rain Tree consulting

Arboricultural Management

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13 September 2022

57 CUTLER ROAD

CLONTARF, NSW

DEVELOPMENT PROPOSAL

ARBORICULTURAL IMPACT ASSESSMENT REPORT

Report Ref No- 12222

Prepared for
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INTRODUCTION

This report has been commissioned by Mr. & Mrs. Popovac C/- Gartner Trovato Architects 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 additions and alterations to the existing dwelling located within Lot 30 of DP25654, known as 57 Cutler Road, CLONTARF 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.

In this case tree 3 has likely restricted root development, being confined by existing retaining wall foundations indicating root zone conflict may be greater than determined under the standards (AS4970).

Each tree assessed has been accorded a temporary identification number and is referred to by number throughout this report. The trees, their location, development impact and design requirements may be referenced 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.

METHODOLOGY

1. In preparation for this report a site and tree inspection was conducted on Monday 29th August 2022 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 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 tree inspection the retention value of the tree was summarised utilizing the tree assessment Checklist provided within Appendix- C.

2. 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. Within the site 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, 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' AS 4970 – 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 plotted within survey documentation.

5. Plans and/or documentation received to assist in preparation of this assessment include:

   Gartner Trovato Architects, project No: 2212 *specific to*:
   - Lower Ground Dwg No. A.02 issue A dated 17.8.2022
   - Ground Floor Dwg No. A.03 issue A dated 17.8.2022
   - NTH & EST Elevation Dwg No. A.05 issue A dated 17.8.2022
   - STH & WST Elevation Dwg No. A.05 issue A dated 17.8.2022
   - Sections Dwg No. A.07 issue A dated 17.8.2022

   Stutchbury Jaques Pty Limited
   - Survey Plan ref No: 11480/22 dated 31.3.2022

1. SUMMARY OF ASSESSMENT

1.1 General tree assessment

1.1.1 Three (3) trees have been assessed for the purpose of this development proposal. Of the three trees Palm T2 (Ponytail) is an exempt non-prescribed species with trees 1 & 3 (Sydney Red Gums / Angophora trees) being local endemic tree species.

1.1.2 *Low retention value trees:* Of the trees inspected tree 1 requires further investigations due to fungal conks (Brackets) located within a deep cavity extending 600mm at ground level. Structural testing is recommended to determine the trees remaining safe site usefulness.

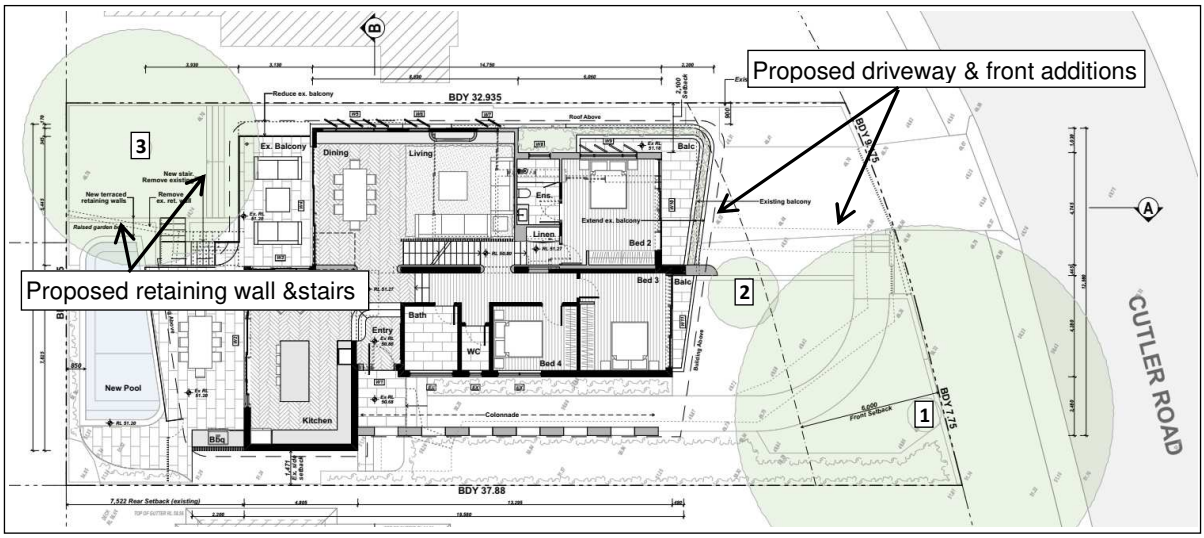
1.1.3 *Exempt non-prescribed palm:* Palm T2 is identified as exempt non-prescribed (not protected) species. Being an exempt non-prescribed palm, the palm is permitted to be managed (pruned, removed or relocated) without Council consent. Should the palm require retention further advice and protection methodology is required prior to works occurring within the palms Tree Protection Zone (TPZ).

