rain Tree consulting
Arboricultural Management
PO Box 326 AVALON NSW 2107
Mobile 0419 250 248

28 January 2025

40 BUNGAN HEAD ROAD
NEWPORT, NSW

PROPERTY SUBDIVISION

ARBORICULTURAL IMPACT ASSESSMENT REPORT
Report Ref No- 13124

Prepared for
Mark Newell
40 Bungan Head Road
NEWPORT NSW 2106

Prepared by
Mark A. Kokot
AQF Level 5 Consulting arborist

CONTENTS **page**

INTRODUCTION

This report has been commissioned by Mr. Mark Newell. The purpose of this report is to assess the impact on trees by proposed design footprints in relation to a new property subdivision proposal. The new proposal consists of providing two (2) separate allotments known as No. 40 & No. 40A, located within Lot 7 of DP 236330 known as 40 Bungan Head Road NEWPORT NSW.

Recommendations for retention or removal of trees is based on a trees protection status being a prescribed (protected) or non-prescribed tree, tree structural condition, accorded Useful Life Expectancy (ULE) and potential impacts by proposed building and driveway footprints.

Within this report guidelines addressing future tree protection zone (TPZ) or tree protection areas (TPA's) for initial planning and development stages have been provided.

Both the Structural Root Zone (SRZ) and Tree Protection Zone (TPZ) radiuses of individual trees have been provided within Appendix- C. These setbacks are recommended to be utilized for initial architectural, construction plan and associated work requirements where design may require to be situated within TPZ & SRZ radiuses.

To ensure a tree remains viable, ideally design should be limited to *Minor* (<10%) encroachments within TPZ radiuses as identified within Appendix- A *diagram of acceptable incursions within the TPZ* (AS4970-2009).

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 within 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 of Appendix- C with tree locations provided within the Tree Location Plan of Appendix- 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.

METHODOLOGY

1. In preparation for this report a site and ground level visual tree inspection was conducted on Monday 4th November 2024 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- B.

2. The inspection was limited to visual observations 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). Where multi stems at 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' 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 indicated within provided survey and/or design documentation.

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

   Modality, project No: 2139
   - Site Analysis Plan Dwg No: SD 01 Issue B dated plotted 13.12.2024

   Stutchbury Jaques Pty Ltd, Land Surveyors
   - Detailed Survey ref No: 11604/22, Sheet 1, dated 18.10.2023
   - Proposed Subdivision of Lot 7 in DP 236330, DP Proposed ref No: 11604 / 22 dated 16.7.2024

1. SUMMARY OF ASSESSMENT

1.1 General tree assessment

1.1.1 Thirteen (13) trees have been assessed for the purpose of this property subdivision proposal. Of the thirteen trees eight (8) trees are located within an adjoining property. Within the site the remaining four (4) trees are prescribed native trees with trees considered viable for retention without change in existing site conditions or *Major* (>10%) modification within Tree Protection Zone (TPZ) radiuses as indicated within the SRZ & TPZ distance column of Appendix- C.

1.2 The subdivision proposal

1.2.1 The proposal consists of subdividing the subject site into two (2) separate allotments described as Lot 101 in No. 40 & Lot 102 known as No 40A. Based on the documentation assess proposed design footprints of dwellings and driveway access have *Negligible* to *Minor* or manageable *low-level* (<15%) TPZ encroachment impacts without Structural Root Zone (SRZ) occupancy, *being the area required for tree stability* (AS4970).

