
rain Tree consulting

Arboricultural Management

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2 June 2025

14 ELOUERA ROAD

AVALON BEACH, NSW

DEVELOPMENT PROPOSAL

**ARBORICULTURAL IMPACT
ASSESSMENT (AIA) REPORT**

Ref No- 1225

Prepared for
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INTRODUCTION

This report has been commissioned by Duncan & Treg Herbert C/- Incidental Architecture. The purpose of this report is to assess potential impacts that may occur to significant trees in relation to a new development proposal located within Lot 113 of DP 9151, known as 14 Elouera Road AVALON BEACH NSW.

Recommendations for retention or removal of trees is based on the tree's protection status being prescribed (LGA protected) or non-prescribed trees, tree structural condition, estimated remaining Useful Life Expectancy (U.L.E.) and potential impacts to trees by the design proposal.

Development incursions within tree protection zones (TPZ) are based on percentages of incursion noted within Note 2 of Appendix- A and are described as Negligible (0%), Minor (<10%) & Major (>10%) TPZ occupancy having *Low*, *Moderate* to *High-level* impacts within Tree Protection Zones (TPZ's).

Where site restrictions within notional root zone radiuses exist development impacts or encroachment disturbances are based on author's experience, observations of site conditions, soil type and topography.

Each tree assessed within this report has been accorded a temporary identification number and is referred to by number throughout this report. For additional trees not plotted in provided documentation their location has been estimated by taking offsets from existing trees and structures.

The trees assessed, their location, development impact and design requirements have been detailed within the Tree Assessment Schedule and Tree Location Plan of Appendices D & E.

Care has been taken to obtain information from reliable sources. All data has been verified as far as possible, however, I can neither guarantee nor be responsible for the accuracy of information provided by others.

DISCLAIMER & LIMITATION ON THE USE OF THIS REPORT

This report is to be utilized in its entirety only. Any written or verbal submission, report or presentation that includes statements taken from the findings, discussions, conclusions or recommendations made in this report, may only be used where the whole of the original report (or copy) is referenced in, and directly to that submission, report or presentation. Unless stated otherwise: Information contained in this report covers only the tree/s that were examined and reflects the condition of the trees at the time of inspection: and the inspection was limited to visual examination of the subject tree without dissection, excavation, probing or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject tree/s may not arise in the future. Arborist cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specific period of time. Trees are a living entity and change continuously, they can be managed but not controlled and to be associated near one involves some degree of risk.

METHODOLOGY

1. In preparation for this report a site and ground level visual tree inspection was conducted on Friday 21st February 2025 by the author of this report. The principles of visual tree inspection were primarily adopted from components of Mattheck & Breloer 1994 'The Body Language of Trees' with basic risk values determined by criteria explained within the ISA TRAQ (tree risk) manual 2017. The inspection included observing the overall health and vigour of trees, tree form, structure and structural condition as best as site conditions would allow. On completion of the inspection the retention value of the tree was summarised utilizing the tree inspection Checklist provided within Appendix- C.
2. The inspection was limited to visual observations where no aerial (climbing) inspections, woody tissue testing, or tree root investigation was undertaken. Tree height and canopy spread was estimated and expressed in metres with trunk diameters measured at approximately 1.4 metres above ground level, rounded off to the nearest 50mm and expressed as DBH (Diameter at Breast Height). Where multi stems at or near the base exist the stem group diameter was estimated as a tight clump. The height of palms was taken from ground level to the top of the crown shaft only and excludes the central apical spear projection with palm Tree Protection Zones (TPZ) determined as 1m outside the canopy projection area.
3. This report acknowledges and utilizes the current Australian Standards 'Protection of Trees on Development Sites' AS4970 – 2009 as explained within Notes of Appendix- A.
4. Unless specified otherwise all distances and development offsets within this report are taken from the centre of the tree as indicated within provided survey and/or design documentation. Slight discrepancies exist with detailed plan measurements to scale of drawings with percentage of TPZ encroachment determined as best as plans would allow.
5. Plans and/or documentation reviewed to assist in preparation of this assessment include:
Incidental Architecture, *draft design plans specific to:*
 - Site Plan Dwg No: DA1 dated March 2025.
 - Ground Floor Plan Dwg No: DA2 dated March 2025.
 - Lower Floor Plan Dwg No: DA3 dated March 2025.
 - STH & WST Elevation Dwg No: DA4 March 2025.
 - EST & NTH Elevation Dwg No: DA5 March 2025.
 - Section AA Dwg No: DA6 dated March 2025.DP Surveying
 - Survey Plan ref No: 3560 dated 15.11.2023.

1. SUMMARY OF ASSESSMENT

1.1 General tree assessment

1.1.1 Seven (7) trees have been assessed for the purpose of this development proposal. Of the seven trees, three (3) trees are neighbouring trees and within the site three (3) trees are noted as exempt non-prescribed trees by way of species type or low height less than 5m tall.

1.1.2 Exempt non-prescribed trees within the site are identified as trees:

- T4, 5 & 6.

Being exempt non-prescribed specimens, the above trees are permitted to be managed (pruned, removed or relocated) without Council consent.

