Arboriculture Impact Assessment Report 121 Pacific Rd Palm Beach



Site Assessment conducted by Aaron Erbacher and report prepared by: Geoffrey Ashton Arboriculture AQF Level 5 November 2021

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1 Summary

The author of this report was contacted by Daniel Boddam Architecture & Interior Design with a request for an assessment of trees in relation to a proposed development at 121 Pacific Rd Palm Beach NSW.

A site assessment was conducted on as well as a prior assessment 7th September 2019, the numbers from the original assessment were utilised for this report. 26 trees were assessed to be impacted or potentially impacted by the development. To proceed with the proposed development this report gives recommendations for the removal and replacement of six trees (Trees 1, 2, 3, 4, 20 and 21).

Trees 3, 20 and 21 are located in close proximity to development and have potential to be located in neighbouring properties. It is recommended negotiations with neighbours and governing body to ascertain if an agreement for removal is possible. If removal is not possible further non-invasive excavation assessment by and AQF level 5 arborist around the base of the subject trees is recommended to determine if the encroachments are possible without undermining the integrity and health of the trees. It is possible Tree 21 is within the subject property and a confirmation of the precise tree's location can allow for a more informed measurement of the impacts on each tree and the management of each tree. If Tree 3 is within the neighbouring property, the palm species exemption would not apply as the site has a heritage item listing⁹ which requires that an application with the governing body be lodged.

At the time of inspection Tree 1(*Phoenix canariensis*) was an exempt palm species and Tree 2 could be removed utilising the RFS 10/50 legislation if the existing back deck is an approved structure. Tree 2 was assessed to have a reduced life expectancy as there was significant borer activity in the main stem and a loss of approximately 50% of the live stem tissue was observed on the western side. Tree 14 is a small dead council verge tree, although removal is recommended the trees removal is not required for the development to proceed.

The retention and protection of the remaining trees was assessed as possible with AQF level 5 arborist assistance throughout the development. The construction of the proposed building driveway and plantings have the potential to impact on trees recommended for retention and improvised measures are provided throughout this report

to minimise the impacts on the subject trees. Protection measures for trees are outlined in the Tree Protection Plan (TPP) and the Tree Protection Plan Diagram (TPPD) attached to this report.

2 Disclosure Statement

Trees are living organisms that provide numerous benefits to the environment; Trees within an urban environment often pose some degree of risk, this risk must be weighed up against the benefits that trees provide. Often the risks associated from trees are minimal when compared to the commonly accepted risks associated with everyday living. Some examples would be commuting in a motor car, using a stairwell or crossing a road.

There is no warranty or guarantee expressed or implied that the subject trees are defect free or do not pose any risk of harm to persons or property. Visual Tree Assessment (VTA¹) as well as additional tree assessment techniques cannot identify or eliminate all tree defects and failure potential.

The Tree MD Pty Ltd provides professional tree management options in line with industry standards to allow customers or relative legislative bodies to make informed choices. The report findings, conclusions, specifications or recommendations are often based on information provided whether it is measurements, site plans, official reports or verbal discussions. The Tree MD Pty Ltd cannot guarantee the accuracy of this information provided although it may be taken in good will and utilised to make findings, conclusions, specifications or recommendations within this report.

Findings, conclusions, specifications and recommendations are given on the information provided or present at the time of inspection, the condition of the subject trees may change over time or in the event of adverse weather where further additional assessment is recommended. The Tree MD Pty Ltd or anyone employed or working on behalf of The Tree MD Pty Ltd is not to be held liable for any damage or loss due to decisions made or not made regarding findings, conclusions, specifications or recommendations provided in this report.

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3 Introduction

This tree report was commissioned by Kede Carboni with all requests made C/O Daniel Boddam Architecture & Interior Design in relation to a proposed development at 121 Pacific Rd Palm Beach NSW.

The author of this report conducted a site assessment on 7th September 2019, Aaron Erbacher conducted the second assessment on 1st September 2021. It was identified Tree 5 had been removed and Tree 17 has failed within the site. There was ample lighting for the purpose of assessment for this report.

