

PEAKE ARBORICULTURE

ARBORICULTURAL IMPACT ASSESSMENT

Lot 1/-/ DP214956 30 Herbert Avenue Newport, NSW 2106

Prepared on: 07/07/2022 (revised 11/08/2022)

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EXECUTIVE SUMMARY

This Arboricultural Impact Assessment (AIA) was requested by Ben Farrar on the 6th of June 2022. This AIA adresses the potential impacts upon surrounding trees from the proposed development of Lot 1/DP214956 30 Herbert Avenue, Newport NSW 2106 (the subject site)

Nine trees have been assessed within and adjacent to the subject site. The proposed development includes Landscaping alterations and additions within the rear yard.

Following an assessment of construction impacts from the proposed development (available in section 6 of this report) it is concluded and recommended that;

Trees 7 & 9 are proposed for removal. Tree 7 will require approval from Northern Beaches Council. Tree 9 is an exempt species that can be removed without approval. It is recommended that in the process of removal;

• All work is carried out by a person who is trained in AQF Level 3 in Arboriculture.

• All work is carried out in accordance with the Work Cover, Amenity Tree Industry Code of Practice 1998 and Safe work Australia's "Guide to managing risks of tree trimming and removal work" (July 2016).

• All tree waste is removed from site.

All remaining trees in this assessment are to be retained and protected. The appointment of a site arborist (AQF Level 5) for the duration of the project, should be made prior to the commencement of any site works including demolition, to implement tree protection measures recommended below and in the Tree Protection Specification.

Prior to the commencement of any site works, it is recommended that tree protection fencing is installed to exclude TPZ of T8 from construction activities. An example of tree protection fencing is available in section 9.6 of this report. The final location of Tree Protection Fencing is to be determined by the Project Arborist following consultation with the project manager (to allow for site access etc.). Ground Protection may also be required at the discretion of the project arborist.

Specific tree protection measures (fencing) have not been recommended for Trees 1,2,3 & 6 due to the existing boundary/site fence providing adequate protection to the bulk of the trees TPZ's. Tree protection measures have not been recommended for trees 4 & 6 as only lightweight construction is proposed within their TPZ's. Activities excluded from Tree Protection Zone's (section 9.4) must be observed within the TPZ's of all trees to be retained. Additional tree protection fencing may be required at the discretion of the project arborist.

Proposed replacement planting for the tree removals listed above are detailed on the Planting Plan prepared by Serenescapes on the 10/05/2022. The following trees are included;

Species	Quantity	Mature Height	Pot Size
Acacia floribunda	2	5	300mm
Banksia serrata	1	5	45L
Banksia integrifolia	2	8	45L
Corymbia maculata	1	35	100L
Ceratopetalum gummiferum	3	7	300mm
Elaeocarpus reticulatus	3	8	45L
Glochidion ferdinandi	1	6	45L
Melaleuca linarifolia	1	8	200mm



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1 INTRODUCTION & AIMS

1.1 This Arboricultural Impact Assessment (AIA) was requested by Ben Farrar on the 6th of June 2022. This AIA is to address the potential impacts upon surrounding trees from the proposed development of Lot 1/DP214956 30 Herbert Avenue, Newport NSW 2106 (the subject site). The subject site can be seen in figure 1 below.



Figure 1: The subject site, site boundary shown in red. (Nearmap, 2022)

- 1.2 The aim of this report is to:
 - Examine Councils policies in regards to application requirements needed for the preparation of an Arboricultural Impact Assessment.
 - Visually assess and identify the subject trees & the environment in which they grow.
 - Assess construction impacts for each subject tree through the revision of plans for the proposed development.