Should an exempt species require retention further arborist advice and protection methodology as indicated within Section 2.3 *General tree protection requirements* is required prior to works occurring within Tree Protection Zone (TPZ) radiuses.

1.1.3 Neighbouring tree(s) are identified as:

- T1, 2 & 3.

Trees 1 & 2 are palm trees with palm group T2 consisting of a stand of mature clumping palms. New design proposes a modified driveway access within the TPZ of T1 & 2 where further information is required based on final driveway Civil design & construction drawings as works (demolition) and/or is excavation is likely required within tree protection zones.

Tree T3 receives a *Minor* (<10%) TPZ encroachment without SRZ occupancy by a proposed driveway alteration.

1.1.4 Based on the inspection conducted, apart from low retention value trees, the trees inspected are considered viable for retention without change in existing site conditions or modification within Tree Protection Zone (TPZ) radiuses as indicated within the SRZ & TPZ distance column Appendix- D.

1.2 The development proposal

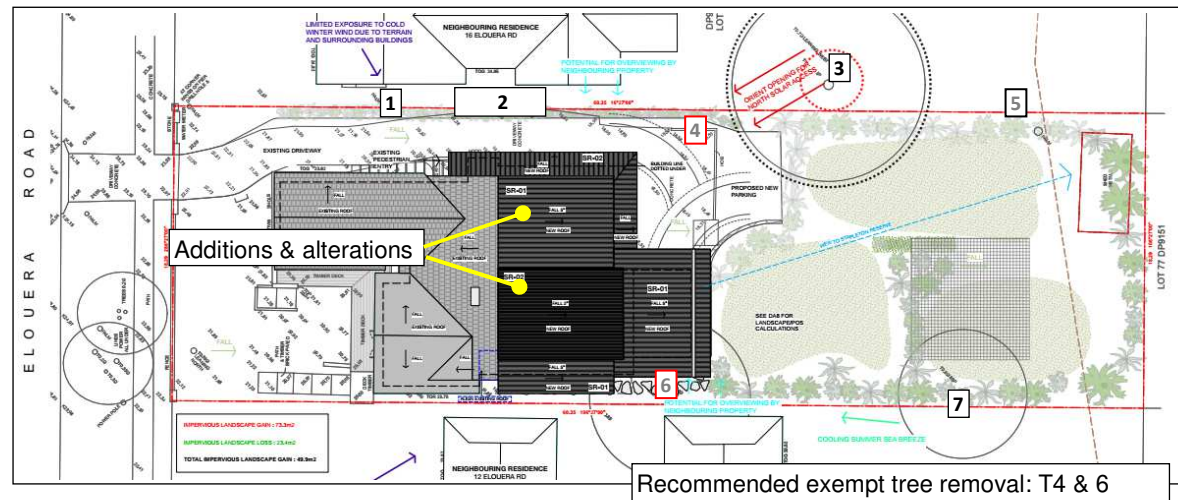
1.2.1 The development proposal consists of additions and alterations to the existing dwelling with provisions for an amended driveway access and associated infrastructure throughout the site.

The proposal requires both cut & fill to achieve finished levels with the footprint of design located within Tree Protection Zone (TPZ) & Structural Root Zone (SRZ) radiuses of prescribed (protected) and non-prescribed trees.

1.3 Tree removal to accommodate design

- 1.3.1 Based on the documentation assessed no prescribed (protected) trees require removal to accommodate this development proposal.
- 1.3.2 Exempt non-prescribed trees recommended for removal to accommodate this proposal are trees T6 (Jacaranda) and T4 requiring removal to accommodate the proposed driveway alteration.

Figure 1: showing design footprint & proposed tree removal plan.



- 1.3.3 The identified development impacts and design requirements have been detailed and required to be reviewed as part of this report within Appendix-D, with the following sections summarizing impacts by the design proposal.

1.4 Discussion of development impacts

Tree removal - exempt tree species

- 1.4.1 Recommendations for the removal of the three (3) exempt non-prescribed trees consist of:

- T4: falls within or very near to the footprint of the proposed driveway servicing the rear yard carport and Studio.
- T6: already displaying low vitality will likely be further compromised by excavations to accommodate the lower level excavation cut as shown within Section Plan DA6.

Should an exempt tree or palm be considered for retention the following tree management requirements apply:

- a) No excavation or demolition is to occur within SRZ or TPZ radiuses without prior arborist advice, site supervision & certification.
- b) The trees are to be protected with tree protection fencing and/or ground protection mats to protect underlying tree roots during construction activities as indicated and certified by appointed project arborist prior to works commencing.
- c) All general recommendations noted within Section 2.3 *General tree protection requirements* apply to managing these trees.

Tree retention: Neighbouring trees T1, 2 & 3.

