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74 SOLDIERS AVENUE

FRESHWATER, NSW

DEVELOPMENT PROPOSAL

ARBORICULTURAL IMPACT ASSESSMENT REPORT

Report Ref No- 13621

Prepared for
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INTRODUCTION

This report has been commissioned by Mr. Nick Richter C/- Saturday Studios to assess the remaining Useful Life Expectancy (ULE) and potential impacts that may occur to significant trees in relation to a new development proposal. The new development proposal consists of constructing a new dwelling with provisions for a new shed & storage area within Lot 1 of DP954849 being known as 74 Soldiers Avenue, FRESHWATER NSW.

Recommendations for retention or removal of trees is based on the trees condition, accorded ULE category, current design and potential impacts to trees under this development application.

Development incursions within tree protection zones (TPZ) and impacts to trees have been outlined within Note 2 of Appendix- A where incursions are described as Minor (<10%) & Major (>10%) TPZ occupancy having low, moderate to high level impacts within the TPZ. Where site restrictions within notional root zone radiuses exists development impacts or encroachment disturbances are based on author's experience, observations of site conditions, soil type and topography.

Each tree assessed has been accorded a temporary identification number and is referred to by number throughout this report. For additional trees not plotted on provided documentation their location has been estimated by taking offsets from existing trees and structures. The trees, their location, development impact and design requirements may be referenced within the Tree Assessment Schedule and Tree Location Plan of Appendices C & D.

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

- i In preparation for this report a site consultation & ground level Visual Tree Assessment (VTA) was conducted on Monday 16th August 2021 by the author of this report. The principles of VTA 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 manual 2017. The inspection included assessment of the overall health and vigour of trees, tree form, structure and structural condition commencing from near the lower trunk to the upper first order branch division as best as site conditions would allow. On completion of the VTA the retention value of the tree was summarised utilizing the tree assessment Checklist provided within Appendix- B.
- ii The inspection was limited to visual assessment from within the subject site where the retention value, condition and diameters of neighbouring trees was estimated. No aerial (climbing) inspections, woody tissue testing, or tree root investigation was undertaken as part of this tree assessment. 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). The height of palms was taken from ground level to the top of the crown shaft only and excludes the central apical spear projection.
- iii This report acknowledges and utilizes the current Australian Standards 'Protection of Trees on Development Sites' AS 4970 – 2009 as explained within Notes of Appendix- A.
Unless specified otherwise all distances and development offsets within this report are taken from the centre of the tree.
- iv Plans and/or documentation received to assist in preparation of this assessment include:
Saturday Studio project No: 20008
 - Site Plan Dwg No. 100:01 rev A-WIP, dated 1.9.2021
 - Ground Floor Plan Dwg No. 110:01 rev A-WIP, dated 1.9.2021
 - First Floor Dwg No. 110:02 rev A-WIP, dated 1.9.2021
 - Roof Plan Dwg No. 110:03 rev A-WIP, dated 1.9.2021
 - Elevations Dwg No. 200:01 rev A-WIP, dated 1.9.2021Survey Plus
 - Survey Plan No: 18714_DET_1A, rev A dated 8.5.2020

1. SUMMARY OF ASSESSMENT

1.1 General tree assessment

- 1.1.1 Eighteen (18) trees have been assessed under this development proposal. Of the eighteen trees thirteen (13) trees are located within adjoining properties. Within the site two (2) trees have low retention values and one (1) tree is an exempt non-prescribed tree noted within Northern Beaches Council exemptions E1 Preservation of Trees or Bushland Vegetation DCP / Warringah LEP 2011.

Neighboring trees are identified as trees:

- 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14 & 15.

Of these trees T2, 3, 4, 5, 6, 7, 8, 9, 10, 11 & 15 are non-prescribed trees being exempt species however, require to be managed and protected in accordance with Australian Standard AS 4970 – 2009 Protection of Trees on Development Site principles. To accommodate design trees 2, 3, 4 & 5 have been proposed for removal with consent from the owner of 76 Soldiers Avenue.

Low retention value trees within the site are identified as Acacia trees 16 & 17. Given their species type and short life expectancies the trees are considered low value trees which can be easily replaced.

