

PEAKE ARBORICULTURE

ARBORICULTURAL IMPACT ASSESSMENT

Lot 20/-/DP239260 46 Cooyong Road Terrey Hills, NSW 2084

Prepared on: 27/06/2025

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1 Introduction & Aims

1.1 This Arboricultural Impact Assessment (AIA) was requested by Mark Wysman – Northern Beaches Designs on the 19th of June 2025. This AIA is to address the potential impacts upon surrounding trees from the proposed development of Lot 220/-/DP239260, 46 Cooyong Rd, Terrey Hills NSW 2084 (the subject site). The subject site can be seen in figure 1 below.

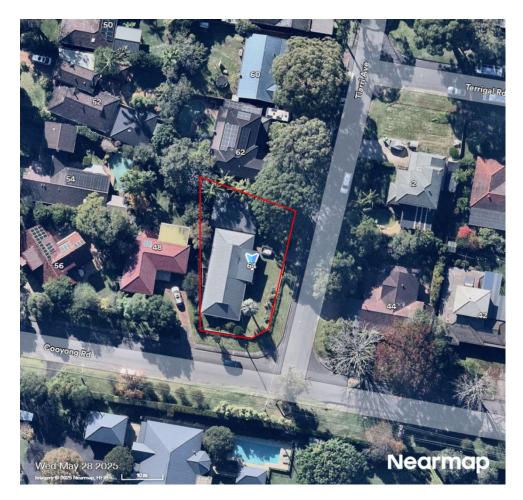


Figure 1: The subject site, site boundary shown in red. (Nearmap, 2025)

1.2 The aim of this report is to:

- Examine Councils policies in regard to application requirements needed for the preparation of an Arboricultural Impact Assessment.
- Visually assess and identify the subject trees & the environment in which they grow.
- Assess construction impacts for each subject tree through the revision of plans for the proposed development.



2 LEGISLATION REQUIREMENTS

- 2.1 Lot 20/-/DP239260, 46 Cooyong Rd, Terrey Hills NSW 2084 is zoned R2 Low Density Residential and is located within the Local Government Area of Northern Beaches Council (NSW Government, n.d.)
- 2.2 Chapter 2 Vegetation in non-rural areas of the State Environmental Planning Policy (Biodiversity & Conservation) 2021 (NSW Government, 2021) has been considered in the preparation of this report. The aims of the chapter are to;
 - "(a) to protect the biodiversity values of trees and other vegetation in non-rural areas of the State, and
 - (b) to preserve the amenity of non-rural areas of the State through the preservation of trees and other vegetation."
- 2.3 Warringah Development Control Plan 2011 Amendment 14, specifically part E1 Preservation of Trees or Bushland Vegetation (Northern Beaches Council, 2011 (amendment 14 20/10/2018)) has been considered in the preparation of this report.
- 2.4 Part H Appendices, of the Warringah Development Control Plan 2011 (Northern Beaches Council, 2011 (amendment 14 20/10/2018)) contains information required for the preparation of an Arboricultural Impact Assessment. This includes
 - Appendix 8 Removal of Tree Tests
 - Appendix 9 Tree Retention Assessment
 - Appendix 12 Tree Protection Plan



3 METHOD

- 3.1 The tree and site were visually assessed from ground level, using methods developed by the Visual Tree Assessment (VTA) process (Claus Mattheck, 2006). No detailed inspections as described in the VTA process have been undertaken. The genus and species of the tree was recorded as well as the dimensions for diameter at standard height (DSH), diameter above buttress (DAB) and canopy width¹. Height and age of the trees were estimated as well as the percentage of deadwood, the tree was given a Health / Vigour rating and signs and symptoms of pests and diseases were looked for. Structural defects and comments were recorded.
- 3.2 Calculations have been made using guidelines supplied in AS4970-2025 Protection of Trees on Development Sites (Standards Australia, 2025) for the;
 - Notional Root Zone (NRZ),
 - Structural Root Zone (SRZ),
 - Live Crown Ratio (LCR),
 - Live Crown Size (LCS),
- 3.3 The tree has been allocated a landscape significance rating of Low, Medium or High using the IACA Significance of a Tree, Assessment Rating System (STARS)© (IACA, 2010). Stars assessment criteria includes:
 - Condition and Vigour
 - Form, species specific
 - Provenance, age and botanical significance
 - Heritage and Ecological significance
 - Size, shape, and local amenity value
 - Restrictions to tree growth

Appendix A contains the assessment criteria in full.