1.4.2 Trees / Palms T1 & group 2:

The palms receive *Moderate-High (20-25%)* TPZ encroachment by the proposed driveway amendment being a manageable TPZ encroachment impact due to the existing driveway footprint within the TPZ. Having adventitious roots and driveway setback at or near 1m from the boundary and partly on the existing driveway footprint the protection & management of the trees is recommended to specifically consist of:

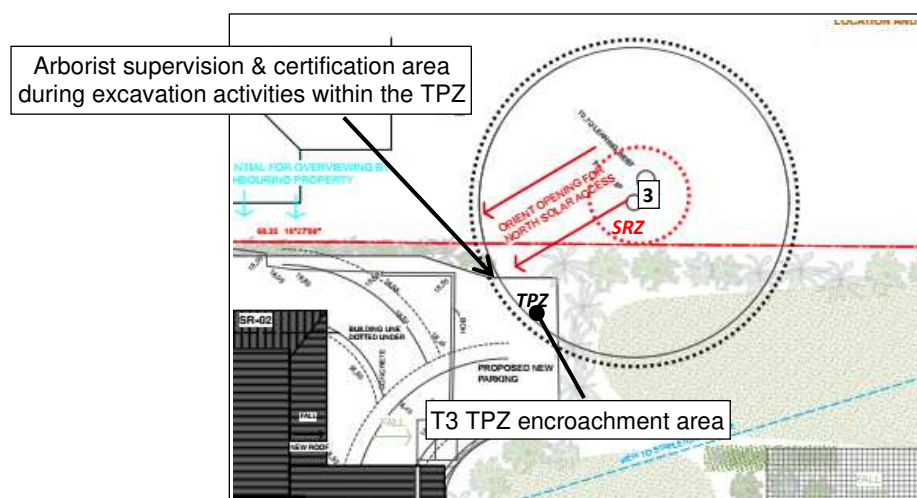
- a) The proposed driveway is recommended to be constructed on, or on top of ground level to mitigate excavation impacts & compaction within tree protection zones.
- b) Final Civil driveway design drawings and construction plans are recommended to be reviewed and endorsed by appointed project arborist providing any additional tree protection advice.
- c) Demolition & excavation within TPZ's are to be supervised & certified by an appointed site arborist with palm root management conducted in accordance with AS4970 – 2009 Section 4.5.4 *Root protection during works within the TPZ*, such that tree roots are not damaged or ripped beyond the point of excavation by site machinery.
- d) Tree protection fencing is recommended to be installed spanning tree protection zones where development site boundary exclusion fencing may suffice as tree protection given project arborist certification prior to works commencing.

1.4.3 Tree 3 (Cheese tree).

The tree receives *Minor (<10%)* TPZ encroachment without SRZ occupancy by proposed carport infrastructure and driveway amendment. Given no works are proposed within the Structural Root Zone (SRZ) being the *area required for tree stability*, specific tree management recommendations are to consist of:

- a) No over excavation should occur beyond design footprint without project arborist advice & certification.
- b) Excavations along the line of cut are to be conducted manually, by hand for the first 0.5m (500mm) under the supervision & certification of an appointed site arborist.
- c) Encountered tree roots are to be managed & protected in accordance with AS4970 – 2009 Section 4.5.4 *Root protection during works within the TPZ*.
- d) Prior to installation detailed stormwater & hydraulic plans are recommended to be reviewed & endorsed by an appointed project arborist.

Figure 2: showing T3 arborist supervision area



Tree retention: Site trees.

1.4.4 Tree T7 (Swamp Mahogany).

Tree 7 receives *Negligible* (0%) TPZ encroachment by the design proposal indicating the tree can be protected in accordance with standard or *Manageable* TPZ encroachment impacts indicated within Section 2.3 *General tree protection requirements*, specific to:

- Prior to works tree protection fencing as indicated within Appendix-B Item [A] is to be constructed no less than a 6m radius from the tree forming a designated Tree Protection Area (TPA).
- The 6m radial Tree Protection Area (TPA) is to remain a development activity exclusion zone as indicated within Section 2.3 *General tree protection requirements*, Subsection b).
- The Tree Protection Fencing (TPF) should only be removed for installation of the absorption trench.
- Provided non-contaminated water access the absorption trench that occupies at or near 19.1% of the TPZ, the location of the trench will unlikely adversely affect the tree and likely be beneficial to the tree in dry periods.

2. CONCLUSIONS & RECOMMENDATIONS

2.1 Tree Removal

2.1.1 Exempt non-prescribed trees or palms recommended for removal to accommodate the design proposal are identified as trees:

- T4 & 6.

Should an exempt species require retention further arborist advice and/or protection methodology is required prior to any works occurring within the site.

2.2 Specific tree management recommendations

2.2.1 In addition to the recommendations provided within this report the following summary or additional recommendations are provided as a guide for trees management:

- a) Neighbouring trees / palms T1 & group 2 driveway construction:
 - No demolition or excavation is to occur without prior arborist notification, site supervision & certification.
 - Final Civil construction drawings / driveway design plans are to be reviewed and endorsed by an appointed project arborist to provide any additional tree management advice. In specific the drawings should identify both existing & proposed RL's within tree protection zone.
 - Ideally the driveway should be constructed on top of ground level to avoid disturbance or impact on deeper underlying palm roots.
- b) Neighbouring tree T3:
 - Within the TPZ and along proposed lines of excavation, excavations are to be supervised & certified by an appointed site arborist.
 - All encountered tree roots are to be managed in accordance with AS4970 – 2009 Section 4.5.4 *Root protection during works within the TPZ*, such that tree roots are not damaged or ripped beyond the point of excavation by site machinery.