The proposed plan documentation utilised for the assessment of this report-

Survey Plan-Mepstead & Associates first issue 13.03.19 modified 17.07.19 drw no. 4590- DET3 B², Demlakian Stormwater Plan Drawing SW03 Revision P2 Date Oct 2021 job no. 221154³, Wyer & Co Landscape Plan Job DA 01- 04 No. 21.035 Date 27/10/21 Drawing No. CP 01 - CP04⁴, Daniel Boddam Architecture & Interior Design Project 121 Pacific Rd Palm Beach Drawing No. DA 00, 100, 101, 102, 103, 104, 105, 200, 201, 300, 301, Rev 4 last update Date: 27/10/21⁵

The objective of this report is to provide a document that may be submitted with a proposed development application. The document provides recommendations that are in line with current arboriculture industry standards. The author of this report has no affiliation or conflict of interest regarding this development.

121 Pacific Rd Palm Beach NSW is Zoned Environmental living (E4) ⁶ and situated within the Northern Beaches Council and governed by the previous Pittwater Council's Local Environment Plan 2014⁷ & Development Control Plan⁸. A search of the council's website and Local Environment Plan could not find a heritage listing or conservation area zoning associated with the site⁹

The site is South West facing to Pacific Rd, and slopes away from the road to the North East. The trees are located throughout the property and neighbouring residence although concentrated along the front council verge. A soil analysis was not taken however the soil media appeared to be shallow and the site located on a rock shelf.

5 Methodology

The site inspection consisted of a Visual Tree Assessment (VTA¹). This technique assesses trees from ground level identifying features, symptoms and signs. VTA¹ is a useful tool but can be limiting as it does not inspect below ground or within the internal structure of a tree, it is also limited in the upper canopy where it may not identify concerns that may be seen from an aerial inspection.

Despite its limitations, VTA¹ is an industry recognised and accepted approach. Any further diagnostic or assessment methodology would only be incorporated where requested; further information has been obtained warranting the need for further investigation or a VTA¹ has identified the need for further investigation.

Additional methodology utilised within this report is to assess the site and implement practices that will establish a compliance with Australian Standard Protection of trees on development sites AS 4970 2009.

An overlay of the trees and their numbers onto the existing plan building footprint is provided within the Tree Protection Plan Site Diagram. This plan in conjunction with the measurements supplied within the Tree Profile Table will allow for a measured analysis of the trees canopy and rootsystems as well as the associated impacts. Where plans are not measured, or access is not achieved an estimated distance is utilised. Measurements of neighbouring trees were estimated and a thorough VTA was not conducted as access to the property was not obtained.

6 **Observations**

Trees 1, 2, 3, 4, 20 and 21 were assessed to have major encroachments from the proposed works and are recommended for removal. There may be grounds for retention of Trees 3, 20 and 21 however further investigation will be required. The ownership of Trees 3, 20 and 21 will require confirmation before the appropriate management of the trees can be determined.

Designs will require a soft landscape with flexible final planting locations throughout Tree Protection Zones. There is an above existing grade driveway design to reduce the impacts on significant trees however it is identified the current pathway at the front of the property appears to be below existing ground level, this area has an old retaining wall. If the driveway was constructed below grade, it would be a major encroachment on Trees 4, 11, 12 and 13 The encroachment on Tree 13 is within the formulated structural root system however above grade construction allows for the retention of root systems within this area.

Trees 1 and 2 are assessed to have major encroachments from the pool and landscape and due to the encroachment removal is recommended. Tree 1 was identified to be an exempt palm species at the time of inspection. Tree 2 was assessed to have a reduced life expectancy due to the 50% loss of live tissue and borer activity along the main stem. Tree 3 is possibly a shared tree, it is within a proximity to the development, and further investigation will be required if the tree is to be retained. There is a site heritage listing for the neighbouring property and if the tree is located within that property as identified on the survey, then necessary application along with owners' permission will be required before the tree can be removed.

Tree 4 was assessed to incur major encroachments from the proposed works which are accumulative from the driveway carpark and building footprint. All though there is potential to retain the tree, the tree has average structural

form and will significantly limit access to the front of the development. Tree 19 is a neighbouring tree and a substantial specimen; other trees fall within the Tree Protection Zone of the subject tree. Additional trees along the northern property boundary were considered less significant however will require protection and flexible installation of landscape and fencing.

7 Discussion

Potential impacts on the trees are determined by the encroachment of the proposed development. Trees that are imposed on with major encroachments are often recommended for removal however a governing body may request that a retention option be placed on certain trees, this would require alterations to the proposed plan and that additional tree protection measures and possible further investigation may be implemented. Measurements are not always accurately defined as to the location of trees in relation to the development so estimated distances are utilised when an accurate measurement is not provided.

