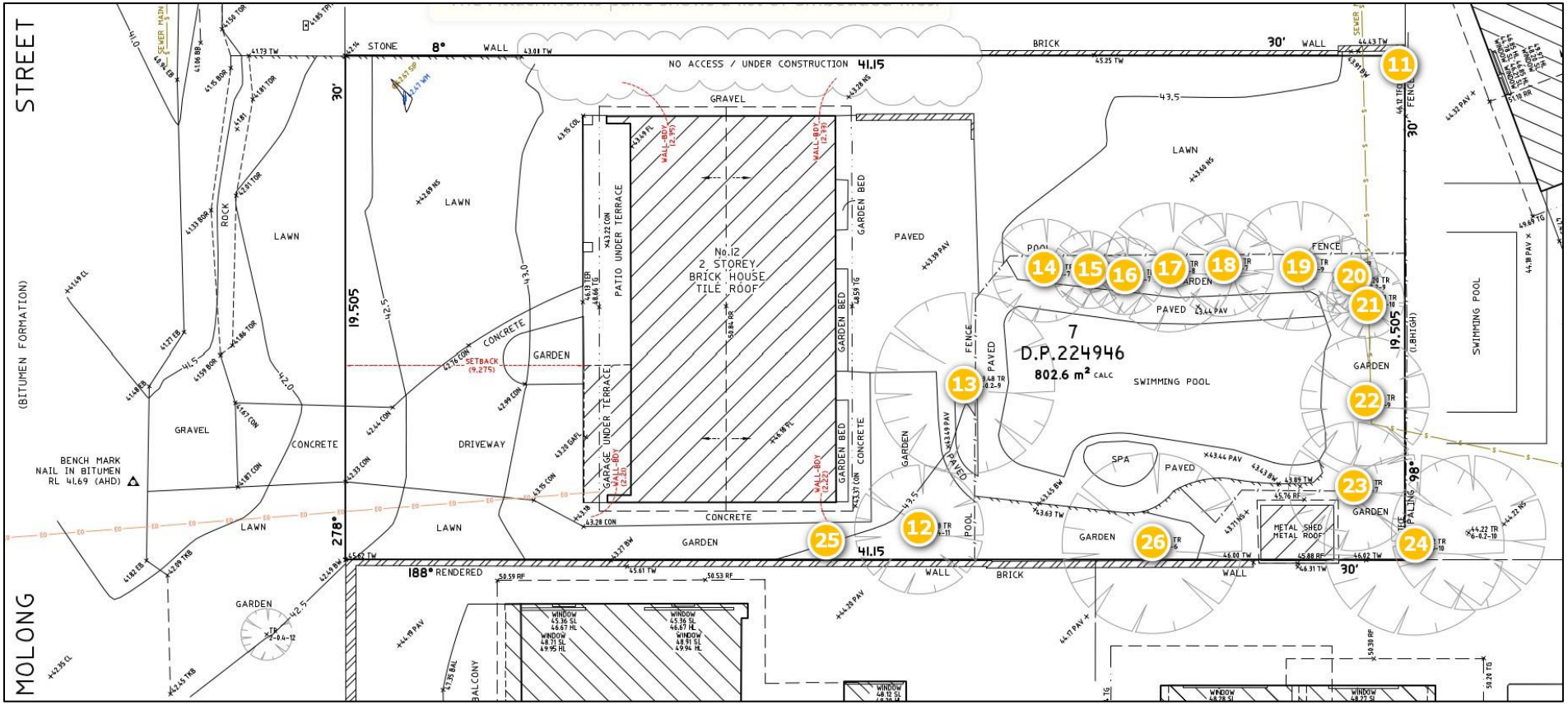


Figure 6 – Extract from the Site Survey (CMS Surveyors – 09/09/2022) showing location and numbering of trees. Colour depicts assigned retention value. **Green** = High Retention; **Blue** = Medium Retention; **Yellow** = Low Retention; Red = Hazardous/Irreversible Decline.

4.0 DISCUSSION

4.1 High Retention Trees

Trees in this category are considered important for retention and should be retained and protected. Design modification or relocation of infrastructure should be considered to accommodate the setbacks as prescribed by *AS 4970–2009: Protection of Trees on Development Sites.*

Zero (0) trees were determined to be of high retention value.

4.2 Medium Retention Trees

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 works and all other alternatives have been considered and exhausted.

Zero (0) trees were determined to be of medium retention value.

4.3 Low Retention Trees

These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.

All sixteen (16) trees were determined to be of low retention value.