2.3 General tree protection requirements

- a) Prior to site works, including demolition, Tree Protection Fencing (TPF) and/or zones as identified within this report or Appendix- B are recommended to be located under the guidance of an appointed site arborist. Unless specified otherwise the location of tree protection fencing is to be positioned to allow for adequate work access and/or be located at the extremity of the TPZ radius as indicated within the SRZ & TPZ distance column Appendix- D. Where design & construction access may be restrictive by tree protection fencing timber beam trunk protection is recommended to be installed with ground protection mats provided to protect underlying tree roots within tree protection zones or designated tree protection areas (TPA).
- b) Unless approved otherwise activities to be excluded within TPZ radius or specified tree protection areas (TPA's) include:
 - Machine access & excavation.
 - Minor works including trenching & installation of utility services.
 - Storage & work preparation including wash down areas.
 - Soil level change and physical damage to trees.

Activities that minimize the impact of TPZ disturbances include:

- Within the TPZ radius, TPA or extending 2m outside the canopy dripline installation of native leaf mulch not greater than 80mm in depth with routine irrigation based on arborist advice is recommended.

- c) In accordance with AS4970 - 2009 (1.4.4) during works a Project or Site Arborist is to be engaged to monitor, supervise excavation within TPZ setbacks, advise and provide certification of protection works conducted. The project arborist is recommended to hold a minimum Australian Qualification Framework (AQF) Level 5 certification and be competent in methodology of protecting trees on development sites.
- d) The project arborist is to provide final certification outlining tree protection measures with photographic evidence of ongoing works retained for certification purposes (AS4970 S/5.5.2 *Final certification*).
- e) The project arborist is to be familiar with protection measures specific to Australian Standard AS4970 'Protection of Trees on Development Sites' – 2009 requirements with any modification in Tree Protection Fencing (TPF) or Zones (Z) to be compliant with AS4970 Section 4.5 *Other Tree Protection Measures*.
- f) Approved excavation within TPZ setbacks; there shall be no over excavation beyond the line of cut as shown within construction drawings without arborist advice. Should over excavation be required the extent of excavation should be detailed within approved drawings or a construction management plan for arborist review and endorsement.
- g) Unless specified otherwise during approved excavation within TPZ setbacks excavation is to be conducted manually (by hand) under the supervision of an appointed site arborist. Where approved by the arborist the pruning of roots at or <30mm(Ø) is to be conducted in accordance with AS4970 – 2009 Section 4.5.4 *Root protection during works within the TPZ*, such that tree roots are not damaged or ripped beyond the point of excavation by site machinery.
Where larger roots have been encountered, they are to be referred to an independent Level 5 arborist for further advice. For deep excavations exposed roots at the excavated cut face are to be protected with jute mesh, geotextile fabric or similar being secured in place to avoid drying of roots and the exposed soil profile.
- h) *Additional inground services* which may include landscape works, fencing, sewer, stormwater, water and electrical services, final design and impact to trees shall be reviewed and endorsed by the project arborist prior to their installation. Where landscaping (excavation) is required within the SRZ further advice from an appointed project arborist is recommended.
- i) *Tree sensitive construction measures* such as pier and beam bridging over critical roots, suspended slabs, cantilevered building sections, screw piles and contiguous piling can minimise the impact of encroachment (AS4970).
Where Bushfire BAL conflicts exist with tree management advice the appointed project arborist shall be consulted to advise on an appropriate design outcome.

- j) *Canopy pruning / tree removal*: where required tree removal and canopy reductions are to be approved by the Local Government Authority. Works are to be conducted by a suitably qualified AQF Level 3 certified arborist in accordance with AS4373 Pruning Standards, and specifically be conducted in accordance with Safe Work Australia – Guide to managing risks of tree trimming and removal works 2016 (www.swa.gov.au).
- k) *Hold points*: specific to no works are to commence without arborist advice, inspections & certifications:
 - 1) Prior to works arboricultural certification is to be provided ensuring that all trees have been adequately protected in accordance with this report, or as indicated within Australian Standard AS 4970 Protection of Trees on Development Sites– 2009.
 - 2) No works (including landscaping) shall occur within the SRZ of any tree without prior arborist advice and certification. Where excavation may be required prior exploratory tree root investigation are to identify the location, distribution and impact to underlying tree roots.
 - 3) No excavation shall occur within tree protection zones without prior project arborist notification and/or site supervision.
 - 4) No access, work activity or storage is permitted within fenced or designated tree protection areas (TPA's) or Tree Protection Zone (TPZ) radiuses without arborist advice and certification.
- l) To ensure tree(s) are appropriately protected the development site superintendent is recommended to be familiar with all tree protection and ongoing certification requirements.
The superintendent is responsible for informing all subcontractors of the responsibilities and requirements of tree protection prior to their engagement.
- m) Should there be any uncertainty with tree protection requirements the site superintendent shall contact the appointed project arborist for advice prior to works occurring within tree protection zones (TPZ) or specified tree protection areas (TPA).