The proposed building footprint was not a major encroachment on any trees to be retained however the authorisation to remove any tree is subject to the property owner and governing bodies consent. If retention of Trees 3, 20 and 21 is requested further investigation will be required. These investigations would have to ensure the root systems and excavation required in close proximity to Tree 3 will not have significant impact on the tree and that the precise location of Trees 20 and 21 are not major encroachments or significant root systems will not require removal in order to construct the proposed building and surrounds. The precise location of the subject trees within the survey and site plan will allow for more accuracy when measuring the potential impacts from the proposed works.

Proposed retaining walls, the pathway and the driveway will need to be modified to above existing grade construction within Tree Protection zones to reduce potential root severance and reduce the encroachments on trees within the surrounding area. Porous pavement was not recommended for the driveway although a governing body may request this be in place of the hard surface. It is paramount for the retention of the significant trees at the front of the property that all protection measures are implemented and only when necessary any minor root pruning (<40mm), if required is to be overseen by the Site Arborist and is to be conducted in accordance with root protection during works (AS 4373 2007 Section 4.5.4) and the Australian Standard Pruning of Amenity Trees AS 4373 2007¹⁰.

Non-invasive investigation by an AQF level 5 arborist utilising hand tools or other tools such as an air knife or hydro vac can determine a final location of proposed planting to avoid significant root systems. The flexible location of the plantings will reduce the impacts on trees to be retained.

8 Recommendations

To carry out the proposed development an application should be lodged to the governing body for the removal/replacement of six trees (Trees 1, 2, 3, 4, 20 and 21) which consist of five medium STARS retention value trees (Trees 1, 2, 3, 20 and 21) and one low STARS retention value tree (Tree 14) that is on the council verge may also be requested although not required for the proposed development to proceed.

Prior to application ownership of each tree is to be confirmed to seek the necessary permission and approval process, it is identified there is a heritage item listing on the neighbouring property 119 Pacific Rd and exempt species listings do not apply to any tree within the site.

Plans are to be adjusted to show above grade construction within any Tree Protection Zone of trees to be retained. Non-invasive investigation by an AQF level 5 arborist utilising hand tools or other tools such as an air knife or hydro vac can determine a final location of the proposed piers or plantings to avoid significant root systems.

As per Tree Protection Plan and Tree Protection Plan Site Diagram an AQF 5 level arborist (Site Arborist) is to establish and oversee all works in the Modified Tree Protection Zones as well as assess tree health and record compliance/non-compliance at each stage of development as per Australian Standard Protection of trees on development sites AS 4970 2009. The elevation of the driveway above grade and the encroachment from the proposed structure within Tree Protection Zones will require restrictive measures throughout the development process.

Root pruning is to be only on minor woody root systems(<40mm) and is to be overseen by the Site Arborist and is to be in accordance with Root protection during works (AS 4373 2007 Section 4.5.4) as well as the Australian Standard Pruning of Amenity Trees AS 4373 2007¹². If council permits, the arborist removing the trees is to have a minimum certificate 3 in arboriculture; the arborist must have Workers Compensation insurance and Liability insurance with all work complying with the Amenity Tree Industry Code of Practice and the NSW Work Health and Safety Act 2011.¹¹

9 Appendix A Tree Protection Plan Diagram



10 Appendix B Tree Profile Table

Tree no.	Genus Species Common Name	STARS© RATING	STARS© Life Exp.	Structure	Health	Age Class	Height(M)	Canopy N	Canopy E	Canopy S	Canopy W	Est. Encr.	SRZ	TPZ	DAB (M)	DBH Stem1	Notes/Comments	Recommendations
1	Phoenix Palm Phoenix canariensis	Medium The tree is in good condition with good vigour, the tree has a form typical of its species, and the tree provides a fair contribution to the visual character of the local area.	Long	Good	Good	Μ	10	3	3	3	3	100	3.04	8.64	0.82	0.72	16.6m from rear corner of existing house	Remove/Replace
2	Spotted Gum Corymbia maculata	Medium The tree is in fair condition with good vigour, the trees growth is moderately restricted, and the tree provides a fair contribution to the visual character of the local area.	Short	Average	Average	Μ	16	6	5	6	10	100	3.20	10.32	0.92	0.86	10.8m from existing house, growing at base of rock retaining wall, short lower stem with wound up n side to 2m where stem divides into 2, large swelling on stem just below stem division, many borer holes present within wound, typical dead wood	Remove/Replace
3	Phoenix Palm Phoenix canariensis	Medium The tree is in good condition with good vigour, the tree has a form typical of its species, and the tree provides a fair contribution to the visual character of the local area.	Long	Good	Good	Μ	11	3	3	3	3	45.09	2.71	6.48	0.62	0.54	growing in fence line between properties on top of sandstone retaining wall, 9m from rear of house. Unlikely to be significant root systems due to elevation within rock face.	Protect Arborist supervision when working within TPZ, potential root pruning in accordance with AS4373-2007