Exempt non-prescribed tree is identified as tree 18 being less than 5m in height. Being an exempt non-prescribed tree, the tree is permitted to be managed (pruned, removed, or relocated) without Council consent.

- 1.1.2 Remaining trees 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 of Appendix- C.

1.2 The development proposal

- 1.2.1 The development proposal consists of constructing a new residential dwelling with provisions for an additional storage shed and associated infrastructure located within Tree Protection Zone (TPZ) radiuses.

1.3 Tree removal to accommodate design

- 1.3.1 Three (3) prescribed trees T12, 16 & 17 are proposed or recommended for removal to accommodate design.

- 1.3.2 The removal of exempt tree T18 is also recommended to allow for new landscape works and to make space for new plantings.
The identified development impacts and design requirements have been detailed within Appendix- C and summarized within the following sections.

Figure 1, showing design footprint & tree removal plan



1.4 Discussion of development impacts – prescribed & neighbouring trees

Proposed tree removal due to high level impacts or design request

1.4.2 Prescribed (protected) trees located within the building or excavation footprint or requested for removal to accommodate design are identified as tree

- T12, 16 & 17.

1.4.3 Neighboring exempt trees approved by the tree owner for removal to accommodate works are trees:

- T2, 3, 4 & 5.

Trees receiving negligible to Minor (<10%) manageable impacts by design

1.4.4 The following prescribed or neighbouring tree(s) receive negligible, Minor (<10%) or manageable TPZ encroachments where the trees are considered retainable utilizing principles outlined within Section 2.3 *General tree protection requirements*.

- T1, 8, 9, 10, 11, 13, 14 & 15.

Of the above palms 9 – 11 receive moderate to low impacts as discussed within Section 1.4.6.

Trees noted as receiving Major (>10%) TPZ encroachments by design

In accordance with Australian Standard AS 4970 – 2009 Protection of Trees on Development Sites ‘Major encroachments’ those trees which are subject to works within the SRZ or receive high level impacts by Major (>10%) TPZ encroachments require that the arborist demonstrate that the tree(s) remain viable. The following discussions relate to tree which receive Major encroachments by design.

1.4.5 Palm tree T6:

The adventitious root system of Palm trees are more tolerant to TPZ disturbances where TPZ encroachment or impact is likely to be moderate to high by increased pathway close to the base of the palm. Prior to works clearer detail in Civil pathway construction methodology is required with detailed RL’s showing excavation or fill to accommodate design is recommended for arborist review. To ensure the palm is managed to mitigate impacts by design the following tree management guidelines are provided.