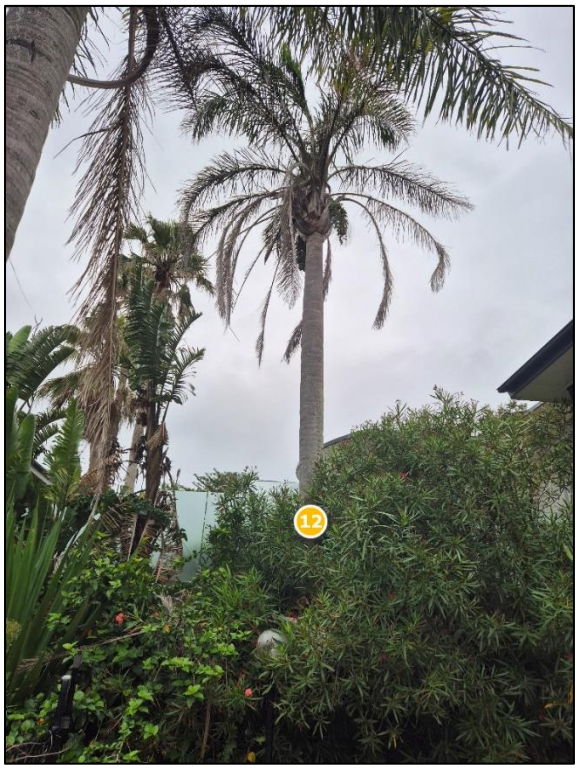


Figure 7 – Tree 12: *Syagrus romanzoffiana* – Low retention value.

Figure 8 – Trees 14, 15 and 16: All *Syagrus romanzoffiana* – Low retention value.

Figure 9 (top left) – Trees 17, 18 and 19 - Low retention value.
Figure 10 (top right) – Trees 22, 23 and 24 - Low retention value.
Figure 11 (bottom left) – Tree 25: *Nerium oleander* - Low retention value.
Figure 12 (bottom right) – Tree 26: *Phoenix canariensis* - Low retention value.

4.4 Hazardous / Irreversible Decline

Trees in this category are deemed either structurally unsound / unstable, or they are in such a state or decline that recovery is not possible. Trees in this category should be removed irrespective of any proposed development.

Zero (0) trees were determined to be of hazardous / irreversible decline.

4.5 The Proposed Development

The proposed development involves the demolition of the existing dwelling and swimming pool, the removal of several trees, and the construction of a new dwelling, cabana and swimming pool.

4.6 Allowable TPZ Encroachments

The Tree Schedule in appendix 1 outlines the calculated radial distance from the tree base to the perimeter of both the TPZ and the SRZ (where applicable).

An encroachment of up to 10% of the TPZ area is deemed a **minor encroachment** by the Australian Standard AS 4970–2009: *Protection of Trees on Development Sites*. If the proposed encroachment is less than 10% of the area of the TPZ, and is outside the Structural Root Zone (SRZ), detailed root investigations should not be required. Ideally, when a minor encroachment occurs. The opposing side(s) of the TPZ perimeter should be extended where practical, to compensate for the encroachment and to optimise the tree's tolerance to it.

An encroachment of more than 10% of the TPZ area is deemed a **major encroachment** as per AS 4970–2009: *Protection of Trees on Development Sites*. If the proposed encroachment is greater than 10% of the TPZ or inside the SRZ the project arborist (an assigned AQF Level 5 Arborist) must demonstrate that the trees would remain viable. Generally, any incursion upon the SRZ is forbidden.

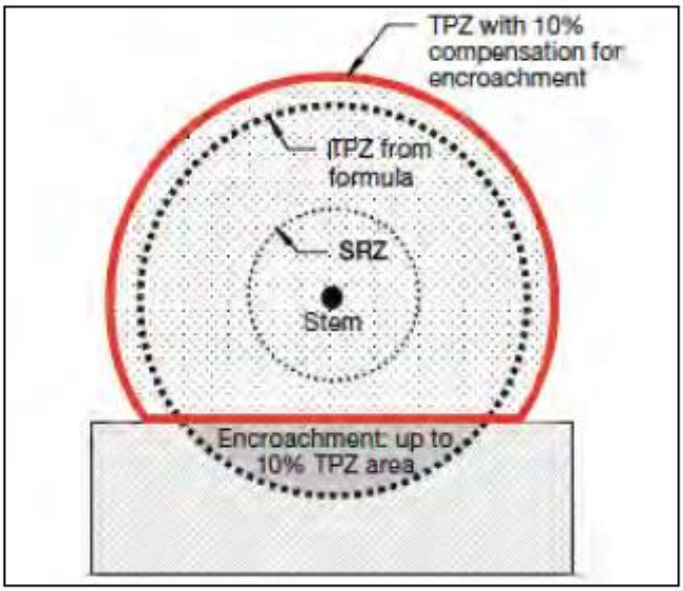


Figure 13 - An example of an acceptable 10% minor encroachment upon a TPZ. (Source: AS 4970-2009).

4.7 Impact Assessment

4.7.1 Trees Recommended for Removal

Fifteen (15) trees are recommended for removal to facilitate the proposed development. These trees are numbered 11-23, 25 and 26. These trees are shown in red on the Tree Removal Plan (appendix 2). All 15 of these trees were assigned as Low retention value. These trees are located wholly within the footprint of the proposed development.