1.1.4 Remaining tree T3 is considered viable for retention without change in existing site conditions or modification within the trees Tree Protection Zone (TPZ) radiuses as indicated within the SRZ & TPZ distance column of 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 new infrastructure and rear yard swimming pool. The proposal requires demolition, excavation and modifications to site features within the notional Tree Protection Zone (TPZ) radiuses of prescribed trees T1 & 3.

Figure 1, showing proposed development footprint



1.3 Tree removal to accommodate design

1.3.1 No prescribed (protected) trees are proposed for removal to accommodate design.

1.3.2 The removal or relocation of non-prescribed palm T2 is permitted without Council consent.

The identified development impacts and design requirements have been detailed within Appendix- D and summarized within the following sections.

1.4 Discussion of development impacts

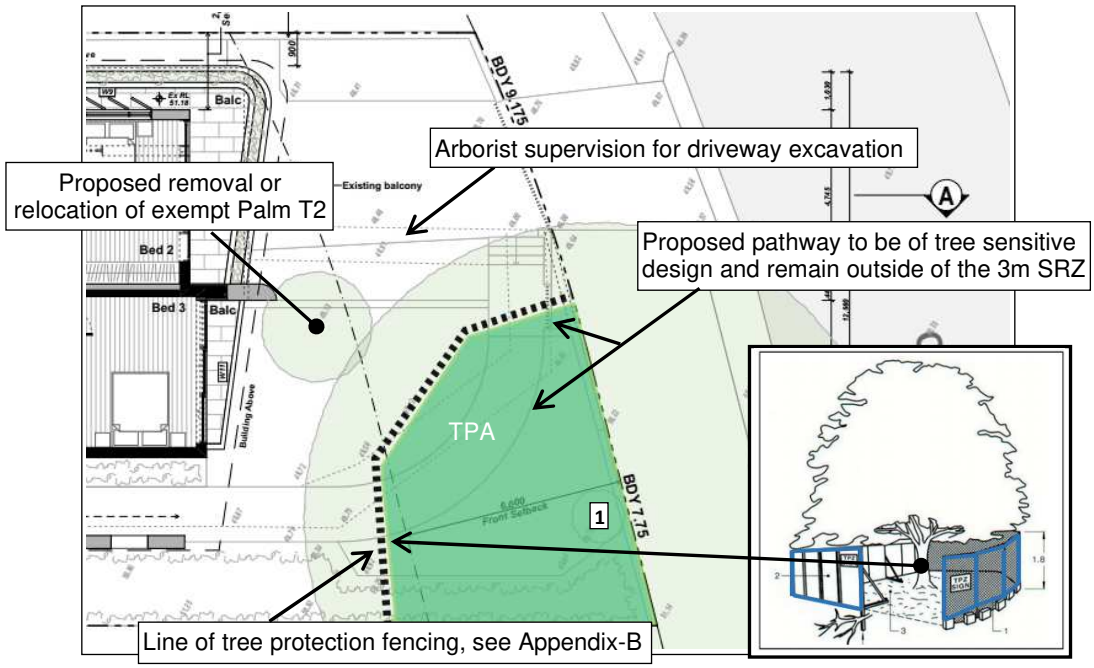
1.4.1 Tree 1: The proposed building footprint and driveway widening proposes a Minor (<10%) TPZ encroachment beyond the existing building & driveway footprints. Given minor or low-level encroachments the tree is recommended to be managed in accordance with Section 2.3 *General tree protection requirements*, specific to:

a) To allow for construction tree protection fencing is recommended to be installed and secured to ground at a 6m radius from the tree. The inner fenced area is to remain a tree protection area (TPA) to be managed as a tree protection zone in accordance with Section 2.3.

b) Should excavation be required within the 12.6 tree protection zone (TPZ), on site arborist supervision is recommended to appropriately manage any encountered tree roots. Specific site management should include excavation for driveway widening and any proposed pathway access in landscape design.

c) Where proposed paths encroach within the 6m tree protection area (TPA) pathways are recommended to be constructed utalising tree sensitive design.