Tree no.	Genus Species Common Name	STARS© RATING	STARS© Life Exp.	Structure	Health	Age Class	Height(M)	Canopy N	Canopy E	Canopy S	Canopy W	Est. Encr.	SRZ	TPZ	DAB (M)	DBH Stem1	Notes/Comments	Recommendations
4	Grey Ironbark Eucalyptus paniculata	Medium The tree is in good condition with good vigour, the tree has a form typical of its species, and the tree provides a fair contribution to the visual character of the local area.	Long	Average	Good	Μ	20	7	9	10	4	30	2.65	7.20	0.59	0.60	1.5m from driveway, no grade changes to proposed driveway. Encroachment from proposed building	Protect Arborist supervision when constructing within TPZ, root pruning in accordance with AS4373-2007 Flexible planting locations to avoid significant rootsystems
6	Sydney Red Gum Angophora costata	Medium The tree is in good condition and good vigour, the tree is locally indigenous, and the tree provides a fair contribution to the visual character of the local area.	Short	Good	Good	Μ	10	4	5	1	6	0.00	1.94	2.76	0.28	0.23	1.5m from road	Protect, Flexible planting locations
7	Grey Ironbark Eucalyptus paniculata	High The tree is in good condition and good vigour, it has a form typical of its species and the tree is visually prominent and visible for a considerable distance.	Long	Good	Good	Μ	35	10	7	11	12	0.00	2.90	7.08	0.73	0.59	1.5m from road, on neighbouring side of fenceline	Protect, Flexible planting locations to avoid significant rootsystems
8	Spotted Gum Corymbia maculata	Medium The tree is in good condition and good vigour, the tree is locally indigenous, and the tree provides a fair contribution to the visual character of the local area.	Medium	Good	Good	Μ	25	7	2	3	5	0.00	2.39	5.04	0.46	0.42	3m from road Proposed retaining wall just outside of SRZ	Protect, Flexible planting locations to avoid significant rootsystems above grade driveway construction with protective measures in place

Tree no.	Genus Species Common Name	STARS© RATING	STARS© Life Exp.	Structure	Health	Age Class	Height(M)	Canopy N	Canopy E	Canopy S	Canopy W	Est. Encr.	SRZ	TPZ	DAB (M)	DBH Stem1	Notes/Comments	Recommendations
9	Stringy bark Eucalyptus spp.	Medium The tree is in good condition and good vigour, the tree has a form typical of its species, and the tree provides a fair contribution to the visual character of the local area.	Medium	Good	Good	Μ	14	5	6	5	6	0.00	2.67	5.52	0.60	0.29	growing 2m from road, 0.4from stone retaining wall Proposed retaining wall just outside of SRZ	Protect, Flexible planting locations to avoid significant rootsystems above grade driveway construction with protective measures in place
10	Spotted Gum Corymbia maculata	Medium The tree is in good condition and good vigour, the tree is locally indigenous, and the tree provides a fair contribution to the visual character of the local area.	Medium	Good	Good	Μ	18	7	6	6	4	0.00	2.18	3.36	0.37	0.28	0.5m from road,0.4m from T11, grows through canopy of T11, branch between melds trees together, companion tree.	Protect, Flexible planting locations to avoid significant rootsystems above grade driveway construction with protective measures in place
11	Spotted Gum Corymbia maculata	Medium The tree is in good condition and good vigour, the tree is locally indigenous, and the tree provides a fair contribution to the visual character of the local area.	Medium	Good	Good	Μ	20	8	8	9	7	0.00	2.74	6.84	0.64	0.57	1.2from road and 3m from driveway	Protect, Flexible planting locations to avoid significant rootsystems above grade driveway construction with protective measures in place
12	Grey Ironbark Eucalyptus paniculata	Medium The tree is in fair condition and good vigour, the tree is locally indigenous, and the tree provides a fair contribution to the visual character of the local area	Short	Average	Good	Μ	13	4	3	2	5	7.84	1.75	2.04	0.22	0.17	growing 1m from road, 1.5 from driveway	Protect, Flexible planting locations to avoid significant rootsystems above grade driveway construction with protective measures in place