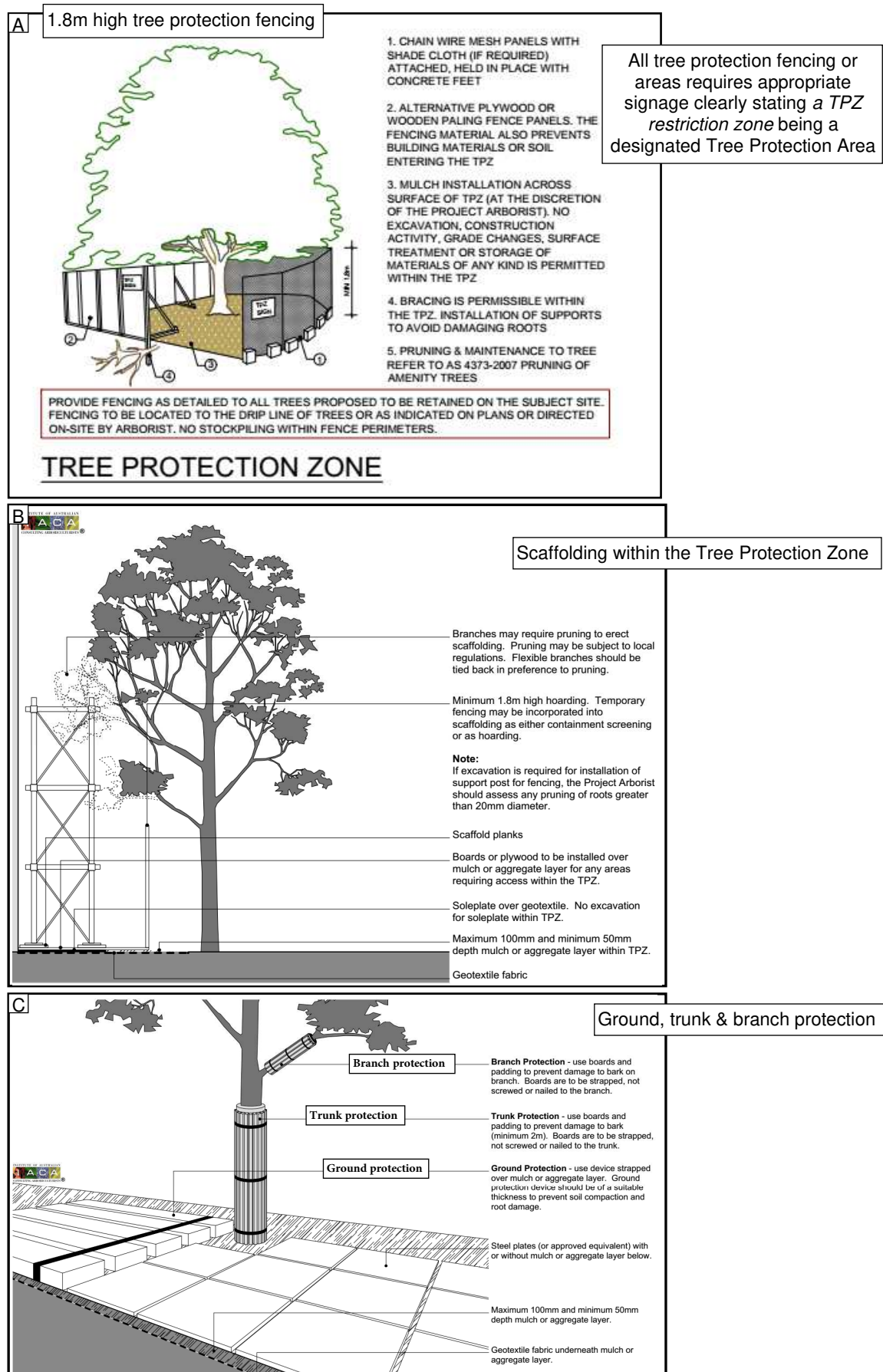
- a) Given additional encroachment for path widening close to the base of the palm, within the 2.7m TPZ pathway construction is to be of tree sensitive design, placed on top of ground level without excavation cut within the TPZ.
- b) Where excavation is proposed within the TPZ clearer detailed civil plans with final RL’s are to be reviewed and endorsed by an appointed project arborist providing additional advice.
- c) All excavation shall be conducted manually (by hand) under the supervision of an appointed site arborist in accordance with AS4970 – 2009 Section 4.5.4 *Root protection during works within the TPZ*.

1.4.6 Palm trees T9-11:

TPZ encroachment is considered at a moderate to low level impact (10-15% occupancy) given the palms adventitious root systems. To ensure palms are protected during works the following tree management guidelines are provided.

- a) Excavation to accommodate footings within the TPZ is to be conducted manually (by hand) for the first 0.4m (400mm) being supervised by an appointed site arborist. All encountered tree roots are to be managed (clean cut & protected) in accordance with AS4970 – 2009 Section 4.5.4 *Root protection during works within the TPZ*, such that roots are not ripped beyond the point of cut by site machinery.
- b) Given the narrow corridor between boundary and building footprint there is to be no additional excavation or level change within the tree protection zone.
- c) Within the TPZ or boundary setback to building footprint ground protection as shown within Figure 2[C] is recommended to be installed to protect underlying tree roots prior to works commencing.

Figure 2: Tree protection fencing, ground and trunk protection detail



2. CONCLUSIONS & RECOMMENDATIONS

2.1 Tree Removal

- 2.1.1 With the consent of Council three (3) prescribed trees T12, 16 & 17 require removal to accommodate the design proposal.
- 2.1.2 Exempt trees permitted to be managed (pruned, removed or relocated) without the consent of Council are identified as T18.
- 2.1.3 Neighboring exempt species approved for removal by the tree owner to accommodate works are trees 2, 3, 4 & 5. The consent authority shall be satisfied that the above tree removal complies with tree owners consent.