Figure 2, showing tree protection area (TPA) adjacent T1

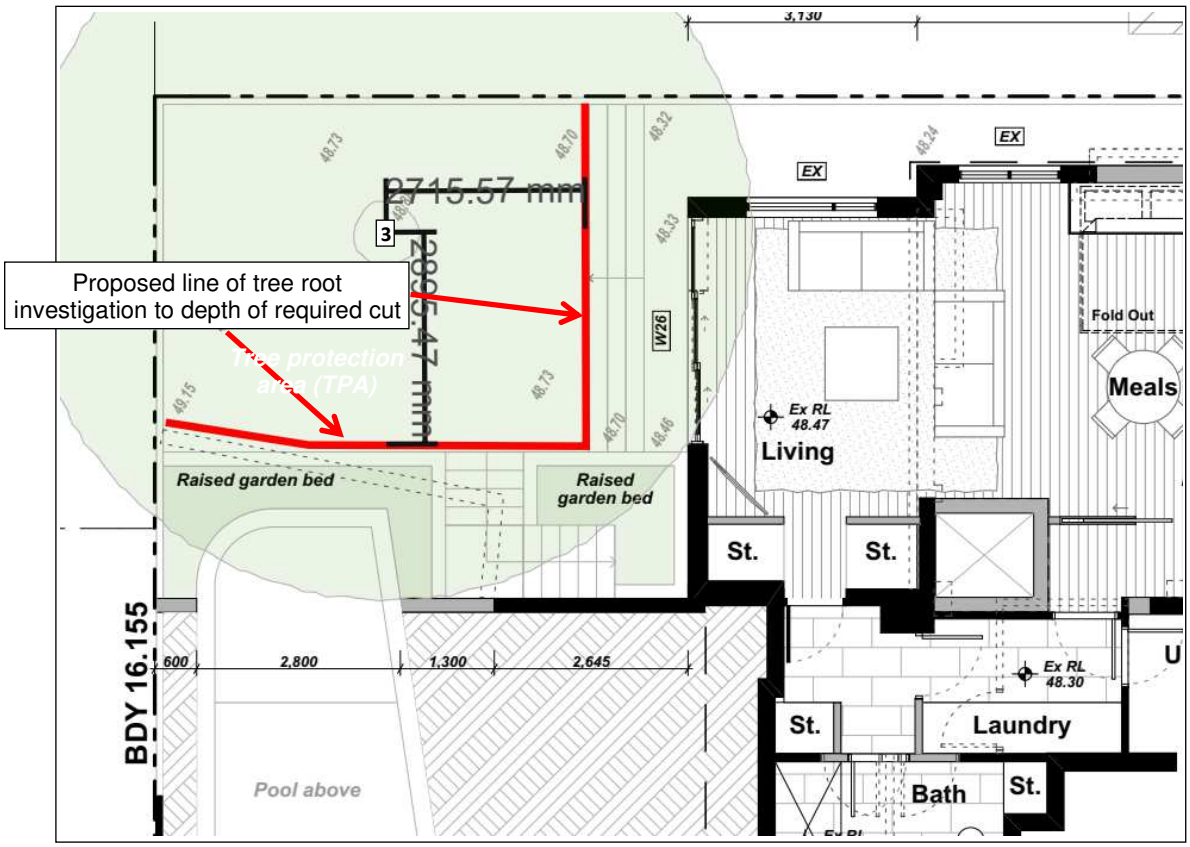


1.4.2 Tree 3: Proposed works outside the existing building & landscape retaining wall footprints is of Minor (<10%) TPZ encroachment with the footprint of new works on, or just within the 3m SRZ, *being the area required for tree stability*. Given the establishment of the tree within a confined garden bed it is likely that any encroachments within the top garden bed will encounter critical roots or interfere with tree vitality. Tree root investigations may provide more information on the location, distribution and impact on critical roots where retaining wall foundations and stair access is required within the 3m SRZ & 10.2m TPZ. Given encroachment close to the SRZ tree management is recommended to consist of the following guidelines:

a) Based on excavation for stair access and civil design plans for retaining wall foundations tree root investigations should be conducted to identify root conflict areas and for the purpose of providing additional recommendations in tree management.

b) Prior to works the tree is recommended to be protected with timber beam trunk & ground protection covering the exposed garden bed for construction work activity access as indicated within Appendix- B.