Should you require further liaisons in this matter please contact me direct on 0419 250 248

Yours sincerely



Mark A Kokot

AQF Level 5 consulting arborist

Diploma of Hort/Arboriculture (AQF5), Associate Diploma Parks Management (AQF4)
Certified Arborist / Tree Surgeon (AQF3), ISA Tree Risk Assessment Qualified 6/2029
Member: ISA, Arboriculture Australia & IACA, Working With Children No: WWC0144637E



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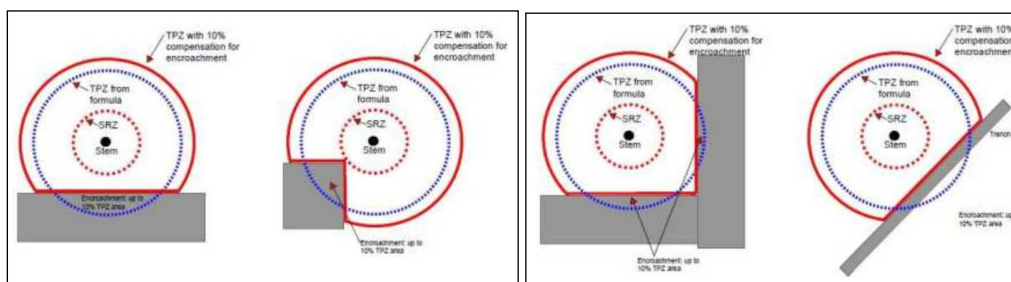
APPENDIX- A: Terminology, notes & references

Acceptable Risk: Exposure to or reject risk of varying degrees. The acceptable risk is defined as 'The person who accepts some degree of risk in return for a benefit being exposed to some risk of varying degree. **Age classes:** (I) Immature refers to a well established but juvenile tree. (ESM) refers to an early semi mature tree not of juvenile appearance. (SM) Semi-mature refers to a tree at growth stages advancing into maturity and full size. (LSM) Late Semi- Mature, refers to a tree between semi-mature and close to mature. (EM) refers to a tree at the first stages of maturity. (M) Mature refers to a full size tree with some capacity for future growth. **Health:** Refers to a trees vigor exhibited by the crown density, leaf colour, presence of epicormic shoots, ability to withstand disease invasion and the degree of dieback. **Condition:** Refers to the tree's form and growth habit, as modified by its environment (aspect, suppression by other trees, soils) and the state of the scaffold (i.e. Trunk and major branches), including structural defects such as cavities, crooked trunks or weak trunk / branch junctions. These are not directly connected with health and it is possible for a tree to be healthy but in poor condition. **Decay:** (N) – an area of wood that is undergoing decomposition. (V) – decomposition of an area of wood by fungi or bacteria. **Decline:** Is the response of a tree to a reduction of energy levels resulting from stress. Recovery from decline is difficult and slow; is usually irreversible. **Defect:** A identifiable fault in a tree. **Epicormic Shoots:** Shoots that arise from latent or adventitious buds that occur on stems and branches and on suckers produced from the base of the tree. A symptom / result of stress related factors. **Footprint:** The area occupied by site structures, including the dwelling driveways and hard surfaces. **Included Bark:** (Inclusion) a genetic weak fault, pattern of development at branch junctions where the bark is turned inwards rather than pushed out, can pose a potential hazard. **Order of branches:** First order being those that are the first to extend from the main trunk or codominant limbs, second order branches extend from the first order and third order branches extend from the second order. **Probability:** The likelihood of some event happening. **Risk:** Is the probability of something adverse happening. **Suppression:** Restrained growth pattern from competition of other trees or structures. **Wound:** Damage inflicted upon a tree through injury to its living cells, may continue to develop further weakening of the structure compromising structural integrity. **Works:** any activity that modifies above & below ground conditions within specified tree protection zone radiuses. **NOTE 1:** This report acknowledges the current **Australian Standards 'Protection of Trees on Development Sites'** AS 4970 – 2009 with reference to the Tree Protection Zone (TPZ): being a combination of the root and crown area requiring protection. The TPZ takes into consideration the Structural Root Zone (SRZ): The area required for tree stability. Determined by AS4970 - 2009 Figure 1, Table of determining the SRZ, section 3.3.5 of the standards. The standard states where a greater than 10% encroachment occurs the arborist is to take into consideration the schedule of determining impacts as set within AS4970 s. 3.3.4. Encroachments are referred to within this report as major or minor encroachments (AS4970 s. 3.3.2 & 3.3.3). Below is the terminology used for estimated percentage of development incursion used within this report. To retain specific trees and ensure their viability development must take into consideration protection of the TPZ radius.

NOTE 2: The extent of inclusion within the TPZ radius has been categorised as follows:

Low impact 0 - 10% of minor consequence. Low to Moderate 10 – 15% incursion where the project arborist is to demonstrate the tree(s) remain viable. Moderate 15 – 20% incursion where the project arborist is to demonstrate the tree(s) remain viable by tree sensitive construction techniques. Moderate to high 20 – 25% incursion requiring specific protection methodology to retain. High impact 25 – 35% incursion where design changes or further information is required to manage tree vitality which includes Significant >35% incursion. **WBF** = located within design or building footprint where design necessitates tree removal.