2.2 Recommended tree management & protection principles

- 2.2.1 In addition to the recommendations provided within this report and Australian Standard AS4970 – 2009 Protection of Trees on Development Sites the following summary and/or additional recommendations are provided as a guide for tree protection during works:

Specific recommendations

- a) Palm 6. The proposed pathway widening shall be constructed utilizing tree sensitive design, placed on top of existing ground level without excavation cut to protect underlying tree roots within the TPZ. Should excavation be required, prior to works an appointed project arborist shall review and endorse detailed design drawings, pathway RL and construction methodology.
- b) Palms 8 - 11. Excavation for footings shall be conducted manually by hand for the first 400mm being supervised and certified by an appointed site arborist. All encountered roots are to be appropriately managed, clean cut & protected in accordance with AS4970 – 2009 Section 4.5.4 *Root protection during works within the TPZ*.

2.3 General tree protection requirements

- a) Prior to demolition works Tree Protection Fencing (TPF) and/or zones as identified within Figure 2 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, see SRZ & TPZ distance column Appendix- C. Where design & construction access may be restrictive timber beam trunk protection is recommended to be installed, with ground protection mats provided to protect underlying tree roots within tree protection zones or areas.
- b) In accordance with AS4970 - 2009 (1.4.4) 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 4 certification and be competent in methodology of protecting trees on development sites.

- c) 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*).
- d) 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*.
- e) Unless specified otherwise during approved excavation within TPZ setbacks excavation is to be conducted manually (by hand) under the supervision of an appointed project 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.
- f) During approved excavation within TPZ setbacks there shall be no over excavation beyond the line of cut as shown within construction drawings. Should over excavation be required the extent of excavation should be detailed within approved drawings or a construction management plan for arborist review and certification.
- g) *Additional inground services* which may include landscape works, sewer, stormwater, water and electrical services, final design and impact to trees shall be reviewed and endorsed by the project arborist prior to their installment. Where landscaping (excavation) is required within the SRZ further advice from an appointed project arborist is recommended.
- h) *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 construction conflicts exist with tree management advice the appointed project arborist shall be consulted to advise on appropriate design outcomes.
- i) *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).

- j) *Hold points*: specific to no works are to commence without arborist advice, inspections & certifications:
- 1) Prior to construction arboricultural certification is required ensuring that all trees have been adequately protected in accordance with this report.
 - 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 the TPZ without prior project arborist notification and/or site supervision.
 - 4) No access or work activity is permitted within fenced or designated tree protection areas (TPA's) without arborist advice.

Table 1, certification requirements & hold points

1	Pre-construction	Prior to works install tree protection fencing & zones as specified within this report or as directed by the site arborist. Specific to neighbouring palm tree ground & root protection areas within the TPZ
2	During construction	Project arborist to supervise & certify approved excavation works within tree protection areas.
3	Post construction	Prior to handover project arborist to provide final inspection & certification of tree health & vitality

- k) 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.
- l) Should there be any uncertainty with tree protection requirements the site superintendent shall contact the an appointed project arborist for advice prior to works occurring within tree protection zones (TPZ).

Yours sincerely



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Certified Arborist / Tree Surgeon (AQF3), ISA Tree Risk Assessment Qualified 6/2024
Member: ISA, Arboriculture Australia & IACA, Working With Children No: WWC0144637E



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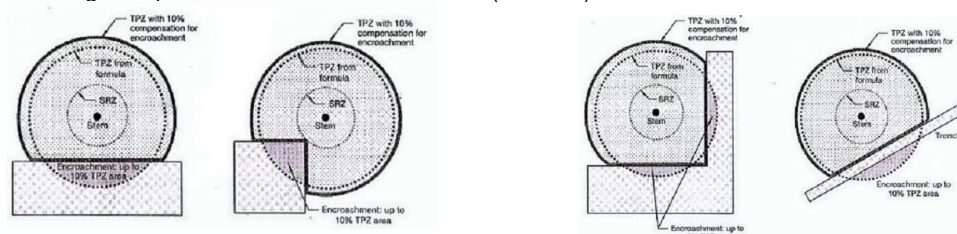
APPENDIX- A: Terminology & references

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.