The species of these 15 trees are listed in Table 1 in Part E1 of the Warringah DCP, which outlines the undesirable tree species which are exempt from requiring approval from Northern Beaches Council to remove. Essentially, the removal of trees 11-23, 25 and 26 are not subject to Council approval.

All tree removal works should be carried out by an arborist with a minimum AQF Level 3 qualification in Arboriculture, in accordance with Australian Standard *AS4373-2007 Pruning of Amenity Trees*; the Work Health and Safety Act 2011; and Work Health and Safety Regulations 2017.

4.7.2 Tree 24 – *Syagrus romanzoffiana*

Tree 24 is a *Syagrus romanzoffiana* (common name: Cocos Palm) that is located within the adjoining property to the north of the site.

A TPZ is calculated differently for palms than it is for dicotyledons and gymnosperms. A palm's TPZ is calculated by adding 1m to the crown spread radius. Tree 24 has a crown spread of 5m. The radius of the crown spread is 2.5m, therefore the radius of the TPZ for tree 24 is 3.5m.

The northeast corner of the proposed pool cabana structure incurs very slightly upon the TPZ of tree 24. The encroachment is minor and deemed negligible. To ensure that no excavation occurs beyond the footprint for the northeast corner of the pool cabana, tree protection fencing is required to protect the TPZ of this neighbouring tree.

5.0 TREE PROTECTION PLAN

5.1 Tree Protection Fencing

Tree 24 requires tree protection fencing to establish an exclusion zone between the works and the southern side of tree 24's TPZ.

The tree protection fencing is to be installed at a minimum of 3.5m from the base of tree 24. The orange markup in appendix 3 delineates the *approximate* location and orientation of the fencing. The fencing is to be installed immediately after the existing pool and surrounding area has been demolished, and prior to any excavation for the footings for the pool cabana structure.

