

ARBORICULTURAL IMPACT ASSESSMENT (AIA) REPORT

Prepared For:	Sean McNeill (On behalf of the owners) Rise Projects Pty. Ltd.
Site Address:	24 Wandeen Rd, CLAREVILLE, NSW, 2107
Inspection Dates:	5 th August 2020
Report Date:	7 th September 2020



Figure 1: The site as seen from the street.

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1	Contents	
1	Introduction	1
1.1	Background	1
1.2	Definitions	2
1.3	Change log	2
1.4	Disclaimers	2
2	Methodology	3
3	Results	4
3.1	Desktop research	4
3.2	The Site	5
3.3	The Trees	5
3.4	The Development	6
3.5	Construction Impact to each tree	6
3.6	Discussion	8
4	Conclusion	9
5	Recommendation:	10
5.1	Trees for Retention	10
5.2	Trees for Removal:	11
5.3	Other recommendation:	12
6	Tree protection plan	13
6.1	Tree Protective Fencing:	13
6.2	Trunk Armouring:	14
6.3	Ground Protection:	14
	Appendix 1 – Tree Data Summary	15
	Appendix 2 - Tree identification and incursion potentials	16
	Appendix 3 – Photographs	17

1 Introduction

1.1 Background

- 1.1.1 Blues Brothers Arboriculture has been engaged by the architect on behalf of the owners, to inspect and report on trees for development purposes. A total of thirty-nine (39) trees were observed to be located on the site, or within five (5) metres of the property boundary forming the scope of works
- 1.1.2 A new dwelling is proposed to be located centrally to the vacant lot.
- 1.1.3 Information supplied and relied upon in the preparation of this report included:
- NSW Planning Portal data; Accessed 07/09/2020.
 - Architectural suite of plans, produced by Rise Developments; Issue B, Dated 31/08/2020 and inclusive:
 - Site plan,
 - Floor plans,
 - Cut/Fill plan,
 - Elevations,
 - Sections,
 - Perspectives,
 - Concept stormwater plan.
 - Detail survey produced by RHCO Surveying & Development consultants; Version A, Dated 05/08/2020.
 - Dial Before You Dig (DBYD) request; Job reference 20197878, requested 07/09/2020.
- 1.1.4 The use of these documents is acknowledged with thanks.

1.2 Definitions

- 1.2.1 **The Standard** refers to the Australian Standard AS4970:2009 – *Protection of trees on development sites*.
- 1.2.2 **The site** refers to the land within the proposed development site.
- 1.2.3 **A significant root** is defined as any woody root with a diameter of 30mm or larger.

1.3 Change log

- 1.3.1 Version 1 – Original.

1.4 Disclaimers

- 1.4.1 This report is considered limited to what could reasonably be seen from ground level only and expresses no commentary on changes which may have, or will, impact the trees or their environment outside the scope of works.
- 1.4.2 To assist with meetings with council, a short summary of findings was created prior to the writing of this AIA report. Views expressed within the preliminary summary were based on plans available at the time of writing which may or may not have been superseded at the writing of this report.

2 Methodology

- 2.1.1 Site attendance occurred on the 5th September 2020 in accompaniment with the Surveyor, Architect and Client.
- 2.1.2 The trees were visually inspected from ground level only in accordance with VTA (Visual Tree Assessment); a methodology derived by Mattheck and Breloer (1994)
- 2.1.3 Canopy Assessment included foliage condition (volume and colour); the presence of pests and diseases, dieback, deadwood and epicormic growth.
- 2.1.4 Tree condition included assessment of structural stability, previous pruning and any damage/disturbance which may have occurred.
- 2.1.5 No destructive or aerial investigations occurred to any tree.
- 2.1.6 Hollows, where found or suspected, were probed to ascertain their size and extent to assist in calculating ratios of notional cavity size and useful life expectancy.
- 2.1.7 Due to the number of trees requiring assessment and with respect for the surveyor, Each of the Trees was assigned a number and tagged with an aluminium tag. Tree numbering included within the supplied survey is reflective of the affixed tags for each tree.
- 2.1.8 Neighbouring trees were not tagged during assessment. Collaboration with the surveyor has allowed for neighbouring trees to be issued an "N" prefix of tree number.
- 2.1.9 Tree data is displayed in Appendix 1.
- 2.1.10 Appendix 2 – Plan Scale; Displays tree numbering for identification purposes (read in conjunction with Appendix 1); The tree protection zones (TPZ) represented by the green outer circle and the structural root zone (SRZ) inner red circle. Both TPZ and SRZ are plotted to scale in accordance with the standard.
- 2.1.11 Tree height and canopy width were estimated with the assistance of a Leica Disto X4 (Laser Distometer).