Figure 1, showing proposed property subdivision Lots

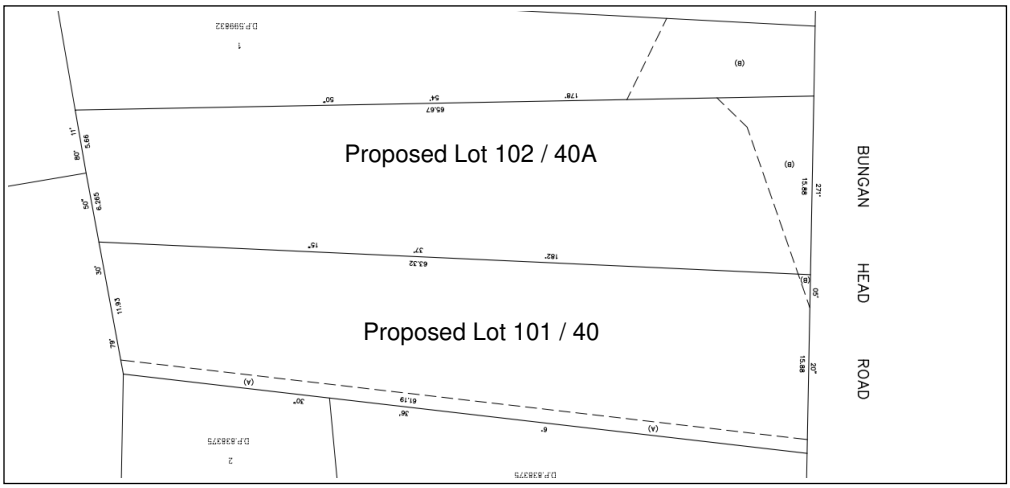
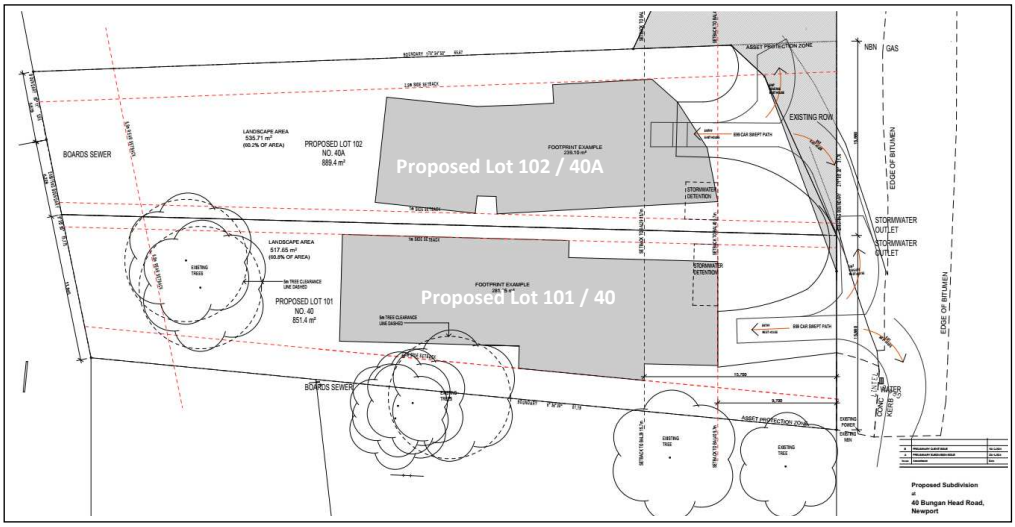


Figure 2, showing proposed design footprints



1.3 Tree removal to accommodate design

1.3.1 No trees require removal to accommodate this subdivision proposal.

1.4 Discussion of development impacts

Trees that receive Negligible (0%) or Minor (<10%) TPZ encroachments

1.4.1 Of the thirteen trees assessed twelve (12) trees receive *negligible* or *Minor* TPZ encroachments by proposed building envelopes and driveway footprints being identified as trees.

- T1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12 & 13.

Mitigating future design occupancy and impacts within tree protection zones is recommended to consist of limiting TPZ encroachments to at or <15% occupancy without access or excavation within structural root zones (SRZ's), refer Section 2.2 *Trees specified for retention*.

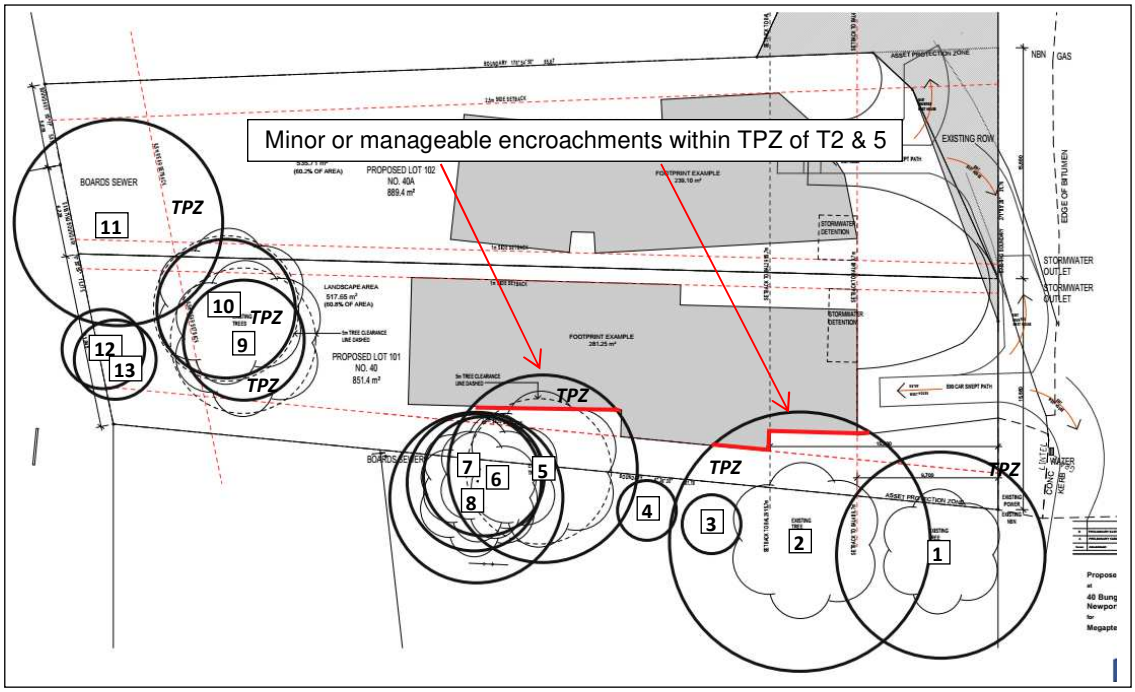
Trees receiving Major (>10%) & manageable impacts by design