- 3.4 The tree has been given a Useful Life Expectancy (ULE) rating, categorised as either;
 - Long 40+ years
 - Medium 15-40 years
 - Short 5-15 years
 - Consider for removal <5 years

¹ Dimensions have been estimated as accurately as possible due to the subject tree being located on a neighbouring property.



4 OBSERVATIONS

- 4.1 Listed in Table 1 below are observations from the subject tree relating to;
 - Health and vigour. (Dead, Senescent, Poor, Fair, Good, Excellent)
 - Structure / Form. (Poor, Fair, Good, Excellent)
 - Structural defects and comments.
 - Any signs/symptoms of pest and disease attack.
 - Previous pruning or wounds.

Tree No.	Genus/Species & Common Names	Health / Vigour	Structure / Form	Structural Defects/ Comments	Pests/ Disease	Pruning/ Wounds
1	Acer buergerianum Trident Maple	Fair	Poor	DSH estimated at 1m below trifurcation.	None visible	Previously lopped at 1.2m

Table 1: Tree Observations

- 4.2 Listed in Table 2 below are measurements from the subject tree relating to;
 - Diameter at standard height (DSH).
 - Diameter above buttress (DAB).
 - Canopy spread measured to the North, East, South and West (N, E, S, W).
 - Tree height.
 - Lowest scaffold branch.

Tree	Species Ma	Maturity Height (m)	Lowest	Spread (m)			m)	DSH /	DAB	
Number			(m)	Scaffold (m)	N	Ε	S	W	Multi (cm)	(cm)
1	Acer buergerianum	Mature	6	2	3	2	3	2	25	30

Table 2: Tree Measurements



- 4.3 Listed in Table 3 Below are calculations from the subject tree relating to:
 - Notional Root Zone (NRZ)
 - Structural Root Zone (SRZ)
 - Live Crown Ratio (LCR)
 - Live Crown Size (LCS)

Tree Number	Species	NRZ (m)	SRZ (m)	Live Crown Size (m2)	Live Crown Ratio (%)
1	Acer buergerianum	3	2	20	67%

Table 3: Calculations from the subject trees



5 Tree Retention Values

- 5.1 The subject tree has been allocated a retention value using the priority Matrix in the *IACA Significance of a Tree*, Assessment Rating System (STARS)© (IACA, 2010). The Matrix uses the Landscape Significance rating combined with the Useful Life Expectancy (ULE) to determine a retention value of either:
 - Priority for Retention (High) All measures must be taken to retain and protect
 these trees. If the guidelines set out in AS4970-2009 Protection of trees on
 development sites cannot be used to protect the trees, design modification or relocation of the proposed development should be considered.
 - Consider for Retention (Medium) Retention of these trees should remain a priority.
 If the trees are adversely affecting the proposed development and all protection measures have been considered but are not viable, removal can be considered.
 - Consider for Removal (Low) Retention of these trees is not important. No modification to design should be considered for their retention.
 - Priority for Removal Trees in an irreversible decline, weed species or hazardous trees. These trees should be removed.

Tree Number	Species	Landscape Significance Rating	Useful Life Expectancy	Retention Value
1	Acer buergerianum	Low	Medium (15-40)	Low-Medium

Table 4: Tree Retention Values



6 Construction Impacts

The locations of the subject tree and its NRZ, SRZ and TPZ are overlayed on the attached site analysis plan.

6.1 T1 has an encroachment to the SRZ and to the TPZ of approximately 11% from the proposed timber deck. Although major under AS4970-2025, the proposed decking is located on piers (see figure 2 below) and will minimize soil disturbance within the NRZ (as described in section 2.2.4 of As4970-2025 Protection of trees on development sites. No long-term detrimental effects are expected upon T1 from the proposed development.