3 Results

3.1 Desktop research

- 3.1.1 Research from the NSW Planning portal revealed the following information for the properties:
- Zoning: E4 – Environmental Living
 - No heritage items are associated with the property.
 - Acid Sulfate Soils – Class 5.
 - Listed as part of a Terrestrial Biodiversity area.
- 3.1.2 In accordance with published directives of Northern Beaches Council, a protected tree is a tree meeting the following criteria¹:
- Has a height of 5m or more;
 - Not listed on the *Exempt Tree Species List*;
- 3.1.3 None of the assessed trees were listed in the Council significant tree register or listed under the Threatened species conservation Act 1995.
- 3.1.4 Interpretation of DBYD data indicates the existence of a Sydney Water Sewer main traversing the rear of the property.

¹ Northern Beaches Council: Trees on Private Land:
<https://www.northernbeaches.nsw.gov.au/planning-development/tree-management/private-land>

3.2 The Site

- 3.2.1 The site was located on the northern side of Taylor's Point in the Clareville locality. The vacant site demonstrated a distinct North-Westerly aspect and presented in a heavily vegetated state, particularly near the Northern Boundary.
- 3.2.2 The supplied survey indicated the presence of a sewer main traversing the property.
- 3.2.3 Both of the neighbouring properties appeared to be well developed. A 'terraced' landscape appearance was visible due to the presence of boundary retaining walls located on both Eastern and Western Boundaries.

3.3 The Trees

- 3.3.1 A total of thirty-nine (39) trees were assessed as part of the scope of works. These trees are comprised of the following:
- Twenty trees located within the site.
 - Fifteen neighbouring trees.
 - Four street trees.
- 3.3.2 The trees were seen to be in generally good health as a cohort despite some individual specimens which displayed poor scores of health.
- 3.3.3 Trees with low and moderate health scores were typically those which were subject to canopy crowding or were (or had been) affected by climbers or other biotic pest factors.
- 3.3.4 Various exempt species were noted on the site, some of which were not assessed. Of the assessed exempt species was one Chinese Elm (T5), Three street trees including two unidentified trees (T22 & T23) and an Illawarra Flame Tree (T24).
- 3.3.5 The cohort was dominated by mature Black She-Oaks (*Allocasuarina littoralis*). Many of these trees displayed signs of weak branch attachment (included bark) and elevated levels of canopy deadwood.
- 3.3.6 Trees of high significance were classed as mature and were either *Eucalyptus sp.* or *Corymbia maculata* (Spotted Gum).
- 3.3.7 TPZ and SRZ areas for each tree can be found on Appendices 1 & 2.

3.4 The Development

- 3.4.1 The supplied architectural suite of plans form the proposal for the construction of an entirely new dwelling to be located centrally to the previously vacant lot.
- 3.4.2 A three-storey dwelling is proposed on the site inclusive of a partially in-ground swimming pool, rear decks, an attached garage plus driveway to the street and associated landscaping.
- 3.4.3 Numerous trees will require removal to accommodate the development however consultation with the architect has resulted in a design which requires the removal of the least number of trees possible. Despite this, the loss of two high significance trees is unavoidable.

3.5 Construction Impact to each tree

- 3.5.1 The following trees are located within the development footprint and are not retainable based on the supplied plans:

Tree ID	Species	Retention Value	Notes / Comment
T7	<i>Allocasuarina littoralis</i> Black She-Oak	Low	Exposed heartwood at base of tree.
T8	<i>Pittosporum undulatum</i> Sweet Pittosporum	Exempt	
T9	<i>Eucalyptus resinifera</i> Red Mahogany	Moderate	A young mature tree.
T10	<i>Pittosporum undulatum</i> Sweet Pittosporum	Exempt	
T11	<i>Allocasuarina littoralis</i> Black She-Oak	Low	Suspected stability issues with this tree due to westerly lean & suspected ground uplift on the eastern side of the trunk. Remove irrespective of development.
T13	<i>Allocasuarina littoralis</i> Black She-Oak	Moderate	This tree has elevated levels of deadwood within the canopy.
T14	<i>Corymbia maculata</i> Spotted Gum	High	Located centrally to the site and likely to be affected by most if not all development.
T15	<i>Allocasuarina littoralis</i> Black She-Oak	Moderate	
T16	<i>Eucalyptus resinifera</i>	Moderate	A young mature specimen.
T18	<i>Allocasuarina littoralis</i> Black She-Oak	Low	
T24	<i>Brachychiton acerifolius</i> Illawarra Flame Tree	Exempt	STREET TREE Council approval for removal is required despite exempt status.