1.4.2 One (1) tree T5 receives a manageable (<15%) TPZ occupancy at or near 11.6% without SRZ encroachment.

Given the *low level* & manageable TPZ occupancy impact the management of the tree is recommended to consist of the same principles identified for *Minor* (<10%) encroachment impacts (above) described as: Design occupancy within tree protection zones is recommended to consist of limiting TPZ encroachments to at or <15% occupancy without access or excavation within structural root zones (SRZ's), refer Section 2.2 *Trees specified for retention*.

1.4.3 The identified encroachment impacts by the design proposal have been detailed and require to be reviewed as part of this report within Appendix-C, with the following diagram showing TPZ encroachment areas.

Figure 3, showing TPZ & encroachment areas



2. CONCLUSIONS & RECOMMENDATIONS

2.1 Tree Removal

2.1.1 No trees require removal to accommodate this property subdivision proposal.

2.2 Trees specified for retention

2.2.1 For those trees located near works and specified for retention the SRZ & TPZ radiuses are recommended to be detailed within design documentation specific to a site analysis plan such that encroachment areas and development incursions can be clearly identified. For allowable incursions within the TPZ refer to Appendix- A *diagram of acceptable incursions* with *low-level* (<15%) TPZ occupancy without SRZ encroachment is considered a manageable encroachment impact.

Where greater than 10% incursions are proposed further advice from an appointed project arborist is required at the design stage for the purpose of minimising impact to trees by design footprints or construction activities.

Basic tree protection methodology for *Minor* (<10%) or manageable (<15%) encroachments have been provided within generic protection methodology noted within Section 2.4 *General tree protection requirements.*

2.2.2 For future construction proposals detailing additional tree protection methodology and impacts in accordance with Australian Standard AS4970 Protection of Trees on Development Sites– 2009 is to be specified within an approved Arboricultural Impact Assessment (AIA) report.

2.3 Future civil & structural design works

2.3.1 Trees which have been identified for retention and specific protection for the purpose of development require final arboricultural planning advice and reports to be appropriately retained. Report requirements and ongoing arborist activities are identified within the Australian Standard AS4970 '*Protection of Trees on Development Sites*' 2009 being specific to:

- AS4970 section 2.3.4: *Development design and review,* the ongoing review of architectural, engineering (e.g. bulk earthworks and construction drawings) services and landscape drawings. The purpose of this is to determine the potential impacts on trees proposed for retention.
- AS4970 section 2.3.5: *Arboricultural impact statement*, to be prepared once the final development layout is complete. This report identifies trees to be removed, retained or transplanted. The report explains tree protection methodology required to minimise development impacts where development encroachment is within the TPZ. The location of tree protection methods should also be shown on other documents such as demolition, bulk earth works, construction and landscape plans (AS4970).

2.4 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 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) *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 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, advice, site supervision 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 specified within development conditions of consent.