NOTE-3: Showing acceptable 10% incursion within TPZ radiuses (AS4970)



SELECTED REFERENCES:

Barrell J. 1993, 'Preplanning Tree Surveys: Safe useful Life expectancy (SULE) is the Natural Progression', Arboricultural Journal 17: 1, February 1993, pp. 33-46.

International Society of Arboriculture (ISA) 2013, Tree Risk Assessment Manual, Martin Graphics, Champaign Illinois U.S.

Mattheck, C. & Breloer, H.(1994) *The Body Language of Trees*. Research for Amenity Trees No.4 the Stationary Office, London.

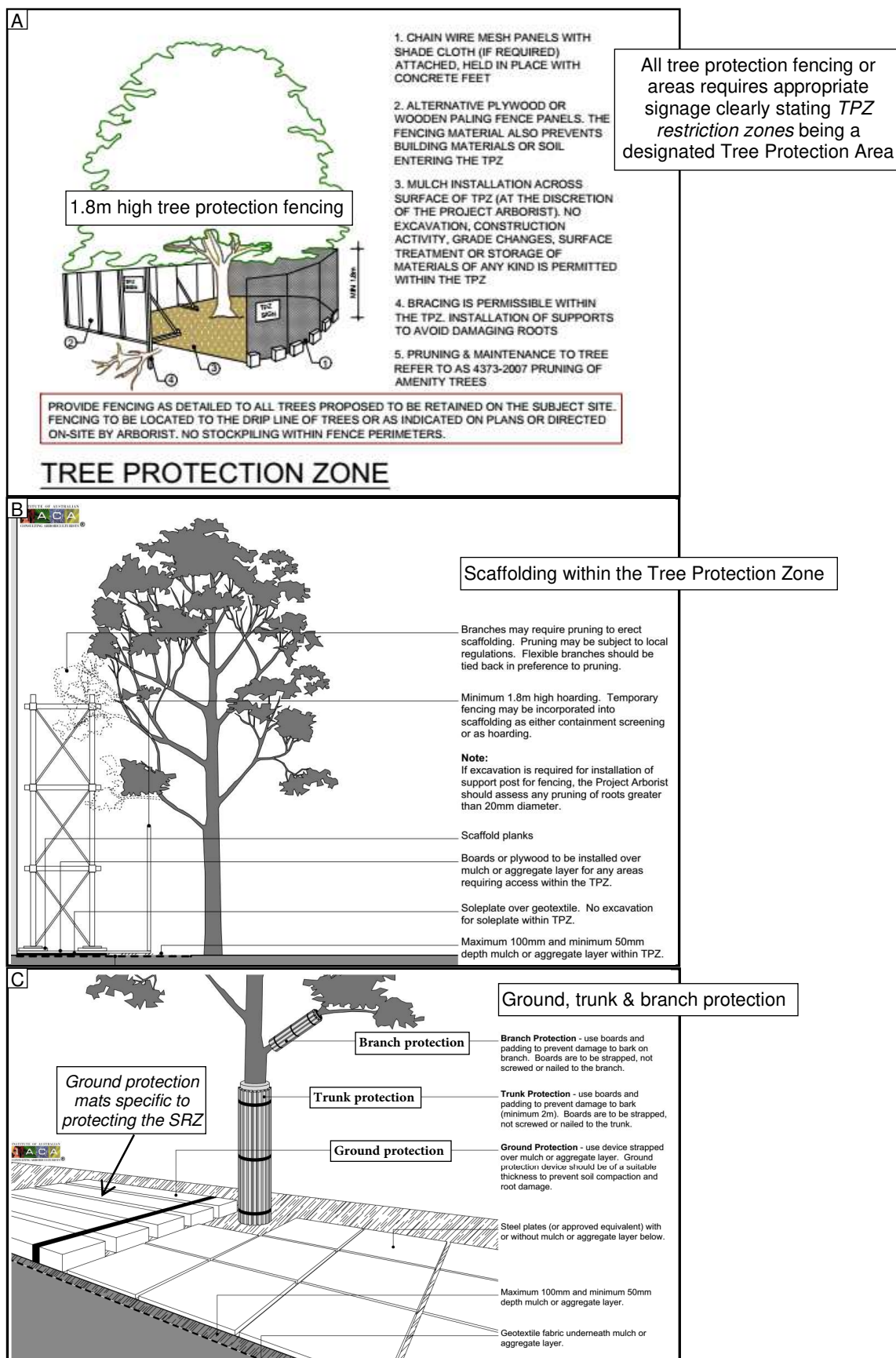
Matheny N. & Clark J. 1998, Trees & Development 'A Technical Guide to Preservation of Trees During Land Development' International Society of Arboriculture, Champaign USA.

ProSafe: TPZ encroachment calculator https://proofsafe.com.au/tpz_incursion_calculator.html

Standards Australia 2009, *Australian Standards 4970 Protection of Trees on Development Sites* - Standards Australia, Sydney, Australia.