Tree protection fencing is to adhere with the fencing specifications outlined in *AS4970-2009 – Australian Standard – Protection of trees on development sites.* Tree protection fencing shall consist of 1.8m galvanised chain-link or mesh fencing, secured by either heavy duty plastic feet or concrete footings. Signage stating "Tree Protection Zone – No Entry" or similar is to be fastened to one of the fencing panels.

Stockpiling of materials, placement of fill, compaction of soil, or washing of cement, other chemicals or fuel contaminants shall not occur within the designated fenced off area.

The fencing is to remain in place until the 'post construction' stage of development. At this point, the fencing can be dismantled to allow for soft landscaping works that do not involve excavations beyond a depth of 150mm.

Figure 14 - Example of suitable tree protection fencing with signage that meets the requirements outlined in *AS4970-2009 – Australian Standard – Protection of trees on development sites.*

6.0 REFERENCES

Australian Standard AS 4373–2007: *Pruning of Amenity Trees,* Sydney: Standards Australia

Australian Standard AS 4970–2009: *Protection of Trees on Development Sites, Standards Australia*, GPO Box 476, Sydney, New South Wales, 2001

Barrell, J. (1993) '*Pre-planning Tree Surveys: Safe Useful Life Expectancy (SULE) is the natural progression'* Arboricultural Journal Vol. 17, pp 36-46.

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

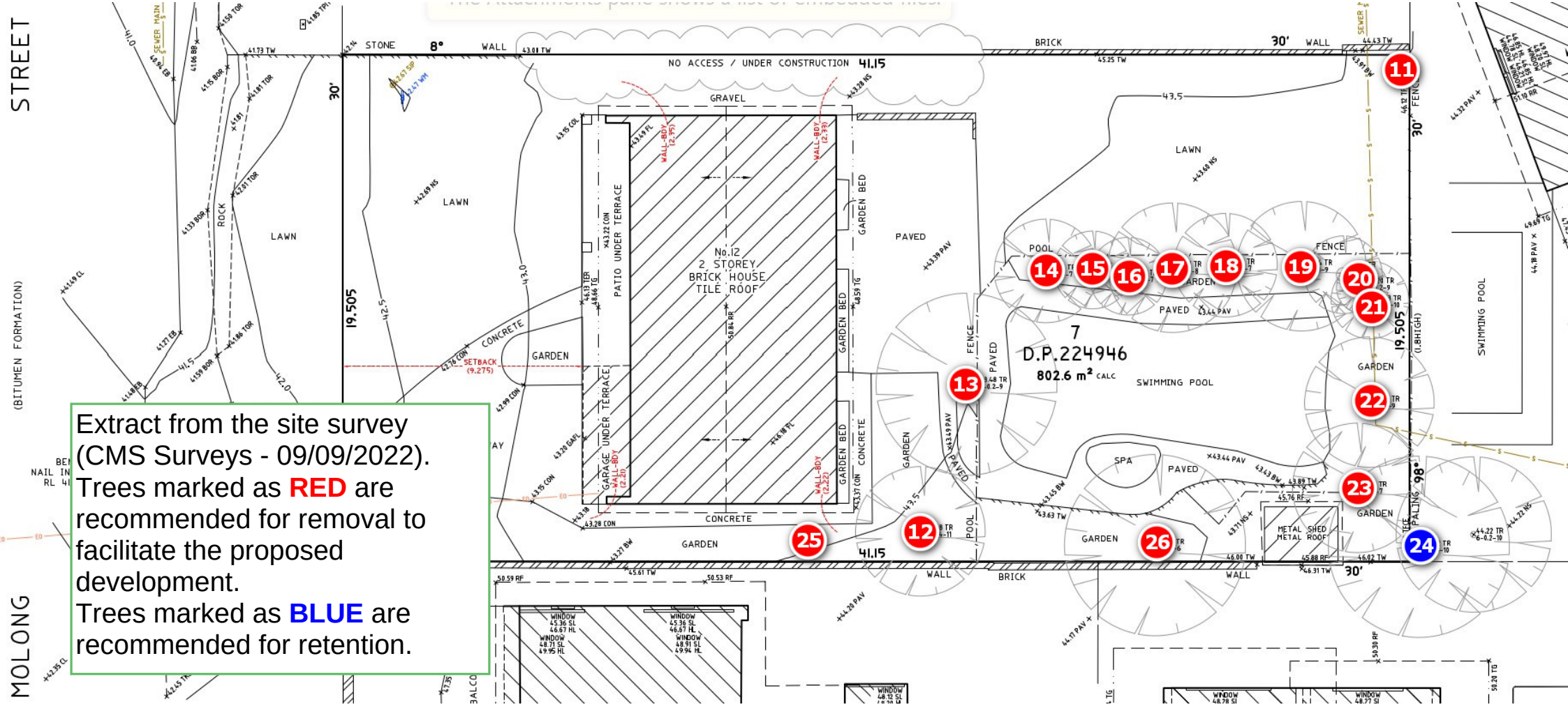
IACA, 2010. *Significance of a Tree Rating System (STARS).* Institute of Australian Consulting Arborists, www.iaca.org.au