3.5.2 Trees located within immediate vicinity of development and likely to be impacted include:

Tree ID	Species	Retention Value	Notes / Comment
T5	<i>Ulmus parviflora</i> Chinese Elm	Exempt	Located at the base of rear stairs. May be removed irrespective of development. <i>Impact: Major.</i>
T6	<i>Allocasuarina littoralis</i> Black She-Oak	Low	Tree has an intertwined canopy and significant inclusion of codominant stems. <i>Impact: Major.</i>
T12	<i>Allocasuarina littoralis</i> Black She-Oak	Low	Low significance tree with likely encroachment of this tree's structural root zone. <i>Impact: Major.</i>
N15	<i>Pittosporum undulatum</i> Sweet Pittosporum	Exempt	Tree located within the property despite "N" numbering code. <i>Impact: Minor.</i>
T17	<i>Eucalyptus paniculata</i>	High	Large tree with a TPZ area covering much of the street frontage. This tree is likely to be impacted irrespective of the size of development on the property. <i>Impact: Major.</i>

3.5.3 The development is unlikely to impact any neighbouring trees due to adequate construction offsets from any respective TPZ areas.

3.6 Discussion

- 3.6.1 The removal of Tree 17 is proposed due to the degree of excavation required to accommodate the driveway. Alternative design options have been considered however design options are limited due to site topography and compliance with relevant engineering and planning codes.
- 3.6.2 Options regarding the translation of dwelling further down the site or to the west are unfeasible as these will cause impacts to neighbouring trees or impact multiple high significance trees within the site.
- 3.6.3 Tree 17 presented with a high degree of large diameter deadwood high within the canopy. Evidence of recent branch loss was noted within the canopy.
- 3.6.4 The proposed construction, in present form will equate to approximately 21% of the TPZ area with SRZ encroachment likely. Should the development proceed and the tree be retained it is likely that further branch loss could be expected, mainly due to excavation and coverage of the TPZ area irrespective of the use of tree sensitive construction techniques.

4 Conclusion

- 4.1.1 A total of thirty-nine (39) trees were assessed as part of the scope of works. The trees were seen to be in moderate to good health overall and otherwise in good condition.
- 4.1.2 Many of the assessed trees are located close to or within the proposed development area. A total of sixteen (16) trees are marked for removal for this reason. Many of the trees marked for removal are either exempt or of low or moderate significance.
- 4.1.3 Two trees of high significance are proposed for removal due to their location either within or close to the development footprint. Alternative development options have been explored by the architect however these are considered unfeasible due to engineering constraints or causing impact to other trees of high significance and/or neighbouring trees.
- 4.1.4 Development impacts to neighbouring trees requiring protection under the development are minor. Impacts to these trees will likely be limited due to associated landscaping.

5 Recommendation:

Based on the supplied plans and observations of tree health, it is recommended: -

5.1 Trees for Retention

5.1.1 It is recommended that the following trees be retained under development:

Tree ID	Species	Comments
N1-N14	Various – Refer Appendix 1	All neighbouring trees are recommended for retention.
T1-T4	<i>Corymbia maculata</i> & <i>Eucalyptus botryoides</i>	These are high retention trees located far enough from development such that minimal development impact is likely. The lightweight structure proposed within the TPZ of T4 is unlikely to have a major impact provided associated footings do not interact with significant roots.
T19-T21	<i>Corymbia maculata</i>	These are high retention value trees that are worthy of retention. Associated landscaping will have a minor impact to Trees 19 & 21. Excavation of footings to accommodate the driveway appears to have a major encroachment of Tree 20. With appropriate use of suspended and or cantilevered slab design, a minor encroachment is possible.
T22 & T23	<i>Unidentified</i>	These street trees are located sufficient distance from the development such that impacts will be minimal, mainly associated with landscaping.

5.1.2 It is recommended that all excavation required within the TPZ areas of any tree marked for retention is sensitive to possible root discovery. Significant roots, as defined in Section 1.2.3 play a critical role in a tree's health and stability. Efforts to retain these are recommended.

5.2 Trees for Removal:

5.2.1 The following trees are recommended for removal due to their location either within the building footprint or within the immediate vicinity such that the likelihood of long-term survival is unlikely.