2 LEGISLATION REQUIREMENTS

- 2.1 Lot 1/DP214956 30 Herbert Avenue, Newport NSW 2106 is zoned C4 Environmental Living, and is located within the Local Government Area of Northern Beaches Council (NSW Government, n.d.)
- 2.2 Section A1.9 of the Pittwater 21 Development Control Plan 2014 (DCP) (Pittwater Council, 2014), defines a tree as;

"tree means a palm or woody perennial plant with a single or multi stem greater than five (5) metres in height."2.3

2.3 Section B4.22 of the Pittwater 21 Development Control Plan - 2014 (DCP) (Pittwater Council, 2014), Preservation of Trees or Bushland Vegetation has also been considered, in particular;

"10. Where trees proposed to be retained may be affected by the construction of new buildings and works of Classes 1 and 10, a Tree Protection Plan as per Appendix 18 (P21DCP) is to be submitted."

- 2.4 Section 7.6 Biodiversity, of the Pittwater Local Envrionmental Plan 2014 (Pittwater Council, 2014)
- 2.5 Chapter 2 Vegetation in non-rural areas of the State Environmental Planning Policy (Biodiversity & Conservation) 2021 (NSW Government, 2021) has been considered in the preparation of this report. The aims of the chapter are to;
 - "(a) to protect the biodiversity values of trees and other vegetation in non-rural areas of the State, and
 - (b) to preserve the amenity of non-rural areas of the State through the preservation of trees and other vegetation."



3 METHOD

- 3.1 The trees and site were visually assessed from ground level, using methods developed by the Visual Tree Assessment (VTA) process (Claus Mattheck, 2006). No detailed inspections as described in the VTA process have been undertaken. The genus and species of the trees were recorded as well as the dimensions for diameter at breast height (DBH), diameter above buttress (DAB) and canopy width (when the measurement of a DBH and DAB has not been practical, such as in the case of low branching or mallee trees, a DBH and DAB measurement has been allocated based on tree size). Height and age of the trees were estimated as well as the percentage of deadwood, the tree was given a Health / Vigour rating and signs and symptoms of pests and diseases were looked for. Structural defects and comments were recorded.
- 3.2 Calculations have been made using guidelines supplied in AS4970-2009 Protection of Trees on Development Sites (Standards Australia, 2009) for the;
 - Tree Protection Zone (TPZ),
 - Structural Root Zone (SRZ),
 - Live Crown Ratio (LCR),
 - Live Crown Size (LCS),
- 3.3 The trees have been allocated a landscape significance rating of Low, Medium or High using the IACA Significance of a Tree, Assessment Rating System (STARS)© (IACA, 2010). Stars assessment criteria includes:
 - Condition and Vigour
 - Form, species specific
 - Provenance, age and botanical significance
 - Heritage and Ecological significance
 - Size, shape, and local amenity value
 - Restrictions to tree growth

Appendix A contains the assessment criteria in full.

- 3.4 The trees have been given a Useful Life Expectancy (ULE) rating, categorised as either;
 - Long 40+ years
 - Medium 15-40 years
 - Short 5-15 years
 - Consider for removal <5 years



4 **OBSERVATIONS**

- 4.1 Listed in Table 1 below are observations from the subject trees relating to;
 - Health and vigour. (Dead, Senescent, Poor, Fair, Good, Excellent)
 - Structure / Form. (Poor, Fair, Good, Excellent)
 - Structural defects and comments.
 - Any signs/symptoms of pest and disease attack.
 - Previous pruning or wounds.

Tree No.	Genus/Species & Common Names	Health / Vigour	Structure / Form	Structural Defects/ Comments	Pests/ Disease	Pruning/ Wounds
1	Corymbia maculata Spotted Gum	Fair	Good	Thin foliage	None visible	None visible
2	Corymbia maculata Spotted Gum	Fair	Good	15-20% tip dieback	None visible	None visible
3	Corymbia maculata Spotted Gum	Fair	Fair	None visible	None visible	None visible
4	Macadamia integrifolia Mcadamia Nut	Good	Good	None visible	None visible	None visible
5	Jacaranda mimosifolia Jacaranda	Fair	Fair	Exempt species	None visible	None visible
6	Unidentified Eucalyptus sp.	Good	Fair	Bark wound on Southern stem	Termite mudding visible	None visible
7	Eucalyptus punctata Grey Gum	Good	Poor	Open decay at base, 2/3 rd of stem circumference affected. Stem wound at	None visible	Previous removal of most internal branches and all