Mattheck, C., 2007. *Updated Field Guide for Visual Tree Assessment.* Karlsruhe: Karlsruhe Research Centre

APPENDIX 1 - TREE SCHEDULE

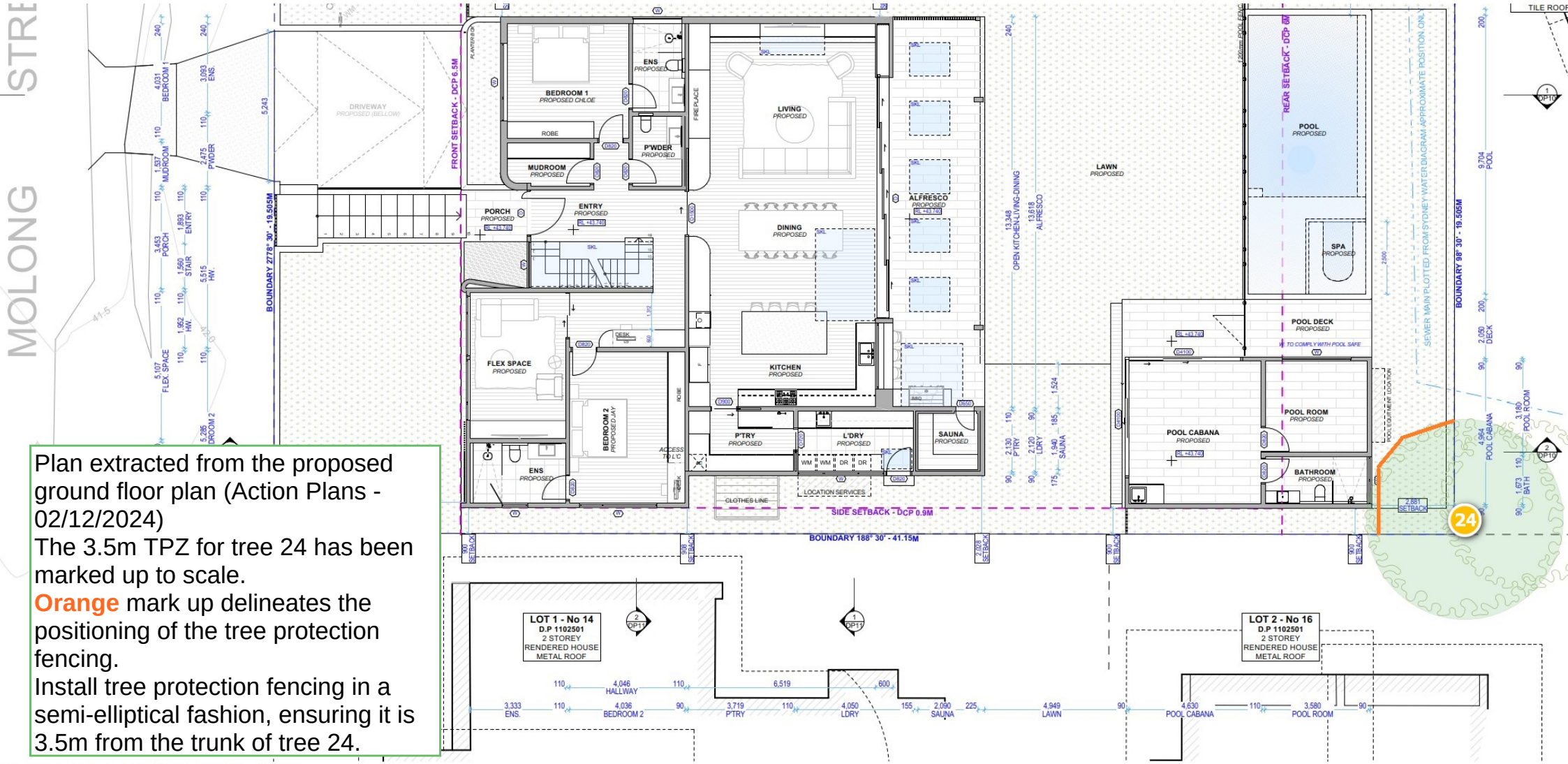
Tree No.	*Botanical Name*	Common Name	DBH [cm]	DRC [cm]	TPZ Radius [m]	SRZ Radius [m]	TPZ area [m2]	Height [m]	Canopy [m]	Health	Structure	Age Class	Observations / Defects	Estimated Life Expectancy	Landscape Significance	STARS Retention Value	Comments	Recommendations
11	*Pittosporum undulatum*	Sweet Pittosporum	19	23	2.28	1.79	16	5	3	Fair	Fair	Mature	Dieback; Wounds; Borers; Infrastructure contact; Infrastructure damage; Inappropriate location.	<1-15 years	Low	Low	**No encroachment.** Not on survey. Trunk is pushing against boundary fence. Health is declining. Poor specimen.	**Remove** poor specimen.
12	*Syagrus romanzoffiana*	Cocos Palm	30	34	3.50	n/a	38	9	5	Good	Good	Mature	Dead fronds.	15-40 years	Low	Low	Proposed cabana, lawn and pool results in a **major encroachment.** Species is exempt.	Tree requires **removal** to facilitate the proposed development.
13	*Syagrus romanzoffiana*	Cocos Palm	22	29	3.50	n/a	38	7	5	Good	Good	Semi-mature	Dead fronds.	15-40 years	Low	Low	Proposed cabana, lawn and pool results in a **major encroachment.** Species is exempt.	Tree requires **removal** to facilitate the proposed development.
14	*Syagrus romanzoffiana*	Cocos Palm	35	37	3.00	n/a	28	6	4	Good	Good	Mature	Dead fronds.	15-40 years	Low	Low	Proposed cabana, lawn and pool results in a **major encroachment.** Species is exempt.	Tree requires **removal** to facilitate the proposed development.
15	*Syagrus romanzoffiana*	Cocos Palm	24	27	2.50	n/a	20	5	3	Good	Good	Semi-mature	Dead fronds.	15-40 years	Low	Low	Proposed cabana, lawn and pool results in a **major encroachment.** Species is exempt.	Tree requires **removal** to facilitate the proposed development.
16	*Syagrus romanzoffiana*	Cocos Palm	40	43	3.00	n/a	28	7	4	Good	Good	Mature	Dead fronds.	15-40 years	Low	Low	Proposed cabana, lawn and pool results in a **major encroachment.** Species is exempt.	Tree requires **removal** to facilitate the proposed development.
17	*Syagrus romanzoffiana*	Cocos Palm	23	25	3.00	n/a	28	5	4	Good	Good	Semi-mature	Dead fronds.	15-40 years	Low	Low	Proposed cabana, lawn and pool results in a **major encroachment.** Species is exempt.	Tree requires **removal** to facilitate the proposed development.
18	*Syagrus romanzoffiana*	Cocos Palm	27	32	3.00	n/a	28	8	4	Fair	Good	Semi-mature	Dead fronds; Dieback; Hangers.	15-40 years	Low	Low	Proposed cabana, lawn and pool results in a **major encroachment.** Species is exempt.	Tree requires **removal** to facilitate the proposed development.
