



JACKSONS NATURE WORKS

34 CALOOLA CRESCENT, BEVERLY HILLS 2209

9 150 4430
0 4 18) 414 502

ARBORICULTURAL IMPACT ASSESSMENT REPORT

At

77 Central Road, Avalon Beach

Prepared for

N Vatsalias & J Schuberg

24th January 2025

Prepared by: Ross Jackson

Graduate Certificate in Arboriculture (AQF L 8)

Dip. Horticulture (Arboriculture – AQF L 5)

Certificate III in Horticulture (Arboriculture)

Certificate in Horticulture (Landscape)

Member of the Arboriculture Australia (MAA)

Member of the Australian Institute of Horticulture

Consulting Arborist Nos.1695

E: ross.jnw@gmail.com

DISCLAIMER

The Client acknowledges that this Report, and any opinions, advice or recommendations expressed or given in it, are the information supplied by the Client and on the data inspections, measurements and analysis carried out or obtained by Jacksons Nature Works (JNW) and referred to in the Report. The Client should rely on The Report, and on its contents, only to that extent.

Care has been taken to obtain all information from reliable sources. All data has been verified as far as possible. However, Ross Jackson – Consulting Arborist can neither guarantee nor be responsible for the accuracy of information provided by others.

Unless stated otherwise:

- Information contained in this report covers only the trees examined and reflects the health and structure of the trees at the time of inspection. The documented, observations, results, recommendations, and conclusions given may vary after the site visit due to environmental conditions.
- The inspection was limited to visual examination from the base of the subject tree without dissection, probing or coring.
- There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future; &
- Unauthorised use of this report in any form is prohibited and remains the intellectual property of Jacksons Nature Works until all costs are settled.

Ross Jackson

Consulting Arborist

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1. BACKGROUND and METHODOLOGY

- 1.1 The purpose of this Tree Report is to inform and accompany the development application works at 77 Central Road, Avalon Beach – The Site.
- 1.2 The report was commissioned by Mr J Schuberg to consider the development impacts on trees located on and around the Site.
- 1.3 This report outlines the health and condition of the subject trees, the remaining life expectancy of the trees, identifies any visible defects or other problems, describes which trees require pruning, removal, retention or represent a potential hazard and comments on the impact on these trees in relation to the works proposed. The report also provides recommended tree protection measures (Tree Management Plan) to ensure the long-term preservation of the trees to be retained where appropriate.
- 1.4 The Site is a residential site with gardens at Avalon Beach.
- 1.5 The trees were identified by ground level Visual Tree Assessment (VTA) ¹ only in the data collection, taken on 27.9.2024. No aerial (climbing) was undertaken.
- 1.6 All site photographs were taken by the author at the site. All photographs were taken using a digital camera (Canon 7D) with no image enhancement either within the camera or on computer.
- 1.7 The subject trees were located on plans supplied. The trees have been plotted and can be found on Annexure B – Tree Location Plan.
- 1.8 The trees were identified and their genus species and common name used. The trees were identified by the use of data collected and compared to G Burnie, S Forrester et al (1997) **Botanica** Random House, Milsons Point, NSW, Australia.
- 1.9 DBH. The Trunk Diameter at Breast Height (1.4 metres above ground level) in centimetres was measured over bark using a metal tape which automatically converts to diameter and assumes a circular trunk cross section.
- 1.10 DRB. The trunk Diameter above Root Buttress in centimetres was measured over bark using a metal tape which automatically converts to diameter and assumes a circular trunk cross section.
- 1.11 Height. Estimated overall height in metres.
- 1.12 Spread. Measured with a metal tape measure and shown in metres.
- 1.13 Useful Life Expectancy (ULE)².
A systematic pre-development tree assessment procedure developed by Jeremy Barrell, Hampshire, England. It gives a length of time that the Arborist feels a particular tree can be retained with an acceptable level of risk based on the

¹ Mattheck, Dr. Clause & Breloer, Helge (1994) – Sixth Edition (2001) **The Body Language of Trees – A Handbook for Failure Analysis** The Stationery Office, London, England

² Barrell, Jeremy (1996, 2001) **Pre-development Tree Assessment** Proceedings of the International Conference on Trees and Building Sites (Chicago) International Society of Arboriculture, Illinois, USA

information available at the time of the inspection. SULE ratings are Long (retainable for 40 years or more with an acceptable level of risk), Medium, (retainable for 16 – 39 years), Short (retainable for 5 – 15 years) and Removal (tree requiring immediate removal due to imminent hazard or absolute unsuitability).

1.14 The Tree Protection Zone (TPZ) and Structural Root Zone (SRZ) have been calculated in terms of AS 4970 – 2009 Protection of trees on development site Section 3.

1.15 Retention value & landscape significance as described by ICAC – STARS © have been used for the trees in this report.

1.16 To prepare this report we have reviewed the following documents:

- Detail survey by Donovan Associates dated 17.8.2020.
- Architectural plans by Mathieson Architects dated 13.1.2025, Rev C.
- Landscape plans by Mathieson Architects dated 13.1.2025, Rev A.
- Drainage concept plan by Intrax dated 16.12.2024.
- Northern Beaches Council, B4.22 Preservation of Trees or Bushland Vegetation (TPO); &
- Australian Standard AS 4970 – 2009 Protection of trees on development sites.

2. OBSERVATIONS as seen on the day of inspection (27.9.2024)

2.1 Our tree observations can be found in Annexure A. N.B. Tree 20 was not located on site during the site assessment.

3. DISCUSSIONS

3.1 We have been commissioned by Mr J Schuberg, to examine the health and condition of the trees on and around this development site.

It is proposed to demolish the existing and the construction of a new residence on Site (development works).

3.2 We have examined the trees on site and can suggest the following considerations for the development works:

1. The following trees are proposed for removal to allow the development to proceed: Tree 7 *Eucalyptus resinifera* (fair – average vitality with 90% epicormic regrowth [a sign of stress /decline] & located in Council's nature strip – refer plate 1), tree 8 *Duranta sp.* (exempt species), tree 9 *Camellia sasanqua* (exempt tree <5m) and trees 12 & 13 *Murraya paniculata* (Weed species by Department of Primary Industries).

It is acknowledged Tree 7 is in Council's nature strip, however there are four other canopy trees in front of this site that will maintain the benefit of trees in this location.

Removal of Tree 7 is to reconfigure the crossing to the new residence – refer Annexure C.

Also, there is little opportunity to replant a replacement tree due to the existing four trees.

Removal of all these trees is supported.



Plate 1: Tree 7 with 8 behind.