Tree no.	Genus Species Common Name	STARS© RATING	STARS© Life Exp.	Structure	Health	Age Class	Height(M)	Canopy N	Canopy E	Canopy S	Canopy W	Est. Encr.	SRZ	TPZ	DAB (M)	DBH Stem1	Notes/Comments	Recommendations
13	Grey Ironbark Eucalyptus paniculata	High The tree is in good condition and good vigour, it has a form typical of its species and the tree is visually prominent and visible for a considerable distance.	Long	Good	Good	Μ	34	12	12	8	10	0.00	3.66	14.76	1.27	1.23	growing 1.7m from road, 1.5m from driveway, single stem to 2m dead wood, hangers, large first order on sw side removed approx 0.55, cavity in cut Driveway replacement is within SRZ and will need to be above grade within the TPZ Minimal encroachments if above grade	Protect, Flexible planting locations to avoid significant rootsystems above grade driveway construction with protective measures ir place
14	Spotted Gum Corymbia maculata	Low	Short	Poor	Poor	М	9	1	1	1	3	0.00	1.53	1.56	0.16	0.13	most of crown dead	Remove/Replace
15	Cabbage Tree Palm Livistona australis x3	Medium The tree is in good condition and good vigour, the tree is locally indigenous, and the tree provides a fair contribution to the visual character of the local area.	1 Long >40years	Good	Good	Μ	0 to 5	2	2	2	2	0.00	2.13	3.00	0.35	0.25	A close proximity to fenceline although no proposed fenceline	Protect, Flexible planting locations to avoid significant rootsystems
16	Spotted Gum Corymbia maculata	Medium The tree is in good condition and good vigour, the tree is locally indigenous, and the tree provides a fair contribution to the visual character of the local area.	Medium	Good	Good	Μ	27	7	5	6	7	0.00	2.55	5.76	0.54	0.48	growing on or close to fence line, 8.2m from driveway	Protect, Flexible planting locations to avoid significant rootsystems
18	Tuckeroo Cupaniopsis anacardioides	Medium The tree is in good condition and good vigour, the tree is locally indigenous, and the tree provides a fair contribution to the visual character of the local area.	Medium	Good	Good	Μ	8	4	3	4	3	0.00	1.53	1.68	0.16	0.14	on or close to boundary	Protect Flexible planting locations to avoid significant rootsystems

Tree no.	Genus Species Common Name	STARS© RATING	STARS© Life Exp.	Structure	Health	Age Class	Height(M)	Canopy N	Canopy E	Canopy S	Canopy W	Est. Encr.	SRZ	TPZ	DAB (M)	DBH Stem1	Notes/Comments	Recommendations
19	Spotted Gum Corymbia maculata	High The tree is in good condition and good vigour, it has a form typical of its species and the tree is visually prominent and visible for a considerable distance.	1 Long >40years	Good	Good	М	25 to 30	6	9	9	10	Build 7.4	3.09	8.40	0.85	0.70	Neighbours tree, other trees within TPZ. 4-5m from corner of building. Garden construction has encroachments on tree. Proposed construction just outside of SRZ.	Protect Arborist supervision when constructing within TPZ, root pruning in accordance with AS4373-2007 Flexible planting locations to avoid significant rootsystems
20	Tuckeroo Cupaniopsis anacardioides	Medium The tree is in good condition and good vigour, , the tree has a form typical of its species, and the tree provides a fair contribution to the visual character of the local area.	Long	Good	Good	Μ	10	3	3	1.5	3	25	1.5	2	0.21	0.16	on or close to boundary	Protect Arborist supervision when constructing within TPZ, root pruning in accordance with AS4373-2007 Flexible planting locations to avoid significant rootsystems
21	Washingtonia spp.	Medium The tree is in good condition and good vigour, the tree has a form typical of its species, and the tree provides a fair contribution to the visual character of the local area.	Long	Good	Good	М	8.00	1.50	1.50	1.50	1.50	40		3.6	0.30	0.30	on or close to boundary	Protect Arborist supervision when constructing within TPZ, root pruning in accordance with AS4373-2007 Flexible planting locations to avoid significant rootsystems
22	Spotted Gum Corymbia maculata	Medium The tree is in average condition and good vigour, the tree has a form typical of its species, and the tree provides a fair contribution to the visual character of the local area.	Long	Average	Good	М	8.00	3.50	4.00	1.50	0.00	6	1.94	2.64	0.28	0.22	1-2m in from fenceline	Protect Arborist supervision when constructing within TPZ, root pruning in accordance with AS4373-2007 Flexible planting locations to avoid significant rootsystems