Tree No.	Genus/Species & Common Names	Health / Vigour	Structure / Form	Structural Defects/ Comments	Pests/ Disease	Pruning/ Wounds
				approximately		Southern
				25m above		canopy.
				ground level		Crown
				(southern stem).		raised
8	Corymbia maculata Spotted Gum	Fair	Good	None visible	None visible	None visible
9	Brachychiton acerifolius Flame Tree	Good	Good	Exempt species	None visible	None visible

Table 1: Tree Observations

4.2 Listed in Table 2 below are measurements from the subject trees relating to;

- Diameter at breast height (DBH).
- Diameter above buttress (DAB).
- Canopy spread measured to the North, East, South and West (N, E, S, W).
- Tree height.
- Lowest scaffold branch.

Tree	Species	Maturity	Height	Lowest	S	pre	ad (m)	DBH / Multi	DAB
number	Species	Maturity	(m)	Scaffold (m)	Ν	Ε	S	W	(cm)	(cm)
1	Corymbia maculata	Mature	18	9	7	7	6	6	35	45
2	Corymbia maculata	Mature	18	12	8	8	4	7	50	65
3	Corymbia maculata	Mature	20	6	6	5	7	7	55	65
4	Macadamia integrifolia	Mature	5	0.5	3	3	3	3	22	35
5	Jacaranda mimosifolia	Mature	7	3	4	4	4	4	28	30
6	Eucalyptus sp.	Mature	22	14	8	6	9	9	60	70
7	Eucalyptus punctata	Mature	26	7	9	0	9	5	86	97
8	Corymbia maculata	Mature	19	8	3	3	4	3	37	41
9	Brachychiton acerifolius	Mature	8	2	3	3	1	3	28	38

Table 2: Tree Measurements



- 4.3 Listed in Table 3 Below are calculations from the subject trees relating to:
 - Tree Protection Zone (TPZ)
 - Structural Root Zone (SRZ)
 - Live Crown Ratio (LCR)
 - Live Crown Size (LCS)

Tree Number	Species	TPZ (m)	SRZ (m)	Live Crown Size (m2)	Live Crown Ratio (%)
1	Corymbia maculata	4.2	2.4	117	50%
2	Corymbia maculata	6.0	2.8	81	33%
3	Corymbia maculata	6.6	2.8	175	70%
4	Macadamia integrifolia	2.6	2.1	27	90%
5	Jacaranda mimosifolia	3.4	2.0	32	57%
6	Eucalyptus sp.	7.2	2.8	128	36%
7	Eucalyptus punctata	10.3	3.3	219	73%
8	Corymbia maculata	4.4	2.3	72	58%
9	Brachychiton acerifolius	3.4	2.2	30	75%

Table 3: Calculations from the subject trees



5 TREE RETENTION VALUES

- 5.1 Trees have been allocated a retention value using the priority Matrix in the IACA *Significance of a Tree, Assessment Rating System* (STARS)© (IACA, 2010). The Matrix uses the Landscape Significance rating combined with the Useful Life Expectancy (ULE) to determine a retention value of either;
 - Priority for Retention (High) All measures must be taken to retain and protect these trees. If the guidelines set out in AS4970-2009 Protection of trees on development sites cannot be used to protect the trees, design modification or relocation of the proposed development should be considered.
 - Consider for Retention (Medium) Retention of these trees should remain a priority. If the trees are adversely affecting the proposed development and all protection measures have been considered but are not viable, removal can be considered.
 - Consider for Removal (Low) Retention of these trees is not important. No modification to design should be considered for their retention.