Tree ID	Species	Retention Value	Notes / Comment
T7	<i>Allocasuarina littoralis</i> (Black She-Oak)	Low	Within development footprint. Not retainable.
T8	<i>Pittosporum undulatum</i> (Sweet Pittosporum)	Exempt	Within development footprint. Not retainable.
T9	<i>Eucalyptus resinifera</i> (Red Mahogany)	Moderate	Within development footprint. Not retainable.
T10	<i>Pittosporum undulatum</i> (Sweet Pittosporum)	Exempt	Within development footprint. Not retainable.
T11	<i>Allocasuarina littoralis</i> (Black She-Oak)	Low	Within development footprint. Not retainable. <i>Remove irrespective of development due to structural concerns.</i>
T13	<i>Allocasuarina littoralis</i> (Black She-Oak)	Moderate	Within development footprint. Not retainable.
T14	<i>Corymbia maculata</i> (Spotted Gum)	High	Within development footprint. Not retainable.
T15	<i>Allocasuarina littoralis</i> (Black She-Oak)	Moderate	Within development footprint. Not retainable.
T16	<i>Eucalyptus resinifera</i> (Red Mahogany)	Moderate	Within development footprint. Not retainable.
T18	<i>Allocasuarina littoralis</i> (Black She-Oak)	Low	Within development footprint. Not retainable.
T24	<i>Brachychiton acerifolius</i> (Illawarra Flame Tree)	Exempt	STREET TREE Within development footprint. Not retainable.
T5	<i>Ulmus parviflora</i> (Chinese Elm)	Exempt	Within immediate vicinity of proposed rear access.
T6	<i>Allocasuarina littoralis</i> (Black She-Oak)	Low	Within the vicinity of development. Removal recommended due to low significance and likelihood of needle drop into proposed pool.
T12	<i>Allocasuarina littoralis</i> (Black She-Oak)	Low	Low significance tree with likely encroachment of this tree's structural root zone.
N15	<i>Pittosporum undulatum</i> (Sweet Pittosporum)	Exempt	Within vicinity of proposed development. Tree of low visual appeal.

T17	<i>Eucalyptus paniculata</i> (Grey Ironbark)	High	Large tree with a TPZ area covering much of the street frontage. This tree is unretainable based on the degree of excavation required within the SRZ area and overall TPZ coverage (Despite tree sensitive excavation or conventional techniques).
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5.2.2 It is recommended that T11 (Black She-Oak) is removed irrespective of development. Observations made during inspection arise suspicion that the stability of this tree is suspect and that it is at risk of failure in the short term

5.3 Other recommendation:

5.3.1 Major encroachment of Tree 20:

It is recommended that the driveway be constructed by means of either partially cantilevered sections or through the use pier and beam sections. It is recommended that footings necessary for the construction of the driveway are located in a manner that is sensitive to tree roots which may or may not be discovered.

5.3.2 It is recommended that the site arborist is involved will ALL works requiring excavation within the TPZ area of any tree to be retained located within the vicinity of development. This includes neighbouring trees, landscaping design and installation.

6 Tree protection plan

Trees recommended for retention shall be subject to a tree protection plan consisting of the following. All recommendations are derived from the Australian Standard AS4970:2009 *Protection of Trees on development sites*. This standard is a valuable reference for those installing tree protection measures.

6.1 Tree Protective Fencing:

- 6.1.1 Neighbouring trees, N1-N14 can be adequately protected by standard site perimeter fencing associated with securing the site for construction. No further protection is required.

Reason: To restrict access to TPZ areas during development minimising impact to trees to be retained.

- 6.1.2 Trees T1-T3, T19 & T21-T23 shall be protected by protective fencing throughout the course of development with exception to the installation of landscaping features, subject to site arborist liaison.

Reason: To restrict access to TPZ areas during development minimising impact to trees to be retained.

- 6.1.3 Tree protective fencing shall be constructed of standard temporary site fencing panels. Fencing dimensions shall be aligned as close to the edge of the TPZ area as possible. Where clearance for construction is required, protective fencing shall act to restrict access to at least 75% of the tree's TPZ area. The site arborist shall be consulted where deviations from this clause are required.

- 6.1.4 The tree shall be located centrally to the fenced area. Fencing shall be located to allow adequate flexing of the tree to limit injury due to typical weather conditions (eg, strong winds).

- 6.1.5 Protective fencing does not need to be erected over existing hard-paved areas such as footpaths or roads. **Note:** Protective fencing must be contiguous to prevent access to the tree by construction workers.

- 6.1.6 Signage shall be affixed to the perimeter of protective fencing in a prominent position, visible from within the site. Signage shall include the site arborist's contact details and the wording:

*"TREE PROTECTION ZONE.
No access without Site Arborist approval."*

6.2 Trunk Armouring:

- 6.2.1 Tree T20 shall be protected by trunk armouring to a minimum height of 2m above existing grade.

Reason: To protect the tree located in close proximity to the proposed development.