Tree no.	Genus Species Common Name	STARS© RATING	STARS© Life Exp.	Structure	Health	Age Class	Height(M)	Canopy N	Canopy E	Canopy S	Canopy W	Est. Encr.	SRZ	TPZ	DAB (M)	DBH Stem1	Notes/Comments	Recommendations
23	Wattle <i>Acacia sp.</i>	Low The tree has a form typical of its species, The tree is a young specimen that is easily replaceable. The tree provides a minor contribution to the local area.	Short	Good	Good	1	6.00	2.00	1.50	1.50	1.00		1.5	2	0.11	0.09	0.5m from fence line in neighbouring prop, poor D-H ratio	Protect Arborist supervision when constructing within TPZ, root pruning in accordance with AS4373-2007 Flexible planting locations to avoid significant rootsystems
24	Turpentine Syncarpia glomulifera -	Medium The tree is in good condition and good vigour, the tree has a form typical of its species, and the tree provides a fair contribution to the visual character of the local area.	Medium	Good	Good	Μ	8.00	5.00	3.0	2.5	3.5		2.34	4.24	0.45	0.35	neighbouring tree,2.5m from fenceline, 0.5-1m down from existing level of subject property	Protect Arborist supervision when constructing within TPZ, root pruning in accordance with AS4373-2007 Flexible planting locations to avoid significant rootsystems
25	Eucalypt <i>Eucalyptus sp</i>	Low The tree has a form asymmetric for, The tree is a young specimen that is easily replaceable. The tree provides a minor contribution to the local area.	Medium	Poor	Average	Μ	9.00	6.00	4.00	0.00	1.00		2.25	3.84	0.40	0.32	neighbouring tree,1m from fenceline, 0.5 down from existing level of subject property, whole lower stem grows east then corrects/ optimises in a northerly direction	Protect Arborist supervision when constructing within TPZ, root pruning in accordance with AS4373-2007 Flexible planting locations to avoid significant rootsystems
26	Loquat Eriobotrya japonica	Low The tree has a form typical of its species, The tree is a young specimen that is easily replaceable. The tree provides a minor contribution to the local area	Medium	Good	Good	Μ	7.00	3.00	3.50	2.50	2.00		1.68	2	0.20	0.16	neighbouring tree,1m from fence line, multiple stems	Protect Arborist supervision when constructing within TPZ, root pruning in accordance with AS4373-2007 Flexible planting locations to avoid significant rootsystems

Tree no.	Genus Species Common Name	STARS© RATING	STARS© Life Exp.	Structure	Health	Age Class	Height(M)	Canopy N	Canopy E	Canopy S	Canopy W	Est. Encr.	SRZ	TPZ	DAB (M)	DBH Stem1	Notes/Comments	Recommendations
27	Casuarina sp.	Medium The tree is in good condition and good vigour, , the tree has a form typical of its species, and the tree provides a fair contribution to the visual character of the local area.	Medium	Good	Good	Μ	10.00	2.50	1.00	1.50	3.00		2.13	3.36	0.35	0.28	neighbouring tree,2.5-3m from fenceline, 1.5-2m from subject property level	Protect Arborist supervision when constructing within TPZ, root pruning in accordance with AS4373-2007 Flexible planting locations to avoid significant rootsystems
28	Turpentine Syncarpia glomulifera -	Medium The tree is in good condition and good vigour, , the tree has a form typical of its species, and the tree provides a fair contribution to the visual character of the local area.	Medium	Good	Good	Μ	9.00	4.00	4.00	1.50	1.00		2.13	3	0.35	0.25	neighbouring tree, 2.5 from fenceline, 1.5-2m from subject property level	Protect Arborist supervision when constructing within TPZ, root pruning in accordance with AS4373-2007 Flexible planting locations to avoid significant rootsystems

