

Project No: 136-148/NSH/21 Report No: 136-148/NSH/PAR/B

# PRELIMINARY ARBORICULTURAL REPORT

## 136-148 New South Head Road Edgecliff

Prepared for: EDGECLIFF CENTRAL PTY LTD

2<sup>nd</sup> July 2021 Revision B

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#### 1.1 Background

- 1.1.1 This Preliminary Arboricultural Report was prepared for the Edgecliff Central Pty Ltd in relation to seven (7) trees located at 136-148 New South Head Road, Edgecliff. The purpose of this Report is to undertake a Visual Tree Assessment<sup>1</sup> (VTA), provide an overview of the quality and value of the trees on site, determine Tree Protection Zone (TPZ) and Structural Root Zone (SRZ) areas in accordance with *Australian Standard 4970 Protection of Trees on Development Sites (2009),* and provide arboricultural advice early in the planning stages of the project.
- 1.1.2 In preparing this Report, the authors have considered the objectives of the following:
  - State Environmental Planning Policy Vegetation in Non-Rural Areas (2017)
  - Woollahra Development Control Plan Chapter E3 (Tree Management)
  - Woollahra Council DA Guide (Attachment 4)
  - Australian Standard 4970-2009 Protection on Tree Development Sites
  - Australian Standard 4373-2007 Pruning of Amenity Trees
  - Australian Standard 2303-2015 Tree Stock for Landscape Use
  - Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal Work (2016)

#### Refer to Methodology (Appendix 1)

#### 2.0 RESULTS

#### 2.1 The Site

- 2.1.1 The site is located at 136-148 New South Head Road on the corner of Darling Point Road and New South Head Road, Edgecliff and consists of four (4) allotments. The site is bordered by a carpark servicing a residential unit block to the north, a four-storey brick building to the east and the carriageway of New South Head Road and Darling Point Road to the south and west.
- 2.1.2 A series of retaining walls is located on and adjacent to the northern boundary which facilitate a significant level change between the site and the carpark to the rear. The site contains four (4) mixed use buildings up to three-storeys in height.

#### 2.2 The Trees

2.2.1 Seven (7) trees were assessed using the Visual Tree Assessment<sup>2</sup> (VTA) criteria and notes, and consists of a mix of locally indigenous, Australian native and exotic species. Trees 1-4 are located within the site with Trees 5-7 located on the New South Head Road road reserve.

<sup>&</sup>lt;sup>1</sup> Mattheck & Breloer (2003)

<sup>&</sup>lt;sup>2</sup> Mattheck & Breloer (2003)

- 2.2.2 None of the trees are listed in the *Woollahra Council Register of Significant Trees (1991)* or *Woollahra Local Environmental Plan Schedule 5 Environmental Heritage (2014)*.
- 2.2.3 A search of the BioNet Atlas of NSW Wildlife Database was undertaken in June 2021. No individual threatened tree species listed within this database for the locality were identified during the field investigations of the site.<sup>3</sup> The ecological significance and habitat value of the trees has not been assessed and is beyond the scope of this Report.
- 2.2.4 As required by Clause 2.3.2 of *Australian Standard 4970 Protection of Trees on Development Sites (2009)*, each of the trees assessed has been allocated a Retention Value. TreeiQ allocates one of four Retention Value categories based on a combination of Landscape Significance and Useful Life Expectancy (ULE). The assessment of Landscape Significance and ULE involves a degree of subjectivity and there will be a range of tree quality and value within each of the Retention Value categories. The Retention Values <u>do not consider any proposed development works and are not a schedule for tree retention or removal</u>. The trees have been allocated one of the following Retention Values:
  - Priority for Retention
  - Consider for Retention
  - Consider for Removal
  - Priority for Removal

Refer to Tree Assessment Schedule (Appendix 2)

#### **3.0 TREE ASSESSMENT**

#### 3.1 Tree 1

- 3.1.1 Tree 1 was identified as *Cryptocarya laevigata* (Red Fruited Laurel) and is located within the 142-146 New South Head Road allotment. The tree is in good health and structural condition however it is located in close proximity to the existing building and its trunk is in contact with the building eave. Tree 1 is of low Landscape Significance with a transient (<5) Useful Life Expectancy (ULE) and has been allocated a Retention Value of *Priority for Removal*.
- 3.1.2 Tree 1 is recommended for removal and replacement as part of future development works.