2. The following trees are proposed for retention: Tree 1 & 2 *Lagerstroemia indica*, tree 6 *Eucalyptus resinifera* (driveway outside this tree's TPZ), tree 11 *Archontophoenix cunninghamiana* (driveway outside this tree's TPZ), tree 14 & 15 *Ulmus glabra* (next door and have 14% & 12% encroachment within their TPZ – i.e. just above the threshold of 10% as noted in AS 4970 – 2009), tree 16 *Eucalyptus botryoides* (next door with an encroachment of 26%, considered on the medium level of impact, suggest root mapping to confirm no roots are impacted), tree 17 *Murraya paniculata* (Weed species by Department of Primary Industries but being retained, impact = nil), tree 18 *Viburnum tinus* (exempt species being retain with nil encroachment), tree 18A *Bambusa sp.* (exempt species being retain with nil encroachment), tree 19 *Archontophoenix cunninghamiana* (exempt species being retain with nil encroachment), tree 20 (removed), tree 21 *Magnolia grandiflora* (nil impact), tree 22 *Syzygium paniculatum* (nil impact), tree 25 *Ulmus glabra* (next door with <10% encroachment) and tree 42 *Syzygium luehmannii* (with nil encroachment).

It is proposed to retain all these trees as part of the development works.

To confirm that the 26% encroachment within the TPZ of Tree 16, a root mapping investigation is recommended. However, it is my experience that this level of impact is not a restraint on the retention of this tree.

3.3 The landscape plans show the retention of the trees are suitable replanting to augment the benefit of trees in this location.

3.4 The concept drainage plan has been designed to avoid the retained trees.

4. RECOMMENDATIONS

The following recommendations are advised:

- a) Retain the following council street tree: Tree 6.
- b) Remove the following street tree: Tree 7.
- c) Remove the following trees: Tree 8, 9, 12 & 13.
- d) Retain the following trees: Tree 1, 2, 11, 14, 15, 16, 17, 18, 18A, 19, 21, 22, 25 & 42.
- e) Tree removal work shall be carried out by an experienced tree surgeon in accordance with *Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal (2016)*.
- f) That root mapping be performed near Tree 16 to confirm impact is acceptable by an AQF Level 5 arborist with details to be provided to the Council for their information.
- g) Install the following Tree Protection Measures around the retained street tree: Tree 7, tree protection measures shall be a temporary fence of chain wire panels 1.8 metres in height (or equivalent), supported by steel stakes or concrete blocks as required and fastened together and supported to prevent sideways movement. Existing boundary fences or walls are to be retained shall constitute part of the tree protection fence where appropriate. A sign is to be erected on the tree protection fences of the trees to be retained that the trees are covered by Council's tree preservation orders and that "No Access" is permitted into the tree protection zone – Refer Annexure D.
- h) Trunk protection shall consist of a padding material such as hessian or thick carpet underlay wrapped around the trunk. Timber planks (50mm x 100mm or similar) shall be placed over the padding and around the trunk of the tree at 150mm centres. The planks shall be secured with 8-gauge wire or hoop steel at 300mm spacing. Trunk protection shall extend a minimum height of 2 metres on tree 6 – refer Annexure D.
- i) Install the following Tree Protection Measures around the retained trees: Tree 1, 2, 11, 14, 15, 16, 17, 18, 18A, 19, 21, 22, 25 & 42, tree protection measures shall be a temporary fence of chain wire panels 1.8 metres in height (or equivalent), supported by steel stakes or concrete blocks as required and fastened together and supported to prevent sideways movement. A sign is to be erected on the tree protection fences of the trees to be retained that the trees are covered by Council's tree preservation orders and that "No Access" is permitted into the tree protection zone – refer Annexure D.
- j) The Tree Protection Plan can be found on Annexure D.
- k) An AQF Level 5 Project Arborist shall be engaged to supervise the building works and certify compliance with all Tree Protection Measures.
- l) The tree location plan can be found on Annexure B; &

m) The tree impact plan can be found on Annexure C.



Ross Jackson M.A.A. & M.A.I.H.
Consulting Arborist 1695
Graduate Certificate in Arboriculture AQF Level 8 (Honours)
Diploma Horticulture (Arboriculture) – AQF Level 5
Certificate III in Horticulture
Certificate in Horticulture (Landscape – Honours)



Co-written by
Luke Jackson
Arborist AQF Level 5

Annexure A: Observations as seen on the day of inspection of trees 27.9.2024

Tree No	Botanical Name	Age Class	Height (m)	Spread (m)	D.B.H. (cm)	D.R.B. (cm)	TPZ (radius m)	SRZ (radius m)	Condition comments as seen on site	ULE	Landscape significance	Retention value
1	<i>Lagerstroemia indica</i>	M	3	1	3 x 8	12	2.0	1.5	Exempt species	4	Low	Low
2	<i>Lagerstroemia indica</i>	M	3	1	2 x 10	15	2.0	1.5	Exempt species	4	Low	Low
6	<i>Eucalyptus resinifera</i>	M	7	3	15	20	2.0	1.7	F vitality, suppressed. ST	2	Medium	High
7	<i>Eucalyptus resinifera</i>	M	9	5	50	60	6.0	2.7	F - A vitality, 90% foliage is ER. ST	2	Medium	High
8	<i>Duranta sp.</i>	M	4	5	5 x 15	45	4.0	2.4	Exempt species <5m	4	Low	Low
9	<i>Camellia sasanqua</i>	M	4	3	5 x 10	20	2.7	1.7	Exempt species <5m	4	Low	Low
11	<i>Archontophoenix cunninghamiana</i>	M	7	3	-	-	2.5	1.5	Exempt species	4	Low	Low
12	<i>Murraya paniculata</i>	M	4	-	-	-	-	-	Weed species by NSW Dept Primary Industries	4	Low	Low
13	<i>Murraya paniculata</i>	M	3	-	-	-	-	-	Weed species by NSW Dept Primary Industries	4	Low	Low
14	<i>Ulmus glabra</i>	M	4	5	45, 35	65	6.8	2.8	G vitality, topped > poor form, ND	2	Low	Low
15	<i>Ulmus glabra</i>	M	8	6	2 x 30	50	5.1	2.5	F vitality, ND	2	Low	Low
16	<i>Eucalyptus botryoides</i>	M	16	8	70	80	8.4	3.0	G vitality, ND	1	High	High
17	<i>Murraya paniculata</i>	M	5	-	-	-	-	-	Weed species by NSW Dept Primary Industries	4	Low	Low
18	<i>Viburnum tinus</i>	M	4	3	6 x 10	35	2.9	2.1	Exempt species <5m	4	Low	Low
18A	<i>Bambusa sp. (clump)</i>	M	7	-	-	-	-	-	Weed species by NSW Dept Primary Industries	4	Low	Low
19	<i>Archontophoenix cunninghamiana</i>	M	4	3	-	-	2.5	1.5	Exempt species	4	Low	Low
20	<i>Removed</i>	-	-	-	-	-	-	-	-	-	-	-
21	<i>Magnolia grandiflora</i>	M	8	8	50	55	6.0	2.6	F vitality, lower branches pruned	2	Low	Medium
22	<i>Syzygium paniculatum</i>	M	8	8	25	30	3.0	2.0	G vitality, ND	2	Low	Medium

25	<i>Ulmus glabra</i>	M	9	7	35	40	4.2	2.3	G vitality, ND	1	Medium	Medium
42	<i>Syzygium luehmannii</i>	M	4	2	10, 8	12, 10	2.0	1.5	Exempt species <5m	4	Low	Low

Terms used in Tree Survey & Report:

Age Class

(Y) – Young refers to a well-established but juvenile tree. Less than 1/3 life expectancy

(SM) – Semi-mature refers to a tree at growth stages between immaturity and full size. A tree has reached First Adult Form i.e. displays adult characteristics. 1/3 to 2/3 life expectancy

(M)- Mature refers to a full-size tree with some capacity for future growth. Older than 2/3 life expectancy

(OM) – Over-mature refers to a tree approaching decline or already declining. Older than 2/3 life expectancy and showing signs of irreversible decline.