11 Appendix C Site Images











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23	
24	
25	In Background



12 Appendix D Glossary

Visual Tree Assessment (VTA)	A systematic method of tree assessment (developed by Claus Mattheck & Helge Breloer) using biological and biomechanical indicators to evaluate overall vitality and structural integrity of a tree.
AQF Level 5 Arborist	An Arborist with a AQF level 5 qualification such as a Diploma in Arboriculture ¹⁰ This with relevant experience enables the person to perform the tasks required by the standard AS 4373 2007 and legislative bodies
Arborist ¹¹	An Arborist with a AQF level 3 qualification ¹² or above of equivalent recognised and relevant experience that enables the person to perform the tasks required by the standard AS 4373 2007 and legislative bodies
Tree	As determined by the Burwood Council Tree Preservation Order.
Tree Worker	A worker who through related training (minimum AQF level 2 in Arboriculture) or equivalent recognised and relevant on the job experience has demonstrated competence in pruning in accordance to the standard AS 4373 2007
Selective pruning	The removal of target branches
Dead wooding	The removal of dead branches
Non-invasive excavation	Excavation that is carried out without damage to a trees rootsystem. This can be the careful use of hand tools or may utilise hydraulic jetting or an Airknife to reduce the amount of labour required.
Tree Protection Zone (TPZ) Or Modified Tree Protection Zone	A specified area at a given distance from the trunk set aside for the protection of a trees root system and canopy during land development works to ensure the long term viability and stability of a tree, calculated in accordance with AS 4970:2009.
Canopy	The crown of a tree, comprising all of the foliage and branches
Pruning	The selective removal of branches, severed at the branch collar near the junction with another branch in accordance with Natural Target Pruning techniques as specified in AS4373:2007.
Structural Root Zone (SRZ)	The Structural Root Zone is located within the Tree Protection Zone; it provides the bulk of mechanical support and anchorage for the tree.

13 Appendix E – IACA Significance of a Tree Assessment (Stars)



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.

4. 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.

Table 1.0 Tree Retention Value - Priority Matrix



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, <u>www.iaca.org.au</u>

14 Appendix F – Tree Protection Plan

The employment of a Site/Project Arborist is required to oversee tree protection measures prior to any work. The Site/Project Arborist is to perform site inspections monthly as well as site inspections at the completion of each stage of the development. These inspections are to monitor tree health, the impact on the trees and to assess the TPP is implemented, the site arborist may implement further protective measures or remove measures that are no longer required.

If any noncompliance is identified with the TPP it is to be documented by the Site/Project Arborist and will require compliance and rectification. All non-compliances are to be reported to the site supervisor, owner and certifying body.

These site visits may incorporate remedial activities such as but not limited to the rectification of noncompliance, watering, pest monitoring and pest treatment. The site arborist may be required on site to oversee additional works when working in the Tree protection Zones.

There is to be a site diary established and kept on site where all site visits are documented by the site arborist and any work within the tree protection zone recorded. A duplicated copy is to be sent to the certifier and site supervisor. Any deviation from the site plan should also be recorded.

Pre-Construction

A pre-construction meeting should be attended by the Site Manager, Site Arborist and all contractors and employees that access the site to introduce the Tree Protection Plan.

The Site/Project Arborist is to confirm the location of the trees and identify the pruning works or protection measures that council has permitted following council consent. This is as per council decision which may vary from this report. Confirmation of tree ownership and owner consent will be required. If a tree proposed for removal requires retention further investigation will be required to determine if the impacts on the subject tree are acceptable and are no of detriment to the tree.

A modified TPZ will be required with measures undertaken at the Site Arborist discretion. These measures will be required to allow for access in a closer vicinity to the trees to be retained without causing damage to the trees. This will require maintaining the restrictions that would be implemented within the Tree Protection Zone. 1.8m steel mesh fencing as per Australian Standard Protection of trees on development sites AS 4970 2009 may be utilised however modified TPZ's will incorporate the use of load sharing boards trunk protection and limit machinery. This can be adjusted by the site arborist.

Access to the site is through the TPZ of multiple trees and the early construction of the driveway could be an option to reduce the requirement for load sharing boarding. The access to the site with machinery has the potential for significant impacts on the surrounding trees, methodology statements and construction designs are to be subject to approval or decline by the site arborist. The removal of the existing driveway or the placement of fill will have to be carried out without damage or compaction to the soil and root systems within this area.

There is to be signage visible from the worksite stating -

"Caution Modified Tree Protection Zone"

The Signage should comply with Australian Standard As 1319. There is to be additional signage that has the site arborist contact details that include a contact number and specifying these prohibited activities-

No Machinery

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- No storage of any kind
- No disposal of waste
- No Chemicals
- No excavation without Site Arborist supervision
- No Pruning to the tree canopy or root system without Site Arborists supervision
- No Site Facilities

Site Establishment

The project site arborist is to monitor and report the impacts of temporary infrastructure. Tree health and signs and symptoms are to be recorded, with the Site Arborist to modifying any protection methods as necessary and documenting these measures within the site diary.