- 6.2.2 Trunk armouring shall consist of the following:

- Wrapping of the trunk with Hessian or Geotech fabric to cushion against abrasion or bruising.
- Installation of timber battens (minimum dimension of 4x2") around the trunk with a minimum spacing of 80mm.
- Use of galvanised steel strapping to secure the battens.

- 6.2.3 Trunk armouring shall be installing in such a way that does not injure the tree. No nails, screws etc may be affixed to the trunk of the tree,

- 6.2.4 The site arborist shall provide further comment and advice of trunk armouring should assistance be required.

6.3 Ground Protection:

- 6.3.1 Due to the degree of slope across the slope, ground protection is not recommended due to an increased risk of land slip.

- 6.3.2 Despite this, it is recommended that any haul roads located on the site avoid TPZ areas of trees to be retained as much as possible.

Reason: To prevent root damage from vibration, heavy loads and increased soil compaction due to plant.



Appendix 1 – Tree Data Summary

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Tree Data Summary - 24 Wandee Rd, Clareville - Assessed 5/08/20																		
Tree ID	Species	Height (m)	Canopy dims n/s in metres	DBH (cm)	DGL (cm)	Foliage condition	Maturity	Trunk type	Trunk lean	Canopy Balanced	Past Pruning	Stability	Vigour	Canopy deadwood	Significance value	Notes	TPZ (M) Radius	SRZ (M) Radius
N1	<i>Corymbia maculata</i> (Spotted gum)	20+	26	60	70	Good	Mature	Single	Upright	Yes	No	Appears Stable	Moderate	5-10%	High	Deadwooding reqd	7.2	2.8
N2	Unidentified	18	10	45	50	Poor	Senescent	Single	Upright	Yes	Lower Limbs	Appears Stable	Poor	20+%	Very Low	Tree appears to be dying (95% dead) with intense canopy interaction.	5.4	2.5
N3	<i>Pinus pinaster</i> (Coastal Pine)	16	8	25	30	Good	Mature	Single	Bias SW	Yes	No	Appears Stable	Good	0-5%	Low		3.0	2.0
N4	<i>Corymbia maculata</i> (Spotted gum)	16	8	30	35	Good	Mature	Single	Upright	Bias NE	No	Appears Stable	Good	0-5%	Moderate		3.6	2.1
N5	<i>Cupressus</i> sp.	7	5	11	13	Good	Semi-Mature	Single	Upright	Yes	No	Appears Stable	Good	0-5%	Low	Immediately on boundary	1.3	1.4
N6	<i>Kentia palm</i>	3		0												Exempt species	0.0	0.0
N7	<i>Brachychiton acerifolius</i> (Illawarra Flame tree)	9	5	18	21	Good	Mature	Single	Upright	Yes	No	Appears Stable	Good	0-5%	Exempt		2.2	1.7
N8	<i>Corymbia maculata</i> (Spotted gum)	15	7	30	70	Good	Mature	Twin	Upright	Bias NW	Codominant stem	Appears Stable	Good	0-5%	Moderate		3.6	2.8
N9	<i>Corymbia maculata</i> (Spotted gum)	16	11	46	90	Good	Mature	Triple	Upright	Bias NW	No	Appears Stable	Good	0-5%	Moderate		5.6	3.2
N10	<i>Callistemon citrinus</i> (Crimson bottlebrush)	5	7	15		Good	Mature	Single	Bias N	Entirely N	Lower Limbs	Appears Stable	Good	0-5%	Low	Obstructed base	1.8	0.0
N11	<i>Grevillea robusta</i> (Black Wattle)	16	7	43	59	Good	Mature	Single	Upright	Entirely N	Lower Limbs	Appears Stable	Good	5-10%	Moderate		5.2	2.7
N12	<i>Corymbia maculata</i> (Spotted gum)	20+	18	110	160	Good	Mature	Single to 4m	Upright	Yes	No	Appears Stable	Good	5-10%	High	Deadwooding reqd	13.2	4.0
T1	<i>Corymbia maculata</i> (Spotted gum)	11	3	32	61	Poor	Mature	Single	Bias E	Yes	No	Appears Stable	Poor	10-15%	Low		3.8	2.7
T2	<i>Corymbia maculata</i> (Spotted gum)	30	20	52	70	Good	Mature	Single	Upright	Bias S	Minor upper	Appears Stable	Good	5-10%	High		6.2	2.8
T3	<i>Eucalyptus botryoides</i>	20	20	61	118	Good	Mature	Single	Upright	Yes	No	Appears Stable	Good	0-5%	High		7.3	3.5
T4	<i>Eucalyptus botryoides</i>	10	7	35	36	Good	Mature	Single	Bias E	Entirely E	No	Appears Stable	Good	0-5%	Low	Epicormic growth on trunk	4.2	2.2
T5	<i>Ulmus parviflora</i> (Chinese Elm)	6	3	14	16	Moderate	Mature	Single	Upright	Yes	No	Appears Stable	Fair	0-5	Low	Affected by climber	1.7	1.5
T6	<i>Allocasuarina littoralis</i>	8	6	26	32	Good	Mature	Single	Upright	Yes	No	Appears Stable	Good	5-10%	Low	Intertwined canopy, inclusion of codominant stems	3.1	2.1
T7	<i>Allocasuarina littoralis</i>	9	6	27	35	Good	Mature	Single	Bias N	Bias NE	Minor upper	Appears Stable	Good	5-10%	Moderate	Exposed heartwood @ base.	3.2	2.1
T8	<i>Pittosporum undulatum</i>	5	4	20	25	Good	Mature	Single	Upright	Yes	No	Appears Stable	Fair	5-10%	Low		2.4	1.8
T9	<i>Eucalyptus resinifera</i>	7	3	23	28	Good	Mature	Single	Upright	Yes	No	Appears Stable	Good	0-5%	Moderate		2.8	1.9
T10	<i>Pittosporum undulatum</i>	6	3	19	21	Moderate	Mature	Single	Bias N	Yes	No	Appears Stable	Fair	5-10%	Low	Exposed heartwood from base to 3m up Sth side of trunk.	2.3	1.7
T11	<i>Allocasuarina littoralis</i>	8	6	33	34	Good	Mature	Single	Bias West	Bias West	No	Stability su	Good	5-10%	Moderate	Westerly lean + suspected ground uplift on eastern flank of trunk - suspected that this tree may be at risk of failure on the short term - remove irrespective of development.	4.0	2.1
N13	<i>Grevillea robusta</i> (Black Wattle)	7	4	19	22	Good	Mature	Single	Upright	Yes	No	Unknown	Good	0-5%	Moderate		2.3	1.8
N14	<i>Pittosporum undulatum</i>	7	3	9	11	Good	Semi-Mature	Twin	Upright	Yes	No	Unknown	Good	0-5%	Low		1.1	1.3
N15	<i>Pittosporum undulatum</i>	4	6	19	21	Moderate	Mature	Single	Upright	Yes	Topped at 4m	Appears Stable	Fair	10-15%	Low		2.3	1.7
T12	<i>Allocasuarina littoralis</i>	9	2	21	22	Moderate	Mature	Single	Upright	Yes	No	Appears Stable	Poor	5-10%	Low		2.5	1.8