Health refers to a tree's vigour, growth rate, disease and/or insects.

Vitality summarises observations about the health and structure of the tree on a scale of: **(G) Good, (F) Fair, (P) Poor & (D) Dead.**

Good: Tree is generally healthy and free from obvious signs of structural weaknesses or significant effects of pests and diseases or infection;

Fair: Tree is generally vigorous although has some indication of being adversely affected by the early effects of disease or infection or environmental or mechanical damage. Appropriate tree maintenance can usually improve overall health and halt decline;

Poor: Tree in decline and is not likely to improve with reasonable maintenance practices or has a structural fault such as bark inclusion;

Dead: Tree no longer capable of sustained growth.

Deadwood (DW) – deadwood found in canopy as a percentage.

Over Head Power Lines (OHPL) – upper canopy pruned to accommodate power lines at a given height.

Height expressed in metres refers to estimated overall height of tree.

Next Door tree (ND) – tree located in the neighbour's property.

Street Tree (ST) – tree located in Councils footpath reserve.

Spread expressed in metres refers to estimated spread of crown at the drip line.

(DBH) Diameter at Breast Height expressed in millimetres refers to the trunk diameter at 1.4 metres above ground level. Where there are multiple trunks the combined diameter has been calculated in terms of Appendix A – AS 4970 – 2009, shown in brackets.

(DRB) Diameter above Root Buttress expressed in millimetres refers to the trunk diameter above root buttress.

(TPZ) Tree Protection Zone & Structural Root Zone (SRZ) as defined by AS 4970 – 2009 Section 3

(ULE) The various ULE categories indicate the useful life anticipated for an individual tree or trees assessed as a group. Factors such as the location, age, condition and vitality of the tree are significant to the determination of this rating. Other influences such as the tree's effect on better specimens and the economics of managing the tree successfully in its location are also relevant to ULE (Barrell 1993, 1995, 2001).

ULE RATING (UPDATED 1/4/01) BARRELL

<p>1.Long ULE: Trees that appear to be retainable at the time of assessment for more than 40 years with an acceptable level of risk.</p>	<p>2.Medium ULE: Trees that appear to be retainable at the time of assessment for more than 15-40 years with an acceptable level of risk.</p>	<p>3.Short ULE: Trees that appear to be retainable at the time of assessment for more than 5-15 years with an acceptable level of risk.</p>	<p>4.Remove: Trees that should be removed within the next 5 years.</p>	<p>5.Small, young or regularly pruned: Trees that can be reliably moved or replaced.</p>
<p>(A) Structurally sound trees located in positions that can accommodate future growth</p>	<p>(A) Trees that may only live between 15 and 40 more years.</p>	<p>(A) Trees that may only live between 5 and 15 more years.</p>	<p>(A) Dead, dying, suppressed or declining trees because of disease or inhospitable conditions.</p>	<p>(A) Small trees less than 5 Metres in height.</p>
<p>(B) Trees that could be made suitable for retention in the long term by remedial tree care.</p>	<p>(B) Trees that could live for more than 40 years but may be removed for safety or nuisance reasons.</p>	<p>(B) Trees that could live for more than 15 years but may be removed for safety or nuisance reasons.</p>	<p>(B) Dangerous trees because of instability or recent loss of adjacent trees.</p>	<p>(B) Young trees less than 15 years old but over 5 metres in height.</p>
<p>(C) Trees of special significance for historical, commemorative or rarity reasons that would warrant extraordinary efforts to secure their long term retention.</p>	<p>(C) Trees that could live for more than 40 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting.</p>	<p>(C) Trees that could live for more than 15 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting.</p>	<p>(C) Dangerous trees because of structural defects including cavities, decay, included bark, wounds or poor form.</p>	<p>(C) Formal hedges and trees intended for regular pruning to artificially control growth.</p>
	<p>(D) Trees that could be made suitable for retention in the medium term by remedial tree care.</p>	<p>(D) Trees that require substantial remedial tree care and are only suitable for retention in the short term.</p>	<p>(D) Damaged trees that are clearly not safe to retain.</p>	
			<p>(E) Trees that could live for more than 5 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting.</p>	
			<p>(F) Trees that are damaging or may cause damage to existing structures within 5 years.</p>	
			<p>(G) Trees that will become dangerous after removal of other trees for the reasons given in (A) to (F).</p>	
			<p>(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.</p>	

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.

		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		
	<p>Priority for Retention (High) - These trees are considered important for retention and should be retained and protected. Design modification or re-location of building/s should be considered to accommodate the setbacks as prescribed by the Australian Standard AS4970 <i>Protection of trees on development sites</i>. Tree sensitive construction measures must be implemented e.g. pier and beam etc if works are to proceed within the Tree Protection Zone.</p>	
	<p>Consider for Retention (Medium) - These trees may be retained and protected. These are considered less critical; however their retention should remain priority with removal considered only if adversely affecting the proposed building/works and all other alternatives have been considered and exhausted.</p>	
	<p>Consider for Removal (Low) - These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.</p>	
	<p>Priority for Removal - These trees are considered hazardous, or in irreversible decline, or weeds and should be removed irrespective of development.</p>	

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

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

Appendix A

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 form 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.