The Construction or Site Management Plan should be checked for compliance with the TPP, the site shed stockpiling, <u>sediment control</u> maybe possible concerns. Trees along the street that are assessed as unlikely to be affected should still be assessed as to potential impacts imposed from the development.

Any demolition such as the retaining walls or the current driveway within the Tree Protection Zones is to be subject to the Site Arborist approval or decline and is to be carried out with the Site Arborist supervision.

Any excavation within the TPZ of any tree to be retained will require Site Arborist discretion and if any root systems are observed they are to be pruned or protected in accordance with Australian Standard Pruning of Amenity Trees AS 4373 2007.

Construction Work

The project arborist is to monitor the impacts on the trees from construction; the protection measures shall remain in place with any deviation noted in the site diary. Assessment for compliance or noncompliance with the TPP is to be maintained. Tree health signs and symptoms should be recorded.

Landscape works

Any below grade excavation within the allocated Tree Protection Zones is to be overseen by the Site Arborist. Planting locations are to be flexible to avoid significant root systems, if any significant root systems are observed an alternative planting location is to be utilised.

Practical Completion

Upon the completion all tree protection measures are to be documented and removed. The documentation of the trees condition is to be recorded.

Final Certification

The project arborist is to assess the tree and environment with recommendations given for any remedial action.

Following any remedial action an inspection is to be carried out where the project arborist is to certify the compliance with the approved TPP and tree protection measures. The certification is to state the condition

of the trees as well as any deviations from the tree protection measures and their impact on the trees.



Australian Standard Protection of trees on development sites AS 4970 2009



An example of fencing that is to be included as per Tree Protection Plan

15 Appendix G Measured Encroachments



16 Bibliography/References

² Survey Plan-Mepstead & Associates first issue 13.03.19 modified 17.07.19 drw no. 4590- DET3 B

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<sup>6</sup> Planning Maps . 2017. Planning Maps . [ONLINE] Available
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at: https://legislation.nsw.gov.au/#/view/EPI/2014/320/maps [Accessed 8th November 2021].
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<sup>7</sup> Pittwater LEP 2014 | Northern Beaches Council. 2017. Pittwater LEP 2011 | Northern Beaches Council. [ONLINE] Available at: <u>hhttps://legislation.nsw.gov.au/#/view/EPI/2014/320/full</u>. [Accessed 8th November 2021].
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<sup>8</sup> DCP | Northern Beaches Council. 2017. DCP 2011 | Northern Beaches Council. [ONLINE] Available
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¹² Australian Standard Pruning of Amenity Trees AS 4373 2007

¹ Matheck, C. Updated Field Guide For Visual Tree Assessment. Karlsruhe: Forschungszentrum Karlsuhe, 2007.

³ Stormwater Plan Drawing SW03 Revision P2 Date Oct 2021 job no. 221154

⁴ Wyer & Co Landscape Plan Job DA 01- 04 No. 21.035 Date 27/10/21 Drawing No. CP 01 - CP04

⁵ Survey Plan-Mepstead & Associates first issue 13.03.19 modified 17.07.19 drw no. 4590- DET3 B, Envirotech stormwater date 20.09.2019 job no. 19-8034-A1, Wyer & Co Landscape Plan Job No. 19.011 Date 18/11/19 Drawing No. CP 01 - CP04, Daniel Boddam Architecture & Interior Design Project 121 Pacific Rd Palm Beach Drawing No. DA100, 101, 102, 104, 200, 201, 300 Rev 2 Date: 01.11.19

at: <u>https://eservices.northernbeaches.nsw.gov.au/ePlanning/live/pages/plan/book.aspx?exhibit=PDCP [</u>Accessed 09th October 2019].

⁹ NSW Legislation. 2019. NSW Legislation. [ONLINE] Available at: <u>https://legislation.nsw.gov.au/maps/aa9b1d6e-cbf5-4f8e-b9b8-d0bbc5a4ad83/6370_COM_HER_015_010_20150924.pdf</u> [Accessed 8th November 2021].

¹⁰ Australian Standard Pruning of Amenity Trees AS 4373 2007

¹¹ WorkCover. 2016. *Home - WorkCover*. [ONLINE] Available at: http://www.workcover.nsw.gov.au. [Accessed 8th November 2021].