Tree Data Summary - 24 Wandeen Rd, Clareville - Assessed 5/08/20																		
Tree ID	Species	Height (m)	Canopy dims n/s in metres	DBH (cm)	DGL (cm)	Foliage condition	Maturity	Trunk type	Trunk lean	Canopy Balanced	Past Pruning	Stability	Vigour	Canopy deadwood	Significance value	Notes	TPZ (M) Radius	SRZ (M) Radius
T13	<i>Allocasuarina littoralis</i>	13	6	32	34	Good	Mature	Single	Upright	Yes	No	Appears St	Good	5-10%	Moderate		3.8	2.1
T14	<i>Corymbia maculata</i> (Spotted gum)	33	16	57	77	Good	Mature	Single	Upright	Yes	No	Appears St	Good	0-5%	High		6.8	3.0
T15	<i>Allocasuarina littoralis</i>	15	5	32	42	Good	Mature	Single	Upright	Yes	No	Appears St	Good	0-5%	Moderate		3.8	2.3
T16	<i>Eucalyptus resinifera</i>	13	7	17	20	Good	Mature	Single	Bias N	Bias NE	No	Appears St	Good	0-5%	Moderate		2.0	1.7
T17	<i>Eucalyptus paniculata</i> (Grey Iron Bark)	20+	20+	85	111	Good	Mature	Single	Upright	Yes	No	Appears St	Good	5-10%	High	Deadwooding required, multiple large dead branches are located high within the canopy. Signs of previous branch failure noted.	10.2	3.5
T18	<i>Allocasuarina littoralis</i>	6	5	18	21	Good	Mature	Twin	Upright	Yes	No	Appears St	Good	5-10%	Low		2.2	1.7
T19	<i>Corymbia maculata</i> (Spotted gum)	12	8	32	38	Good	Mature	Single	Upright	Bias NW	No	Appears St	Good	5-10%	Moderate	Deadwooding reqd	3.8	2.2
T20	<i>Corymbia maculata</i> (Spotted gum)	21	15	34	49	Good	Mature	Single	Upright	Yes	No	Appears St	Good	0-5%	High		4.1	2.5
T21	<i>Corymbia maculata</i> (Spotted gum)	9	7	25	28	Good	Mature	Single	Upright	Yes	No	Appears St	Good	0-5%	Moderate		3.0	1.9
T22	<i>unidentified</i>	4	3	18	21	Moderate											2.2	1.7
T23	<i>unidentified</i>	4	8	22	26	Moderate											2.6	1.9
T24	<i>Brachychiton acerifolius</i> (Illawarra Flame tree)	15	10	46	56	Good	Mature	Single	Upright	Yes	No	Appears St	Good	0-5%	Exempt		5.5	2.6