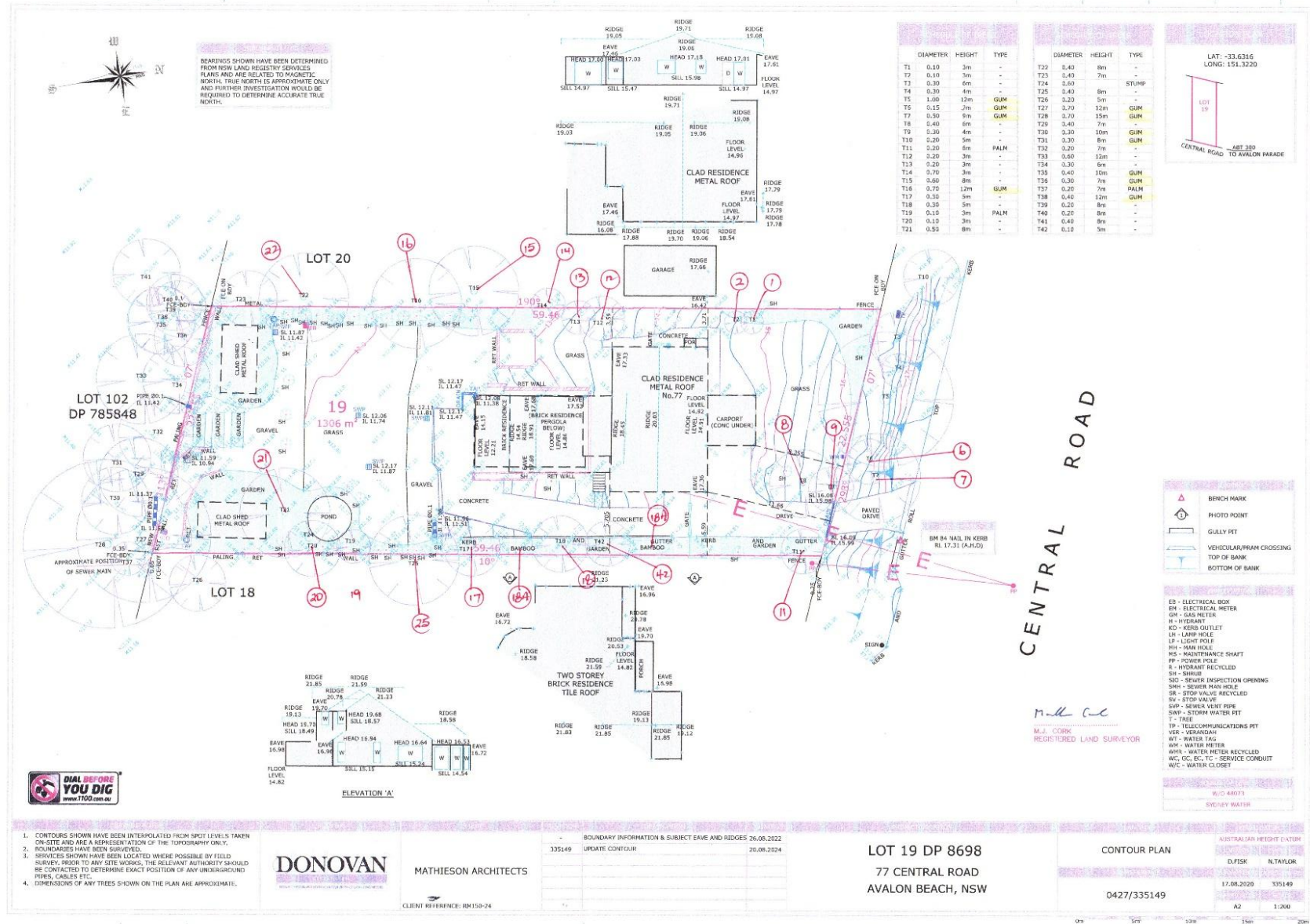
Retention Value

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

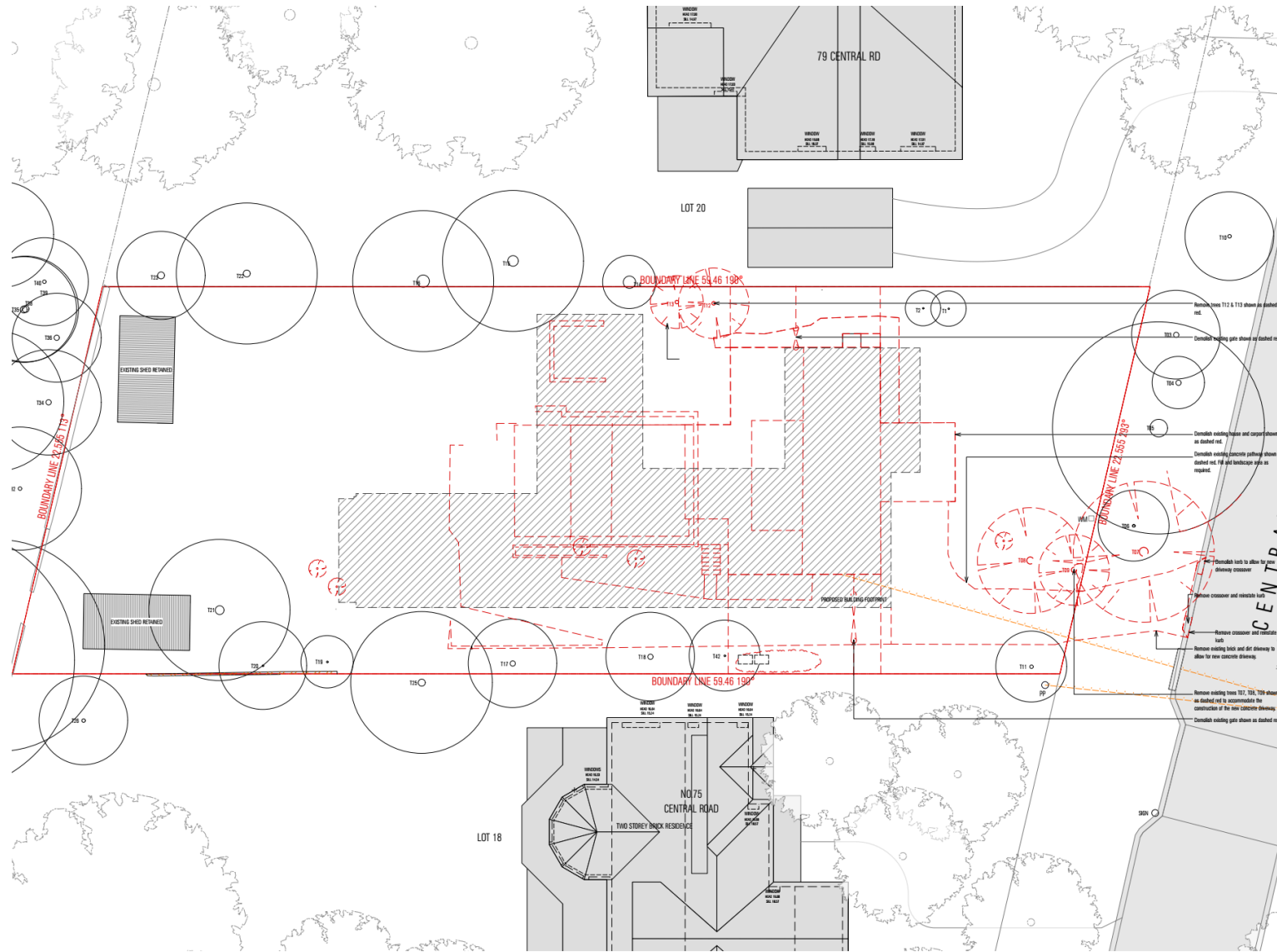
Retention Value	High Priority for Retention	Medium Consider for Retention	Low Consider for Removal	Remove Priority for Removal
Tree No. / Stand No.	1/1, 5, 17/3*, 19	2, 4, 6, 7, 8, 9, 10, 11, 14, 15, 16, 18, 20/4*, 21/5	3, 12/2, 13,	22

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

Annexure B: Tree location plan



Annexure C: Tree impact plans



MATHIESON ARCHITECTS
 25/11/2025 RESUBMIT AT SHIRLEY HILLS NSW 2221 AUSTRALIA
 T +61 2 9239 4450 WWW.MATHIESONARCHITECTS.COM

Proposed building footprint
 Demolished

Notes:
 1. Assume trees T12 & T13 shown as dashed red.
 2. Consider existing gate shown as dashed red.
 3. Consider existing fence and carpet shown as dashed red.
 4. Consider existing concrete pathway shown as dashed red. If old landscape works is required.
 5. Reinforce path to allow for new driveway crossover.
 6. Remove crossover and re-site kerb.
 7. Remove crossover and re-site kerb.
 8. Remove existing kerb and set driveway to allow for new concrete driveway.
 9. Remove existing kerb T12, T13, T14 shown as dashed red to accommodate the construction of the new concrete driveway.
 10. Consider existing gate shown as dashed red.