Northern Beaches Council DCP <https://www.northernbeaches.nsw.gov.au/planning-and-development/building-and-renovations/planning-controls>

APPENDIX- B: Tree protection fencing, ground and trunk protection detail



APPENDIX- C: Tree Retention Value Check list @rainTree consulting

i) Landscape Significance (LS): The significance of a tree in the landscape is a combination of its amenity, environmental and heritage values. There is no industry standard for referencing tree significance. Values may be subjective however, offer a visual understanding of the relative importance of the tree to the environment. The Landscape Significance of a tree is described in seven categories to assist in determining the retention value of trees.

1	Significant	2	Very High	3	High	4	Moderate	5	Low	6	Very Low	7	Insignificant
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ii) Visual Tree Assessment (VTA)

0	If appropriate to VTA - *exempt trees from Local Government Authority (LGA) Tree Management or Preservation Orders (TPO)	2E	Tree location likely to be affected by infrastructure restricting root growth potential, or tree has potential to cause infrastructure damage where risk mitigation or rectification works may compromise tree anchorage. Tree(s) may be contained by solid structures with restricted anchoring root(s)
0A	Noxious or invasive weed species located within heritage conservation areas		
1	Trees that are dead, significantly declining >75% volume or obviously hazardous	3	This rating incorporates trees that may require further investigation of defects such as cavities or symptoms indicating internal decay to an extent that cannot be quantified under visual examination. Further inspections may be in the way of arborist climbing inspection within the canopy, root crown investigation and/or drill penetrating or Picus Sonic Tomograph ultrasound testing procedures to determine percentage of internal decay.
2	Trees that are structurally damaged. Have poor structure or weak & detrimental large stem inclusions capable of failure opposed to 2B. Tree also may be affected by extensive borer damage, fungal pathogens (wood rot) or viruses. Some symptoms may be reversible, remediated or controlled give appropriate management.		
2A	Tree damage specific to basal and/or root plate damage, or very shallow soils, or steep topography resulting in poor anchorage where condition may become problematic in near future / may include trees with included bark splits to ground level	4	Trees which appear specifically environmentally stressed by drought, poor soil or site conditions. Symptoms may be reversible given appropriate management
2B	Defect specific to stem inclusions development (weak branch attachments) where the condition may not be immediately detrimental however, require annual to biannual monitoring with control to prevent stem failure by installing slings, cable or bracing. Tree may also contain multi stems or codominant twin stems	5	Trees that have become exposed or are subject to wind loading, or have tall forest form where exposure may result in windthrow or limb snap
		5A	Screen trees, trees or shrubs, that are routinely hedged, pruned or managed for height or growth control
2C	Tree may contain minor wounds, pest or minor pathogen activity, altered from storm damaged to an extent that is not considered immediately detrimental - may also display average form. Likely to require close annual monitoring or minor corrective pruning	6	Trees may be typical for species type, of good form and visual condition for age class. May have suppressed one sided canopy, or are low risk trees
2D	Trees significantly altered by recent storm or over pruning events which may reduce retention values due to average form- or tree extensively pruned for power line clearance	7	VTA restricted by canopy or plant material vine or ivy covering tree parts, or site conditions which do not allow access- fences to neighbouring sites

iii) Retention Value (RV): Determined by [1] tree free of visual defects and viable for retention, [2] viable for retention with minor faults which may reduce ULE, [3] trees containing faults that are likely to become problematic in the future, [4] trees to be considered for removal due to poor or average condition.

1	High retention	2	Medium retention	3	Low retention	4	Consider removal
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iv) U.L.E. categories Useful Life Expectancy (after Barrell 1996, modified by the author). A tree's U.L.E. category is the life expectancy of the tree modified first by its age, health, condition, safety and location. U.L.E. assessments are not static but may be modified as dictated by changes in trees health and environment.

1. Long U.L.E. - Appear retainable at the time of assessment for over 40 years with an acceptable degree of risk assuming reasonable maintenance.
2. Medium U.L.E. - Appear to be retainable at the time of assessment for 15 to 40 years with an acceptable degree of risk assuming reasonable maintenance.
3. Short U.L.E. - Trees appear to be retainable at the time of assessment for 5 to 15 years with an acceptable degree of risk assuming reasonable maintenance.
4. Very short - Removal- Trees which should be scheduled for removal within the very short term or as specified within this report.
5. Small, young or regularly pruned – Trees under 5m in height that can be easily moved or replaced, includes screen plantings or hedge lines.