Tree Number	Species	Landscape Significance Rating	Useful Life Expectancy	Retention Value
1	Corymbia maculata	High	Medium (15-40)	High
2	Corymbia maculata	High	Medium (15-40)	High
3	Corymbia maculata	High	Long (>40)	High
4	Macadamia integrifolia	Low	Medium (15-40)	Low-Medium
5	Jacaranda mimosifolia	Low	Medium (15-40)	Exempt
6	Eucalyptus sp.	High	Medium (15-40)	High
7	Eucalyptus punctata	Medium	Medium (15-40)	Medium
8	Corymbia maculata	High	Long (>40)	High
9	Brachychiton acerifolius	Low	Medium (15-40)	Exempt

 Priority for Removal – Trees in an irreversible decline, weed species or hazardous trees. These trees should be removed.

Table 4: Tree Retention Values



6 CONSTRUCTION IMPACTS

All trees discussed below are located on the attached Landscape Site Plan (Serenescapes 10/05/2022) with TPZ's and SRZ's shown.

- 6.1 Tree 1 has an encroachment of <5% to the TPZ from the proposed wall bordering the existing stone paving. No detrimental impacts are expected from the proposed construction.
- 6.2 Trees 3,4 & 6 have minor encroachments of <10% to their TPZ's from a proposed timber boardwalk. No detrimental impacts are expected from the construction of the timber boardwalk.
- 6.3 Trees 2, 5 & 8 have no encroachment from the proposed development.
- 6.4 The removal and replacement of tree 7 is proposed to facilitate the construction of a level lawn area within the rear yard. Tree 7 has been allocated a medium retention value due to crown modification from previous pruning and its current structural condition.
- 6.5 Tree 9 is an exempt species proposed for removal.
- 6.6 Proposed replacement planting for the tree removals listed above are detailed on the Planting Plan prepared by Serenescapes on the 10/05/2022. The following trees are included;

Species	Quantity	Mature Height	Pot Size
Acacia floribunda	2	5	300mm
Banksia serrata	1	5	45L
Banksia integrifolia	2	8	45L
Corymbia maculata	1	35	100L
Ceratopetalum gummiferum	3	7	300mm
Elaeocarpus reticulatus	3	8	45L
Glochidion ferdinandi	1	6	45L
Melaleuca linarifolia	1	8	200mm

Table 5: Replacement Trees

7 DOCUMENTS USED IN THE PREPARATION OF THIS REPORT

Document type	Source/ Author	Title	Date	Summary
Survey Plan	Bee & Lethbridge	Detail & Level Survey	23/07/2020	Plan showing details and levels at 30 Herbert Avenue, Newport NSW 2106
Plan Set	Serenescapes Pty Ltd	 Site Plan / Site Analysis / Sedimentation Control Plan Detail Plan Setout Plan Planting Plan Sectional elevations (AA-BB) Sectional Elevations (CC-DD) Sectional Elevation one Sectional Elevation two 	10/05/2022	Plan set showing the proposed development at 30 Herbert Avenue, Newport NSW 2106

7.1 Listed in table 6 below are documents used in the preparation of this report.

Table 6: Documents used in the preparation of this report.