NO.	DATE	REVISION	BY	CHECK
A	13.01.2025	ISSUE FOR CONSULTANT REVIEW	LA	LA
B	14.01.2025	ISSUE FOR I.A.	LA	CS
C	14.01.2025	IN DEVELOPMENT	LA	CS

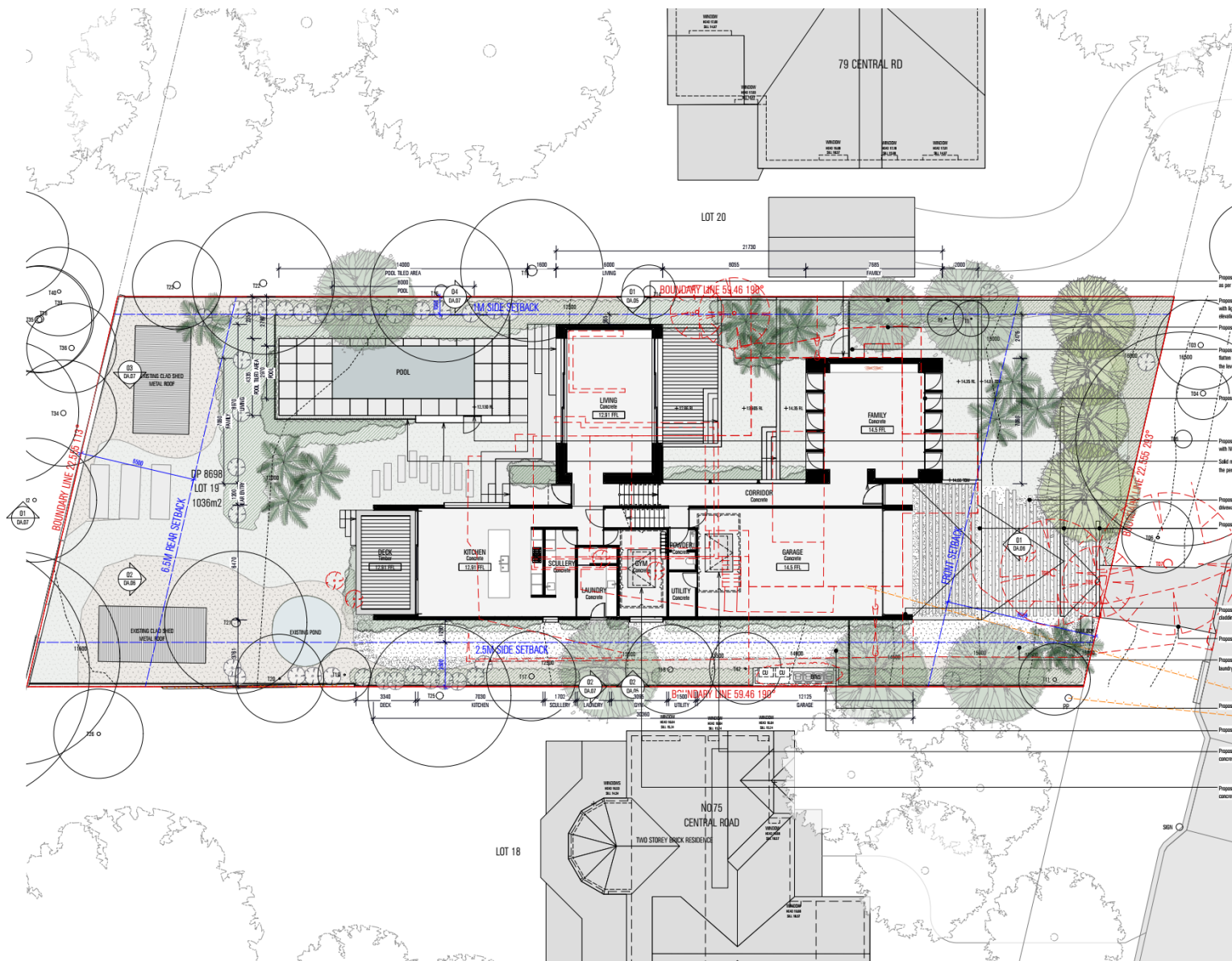
PROJECT: VASELIAS SCHUBERG AVIATION
 ADDRESS: 77 CENTRAL ROAD, ANSLON BEACH NSW 2167
 CATEGORY: DEVELOPMENT APPLICATION

DATE: 13.01.2025 SCALE: 1:100 @ A1
 DRAWN: LA PROJECT NO: 23009
 DRAWING NO: DA.02 REV NO: C

DECLARATION:
I/We, the undersigned, being a duly qualified architect or architects, do hereby certify that I/we are the author or authors of the above described plan and that I/we are duly qualified to do so. I/We are not aware of any other persons who are entitled to be named as authors of the plan.

01 PLAN
 Demolition Plan
 Scale 1:100

MATHIESON



MATHIESON ARCHITECTS
 20/110 WILSON ROAD, GARDEN HILLS NSW 2188 AUSTRALIA
 T +61 2 9261 4165 INFO@MATHIESONARCHITECTS.COM

ABBREVIATIONS:
 RL: Reduced Levels
 TOP: Top of finish RL
 T.O.M: Top of wall RL

Proposed masonry walls, finished as per BASIX reqs.
 Proposed low-height stepped retaining walls with high-level stepped footing on top. Refer elevations for selected finish.
 Proposed metal side access gate.

Proposed finished terrace levels, adjust and confirm the existing level as needed to achieve the levels noted.
 Proposed glazed doors to basin reqs.

Proposed pool gate designed in accordance with NCC 4.4.2 reqs.
 Solid masonry wall and metal fencing to form the perimeter surrounding the pool enclosure.

Proposed concrete pavers & gravel. Construct driveway slope as per engineers drawings.
 Proposed masonry retaining walls.

Proposed lightweight walls with slingshading, finished in accordance with BASIX.
 Proposed concrete driveway & kerb entries.

Proposed gravel pathway for side access to beauty and bin enclosure.
 Proposed metal side access gate.

Proposed bagged brick bin enclosure.
 Proposed access hatch to below slab precast concrete utility room.

Proposed access hatch to below slab precast concrete waste cellar.