Appendix 2 - Tree identification and incursion potentials

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Appendix 3 – Photographs



Figure 2: Vegetation at the rear of the property was densely overgrown.



Figure 3: Vegetation in the neighbouring 26 Wandeen Road.



Figure 4: A view from the rear of the property looking towards Wandeen Rd.

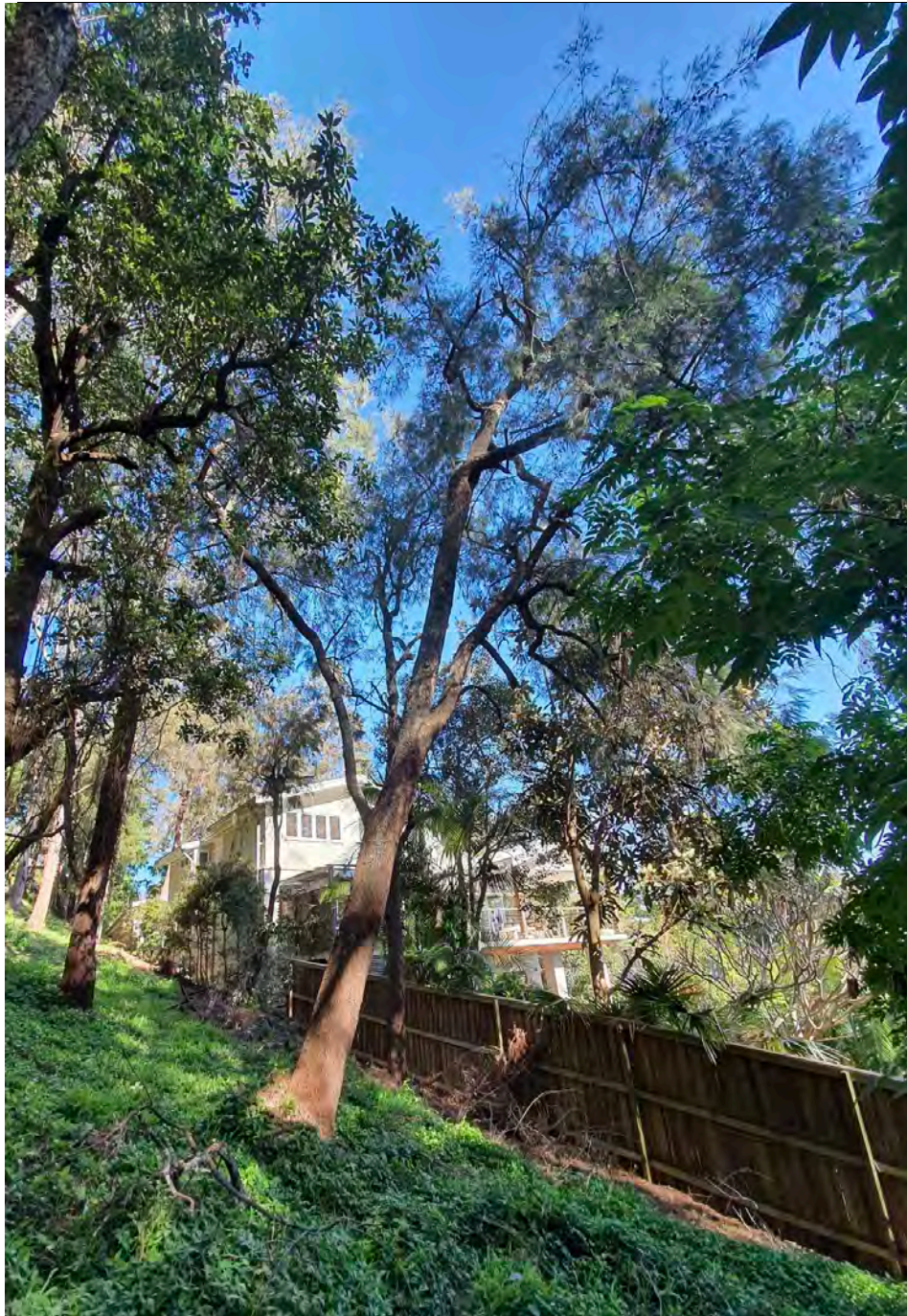


Figure 5: Tree 11 - To be removed irrespective of development.