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:

No impact (0%) incursion, Low to negligible impact (<10%) of minor consequence, 10 - <15% incursion of moderate to low impact, 15 - <20% Medium to moderate level of impact and incursion where the project arborist is to demonstrate the tree/s remain viable by tree sensitive construction techniques, 20 - <25% incursion of Medium to high level of impact, 25 - <35% of High level impact to significant >35% incursion where moderate to high level impacts may require design changes or further information to manage tree vitality. **WBF** = located within the building footprint where design necessitates tree removal. Showing acceptable incursion within the TPZ (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
- Australia 2009, *Australian Standards 4970 Protection of Trees on Development Sites* - Standards Australia, Sydney, Australia.
- Standards Australia 2007, *Australian Standards 4373 Pruning of Amenity Trees* - 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 Retention Value Check list @rainTree consulting

VTA i) Landscape Significance (LS): The significance of a tree in the landscape is a combination of its amenity, environmental and heritage values.

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	Trees location likely to be affected by infrastructure restricting root growth potential, or tree has potential to cause infrastructure damage &/or risk mitigation or rectification works may compromise tree anchorage. Tree(s) may be contained within a vault have restricted anchoring root potential
0A	Noxious or invasive species located within heritage conservation area		
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, 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 would benefit from crown maintenance pruning as identified within the Australian Standards AS 4373 – 2007 Pruning of Amenity Trees
		5A	Trees that require little or no maintenance at time of inspection other than close monitoring
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 canopies 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 which should not restrict development applications containing faults that are likely to become problematic in the short term, [4] trees to be considered for removal due to 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 trees 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- C: Tree Assessment Schedule

Trees requiring removal due to hazardous or dead condition - subject to Local Government Authority notification							Trees with low retention values: senescence, developing defects or being low significant or *exempt trees within the site from the LGA tree management orders					
Tree No	Botanical Name COMMON NAME	Height x spread (m)	DBH (mm)	SRZ TPZ	Age	Vigour	Condition	Significance	VTA	RV	U. L.E.	Comments CV = Council verge tree NT= Neighbouring tree
1 NT	<i>Araucaria heterophylla</i> Norfolk Island Pine	30 x 16	1100	3.5m 13.2	M	Fair / Good	Fair / Good	3	6/7	1	1	Restricted VTA above ground visual parts appear in good order
Design & impact summary		Low level TPZ encroachment of Minor (<10%) TPZ occupancy by design, includes shed footprint & landscape works. Having Minor TPZ occupancy outside of the SRZ, tree to be managed in accordance with Section 2.3 General tree protection requirements										
2 NT	<i>Howea forsteriana</i> Kentia Palm	9 x 2.5	200	- 2.5	M	Fair / Good	Fair / Good	4	6/7	1	1	Neighboring exempt species, slightly environmentally stressed, located in raised garden bed / retaining wall at boundary
Design & impact summary		Proposed approved palm removal by tree owner, should palm exist prior to works commencing palm to be managed in accordance with Section 2.3 General tree protection requirements										
3 NT	<i>Ficus lyrata</i> Cabbage / Fiddle Leaf Fig	9 x 7	350at base	2.1 4.2	SM	Fair / Good	Fair / Good	4	7	2	2	Neighboring exempt species, located in raised garden bed / retaining wall at boundary
Design & impact summary		Proposed approved tree removal by tree owner, should tree exist prior to works commencing palm to be managed in accordance with Section 2.3 General tree protection requirements, all pruning back to fence line in accordance with Australian Standards AS 4373 Pruning of Amenity Trees 2007. No works within SRZ without prior arborist advice & supervision										
4 NT	<i>Howea forsteriana</i> Kentia Palm	5 x 4	200	- 3	ESM	Fair / Good	Fair / Good	4	7	1	1	Neighboring exempt species, located in raised garden bed / retaining wall at boundary
Design & impact summary		Proposed approved palm removal by tree owner, should palm exist prior to works commencing palm to be managed in accordance with Section 2.3 General tree protection requirements										
5 NT	<i>Schefflera actinophylla</i> Umbrella Tree	6 x 4	250at base	1.8 3	ESM	Fair / Good	Fair / Good	4	7	1	1	Neighboring exempt species, located in raised garden bed / retaining wall at boundary
Design & impact summary		Proposed approved tree removal by tree owner, should tree exist prior to works commencing palm to be managed in accordance with Section 2.3 General tree protection requirements. No works within SRZ without prior arborist advice & supervision										
6 NT	<i>Archontophoenix cunninghamiana</i> Bangalow Palm	6 x 3.5	150	- 2.7	SM	Fair / Good	Fair / Good	4/3	7	1	1	Neighboring exempt species, above ground visual parts appear in good order
Design & impact summary		New path proposal requires tree sensitive design, being located on top of the existing path or existing ground level without additional excavation within the TPZ. Where excavation within the TPZ is required the extent of excavation should be made clear to an appointed project arborist for advice with clear construction details RL's noted within design drawings. Palm impacts or percentage of additional TPZ encroachment is dependent on Civil pathway construction methodology which is unclear within provided documentation / West Elevation No. 4.										