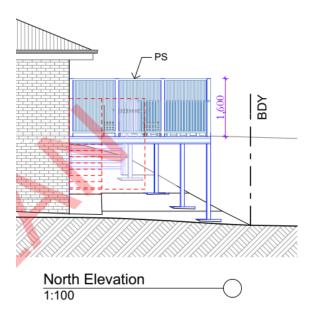


Figure 2: Elevation showing the proposed decking located upon piers. (Northern Beaches Designs 19/05/2025)



7 DOCUMENTS USED IN THE PREPARATION OF THIS REPORT

7.1 Listed in table 6 below are documents used in the preparation of this report.

Document type	Source/ Author	Title	Date	Summary
Survey	Waterview Surveying Services	Survey Plan	12/03/2025	Levels and details over 46 Cooyong Rd, Terrey Hills NSW 2084.
Plan Set	Northern Beaches Designs	DA2 Survey Plan DA3 Site Analysis Plan DA4 Garage Floor Plan DA5 Entry floor Plan DA6 Roof Plan DA7 Elevations N/S DA8 Elevations E/W DA9 Section A-A, B-B	19/05/2025	Plan Set showing existing structures and proposed development at 46 Cooyong Rd, Terrey Hills NSW 2084
Plan Overlay	Peake Arboriculture	Tree Protection Plan.	27/06/2025	Plan showing the tree location, notional root zone, structural root zone and tree protection zone at 46 Cooyong Rd, Terrey Hills NSW 2084

Table 5: Documents used in the preparation of this report.



8 RECOMMENDATIONS

- 8.1 The subject tree included in this assessment is to be retained and protected. The appointment of a project arborist (AQF Level 5) for the duration of the project, should be made prior to the commencement of any site works including demolition, to implement tree protection measures recommended below and in the Tree Protection Specification.
- 8.2 The project arborist is to supervise excavation for piers within the SRZ/NRZ of T1. Any tree roots exposed during excavation within the SRZ with a diameter greater than 40mm must be assessed by the project arborist. Recommendations for root pruning or design must then be made (any remediation required to offset damage from root pruning must also be made.)
- 8.3 A physical Tree Protection Zone has not been recommended due to a boundary fence protecting the majority of the Notional Root Zone. Where the notional root zone extends into the subject property activities excluded from a TPZ (detailed in section 9.4 of this report) must be observed.

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9 Tree Protection Specification – As Per AS4970 – 2025

Tree Protection will be undertaken in the three stages listed below. Certification from the project arborist is required at/during each stage.

9.1 Pre - Development Stage

- Prior to any tree removal an AQF level 5 arborist must be engaged as site arborist to
 oversee all arboricultural aspects of the project, including tagging all trees and identifying
 trees for removal.
- Tree protection should be installed by a minimum AQF level 3 arborist and be supervised by an AQF level 5 arborist in accordance with the guidelines from AS4970-2009 Protection of trees on development sites (Standards Australia, 2025), and the information provided in this report.
- All trees to be retained must be visually assessed and their current health and condition recorded. The minimum assessment categories are provided below.

Visual assessment benchmark

- Health and Vitality (Good/Fair/Poor/Dead)
- Leaf Damage
- Pests and Diseases
- Deadwood percentage
- Dieback Percentage.
- Mechanical Damage
- Recent Pruning
- Certifying of Pre-Construction Tree Protection by the site arborist will conclude the preconstruction phase of development. Construction must not commence until Pre-Construction tree protection has been certified by the site arborist.
- The project manager is to be made aware of Tree Protection requirements for the duration of the project.



Pre-development Arboricultural Certification

	Pre- Development requirement met. (Y/N)	Project Arborist Signature	Date
All trees tagged. Trees for removal identified by project arborist.			
All tree protection measures have been correctly installed.			
A pre-development visual inspection of all trees to be retained has been undertaken by the project arborist			
The project manager has been made aware of all tree protection measures required for the duration of the project.			