19	*Washingtonia robusta*	Mexican Fan Palm	44	62	2.50	n/a	20	10	3	Good	Good	Mature	Dead fronds.	15-40 years	Low	Low	Proposed cabana, lawn and pool results in a **major encroachment.** Species is exempt.	Tree requires **removal** to facilitate the proposed development.
20	*Syagrus romanzoffiana*	Cocos Palm	23	27	2.50	n/a	20	8	3	Fair	Good	Semi-mature	Dead fronds; Dieback; Hangers.	15-40 years	Low	Low	Proposed cabana, lawn and pool results in a **major encroachment.** Species is exempt.	Tree requires **removal** to facilitate the proposed development.
21	*Syagrus romanzoffiana*	Cocos Palm	21	25	2.50	n/a	20	9	3	Good	Good	Semi-mature	Dead fronds.	15-40 years	Low	Low	Proposed cabana, lawn and pool results in a **major encroachment.** Species is exempt.	Tree requires **removal** to facilitate the proposed development.
22	*Syagrus romanzoffiana*	Cocos Palm	27	29	3.00	n/a	28	8	4	Good	Good	Semi-mature	Dead fronds.	15-40 years	Low	Low	Proposed cabana, lawn and pool results in a **major encroachment.** Species is exempt.	Tree requires **removal** to facilitate the proposed development.
23	*Syagrus romanzoffiana*	Cocos Palm	21	24	3.00	n/a	28	7	4	Good	Good	Semi-mature	Dead fronds; Hangers	15-40 years	Low	Low	Proposed cabana, lawn and pool results in a **major encroachment.** Species is exempt.	Tree requires **removal** to facilitate the proposed development.
24	*Syagrus romanzoffiana*	Cocos Palm	25	27	3.50	n/a	38	10	5	Good	Good	Semi-mature	Dead fronds.	15-40 years	Low	Low	Neighbour's tree. Tag on fence. Trunk is ~50cm from boundary fence. Proposed cabana bathroom results in a **minor encroachment.** Species is exempt.	**Retain tree.** Install tree protection fencing in a semi-elliptical fashion, ensuring it is 3.5m from the trunk of tree 24. See appendix 3 - Tree Protection Plan
25	*Nerium oleander*	Oleander	20	35	2.40	2.13	18	6	5	Good	Good	Mature	Co-dominant; Epicormic growth; Infrastructure contact.	15-40 years	Low	Low	Not on survey. Base of tree is 1.25m from edge of house wall. Proposed new dwelling results in a **major encroachment.** Species is exempt.	Tree requires **removal** to facilitate the proposed development.
26	*Phoenix canariensis*	Canary Island Date Palm	85	90	4.00	n/a	50	7	6	Good	Good	Semi-mature	Infrastructure contact; Inappropriate location.	15-40 years	Low	Low	Proposed cabana, lawn and pool results in a **major encroachment.** Species is exempt.	Tree requires **removal** to facilitate the proposed development.