REV	DATE	REVISIONS	BY	CHK
A	13.01.2025	ISSUE FOR CONSULTANT REVIEW	LA	ES
B	13.01.2025	ISSUE FOR PERMITS	LA	ES
C	14.01.2025	ISSUE FOR DA	LA	ES
D	18.01.25	DA SUBMISSION	LA	ES

PROJECT: WHITSELL SCHUBERG AVALON
 ADDRESS: 77 CENTRAL ROAD, AVALON BEACH NSW 2107

DOCUMENT: DEVELOPMENT APPLICATION

DRAWING: GROUND PLAN

DATE: 13.01.2025 SCALE: 1:100 @ A1

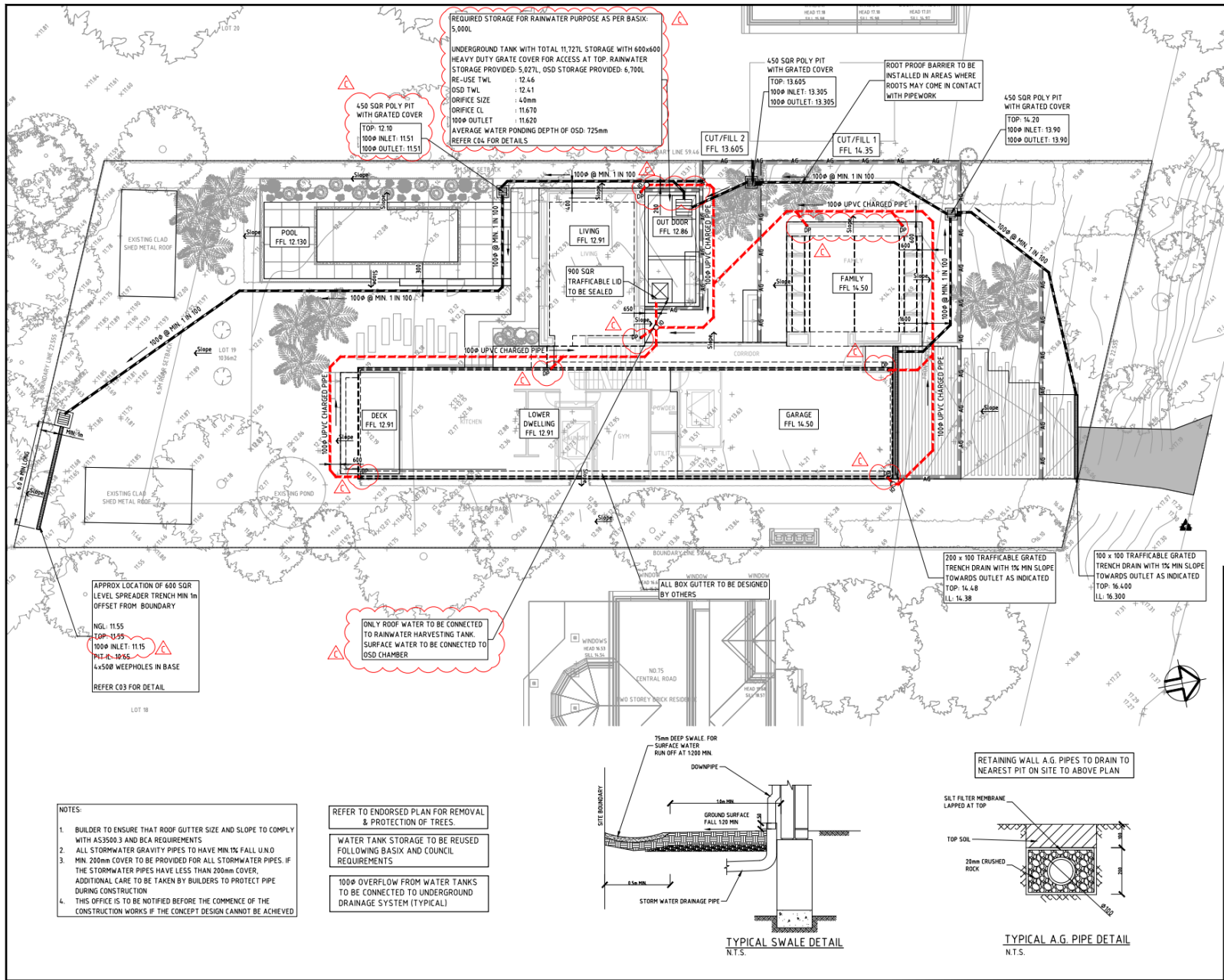
DRAWN: LA PROJECT NO: 23009

DRAWING NO: DA.03 REV NO: D

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01 PLAN
 Ground Floor Plan
 Scale 1:100

MATHIESON



REQUIRED STORAGE FOR RAINWATER PURPOSE AS PER BASIX: 5,000L

UNDERGROUND TANK WITH TOTAL 11,727L STORAGE WITH 600x600 HEAVY DUTY GRATE COVER FOR ACCESS AT TOP. RAINWATER STORAGE PROVIDED: 5,027L, OSD STORAGE PROVIDED: 6,700L

RE-USE TWL: 12.46
 OSD TWL: 12.41
 ORIFICE SIZE: 4.0mm
 ORIFICE CL: 11.670
 100Ø OUTLET: 11.620
 AVERAGE WATER PONDING DEPTH OF OSD: 725mm
 REFER C04 FOR DETAILS

450 SDR POLY PIT WITH GRATED COVER
 TOP: 12.10
 100Ø INLET: 11.51
 100Ø OUTLET: 11.51

450 SDR POLY PIT WITH GRATED COVER
 TOP: 13.605
 100Ø INLET: 13.305
 100Ø OUTLET: 13.305

450 SDR POLY PIT WITH GRATED COVER
 TOP: 14.20
 100Ø INLET: 13.90
 100Ø OUTLET: 13.90

CUT/FILL 2
 FFL 13.605

CUT/FILL 1
 FFL 14.35

APPROX LOCATION OF 600 SDR LEVEL SPREADER TRENCH MIN 1m OFFSET FROM BOUNDARY

NGL: 11.55
 100Ø INLET: 11.55
 PIT: 11.55
 4x500 WEEPHOLES IN BASE
 REFER C03 FOR DETAIL

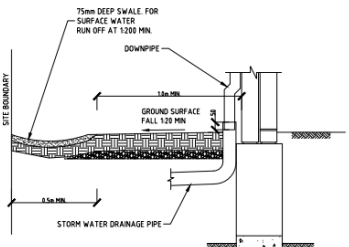
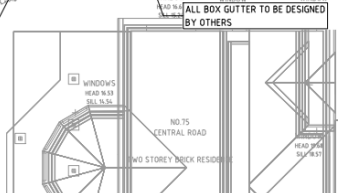
ONLY ROOF WATER TO BE CONNECTED TO RAINWATER HARVESTING TANK
 SURFACE WATER TO BE CONNECTED TO OSD CHAMBER

200 x 100 TRAFFICABLE GRATED TRENCH DRAIN WITH 1% MIN SLOPE TOWARDS OUTLET AS INDICATED
 TOP: 14.48
 LL: 14.38

100 x 100 TRAFFICABLE GRATED TRENCH DRAIN WITH 1% MIN SLOPE TOWARDS OUTLET AS INDICATED
 TOP: 16.400
 LL: 16.300

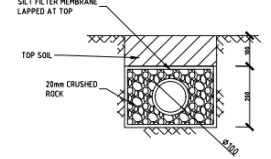
- NOTES:
- BUILDER TO ENSURE THAT ROOF GUTTER SIZE AND SLOPE TO COMPLY WITH A3350.3 AND BCA REQUIREMENTS
 - ALL STORMWATER GRAVITY PIPES TO HAVE MIN 1% FALL UNO
 - MIN 200mm COVER TO BE PROVIDED FOR ALL STORMWATER PIPES. IF THE STORMWATER PIPES HAVE LESS THAN 200mm COVER, ADDITIONAL CARE TO BE TAKEN BY BUILDERS TO PROTECT PIPE DURING CONSTRUCTION
 - THIS OFFICE IS TO BE NOTIFIED BEFORE THE COMMENCE OF THE CONSTRUCTION WORKS IF THE CONCEPT DESIGN CANNOT BE ACHIEVED

- REFER TO ENDORSED PLAN FOR REMOVAL & PROTECTION OF TREES.
- WATER TANK STORAGE TO BE REUSED FOLLOWING BASIX AND COUNCIL REQUIREMENTS
- 100Ø OVERFLOW FROM WATER TANKS TO BE CONNECTED TO UNDERGROUND DRAINAGE SYSTEM (TYPICAL)



TYPICAL SWALE DETAIL
 N.T.S.