9.2 DEVELOPMENT STAGE

- Tree protection measures must remain in place during this stage. They cannot be removed intermittently for access and any modifications to Tree Protection Fencing Locations as shown in the tree protection plan, must be authorised, recorded and carried out by the site arborist.
- The project arborist is to be present for all arboricultural supervision within TPZ's of retained trees, as recommended by the arboricultural impact assessment(AIA) and tree protection plan.
- The site arborist will conduct regular visits (every two months) in accordance with AS4970-2009 to visually assess and record the health and condition of the trees being retained.
- Tree protection measures will also be assessed regularly to ensure they are functioning correctly. Any maintenance required for Tree Protection measures will be performed.
- A stop work notice will be issued to the project manager if any Tree Protection Measures are not found to be complying with the Tree Protection Plan.
- Any incidents relating to retained trees must be reported immediately to the site arborist to be documented and a plan for remediation put in place.

Development Stage Arboricultural Certification.

	Development requirement met. (Y/N)	Project Arborist Signature	Date
Tree protection measures have remained in place for the duration of the development.			
Tree Health and vitality has not deteriorated during the development.			
Arboricultural supervision has been undertaken as required by the AIA and Tree Protection Plan			
Incidents relating to retained trees have been reported to the project arborist.			
Remediation has been implemented as necessary for the successful retention of retained trees.			



9.3 CONCLUSION OF DEVELOPMENT

- Final visit from the site arborist to report on the health and condition of the trees that have been retained and the removal of tree protection. Incidents documented during the development stage will be included in this report.
- Any remedial work necessary upon the completion of development will be recommended in the final report.
- Replacement trees are to be planted before the project arborists final inspection.

Conclusion of Development Arboricultural Certification.

	Development requirement met. (Y/N)	Project Arborist Signature	Date
Tree protection measures have remained in place for the duration of the development.			
Tree Health and vitality has not deteriorated during the development.			
All documentation from site inspections/supervision has been compiled.			
Remediation has been implemented as necessary for the successful retention of retained trees. Any remediation to be continued has been recommended in the final report.			
Replacement tree planting has been undertaken and all replacement trees have been planted correctly.			



9.4 Tree Protection zone requirements

Tree Protection Zones (TPZs), will be set out before the commencement of construction works.

According to AS 4970-2025, activities excluded from the TPZ include but are not limited to-:

- (a) Excavation, cultivation or disturbance of the soil, including scraping of the surface.
- (b) Equipment and material storage.
- (c) Preparation of chemicals, including preparation of cement products.
- (d) Movement or parking of vehicles and plant.
- (e) Dumping of waste.
- (f) Spreading or stockpiling of fill.
- (g) Refuelling.
- (h) Washing down and cleaning of equipment or hard surfaces.
- (i) Fires.
- (j) Physical damage to the tree.

Activities specified in items (a) to (e) may be permitted with appropriate protection measures, as detailed in the TPS and TPP.

Source Australian Standard AS 4970-2025 Protection of trees on development sites.



9.5 Tree Protection Zone Signage

A tree protection zone sign must be affixed to all Fenced Tree Protection Zones. (Example Below)



Activities excluded from the TPZ include —

- (a) Excavation or disturbance of the soil, including scraping of the surface
- (b) Spreading or stockpiling of fill
- (c) Cultivation
- (d) Equipment and material storage
- (e) Preparation of chemicals, including preparation of cement products
- (f) Parking of vehicles and plant
- (g) Refuelling
- (h) Dumping of waste
- (i) Wash down and cleaning of equipment
- (j) Fires
- (k) Physical damage to the tree

Contact:

Contact Project Manager for copy of the Tree Protection Specifications (TPS).

An Example of a TPZ sign. Source, Australian Standard AS 4970-2025 Protection of trees on development sites



10 REFERENCES

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11 GLOSSARY OF TERMS

Age class:

Young - planted recently.

Semi Mature - Reached less than 20% of expected life span.

Mature - Between 20-80% of expected life span.

Over Mature - Past 80% of expected life span.

Health and Vigour:

Dead - Dead tree.

Senescent – Advanced state of decline. Significant deadwood visible. <20% live foliage cover

Poor - Declining. Dieback and deadwood visible. 20-60% live foliage cover.

Fair – Low to average vigour. Dieback or visible. 60-90% live foliage cover.

Good - Good vigour. Small amount of dieback visible. 90-100% live foliage cover.

Excellent - Excellent vigour. No dieback or deadwood visible. 100% live foliage cover.