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

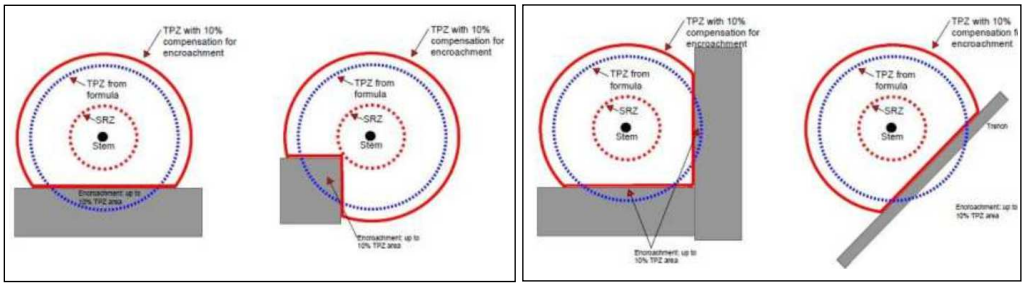
Diploma of Hort/Arboriculture (AQF5), Associate Diploma Parks Management (AQF4)
Certified Arborist / Tree Surgeon (AQF3), ISA Tree Risk Assessment Qualified 6/2029
Member: ISA, Arboriculture Australia & IACA, Working With Children No: WWC0144637E

APPENDICES

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 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**:
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.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 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, 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 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 radial root anchorage
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 or 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 arborist diagnosis & management.		
2A	Tree issue specific to basal and/or root plate damage, or very shallow soils, or steep topography resulting in poor anchorage where condition or location 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 pressure, or have tall forest form where sudden exposure may result in windthrow or limb snap
		5A	Planted screen trees, trees or shrubs that are routinely hedged, pruned or managed 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 limited visual 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- fences to neighbouring sites

Determined by [1] tree fee 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 short term, [4] trees to be considered for removal due to average condition and low retention values.

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.

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- C: Tree Assessment Schedule

Refer Appendix- B Tree retention value Checklist

	Consider tree removal due to dead or high-risk 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** (health)	**Condition** (structure)	**LS**	**VTA**	**RV**	**ULE**	**Comments** CV = Council verge tree NT = Neighbouring tree
1 *NT*	*Araucaria heterphylla* Norfolk Island Pine	11 x 8	650	2.7 / 7.2	SM	Good	Fair / Good	3	2C-7	2	1	Potential apical top failure modifying form, / limb snap at 9-10m, remaining above ground visual parts appear in good order
Design & impact summary: Proposed driveway & building envelope located outside the TPZ having Negligible (0%) SRZ & TPZ encroachment. Tree management should be specific to: no access or excavation within the SRZ, TPZ occupancy should be limited to no greater than 15% of the TPZ radius.												
2 *NT*	*Araucaria heterphylla* Norfolk Island Pine	19 x 12	750	3 / 9	SM	Fair / Good	Good	3	4-7	2	1	Canopy slightly environmentally stressed by exposure?, lower trunk past pruning cuts, remaining above ground visual parts appear in good order
Design & impact summary: Proposed driveway & building envelope of Minor (<10%) TPZ occupancy having low-level impact without SRZ encroachment. Given low level TPZ impact & occupancy tree management should be specific to: no access or excavation within the SRZ, no additional excavation or TPZ occupancy beyond design footprint with additional works or TPZ encroachment recommended to be limited to 15% of the overall TPZ radius.												
3 *NT*	*Livistona australis* Cabbage Palm	3 x 2	300	- / 2	ESM	Good	Good	4-3	7	1	1	Restricted visual inspection, above ground visual parts appear in good order
Design & impact summary: Proposed building envelope located outside the TPZ having Negligible (0%) TPZ encroachment. Palm management should be specific to: any TPZ occupancy should be limited to no greater than 15% encroachment within the TPZ radius.												
4 *NT*	*Livistona australis* Cabbage Palm	3 x 2	300	- / 2	ESM	Good	Good	4-3	7	1	1	Restricted visual inspection, above ground visual parts appear in good order
Design & impact summary: Proposed building envelope located outside the TPZ having Negligible (0%) TPZ encroachment. Palm management should be specific to: any TPZ occupancy should be limited to no greater than 15% encroachment within the TPZ radius.												
5 *NT*	*Ficus rubiginosa* Port Jackson Fig	12 x 9	550	2.7 / 6.6	SM	Good	Fair / Good	3	2C-7	2	1	One sided canopy biomass – N, NE, E, past pruning cuts with exposure SW side having epicormic shoots throughout upper branch scaffolds
Design & impact summary: Proposed building envelope of Moderate to Low (10-15%) TPZ incursion at or near 11.6% of manageable and low-level impact without SRZ encroachment. Given low level TPZ impact & occupancy tree management should be specific to: no occupancy or excavation within the SRZ, no additional excavation or TPZ occupancy beyond design footprint with any additional works or TPZ encroachment recommended to be limited to 15% of the overall TPZ radius.												