RETAINING WALL A.G. PIPES TO DRAIN TO NEAREST PIT ON SITE TO ABOVE PLAN



TYPICAL A.G. PIPE DETAIL
 N.T.S.

LEGEND

PL 0.00	PAVEMENT LEVEL
TOP 0.000	TOP OF PIT
INLET 0.000	INVERT LEVEL OF INLET PIPE
OUTLET 0.000	OUTLET INVERT LEVEL
FFL XX.XXX	FINISHED FLOOR LEVEL
---	RETAINING WALL
---	STORMWATER DRAIN (100Ø AT 1 IN 100)
□	GRATED PIT
DP	DOWNPIPE (90Ø UNO)
Slope	DIRECTION OF SURFACE RUNOFF (100 MIN)
---	CHARGED STORMWATER LINE
○	INSPECTION OPENING
○	CAPPED RISER
---	SWALE DRAIN
AG	SUBSOIL DRAINAGE
SP	SPREADER PIPE

C	DOWNPIPE, RETAINING WALL UPDATE	16.12.24	R.J.
B	OSD RELOCATED UNDER THE OUT DOOR	04.12.24	P.F.
A	FOR CONSTRUCTION PENDING APPROVAL	22.11.24	P.F.
Rev.	Revised/Comments	Date	Author

Client: MATHIESON ARCHITECTS PTY LTD



Melbourne 03 8371 9100
 Sydney 02 8865 1200
 Brisbane 07 2867 0800
 Adelaide 08 8100 0122
 Perth 08 9202 8505

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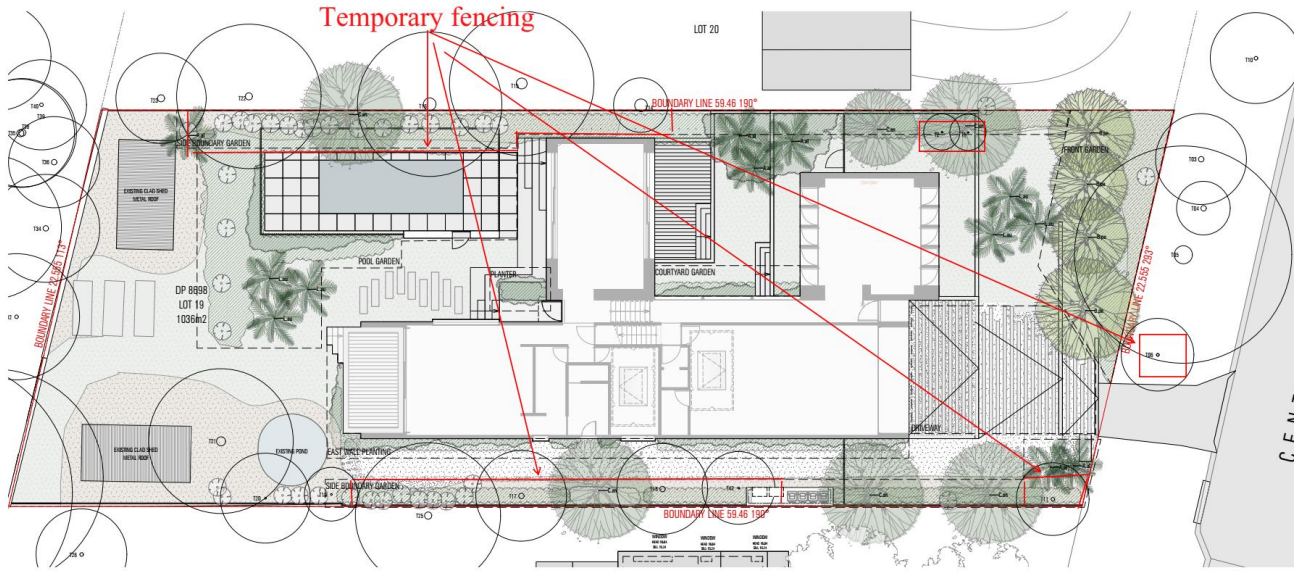
Project: PROPOSED DEVELOPMENT LOT 19 NO. 77 CENTRAL ROAD AVALON BEACH, NSW 2107

Drawing: STORMWATER HYDRAULIC MANAGEMENT PLAN

FOR CONSTRUCTION
 PENDING APPROVAL

Date: NOV. 2024 Engineer: R.F. Drawn: T.W.
 Scale @ A1: 1:100 Checked: P.F. Sheets: 2 OF 8
 Reference No: 230156 Drawing No: C02 Rev: C

Annexure D: Tree protection details



Tree protection plan by JNW with temporary fencing & trunk protection

01 PLAN LANDSCAPE PLAN Scale 1:100

	EXISTING GARDEN BED		EXISTING TREES
	LAWN		PROPOSED TREES
	PROPOSED GRAVEL		PROPOSED PALMS
	PROPOSED PAVING		EXISTING SHRUBS
	PROPOSED RETAINED RETAINING WALLS		PROPOSED SHRUBS
	PROPOSED FENCING		PROPOSED GROUND COVER

TREE NO.	BOTANICAL NAME	ACTION
1	LAURICEDRUM INDICA	RETAINED
2	LAURICEDRUM INDICA	RETAINED
6	SCALYPTUS ROSEIFRUA	RETAINED
7	SCALYPTUS ROSEIFRUA	RETAINED
8	CORONARY SP	RETAINED
9	CAMELLIA SASAENSIS	RETAINED
11	ARCHONDOPHORUM CONNORIANHAKA	RETAINED
12	SARAWAK PAUCIFLORA	RETAINED
13	SARAWAK PAUCIFLORA	RETAINED
14	SEISSUM OLABUM	RETAINED
15	SEISSUM OLABUM	RETAINED
16	SCALYPTUS ROSEIFRUA	RETAINED
17	SARAWAK PAUCIFLORA	RETAINED
18	FRAXINUS FRAXINOSA	RETAINED
19	BRUNIA SP. (CLIPART)	RETAINED
19	ARCHONDOPHORUM CONNORIANHAKA	RETAINED
20	REINOLDIA	RETAINED
21	SARAWAK PAUCIFLORA	RETAINED
22	SCALYPTUS ROSEIFRUA	RETAINED
23	SEISSUM OLABUM	RETAINED
24	SCALYPTUS ROSEIFRUA	RETAINED