8 CONCLUSION & RECOMMENDATIONS

- 8.1 Trees 7 & 9 are proposed for removal. Tree 7 will require approval from Northern Beaches Council. Tree 9 is an exempt species that can be removed without approval. It is recommended that in the process of removal;
 - All work is carried out by a person who is trained in AQF Level 3 in Arboriculture.
 - All work is carried out in accordance with the Work Cover, Amenity Tree Industry Code of Practice 1998 and Safe work Australia's "Guide to managing risks of tree trimming and removal work" (July 2016).
 - All tree waste is removed from site.
- 8.2 All remaining trees in this assessment are to be retained and protected. The appointment of a site arborist (AQF Level 5) for the duration of the project, should be made prior to the commencement of any site works including demolition, to implement tree protection measures recommended below and in the Tree Protection Specification.
- 8.3 Prior to the commencement of any site works, it is recommended that tree protection fencing is installed to exclude TPZ of T8 from construction activities. An example of tree protection fencing is available in section 9.6 of this report. The final location of Tree Protection Fencing is to be determined by the Project Arborist following consultation with the project manager (to allow for site access etc.). Ground Protection may also be required at the discretion of the project arborist.
- 8.4 Specific tree protection measures (fencing) have not been recommended for Trees 1,2,3 & 6 due to the existing boundary/site fence providing adequate protection to the bulk of the trees TPZ's. Tree protection measures have not been recommended for trees 4 & 6 as only lightweight construction is proposed within their TPZ's. Activities excluded from Tree Protection Zone's (section 9.4) must be observed within the TPZ's of all trees to be retained. Additional tree protection fencing may be required at the discretion of the project arborist.
- 8.5 Proposed replacement planting for the tree removals listed above are detailed on the Planting Plan prepared by Serenescapes on the 10/05/2022. The following trees are included;

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Elaeocarpus reticulatus	3	8	45L
Glochidion ferdinandi	1	6	45L
Melaleuca linarifolia	1	8	200mm

Table 7: Replacement Trees



No additional replacement planting is recommended.

9 TREE PROTECTION SPECIFICATION – As PER AS4970 – 2009

Tree Protection will be undertaken in the three stages listed below. Certification from the project arborist is required at/during each stage.

9.1 PRE – DEVELOPMENT STAGE

- Prior to any tree removal an AQF level 5 arborist must be engaged as site arborist to oversee all arboricultural aspects of the project, including tagging all trees and identifying trees for removal.
- Tree protection should be installed by a minimum AQF level 3 arborist and be supervised by an AQF level 5 arborist in accordance with the guidelines from AS4970-2009 Protection of trees on development sites (Standards Australia, 2009), and the information provided in this report.
- All trees to be retained must be visually assessed and their current health and condition recorded. The minimum assessment categories are provided below.
 Visual assessment benchmark
 - Health and Vitality (Good/Fair/Poor/Dead)
 - Leaf Damage
 - Pests and Diseases
 - Deadwood percentage
 - Dieback Percentage.
 - Mechanical Damage
 - Recent Pruning
- Certifying of Pre-Construction Tree Protection by the site arborist will conclude the preconstruction phase of development. Construction must not commence until Pre-Construction tree protection has been certified by the site arborist.
- The project manager is to be made aware of Tree Protection requirements for the duration of the project.



Pre-development Arboricultural Certification

	Pre- Development requirement met. (Y/N)	Project Arborist Signature	Date
All trees tagged. Trees for removal identified by project arborist.			
All tree protection measures have been correctly installed.			
A pre-development visual inspection of all trees to be retained has been undertaken by the project arborist			
The project manager has been made aware of all tree protection measures required for the duration of the project.			



9.2 DEVELOPMENT STAGE

- Tree protection measures must remain in place during this stage. They cannot be removed intermittently for access and any modifications to Tree Protection Fencing Locations as shown in the tree protection plan, must be authorised, recorded and carried out by the site arborist.
- The project arborist is to be present for all arboricultural supervision within TPZ's of retained trees, as recommended by the arboricultural impact assessment (AIA) and tree protection plan.
- The site arborist will conduct regular visits (every two months) in accordance with AS4970-2009 to visually assess and record the health and condition of the trees being retained.
- Tree protection measures will also be assessed regularly to ensure they are functioning correctly. Any maintenance required for Tree Protection measures will be performed.
- A stop work notice will be issued to the project manager if any Tree Protection Measures are not found to be complying with the Tree Protection Plan.
- Any incidents relating to retained trees must be reported immediately to the site arborist to be documented and a plan for remediation put in place.