Figure 6: A view towards Wandeen Rd. taken from approximately T11.



Figure 7: T14 (Spotted Gum) recommended for removal due to location within the proposed development.

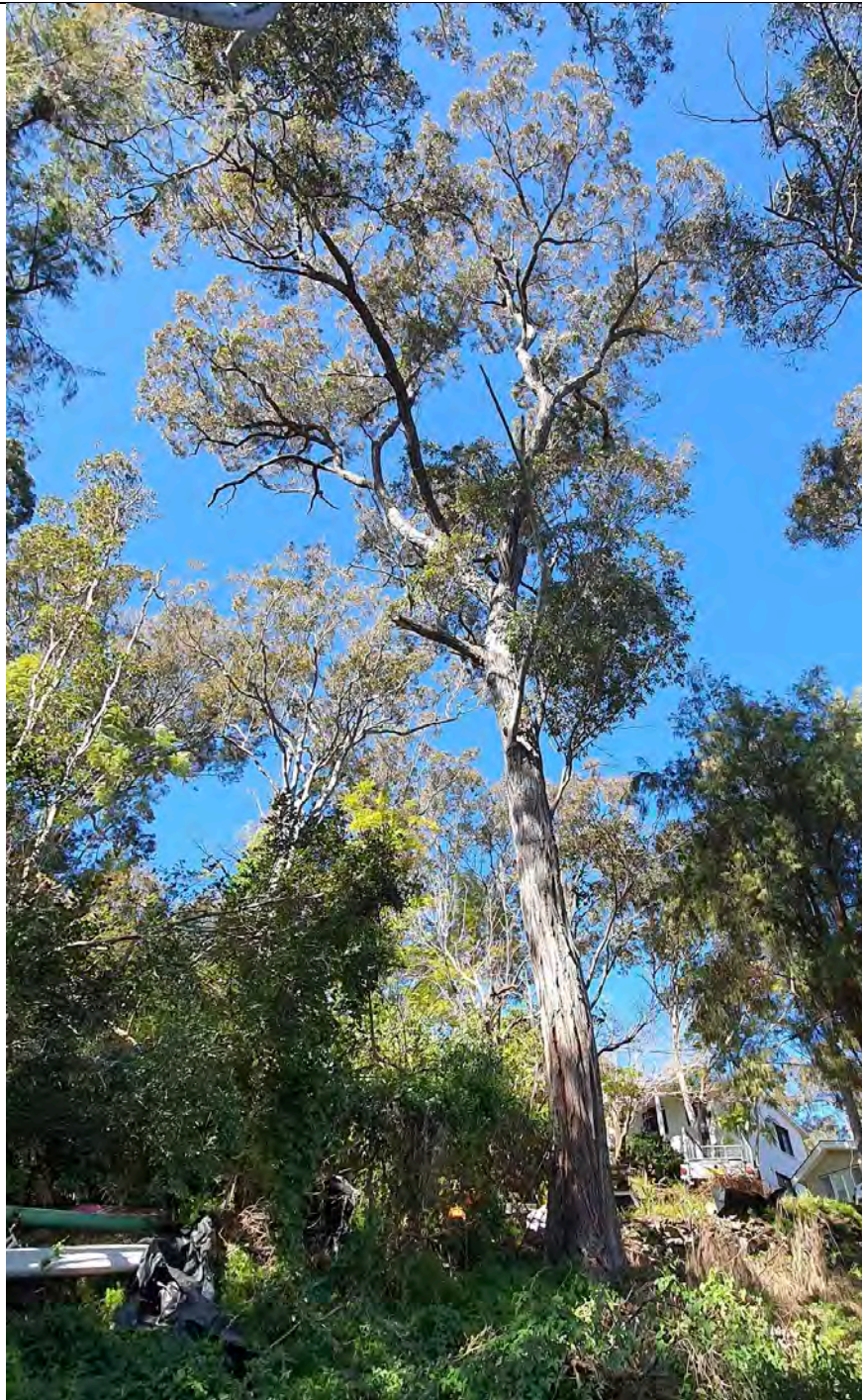


Figure 8: T17 (Grey Ironbark) recommended for removal due to excessive TPZ encroachment. Note elevated levels of deadwood within canopy.