	Consider tree removal due to dead or high-risk 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 (health)	Condition (structure)	LS	VTA	RV	ULE	Comments (CV = Council verge tree, NT = Neighbouring tree)
6 *NT*	*Ficus rubiginosa* Port Jackson Fig	4 x 2.5	350	2.3 / 4.2	ESM	Good	Poor	3	2-7	2	<2	Failed / snapped trunk at 4m modifying form, stub end decay evident
Design & impact summary: Proposed building envelope of Negligible (0%) SRZ & TPZ encroachment. Given negligible TPZ occupancy tree management should be specific to: no occupancy or excavation within the SRZ, no additional excavation or TPZ occupancy beyond design footprint with any additional works or TPZ encroachment recommended to be limited to 15% of the overall TPZ radius.												
7 *NT*	*Ficus rubiginosa* Port Jackson Fig	6 x 4	400	2.4 / 4.8	ESM	Good	Good	3	7	2	1	Suppressed canopy form STH side, significant bow & lean NTH, canopy extension over boundary by 2+m
Design & impact summary: Proposed building envelope of Negligible (0%) SRZ & TPZ encroachment. Given negligible TPZ occupancy tree management should be specific to: no occupancy or excavation within the SRZ, no additional excavation or TPZ occupancy beyond design footprint with any additional works or TPZ encroachment recommended to be limited to 15% of the overall TPZ radius.												
8 *NT*	*Ficus rubiginosa* Port Jackson Fig	12 x 11	500	2.6 / 6	ESM	Good	Good	3	7	2	1	Suppressed canopy form EST side biomass W, fused to T6 with no significant visual faults
Design & impact summary: Proposed building envelope of Negligible (0%) SRZ & TPZ encroachment. Given negligible TPZ occupancy tree management should be specific to: no occupancy or excavation within the SRZ, no additional excavation or TPZ occupancy beyond design footprint with any additional works or TPZ encroachment recommended to be limited to 15% of the overall TPZ radius.												
9	*Ficus rubiginosa* Port Jackson Fig	12 x 10	350	2.3 / 4.2	ESM	Good	Good	3	2C-7	2	1	Slight lean STH, minor past pruning cuts with stub end decline – appears not immediately detrimental
Design & impact summary: Proposed building envelope of Negligible (0%) SRZ & TPZ encroachment. Given negligible TPZ occupancy tree management should be specific to: no occupancy or excavation within the SRZ, no additional excavation or TPZ occupancy beyond design footprint with any additional works or TPZ encroachment recommended to be limited to 15% of the overall TPZ radius.												
10	*Ficus rubiginosa* Port Jackson Fig	11 x 9	400	2.4 / 4.8	ESM	Good	Fair / Good	3	2C	2	1	Minor lower trunk past pruning cuts, one sided canopy biomass – EST, plus slight lean EST
Design & impact summary: Proposed building envelope of Negligible (0%) SRZ & TPZ encroachment. Given negligible TPZ occupancy tree management should be specific to: no occupancy or excavation within the SRZ, no additional excavation or TPZ occupancy beyond design footprint with any additional works or TPZ encroachment recommended to be limited to 15% of the overall TPZ radius.												

	Consider tree removal due to dead or high-risk 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 (health)	Condition (structure)	LS	VTA	RV	ULE	Comments CV = Council verge tree NT = Neighbouring tree
11	*Eucalyptus robusta* Swamp Mahogany	16 x 12	650	2.7 7.2	SM	Fair / Good	Good	3	4-7	2	2	Environmentally stressed with apical stem decline, Restricted VTA vegetation at base, above ground visual structure appears in good order
Design & impact summary: Not plotted within design documentation. Based on survey plan, *building envelope is of Negligible (0%) SRZ & TPZ encroachment. Given negligible TPZ occupancy tree management should be specific to: no occupancy or excavation within the SRZ, any proposed TPZ encroachment is recommended to be limited to 15% of the TPZ radius.*												
12	*Livistona australis* Cabbage Palm	7 x 4	300	- 3	ESM	Good	Good	3	6	1	1	Palm with no significant visual faults, Strelitzia palms within TPZ
Design & impact summary: Proposed building envelope located outside the TPZ having Negligible (0%) TPZ encroachment. Palm management should be specific to: any TPZ occupancy should be limited to no greater than 15% encroachment within the TPZ radius.												
13	*Livistona australis* Cabbage Palm	5 x 4	300	- 3	ESM	Good	Good	3	6	1	1	Palm with no significant visual faults
Design & impact summary: Proposed building envelope located outside the TPZ having Negligible (0%) TPZ encroachment. Palm management should be specific to: any TPZ occupancy should be limited to no greater than 15% encroachment within the TPZ radius.												

APPENDIX- D: Tree Location Plan