Trees requiring removal due to hazardous or dead condition - subject to Local Government Authority notification						Trees with low retention values: senescence, developing defects or being low significant or *exempt trees within the site from the LGA tree management orders						
Tree No	Botanical Name COMMON NAME	Height x spread (m)	DBH (mm)	SRZ TPZ	Age	Vigour	Condition	Significance	VTA	RV	U. L.E.	Comments CV = Council verge tree NT= Neighbouring tree
7 NT	Archontophoenix cunninghamiana Bangalow Palm	6 x 3.5	200	- 2.7	SM	Fair / Good	Fair / Good	4/3	7	1	1	Neighboring exempt species, above ground visual parts appear in good order
Design & impact summary		Likely negligible TPZ impact with increased dwelling & deck setback increasing deep soil area as indicated within Ground Floor Plan 110-01										
8 NT	Archontophoenix cunninghamiana Bangalow Palm	7 x 4.5	250	- 3.2	SM	Fair / Good	Fair / Good	4/3	2C	2	2	Neighboring exempt species, minor lean W with no significant visual faults
Design & impact summary		Low level impact & TPZ occupancy, at or near 5.7% of Minor (<10%) TPZ encroachment. Rainwater tanks to be placed on top of ground level to minimize TPZ encroachment. Palm to be managed in accordance with Section 2.3 General tree protection requirements / root protection mats										
9 NT	Archontophoenix cunninghamiana Bangalow Palm	7 x 3	200	- 2.5	SM	Fair / Good	Fair / Good	4/3	4	2	2	Neighboring exempt species, appears environmentally stressed, displays low vitality
Design & impact summary		Moderate to low (10-15%) TPZ occupancy, at or near 12.6% of Major (>10%) TPZ encroachment. Having adventitious root systems palm to be managed in accordance with Section 2.3 General tree protection requirements, all excavations in TPZ supervised by an appointed site arborist										
10 NT	Archontophoenix cunninghamiana Bangalow Palm	7 x 3	200	- 2.5	SM	Fair / Good	Fair / Good	4/3	7	1	1	Neighboring exempt species, above ground visual parts appear in good order
Design & impact summary		Likely Low-level impact & TPZ occupancy, at or near 11.8% of Major (>10%) TPZ encroachment. Having adventitious root systems impact is likely to be low, with palm to be managed in accordance with Section 2.3 General tree protection requirements / ground / root protection recommended										
11 NT	Archontophoenix cunninghamiana Bangalow Palm	6 x 4	250	- 3	SM	Fair / Good	Fair / Good	4/3	7	1	1	Neighboring exempt species, above ground visual parts appear in good order
Design & impact summary		Likely Low-level impact & TPZ occupancy, at or near 11.4% of Major (>10%) TPZ encroachment. Having adventitious root systems impact is likely to be low, with palm to be managed in accordance with Section 2.3 General tree protection requirements / root protection recommended										
12	Callistemon viminalis Bottle Brush	7 x 4	250, 150	2.3 4.8	SM	Fair / Good	Fair / Good	4/3	2B/7	1	2	Twin stems at ground level with minor stem inclusion development, above ground parts appear in good order
Design & impact summary		Design request, likely high level impact by design footprint, proposed tree removal to relocated boundary fence & clear access for rear decking / alfresco area and dwelling elevation. New decking within 0.6m of tree base with reduction pruning of extending limbs likely to alter tree form to accommodate design.										