Figure 3, showing tree protection area (TPA) adjacent T3



2. CONCLUSIONS & RECOMMENDATIONS

2.1 Tree Removal

2.1.1 No prescribed trees require removal to accommodate this development proposal.

2.1.2 Non-prescribed palm T2 is recommended for removal or relocation to accommodate the proposed driveway widening design.

2.2 Specific tree management recommendations

2.2.1 In addition to the recommendations provided within this report the following summary and/or additional recommendations are provided as a guide for tree protection during works:

a) Tree 1:

- Structural testing to determine the extent of internal decay by active fungus and remaining holding wood located at the base is recommended to determine the trees remaining safe site usefulness.
- Based on tree retention a fenced tree protection area (TPA) extending 6m from the tree is recommended.
- Where excavations are required within the 12.6m Tree Protection Zone (TPZ) onsite arborist supervision is recommended to manage any encountered tree root(s).
- Where pathways are proposed within the TPZ, paths should be constructed utalising tree sensitive design such as being placed on top of ground level to minimize the impact on critical underlying tree roots.

b) Tree 3:

- Given the proximity of excavation to the tree, tree root investigations are required to provide additional tree management advice.
- For tree retention both timber beam trunk and ground protection is recommended that allows for construction site access over the garden bed during works.
- Further advise from a Bushfire consultant may be required as the property falls within a designated 10/50 vegetation area.

2.3 General tree protection requirements

a) Prior to site works Tree Protection Fencing (TPF) and/or zones as identified within 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 and prevented within TPZ radius include:

- Machine access, excavation, 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 incursions by design include:

- Within the TPZ radius, TPA or extending 2m outside the canopy dripline installation of native leaf mulch not greater than 80mm in depth and 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 4 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) 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.

g) During 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 certification.

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 installment. 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) 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) *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, or as indicated within Australian Standard AS 4970 – 2009 Protection of Trees on Development Sites.
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.

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

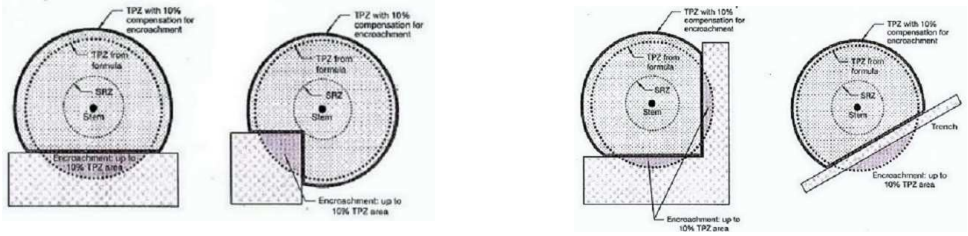
Mark A Kokot
AQF Level 5 consulting arborist
Diploma of Hort/Arboriculture (AQF5), Associate Diploma Parks Management (AQF4)
Certified Arborist / Tree Surgeon (AQF3), ISA Tree Risk Assessment Qualified 6/2024
Member: ISA, Arboriculture Australia & IACA, Working With Children No: WWC0144637E

APPENDICES

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 week 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.