APPENDIX 2 - TREE REMOVAL PLAN



Extract from the site survey (CMS Surveys - 09/09/2022).
Trees marked as **RED** are recommended for removal to facilitate the proposed development.
Trees marked as **BLUE** are recommended for retention.

APPENDIX 3 - TREE PROTECTION PLAN



Plan extracted from the proposed ground floor plan (Action Plans - 02/12/2024)

The 3.5m TPZ for tree 24 has been marked up to scale.

Orange mark up delineates the positioning of the tree protection fencing.

Install tree protection fencing in a semi-elliptical fashion, ensuring it is 3.5m from the trunk of tree 24.

1 **PROPOSED GROUND FLOOR LEVEL**
Scale 1:100

APPENDIX 4 - STARS METHODOLOGY

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.

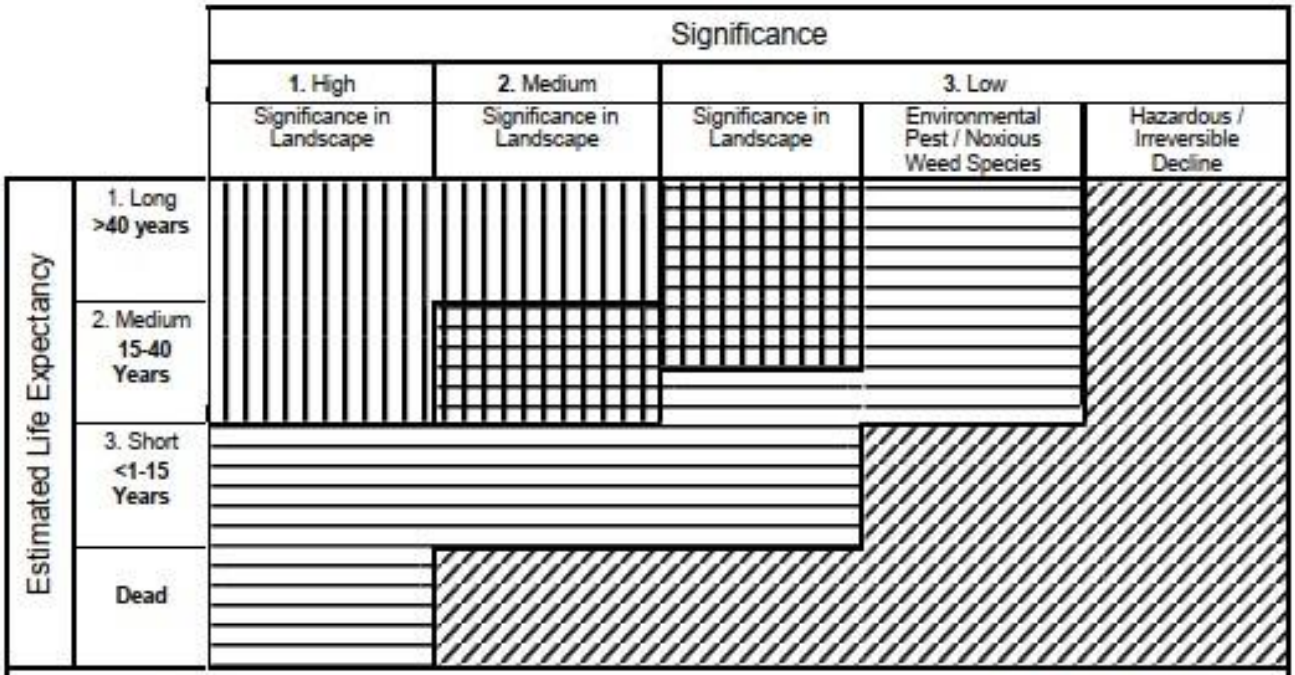
Hazardous/Irreversible Decline

- 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 e.g. hedge.

Table 1.0 Tree Retention Value - Priority Matrix.



Legend for Matrix Assessment

INSTITUTE OF AUSTRALIAN CONSULTING ARBORICULTURISTS ®

	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 *Protection of trees on development sites*. 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.

USE OF THIS DOCUMENT AND REFERENCING

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

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

REFERENCES

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

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

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

The following example shows the IACA **Significance** of a **Tree, Assessment Rating System** (STARS) used in an Arboricultural report.

Tree Significance

Determined by using the Tree Significance - Assessment Criteria of the *IACA Significance of a Tree, Assessment Rating System* (STARS)© (IACA, 2010), Appendix B.

Trees 14, 16, 17/3, 19 and 20/4 are of high significance with the remaining majority of medium significance and a few of low significance. Tree 14 is significant as a prominent specimen and a food source for indigenous avian fauna. Tree 16 as a non-locally indigenous planting is of good from and prominent *in situ*; Tree 17/3 as a stand of 6 street trees along the Davey Street frontage screening views to and from the site and contiguous with trees in Victoria Park extending the aesthetic influence of the urban canopy to the site. Similarly for Trees 20/4 as street trees in Long Road and Tree 19 as an extant exotic planting as a senescent component of the original landscaping. The trees of low significance are recent plantings as fruit trees – Avocados, and 1 Cootamundra Wattle as a non-locally indigenous tree in irreversible decline and potentially structurally unsound.

Significance Scale

1 – High
2 – Medium
3 – Low

Significance Scale	1	2	3
Tree No. / Stand No.	14, 16, 17/3, 19, 20/4	1/1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12/2, 15, 18, 21/5	3, 13, 22

Tree Retention Value

Determined by using the Retention Value - Priority Matrix of the *IACA Significance of a Tree, Assessment Rating System* (STARS)© (IACA, 2010), Appendix B.

Retention Value

High – Priority for Retention
Medium – Consider for Retention
Low – Consider for Removal
Remove - Priority for Removal

Retention Value	High – Priority for Retention	Medium – Consider for Retention	Low – Consider for Removal	Remove – Priority for Removal
Tree No. / Stand No.	1/1, 5, 17/3*, 19	2, 4, 6, 7, 8, 9, 10, 11, 14, 15, 16, 18, 20/4*, 21/5	3, 12/2, 13,	22

* Trees located within the neighbouring property and should be retained and protected.