	Development requirement met. (Y/N)	Project Arborist Signature	Date
Tree protection measures have remained in place for the duration of the development.			
Tree Health and vitality has not deteriorated during the development.			
Arboricultural supervision has been undertaken as required by the AIA and Tree Protection Plan			
Incidents relating to retained trees have been reported to the project arborist.			
Remediation has been implemented as necessary for the successful retention of retained trees.			

Development Stage Arboricultural Certification.



9.3 CONCLUSION OF DEVELOPMENT

- Final visit from the site arborist to report on the health and condition of the trees that have been retained and the removal of tree protection. Incidents documented during the development stage will be included in this report.
- Any remedial work necessary upon the completion of development will be recommended in the final report.
- Replacement trees are to be planted before the project arborists final inspection.

Conclusion of Development Arboricultural Certification.

	Development requirement met. (Y/N)	Project Arborist Signature	Date
Tree protection measures have remained in place for the duration of the development.			
Tree Health and vitality has not deteriorated during the development.			
All documentation from site inspections/supervision has been compiled.			
Remediation has been implemented as necessary for the successful retention of retained trees. Any remediation to be continued has been recommended in the final report.			
Replacement tree planting has been undertaken and all replacement trees have been planted correctly.			



9.4 TREE PROTECTION ZONE REQUIREMENTS

Tree Protection Zones (TPZs), will be set out before the commencement of construction works.

According to AS 4970-2009, activities excluded from the TPZ include but are not limited to-:

- (a) machine excavation including trenching
- (b) excavation for silt fencing
- (c) cultivation
- (d) storage
- (e) preparation of chemicals, including preparation of cement products
- (f) parking of vehicles and plant
- (g) refuelling
- (h) dumping of waste
- (i) wash down and cleaning of equipment
- (j) placement of fill
- (k) lighting of fires
- (I) soil level changes
- (m) temporary or permanent installation of utilities and signs
- (n) physical damage to the tree.

Source Australian Standard AS 4970-2009 Protection of trees on development sites.



9.5 TREE PROTECTION ZONE SIGNAGE

A tree protection zone sign must be affixed to all Fenced Tree Protection Zones. (Example Below)





9.6 TREE PROTECTION FENCING REQUIREMENTS

Tree protection Fencing must be a minimum of 1.8 metres in height and be held in place with locking clamps and concrete feet between each panel, see Figure 2 below.



An Example of Temporary Fencing



10 REFERENCES

Claus Mattheck, H. B., 2006. The Body Language of Trees: A handbook for failure analysis. London: The Stationary office.

IACA, 2010. IACA Significance of a Tree, Asessment Rating System (STARS), Institute of Australian Consulting Arboriculturists, Australia. [Online] Available at: <u>www.iaca.org.au</u> [Accessed 19 June 2015].

Nearmap, 2022. [Online] Available at: <u>https://apps.nearmap.com/maps/#/@-</u> <u>33.6491156,151.3047558,20.00z,0d/V+R/20220518</u> [Accessed 7th July 2022].

Northern Beaches Council, 2017. *Manly region Tree Da Fact Sheet*. [Online] Available at: <u>http://www.manly.nsw.gov.au/environment/trees/tree-development-application/</u> [Accessed 18th May 2017].

NSW Government, 2021. State Environmental Planning Policy (Biodiversity & Conservation). [Online] Available at: <u>https://legislation.nsw.gov.au/view/html/inforce/current/epi-2021-0722</u>

[Accessed 23rd May 2022].

NSW Government, n.d. *Property Report*. [Online] Available at: <u>https://www.planningportal.nsw.gov.au/propertyreports/9efe9ae1-1be8-4ce3-9164-8add59c210d0.pdf</u> [Accessed 7th July 2022].

Pittwater Council, 2014. *Pittwater 21 Development Control Plan*. [Online] Available at: <u>http://portal.pittwater.nsw.gov.au/Pages/Plan/Book.aspx?vid=10075%2c10449</u> [Accessed 18th September 2017].