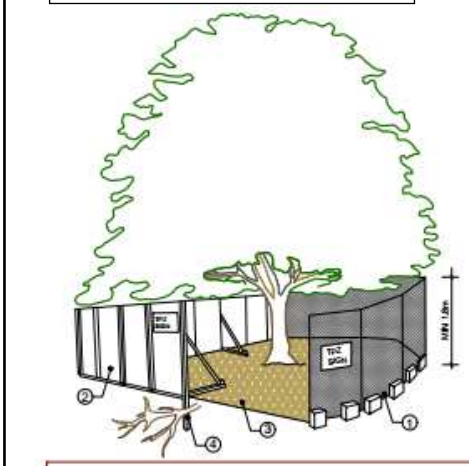
NOTE 2: The extent of inclusion within the TPZ radius has been categorised as follows:
No impact (0%) incursion, Low to negligible impact (<10%) of minor consequence, 10 - <15% incursion of moderate to low impact, 15 - <20% Medium to moderate level of impact and incursion where the project arborist is 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.htmlStandards 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 protection fencing, ground and trunk protection detail

A 1.8m high tree protection fencing



1. CHAIN WIRE MESH PANELS WITH SHADE CLOTH (IF REQUIRED) ATTACHED, HELD IN PLACE WITH CONCRETE FEET

2. ALTERNATIVE PLYWOOD OR WOODEN PALING FENCE PANELS. THE FENCING MATERIAL ALSO PREVENTS BUILDING MATERIALS OR SOIL ENTERING THE TPZ

3. MULCH INSTALLATION ACROSS SURFACE OF TPZ (AT THE DISCRETION OF THE PROJECT ARBORIST). NO EXCAVATION, CONSTRUCTION ACTIVITY, GRADE CHANGES, SURFACE TREATMENT OR STORAGE OF MATERIALS OF ANY KIND IS PERMITTED WITHIN THE TPZ

4. BRACING IS PERMISSIBLE WITHIN THE TPZ. INSTALLATION OF SUPPORTS TO AVOID DAMAGING ROOTS

5. PRUNING & MAINTENANCE TO TREE REFER TO AS 4373-2007 PRUNING OF AMENITY TREES

All tree protection fencing or areas requires appropriate signage clearly stating *a TPZ restriction zone* being a designated Tree Protection Area

PROVIDE FENCING AS DETAILED TO ALL TREES PROPOSED TO BE RETAINED ON THE SUBJECT SITE. FENCING TO BE LOCATED TO THE DRIP LINE OF TREES OR AS INDICATED ON PLANS OR DIRECTED ON-SITE BY ARBORIST. NO STOCKPILING WITHIN FENCE PERIMETERS.

TREE PROTECTION ZONE

B

Scaffolding within the Tree Protection Zone

Branches may require pruning to erect scaffolding. Pruning may be subject to local regulations. Flexible branches should be tied back in preference to pruning.

Minimum 1.8m high hoarding. Temporary fencing may be incorporated into scaffolding as either containment screening or as hoarding.

Note:
If excavation is required for installation of support post for fencing, the Project Arborist should assess any pruning of roots greater than 20mm diameter.

Scaffold planks

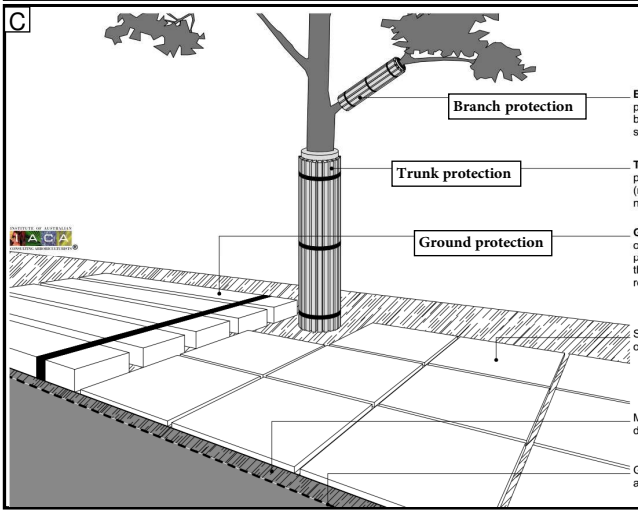
Boards or plywood to be installed over mulch or aggregate layer for any areas requiring access within the TPZ.

Soleplate over geotextile. No excavation for soleplate within TPZ.

Maximum 100mm and minimum 50mm depth mulch or aggregate layer within TPZ.

Geotextile fabric

C



Ground, trunk & branch protection

Branch Protection - use boards and padding to prevent damage to bark on branch. Boards are to be strapped, not screwed or nailed to the branch.

Trunk Protection - use boards and padding to prevent damage to bark (minimum 2m). Boards are to be strapped, not screwed or nailed to the trunk.