Structure / Form

Excellent (E), Good (G), Fair (F), Poor (P), this refers to the tree's form & growth habit, as modified by its environment (aspect suppression by other tree/s, soils,) & the state of the scaffold (i.e. trunk & major branches), including structural defects such as cavities, crooked trunks or weak trunk/branch junctions. These are not directly connected with health & it is possible for a tree to have poor structure but have fair condition/vigour.

Crown:

Measured from the top of the tree to the lowest branch, comprising of leaves and branches.

Deadwood:

Dead branches found in a trees crown. An entirely dead branch or stem.

Dieback:

The death of portions of the crown. The death of branches or shoots from the tips inward.

Defect:

A feature of a tree that affects the health or structure in an adverse manner.

Decay:

The process of micro-organisms breaking down woody tissue.

Cavity:

A void in a woody stem, usually created by decay. This can be open or closed.



Soil Texture:

The amounts of sand, silt and clay in a soil.

Soil pH:

A figure expressing the acidity or alkalinity of a soil.

DBH:

Diameter at Breast Height refers to the tree trunk diameter measured at breast height or 1.4 metres above ground level.

DAB:

Diameter Above the Buttress refers to the tree trunk diameter measured above the root buttress and is used to calculate the radius of the SRZ.

TPZ:

Tree Protection Zone The radius of the TPZ is calculated for each tree by multiplying the DBH \times 12. To establish the TPZ this radius is measured from the centre of the stem at ground level and it is an area that is to be isolated from construction disturbance. Any encroachment into the TPZ of more than 10% is considered to be a major encroachment.

SRZ:

Structural Root Zone The radius of the SRZ is calculated using the following formula: $r(SRZ) = (Dx50)^{0.42} \times 0.64$ where D is the DAB measured in metres. It is the area around a tree that is required for tree stability and is usually applied on constructions sites after there has been a major encroachment of the TPZ.

LCR:

Live Crown Ratio. The height of a trees crown, relative to the total height of the tree. Often used as an indicator of overall stability.

LCS:

Live Crown Size. The area of the crown as viewed from one aspect.

H/D:

Height over Diameter ratio. An indicator of failure due to slenderness. 30 is the optimum ratio. Greater than 50 is considered hazardous



12 RELEVANT APPENDICES

12.1 APPENDIX 1 - S.T.A.R.S.© (IACA 2010)

Significance of a Tree, Assessment Rating System* (IACA 2010) - S.T.A.R.S. ©

The landscape significance of a tree is an essential criterion to establish the importance that a particular tree may have on a site. However, rating the significance of a tree becomes subjective and difficult to ascertain in a consistent and repetitive fashion due to assessor bias. It is therefore necessary to have a rating system utilising structured qualitative criteria to assist in determining the retention value for a tree. To assist this process all definitions for terms used in the *Tree Significance - Assessment Criteria* and *Tree Retention Value - Priority Matrix*, are taken from the IACA Dictionary for Managing Trees in Urban Environments 2009.

This rating system will assist in the planning processes for proposed works, above and below ground where trees are to be retained on or adjacent a development site. The system uses a scale of *High*, *Medium* and *Low* significance in the landscape. Once the landscape significance of an individual tree has been defined, the retention value can be determined. An example of its use in an Arboricultural report is shown as Appendix A.

Tree Significance - Assessment Criteria

High Significance in landscape

- The tree is in Good condition and Good vigor;
- The tree has a form typical for the species;
- The tree is a remnant or is a planted locally indigenous specimen and/or is rare or uncommon in the local area or of botanical interest or of substantial age;
- The tree is listed as a Heritage Item, Threatened Species or part of an Endangered ecological community or listed on Councils significant Tree Register;
- The tree is visually prominent and visible from a considerable distance when viewed from most directions within the landscape due to its size and scale and makes a positive contribution to the local amenity;
- The tree supports social and cultural sentiments or spiritual associations, reflected by the broader population or community group or has commemorative values;
- The tree's growth is unrestricted by above and below ground influences, supporting its ability to reach dimensions typical for the taxa in situ tree is appropriate to the site conditions.