Trees requiring removal due to hazardous or dead condition - subject to Local Government Authority notification							Trees with low retention values: senescence, developing defects or being low significant or *exempt trees within the site from the LGA tree management orders					
Tree No	Botanical Name COMMON NAME	Height x spread (m)	DBH (mm)	SRZ TPZ	Age	Vigour	Condition	Significance	VTA	RV	U. L.E.	Comments CV = Council verge tree NT= Neighbouring tree
13	<i>Leptospermum petersonii</i> Lemon Scented Tea Tree	8 x 4.5	450at base	2.4 5.4	M	Fair / Good	Fair / Good	4/3	7	1	2	Restricted VTA above ground visual parts appear in good order
Design & impact summary		Retain & protect with fence or ground protection within the SRZ: with removal of existing deck & dwelling outside of TPZ and proposed new decking reducing TPZ occupancy, new deck footprint proposes a Minor (<10%) TPZ occupancy by design. Having Minor TPZ occupancy within the SRZ, tree to be managed in accordance with Section 2.3 General tree protection requirements with hand excavation for post (deck) footings supervised by site arborist within the SRZ.										
14 NT	<i>Callistemon viminalis</i> Bottle Brush	9 x 7	500	2.6 6	M	Fair / Good	Fair / Good	4/3	6	1	2	Above ground visual parts appear in good order, 2x tree ferns at base
Design & impact summary		Retain & protect: with removal of existing deck & dwelling outside of TPZ and proposed new decking reducing TPZ occupancy, new deck footprint proposes a Minor (<10%) TPZ occupancy by design. Having Minor TPZ occupancy outside of the SRZ, tree to be managed in accordance with Section 2.3 General tree protection requirements. No excavation within SRZ without prior arborist advice.										
15 NT	<i>Plumeria</i> sp Frangipani	4.5 x 3.5	200, 150	2.1 4.2	M	Fair / Good	Fair / Good	4	7	1	2	Neighboring exempt species height class, above ground visual parts appear in good order, has very minor canopy extension within site
Design & impact summary		Retain & protect: with removal of existing deck & dwelling outside of TPZ and proposed new decking reducing TPZ occupancy, new deck footprint proposes a Minor (<10%) TPZ occupancy by design. Having Minor TPZ occupancy outside of the SRZ, tree to be managed in accordance with Section 2.3 General tree protection requirements. No excavation within SRZ without prior arborist advice.										
16	<i>Acacia frimbriata</i> Fringe Wattle	5.5 x 3.5	200at base	1.6 2.4	M	Fair / Good	Fair / Good	4	2E	2	3	Confined in timber garden bed, minor wounds evident, generally short-lived tree = likely low retention value
Design & impact summary		Recommend tree removal & replacement to accommodate design. Likely Minor (<10%) TPZ occupancy due to trees location with concrete path at base. Anchorage may become compromised should new works or demolition occur within SRZ.										
17	<i>Acacia frimbriata</i> Fringe Wattle	5 x 2.5	100at base	1.5 2	SM	Fair / Good	Fair / Good	4	2E	2	3	Confined in timber garden bed, generally short-lived tree = likely low retention value
Design & impact summary		Recommend tree removal & replacement to accommodate design. Likely Minor (<10%) TPZ occupancy due to trees location with concrete path at base. Anchorage may become compromised should new works or demolition occur within SRZ.										
*18	<i>Grevillea</i> sp 'cv' Grevillea	3 x 3	100	1.5 2	SM	Fair / Good	Fair / Good	4	2E	2	3	Exempt non-prescribed tree, confined in garden bed restricting root anchorage development
Design & impact summary		Exempt tree species, removal of tree recommended to accommodate design. Likely Minor (<10%) TPZ occupancy due to trees location with concrete path at base. Anchorage may become compromised should new works or demolition occur within SRZ where bowing lower tree trunk and lean loading weight may contribute to root plate failure should SRZ be disrupted.										

APPENDIX- D: Tree Location Plan