APPENDIX 5 - GLOSSARY OF ARBORICULTURAL TERMS

TERM	DEFINITION
Aerial inspection	An inspection of the crown by a tree climbing arborist which focuses on defects, either identified or unidentified from ground. The climber is to photograph, measure, probe and describe the defect, and record its location and height within the tree. An AQF level 5 arborist is to present the findings in report format to site management. The report is to assign a current risk and a residual risk to each defect using a recognised risk assessment methodology.
Amenity value	The environmental and landscape benefits of a tree as opposed to its commercial value for timber. Many of these benefits are intangible or difficult to measure.
Bird browsing	Trunk, limb or union wounding caused by parrot-beaked birds such as galahs and cockatoos
Buckling	Failure mode characteristic of collapsing under compressive stress
Burls	A burl is a rounded outgrowth on a tree trunk or branch that is filled with small knots from dormant buds. Burls are caused by various physical and biological stresses.
Cambium	A layer of delicate meristematic cells between the inner bark or phloem and the wood or xylem, which produces new phloem on the outside and new xylem on the inside in stems, roots, etc., originating all secondary growth in plants and forming the annual rings of wood
Cavity	Openings from the outside into the heartwood area of a tree
Co-dominant	Stems of nearly equal diameter arising from a major common junction, usually within the lower portion of the crown
Collar	The ring of tissue that surrounds the lateral branch at its point of attachment
Compartmentalisation	A physiological process that creates the chemical and physical boundaries that act to limit the spread of disease and decay organisms
Crown	The above ground parts of the tree, including the trunk
Decay	Process of degradation of woody tissues by fungi and bacteria through decomposition of cellulose and lignin
Diameter above root crown (DRC)	The diameter of a tree's trunk near ground level measured just above the basal flare.
Diameter at breast height (DBH)	The diameter of a tree's trunk measured at 1.4m.
Dieback	Death of shoots and branches, generally from tip to base
Drip line	The width of the crown, as measured by the lateral extent of the foliage
Epicormic growth	a flush of shoots that arise from latent or adventitious buds that occur on stems, branches, or the bases of trees
Fair health	Tree has average vigour for its species and the site conditions. Fair health indicators include significant dieback, epicormic growth and more deadwood than would normally be expected
Fair structure	Tree presents with typical defects of minor-moderate severity. The defects may or may not require actioning. The defects may or may not influence the level of risk assigned
Flush cut	A poor, incorrect pruning technique where, in contrast to lopping, the branch is removed before the collar and flusher with the trunk. The resulting wound is unlikely to compartmentalise and therefore be an entry point for fungal decay pathogens
Fungal fruiting structure	The reproductive structures of a fungus (conks, brackets, mushrooms)
Good health	Tree is growing well and appears to be free of significant health stress factors. Good health indicators include a dense crown, extensive tip-growth, and free of, or tolerating, a pest/disease
Good structure	Tree presents with good symmetry and sound branch attachments with no visible severe structural defects and history of significant defect failure. Defects may be observed and recorded; however, their severity is deemed minor and often not requiring action
Habitat prune	Reducing or removing the crown of a tree and retaining its trunk as a habitat for wildlife.
Hanger(s)	Fully or partially snapped/cut branches suspended, often poorly secured, within the crown
Heartwood	Wood that is altered from sapwood and provides defence against decay-causing organisms and continues to provide structural strength to the trunk.
Inclusion(s)	Bark that becomes embedded within a union between branch and trunk, or between co-dominant stems, causing a weak structure
Juvenile (age class)	Less than 1/3 of life expectancy, based on species characteristics, the individual specimen, and the current site conditions

TERM	DEFINITION
Lopping	The removal of the crown of a tree, or a major proportion of it, which is undertaken without regard for the tree's natural biology. Lopping is an incorrect pruning technique involving removing branches and leaving stubs which can cause decline, decay and potentially lead to part or whole tree failure. Lopping contravenes the pruning standards outlined in the Australian Standard *AS4373-2007: Pruning of Amenity Trees*
Mature (age class)	Older than 2/3 of life expectancy, based on species characteristics, the individual specimen, and the current site conditions
Mulch (noun)	Organic material laid down over the rooting area to help conserve soil moisture, encourage micro-organisms to flourish, supress weeds, reduce soil compaction and regulate soil temperature. Mulch can also act as a barrier for lawn mowers, effectively protecting any exposed surface roots by covering them. The best quality mulch is that which is produced by a woodchipper that has processed whole living hardwood trees
Mulch (verb)	Apply a 100mm layer of quality hardwood mulch from the tree base to the perimeter of the drip line where practical, or to a specified area
Poor health	Tree health / vigour is weak, growing slowly, and/or under stress. Poor health indicators include a sparse crown density, severe dieback, and unseasonal and rapid browning-off of foliage
Poor structure	Defect(s) of significant severity that are likely to elevate risk. Examples in heaved root plate, weak or separating unions, severe wounding with bracket fungi / decay present
Response growth	Reaction wood or additional wood grown to increase the structural strength or the branch
Root scalping	The process of mechanical damage being inflicted upon exposed surface roots, usually by means of lawn mower. Root scalping can be detrimental to tree health and can be the initiating cause of root decay, which can adversely affect tree structure
Sap exudation	Sap or kino oozing from a trunk, limb or union wound that may have resulted from infections, physical damage, or infestations under the bark layer. Sap exudation may or may not affect health or structure
Sapwood	Outer wood that is active in longitudinal transport of water and nutrients
Scaffold limb	A main, usually large, structural limb arising from the tree trunk and supports the canopy and secondary branches.
Semi-mature (age class)	Between 1/3 and 2/3 of life expectancy, based on species characteristics, the individual specimen, and the current site conditions
Senescent (age class)	The late stage of a tree's life characterised by a decline in the volume of the crown and root system
Structural Root Zone (SRZ)	The SRZ is the area around the base of a tree required for the tree's stability in the ground. The woody root growth and soil cohesion in this area are necessary to hold the tree upright.
Suppressed	Trees which have been heavily shaded by others from above or the side and whose crown development is wholly or partially restricted
Tree Protection Zone (TPZ)	The TPZ is defined as a specified area above and below ground and at a given distance measured radially away from the centre of the tree's trunk and which is set aside for the protection of its roots and crown. It is the area required to provide for the viability and stability of a tree to be retained where it is potentially subject to damage by development.
Useful Life Expectancy (ULE)	Useful life expectancy refers to an expected period of time the tree can be retained within the landscape before its amenity value declines to a point where it may detract from the appearance of the landscape and/or becomes potentially hazardous to people and/or property. ULE values consider tree species, current age, health, structure, and location

Jamie Oates - Consulting Arborist

JamieTheArborist@gmail.com