Pittwater Council, 2014. *Pittwater 21 Development Control Plan*. [Online] Available at: <u>http://portal.pittwater.nsw.gov.au/Pages/Plan/Book.aspx?vid=10075%2c10449</u> [Accessed 18th September 2017].

Pittwater Council, 2014. *Pittwater Local Environmental Plan 2014 - 7.6 Biodiversity*. [Online] Available at: <u>http://www.legislation.nsw.gov.au/#/view/EPI/2014/320/part7/cl7.6</u> [Accessed 13th October 2016].

Standards Australia, 2009. AS 4970-2009 Protection of trees on development sites. Sydney: Standards Australia.



11 GLOSSARY OF TERMS

Age class:

Young – planted recently. Semi Mature – Reached less than 20% of expected life span. Mature – Between 20-80% of expected life span. Over Mature – Past 80% of expected life span.

Health and Vigour:

Dead - Dead tree.

Senescent – Advanced state of decline. Significant deadwood visible. <20% live foliage cover.

Poor - Declining. Dieback and deadwood visible. 20-60% live foliage cover.

Fair – Low to average vigour. Dieback or visible. 60-90% live foliage cover.

Good – Good vigour. Small amount of dieback visible. 90-100% live foliage cover.

Excellent - Excellent vigour. No dieback or deadwood visible. 100% live foliage cover.

Structure / Form

Excellent (E), Good (G), Fair (F), Poor (P), this refers to the tree's form & growth habit, as modified by its environment (aspect suppression by other tree/s, soils,) & the state of the scaffold (i.e. trunk & major branches), including structural defects such as cavities, crooked trunks or weak trunk/branch junctions. These are not directly connected with health & it is possible for a tree to have poor structure but have fair condition/vigour.

Crown:

Measured from the top of the tree to the lowest branch, comprising of leaves and branches.

Deadwood:

Dead branches found in a trees crown. An entirely dead branch or stem.

Dieback:

The death of portions of the crown. The death of branches or shoots from the tips inward.

Defect:

A feature of a tree that affects the health or structure in an adverse manner.

Decay:

The process of micro-organisms breaking down woody tissue.

Cavity:

A void in a woody stem, usually created by decay. This can be open or closed.



Soil Texture:

The amounts of sand, silt and clay in a soil.

Soil pH:

A figure expressing the acidity or alkalinity of a soil.

DBH:

Diameter at Breast Height refers to the tree trunk diameter measured at breast height or 1.4 metres above ground level.

DAB:

Diameter Above the Buttress refers to the tree trunk diameter measured above the root buttress and is used to calculate the radius of the SRZ.

TPZ:

Tree Protection Zone The radius of the TPZ is calculated for each tree by multiplying the DBH x 12. To establish the TPZ this radius is measured from the centre of the stem at ground level and it is an area that is to be isolated from construction disturbance. Any encroachment into the TPZ of more than 10% is considered to be a major encroachment.

SRZ:

Structural Root Zone The radius of the SRZ is calculated using the following formula:

r (SRZ) = $(Dx50)^{0.42} \times 0.64$ where D is the DAB measured in metres. It is the area around a tree that is required for tree stability and is usually applied on constructions sites after there has been a major encroachment of the TPZ.

LCR:

Live Crown Ratio. The height of a trees crown, relative to the total height of the tree. Often used as an indicator of overall stability.

LCS:

Live Crown Size. The area of the crown as viewed from one aspect.

H/D:

Height over Diameter ratio. An indicator of failure due to slenderness. 30 is the optimum ratio. Greater than 50 is considered hazardous



12 **RELEVANT APPENDICES**

12.1 APPENDIX 1 – S.T.A.R.S.© (IACA 2010)

Significance of a Tree, Assessment Rating System* (IACA 2010) – S.T.A.R.S. ©

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

High Significance in landscape

- The tree is in Good condition and Good vigor,

- 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.