ID	BOTANICAL NAME	COMMON NAME	MATURE HEIGHT	MATURE SPREAD	POT SIZE	QUANTITY
TREES						
A01	ARCHONDOPHORUM ALTAZONENSE	ALEXANDER PALM	15-20m	6m	100mm PFT	8
B01	BETULA FRUTICOSA	SWAMP BIRCH	7m	0.9m	100 PFT	4
C01	CONDOCOPSE HACHIROBESSES	SILKBIRCH	6-7m	0.7m	100 PFT	6
L01	LAVANEA AUSTRALIS	CHERRY TREE PALM	2m	2m		6
SHRUBS						
A02	SPONDIUM ELAONIA	EAST INDIA PLANT	0.8-1m	1.0m	200mm PFT	75
A03	HECALARIA MACROCEPHALA	ELIPYANT CAR	0.5-1m	1.2m	200mm PFT	45
A04	ACACIA SENNARUM	BEAN BRUSHES	1.5-3m	1.0m	150mm PFT	30
A05	ACACIA SENNARUM	BEAN BRUSHES	1.5-3m	1.0m	150mm PFT	30
A06	ASPUNDA NIGRA	BRISTLE NEST FERN	1.2m	2m	200mm PFT	20
A07	ALPHA TRICHOMY NANGARAY	WANDERED SHELL GRASS	1.0m	0.8m	200mm PFT	12
L02	SARAWAK PAUCIFLORA	BRUNIA	0.5-0.8m	0.5m	150mm PFT	200
L03	TRIALATANIA ANACARDIUM	PARADOXUS HONEYE	0.7m	1m	150mm PFT	300
GRASS/CROPPERS						
C01	CITRISOLEIA URUCILLAN	SEWER HIKES	0.3m	0.2m	200mm PFT	35
D01	DEWENEA NERIS	NARINE HONEYE	0.05-0.15m	0m	150mm PFT	300
Z01	ZEPHORA TRIANGULARIS	HELVET GRASS	0.1m	0.4m	150mm PFT	300

AREA	TYPE	ID
FRONT GARDEN	TREES	A01
	TREES	A02
	SHRUBS	L01
SIDE BOUNDARY GARDEN	TREES	C01
	SHRUBS	A02
EAST WALL GARDEN	TREES	A03
	TREES	A04
	TREES	A05
	TREES	A06
	TREES	A07
	SHRUBS	L02
	SHRUBS	L03
GROUNDCOVER		Z01
		D01

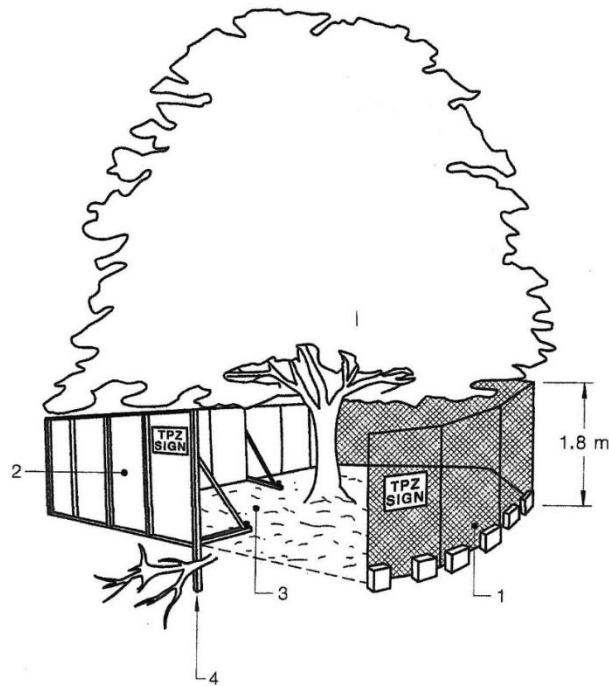
AREA	TYPE	ID
COURTYARD GARDEN	SHRUBS	A06
	SHRUBS	A07
	TREES	L01
POOL GARDEN	TREES	L02
	SHRUBS	A06
PLANTER	SHRUB	L01
	SHRUB	L02
DRIVEWAY	SHRUBS	D01
	SHRUBS	D02

REVISIONS

NO.	DATE	BY	REASON
1			
2			
3			
4			
5			
6			
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11			
12			
13			
14			
15			

PREPARED: BRISLASS SCHUBERT ARCHITECT
 DATE: 12.01.2025 SCALE: 1:100 @ A1
 SHEET NO: 23039
 PROJECT NO: DA.12

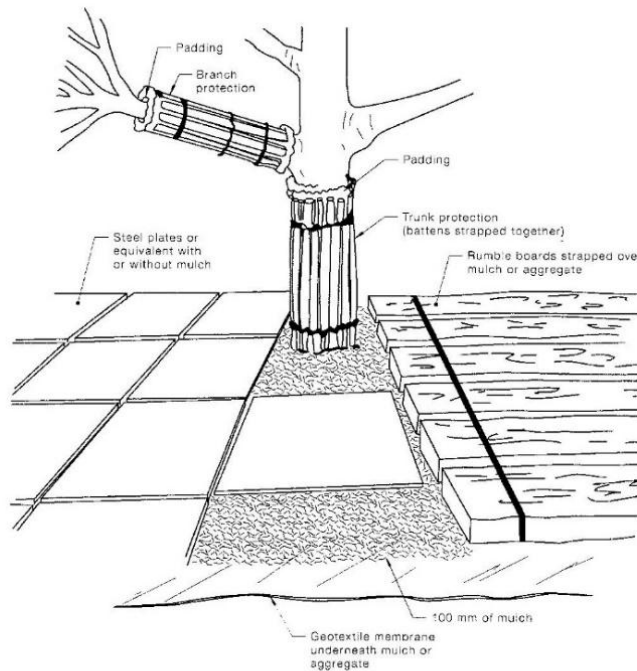
DATE: 12.01.2025 SCALE: 1:100 @ A1
 SHEET NO: 23039
 PROJECT NO: DA.12



LEGEND:

- 1 Chain wire mesh panels with shade cloth (if required) attached, held in place with concrete feet.
- 2 Alternative plywood or wooden paling fence panels. This fencing material also prevents building materials or soil entering the TPZ.
- 3 Mulch installation across surface of TPZ (at the discretion of the project arborist). No excavation, construction activity, grade changes, surface treatment or storage of materials of any kind is permitted within the TPZ.
- 4 Bracing is permissible within the TPZ. Installation of supports should avoid damaging roots.

FIGURE 3 PROTECTIVE FENCING



NOTES:

- 1 For trunk and branch protection use boards and padding that will prevent damage to bark. Boards are to be strapped to trees, not nailed or screwed.
- 2 Rumble boards should be of a suitable thickness to prevent soil compaction and root damage.

FIGURE 4 EXAMPLES OF TRUNK, BRANCH AND GROUND PROTECTION