Ground Protection - use device strapped over mulch or aggregate layer. Ground protection device should be of a suitable thickness to prevent soil compaction and root damage.

Steel plates (or approved equivalent) with or without mulch or aggregate layer below.

Maximum 100mm and minimum 50mm depth mulch or aggregate layer.

Geotextile fabric underneath mulch or aggregate layer.

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. Values may be subjective however, are based after IACA Sustainable Retention Index Value (SRVI) which offer a visual understanding of the relative importance of the tree within the environment. The Landscape Significance for this assessment 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

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's 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 sloid structures with restricted anchoring root potential
0A	Noxious or invasive species located within heritage or biodiversity conservation areas		
1	Trees that are dead, significantly declining >75% volume or obviously hazardous	3	This rating incorporates trees that require further investigation of faults & defects such as pathogen ID, cavities or symptoms indicating internal damage or decay that cannot be assessed by visual examination. Further inspections may include Plant Disease Diagnostic Unit (PDDU) pathogen testing, arborist climbing inspection within the canopy, root crown investigation, drill penetrating and/or Picus Sonic Tomograph ultrasound testing procedures to determine extent of internal damage or decay.
2	Trees that are structurally damaged. Have poor structure or weak & detrimental large branch bark stem inclusions capable of sudden failure opposed to 2B. Tree may also 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 the near future, may include trees with included branch 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, are subject to wind loading pressure, or have tall forest form where exposure may result in windthrow or limb snap
		5A	Screen trees or shrubs that are routinely hedged or pruned for height 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 canopies or are visually low risk trees noted under a limited inspection only
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 i.e. fences to neighbouring sites

iii) Retention Value (RV): y [1] High, tree viable for retention, [2] Medium, viable for retention with minor faults which may reduce ULE, [3] Low, trees which should not restrict development applications containing faults that are likely to become problematic in the short term, [4] Remove, trees to be considered for removal due to average structural condition.

1	High retention	2	Medium retention	3	Low retention	4	Consider removal

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.
The five categories of U.L.E. are as follows:
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 to15 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

	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 (m)	Age	Vigour	Condition	Signifi-cance	VTA	RV	U. L.E.	Comments CV = Council verge tree NT= Neighbouring tree
1	*Angophora costata* Angophora	17 x 16	1050	3.5 / 12.6	M	Good	Fair / Poor?	3	3/2	3	3?	Requires further investigations by structural testing for internal decay, cavity at base W side with multiple fungal conks within. Tree with lower trunk lean N with fence line wounds NW & E sides
Design impact summary: Building footprint with ground level additions or alterations including driveway widening of very Minor (<10%) TPZ encroachment. Given low level TPZ encroachment or impact tree to be managed in accordance with Section 2.3 General tree protection requirements, specific to: no works including demolition within the SRZ without prior arborist advice, an appointed site arborist to install a fenced tree protection area (TPA) no less than 6m from the tree to allow for construction.												
*2	*Beaucarnea recurvata* Ponytail Palm	2.5 x 2	400	- / 2	SM	Good	Good	4	6	1	2/5	Exempt palm species with no significant visual faults
Design impact summary: Exempt palm species, can be relocated, retention requires management in accordance with Section 2.3 General tree protection requirements												
3	*Angophora costata* Angophora	15 x 13	450, 400	3 / 10.2	SM	Good	Good	3	2E	2	2	Tree with no significant visual faults Contained in garden bed with retaining walls on all sides. Established tree within environment, likely confined roots where root establishment or break out from walls is unknown.
Design impact summary: Proposed works include new access stairs, raised garden bed and altered retaining wall within the TPZ, and at or just within the 3m SRZ. Given root confinement within the garden bed the probability of encountering structural roots is likely. The proposed new additions beyond the existing footprint occupy Minor (<10%) of the TPZ where tree root investigations would provide more information on critical root impact by access stair(s) & retaining wall (foundation work) impacts. Tree retention requires detailing the impact of excavation within the SRZ & TPZ retaining wall proposal with general management in accordance with low level TPZ occupancy noted within Section 2.3 General tree protection requirements. Timber beam trunk and ground protection will be required to mitigate impacts during works. The property also falls within a designated 10/50 vegetation area where further advice for a bushfire consultant is recommended.												

APPENDIX- E: Tree Location Plan