APPENDIX- D: Tree Assessment Schedule

Refer Appendix- C Tree retention value Checklist

Trees requiring removal due to hazardous or dead condition - subject to Local Government Authority notification						Trees with low retention values: senescence, appear significantly environmentally stressed, have developing defects or being *exempt trees from LGA Tree Preservation Orders (TPO)						
Tree No	Botanical Name COMMON NAME	Height x spread (m)	DBH (mm)	SRZ TPZ (m)	Age	Vitality (Health)	Condition (structure)	LS	VTA	RV	ULE	Comments
1 NT	Archontophoenix cunninghamiana Bangalow Palm	6 x 3.5	200	- 2.5	SM	Good	Good	4	0-6	1	1	CV = Council verge tree NT= Neighbouring tree Neighbouring palm with no significant visual faults
Design & impact summary: Proposed upgraded driveway access at 1.5m having slight additional encroachment from the existing driveway footprint. Determining impacts requires further information / arborist review of Civil construction plans with current driveway having a Moderate to High (20-25%) TPZ incursion at or near 24.4% occupancy excluding the current driveway coverage. Impacts may be less given the existing driveway within the TPZ. Given Palms adventitious root system and existing driveway coverage the TPZ encroachment is considered manageable in accordance with Section 2.3 General tree protection requirements, specific to: proposed driveway RL to replicate existing RL, arborist review & endorsement of Civil design plans, no excavation within the TPZ without project arborist advice, supervision & certification for root management.												
2 NT	Dypsis Lutescens Golden Cane Palm/s	5 x 3	100	- 2.5	M	Good	Good	4	0-6	1	1	Neighbouring palm group with no significant visual faults
Design & impact summary: Not plotted within documentation. Proposed upgraded driveway access at 1.5m increasing the existing driveway setback from the boundary. TPZ encroachment impact is similar to T1 having a Moderate to High (20-25%) TPZ incursion at or near 24.4% occupancy excluding the current driveway coverage. Impacts may be less given the existing driveway within the TPZ. Given Palms adventitious root system and existing driveway coverage the TPZ encroachment is considered manageable in accordance with Section 2.3 General tree protection requirements, specific to: proposed driveway RL to replicate existing RL, arborist review & endorsement of Civil design plans, no excavation within the TPZ without project arborist advice, supervision & certification for root management.												
3 NT	Glochidion ferdinandi Cheese Tree	17 x 16	500, 650	3.5 13.8	LM	Good	Fair / Good	3	2C-7	2	2	Restricting visual access, twin stems at near ground level, E main stem low bowing NTH 2m^ at 3.5m above ground level, above stem 3m^ at 4m AGL, requires pruning for design
Design & impact summary: Proposed driveway occupancy of Minor (<10%) TPZ encroachment without SRZ occupancy, indicating the tree is capable of being managed in accordance with Section 2.3 General tree protection requirements, specific to: no access or excavation within the SRZ, any excavation within the TPZ supervised & certified by an appointed site arborist.												
*4	Lagerstromia indica Crepe Myrtle	4 x 3	450at base	2.5 5.4	M	Good	Fair / Good	4	0-5A	2	2	Exempt non-prescribed tree height class <5m, routinely cut back for height control with minor sub end decline, Twin stems at 1m with stem inclusion development
Design & impact summary: Not plotted within documentation. Recommend removal to accommodate driveway access & alterations												

Refer Appendix- C Tree retention value Checklist

Trees requiring removal due to hazardous or dead condition - subject to Local Government Authority notification						Trees with low retention values: senescence, appear significantly environmentally stressed, have developing defects or being *exempt trees from LGA Tree Preservation Orders (TPO)						
Tree No	Botanical Name COMMON NAME	Height x spread (m)	DBH (mm)	SRZ TPZ (m)	Age	Vitality (Health)	Condition (structure)	LS	VTA	RV	ULE	Comments CV = Council verge tree NT= Neighbouring tree
*5	<i>Phoenix canariensis</i> Phoenix Palm	7 x 6	500	- 4	M	Fair / Good	Fair	4	0-2A-4	2	<2	Exempt palm species, lower trunk to ground level wounds with bowing trunk lean from 1.3m= basal condition likely to become problematic in the future
Design & impact summary: Recommend Palm removal to accommodate studio. Palm retention requires further arborist advice as per recommendations within Section 2.3 General tree protection requirements, specific to: no access or excavation within the TPZ without project arborist advice, supervision & certification.												
*6	<i>Jacaranda mimosifolia</i> Jacaranda	14 x 14	450, 500	3.2 11.4	M	Fair	Fair	4	0-4-2B	2	<2	Exempt tree species, environmentally stressed with low foliage volume & decline in canopy throughout, twin stems at 1.1m with minor stem inclusion development
Design & impact summary: Recommend tree removal to accommodate design having excavation cut at proposed below RL17.9 as shown within [Plan DA6], with garden works and occupancy within the SRZ. Given tree already displays average vitality where tree is unlikely to withstand design proposal within the SRZ & TPZ having an estimated TPZ disturbance & coverage area of Moderate to Low (10-15%) TPZ incursion at or near 11%. Retention of exempt tree requires tree management specific to: no access or excavation within the SRZ, excavation for lower level supervised & certified by an appointed site arborist managing encountered tree roots with canopy pruning to accommodate building line clearances to AS4373-2007.												
7	<i>Eucalyptus Botryoides</i> Southern Mahogany	20 x 14	700	2.8 8.4	LM	Fair / Good	Fair / Good	3	2C	2	<2	Typical for species type in age class, large diameter deadwood requires removal & minor dieback, minor trunk wounds to 8+m, past central canopy failure = potential habitat value
Design & impact summary: Proposed dwelling design is located outside the TPZ having Negligible (0%) TPZ encroachment, indicating tree is capable of being managed in accordance with Section 2.3 General tree protection requirements, specific to: no access or excavation within the SRZ with tree protection fencing installed at no less than a 6m radius from the tree. Proposed absorption trench occupies 19.1% of the TPZ radius and is positioned outside the SRZ, indicating the addition of clean non-contaminated water may be beneficial to the tree during dry times (drought seasons).												