Medium Significance in landscape

- The tree is in Fair-Good condition and Good or Low vigor;
- The tree has form typical or atypical of the species;
- The tree is a planted locally indigenous or a common species with its taxa commonly planted in the local area
- The tree is visible from surrounding properties, although not visually prominent as partially obstructed by other vegetation or buildings when viewed from the street,
- The tree provides a fair contribution to the visual character and amenity of the local area,
- The tree's growth is moderately restricted by above or below ground influences, reducing its ability to reach dimensions typical for the taxa in situ.

Low Significance in landscape

- The tree is in fair-poor condition and good or low vigor;
- The tree has form atypical of the species;
- The tree is not visible or is partly visible from surrounding properties as obstructed by other vegetation or buildings,
- The tree provides a minor contribution or has a negative impact on the visual character and amenity of the local area,
- The tree is a young specimen which may or may not have reached dimension to be protected by local Tree Preservation orders or similar protection mechanisms and can easily be replaced with a suitable specimen,
- The tree's growth is severely restricted by above or below ground influences, unlikely to reach dimensions typical for the taxa *in situ* tree is inappropriate to the site conditions,
- The tree is listed as exempt under the provisions of the local Council Tree Preservation Order or similar protection mechanisms,
- The tree has a wound or defect that has potential to become structurally unsound.

Environmental Pest / Noxious Weed Species

- The tree is an Environmental Pest Species due to its invasiveness or poisonous/ allergenic properties,
- The tree is a declared noxious weed by legislation.

Hazardous/Irreversible Decline

- The tree is structurally unsound and/or unstable and is considered potentially dangerous,
- The tree is dead, or is in irreversible decline, or has the potential to fail or collapse in full or part in the immediate to short term.

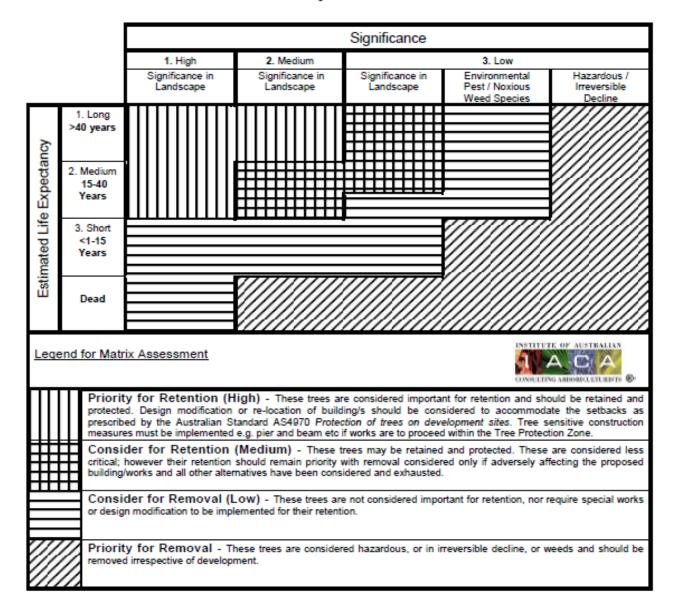
The tree is to have a minimum of three (3) criteria in a category to be classified in that group.

Note: The assessment criteria are for individual trees only, however, can be applied to a monocultural stand in its entirety e.g. hedge.

Institute of Australian Consulting Arboriculturists (IACA 2010), IACA Significance of a Tree, Assessment Rating System (STARS), www.iaca.org.au



Table 1.0 Tree Retention Value - Priority Matrix.



USE OF THIS DOCUMENTAND REFERENCING The IACA Significance of a Tree, Assessment Rating System (STARS) is free to use, but only in its entirety and must be cited as follows:

IACA, 2010, IACA Significance of a Tree, Assessment Rating System (STARS), Institute of Australian Consulting Arboriculturists, Australia, www.iaca.org.au

REFERENCES Australia ICOMOS Inc. 1999, *The Burra Charter –The Australian ICOMOS Charter for Places of Cultural Significance*, International Council of Monuments and Sites, www.icomos.org/australia Draper BD and Richards PA 2009, *Dictionary for Managing Trees in Urban Environments*, Institute of Australian Consulting Arboriculturists(IACA), CSIRO Publishing, Collingwood, Victoria, Australia. Footprint Green Pty Ltd2001, *Footprint Green Tree Significance & Retention Value Matrix*, Avalon, NSW Australia, www.footprintgreen.com.au

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