Medium Significance in landscape

- The tree is in Fair-Good condition and Good or Low vigor;

- 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.

Low Significance in landscape

- The tree is in fair-poor condition and good or low vigor;

- 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.

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



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Table 1.0 Tree Retention Value - Priority Matrix.

USE OF THIS DOCUMENTAND 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 Ltd2001, *Footprint Green Tree Significance & Retention Value Matrix*, Avalon, NSW Australia, www.footprintgreen.com.au

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



Landscape Area Calculations Scale 1:400

Site Analysis Legend



EXISTING TREE SCHEDULE									
TREE No.	BOTANICAL NAME	COMMON NAME	DBH	SPREAD	HEIGHT	RETAIN / REMOVE			
T1	CORYMBIA MACULATA	SPOTTED GUM	0.35m	20m	16m	RETAIN			
T2	CORYMBIA MACULATA	SPOTTED GUM	0.50m	-m	-m	RETAIN			
Т3	CORYMBIA MACULATA	SPOTTED GUM	0.55m	30m	8m	RETAIN			
T4	MACADAMIA INTEGRIFOLIA	MACADAMIA NUT	0.22m	5m	6m	RETAIN			
T5	JACARANDA MIMOSIFOLIA	JACARANDA	0.28m	10m	8m	RETAIN			
T6	UNIDENTIFIED EUCALYPTUS	GUM TREE	0.60m	30m	18m	RETAIN			
T7	EUCALYPTUS PUNCTATA	GREY GUM	0.86m	30m	14m	REMOVE			
T8	CORYMBIA MACULATA	SPOTTED GUM	0.37m	18m	12m	RETAIN			
Т9	BRACYCHITON ACERIFOLIUS	FLAME TREE	0.28m	12-m	6m	REMOVE			



Sediment & erosion control notes

During earthworks the following procedures shall be followed:

- 1. Install silt barriers where shown on plan prior to commencement of works.
- 2. Silt barriers to be maintained regularly & after heavy rain by removal of
- built up silt & spreading silt on existing site when 50% capacity.
- 3. Repair any damages to fence immediately.
- 4. Clean up spillages outside silt fence immediately.
- 5. Sediment control measures to be left in place until works completed.
- 6. Topsoil from the work's area will be stockpiled for later use in landscaping if necessary.
- 7. Approved bins for building waste, concrete and mortar slurries, paints and acid washings will be provided by contractor.

Legend Boundary Sewe Existing contours \triangleleft Existing concrete Existing bitumen Existing turf Proposed turf Proposed concrete Proposed tiles Proposed deck Galv. garden edge - GE - GE - GE - GE - GE -Stepping stones in ground covers / pebbles Masonry retaining wall Timber retaining wall Mulch Existing tree to be retained. TPZ & SRZ . shown dashed Existing tree 0 to be removed



Note: - Contractors to check and verify all dimensions and all levels on site prior to any works.

Any discrepancies should be immediately referred to Serenescapes Landscape Designs
 All work to comply with B.C.A. Statutory Authorities and relevant Australian Standards.

- Dimensions recognised over scaling. All measurements are in millimetres.
 - Copyright Serenescapes Landscape Designs 2022.

Client: Client: Serenscapes Landscape Designs ABN 91 697 643 476 Suite 54, 14 Narabang Way Belrose NSW 2085 Tel: 02 9986 2157 info@serenescapes.com.au www.serenescapes.com.au Site Address:

30 Herbert Avenue Newport Drawing Title:

Site Plan / Site Analysis / Sedimentation Control Plan

Drawn by:		Proj	ct Number: Scale:		
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Sheet Number:					
L-01 of 9					
Rev:	Date:		Issue:		Checked:
А	21/10/2	021	Preliminary	Issue	BF
В	24/03/2	022	Preliminary	Issue	BF
С	10/05/2	022	DA Issue		BF