#### 3.2 Tree 2

- 3.2.1 Tree 2 was identified as *Syzygium luehmannii* (Small Leaf Lillypilly) and is located within the 142-146 New South Head Road allotment. The tree is in good health and structural condition however it is located in close proximity to the existing building and its crown is in contact with the building facade. Tree 2 is of low Landscape Significance with a transient (<5) ULE and has been allocated a Retention Value of *Priority for Removal*.
- 3.2.2 Tree 2 is recommended for removal and replacement as part of future development works.

<sup>&</sup>lt;sup>3</sup> NSW Office of Environment and Heritage (2011)

#### 3.3 Tree 3

- 3.3.1 Tree 3 was identified as *Cinnamomum camphora* (Camphor Laurel) and is located within the 142-146 New South Head Road allotment. The tree is in good health and fair structural condition and is a self-sown specimen growing on top of the rear boundary wall. *Cinnamomum camphora* (Camphor Laurel) is listed as an exempt species within Section E3.4.1 of the *Woollahra Development Control Plan* (2015) if under 10m in height. Tree 3 is of low Landscape Significance with a transient (<5) ULE and has been allocated a Retention Value of *Priority for Removal*.
- 3.3.2 Tree 3 is recommended for removal and replacement as part of future development works.

#### 3.4 Tree 4

- 3.4.1 Tree 4 was identified as *Ailanthus altissima* (Tree of Heaven) and is located within the 142-146 New South Head Road allotment. The tree is a self-sown specimen growing on top of the rear boundary wall. *Ailanthus altissima* (Tree of Heaven) is listed as an exempt species within Section E3.4.1 of the *Woollahra Development Control Plan (2015)*. Tree 4 is of low Landscape Significance with a transient (<5) ULE and has been allocated a Retention Value of *Priority for Removal*.
- 3.4.2 Tree 4 is recommended for removal and replacement as part of future development works.

### 3.5 Trees 5-7

- 3.5.1 Trees 5-7 were identified as Lophostemon confertus (Brush Box) and are street trees growing within the New South Head Road road reserve. Trees 5 and 6 are in good health. Tree 7 is in fair health due to a reduced crown density of 50-75%. The trees are in good structural condition. Trees 5-7 are of moderate Landscape Significance and have been allocated a Retention Value of Consider for Retention.
- 3.5.2 Trees 5-7 are Council-managed street trees and should be retained and protected as part of future development works.

#### 3.6 Development Works

- 3.6.1 Australian Standard 4970 (2009) Protection of Trees on Development Sites (AS-4970) outlines that a Tree Protection Zone (TPZ) is the principal means of protecting trees on development sites. It is an area isolated from construction disturbance so that the tree remains viable.<sup>4</sup> The TPZ is calculated as a radial measurement based on twelve (12) times the tree's Diameter at Breast Height (DBH). This formula is based on extensive research and are generally accepted within the arboricultural industry as being suitable for calculating areas designed to maintain the long-term viability of trees on development sites.
- 3.6.2 AS-4970 also provides calculations to determine a tree's Structural Root Zone (SRZ). The SRZ is described in AS-4970 as the area around the base of a tree required for the tree's stability in the ground. This zone considers a tree's structural stability only, not the root zone required for its vigor and long-term viability, which will usually be a much larger area. Severance of structural roots (>25mmØ) within the SRZ is generally not recommended as it may lead to the destabilisation and/or decline of the tree.

<sup>&</sup>lt;sup>4</sup> Standards Australia (2009)

- 3.6.3 Ideally, works should be avoided within the TPZ. A *Minor Encroachment* is less than 10% of the TPZ and is outside the SRZ. A *Minor Encroachment* is considered acceptable by AS-4970 when it is compensated for elsewhere and contiguous within the TPZ. A *Major Encroachment* is greater than 10% of the TPZ or inside the SRZ. *Major Encroachments* generally require root investigations undertaken by non-destructive methods or the use of tree sensitive construction methods.
- 3.6.4 AS-4970 outlines that the TPZ may need to be modified (extended) to provide additional protection to the above ground parts of the tree. Where conflict between branches, new structures and construction machinery could occur, 3D laser surveying of the tree's crown may be required to accurately determine potential impacts. Branches may be temporarily protected with padding and timber battens or tied back, or in some cases pruning may be possible to provide additional clearances where these works would not impact the tree's ULE or form.
- 3.6.5 Pruning requirements should be outlined within a Pruning Specification prepared in accordance with *Australian Standard* 4373 Pruning of Amenity Trees (2007).

#### 3.7 New Tree Planting

- 3.7.1 Advanced-size replacement trees should be installed to help off-set the loss of amenity and canopy cover from the tree removal.
- 3.7.2 New trees should be grown in accordance with Australian Standard 2303 Tree Stock for Landscape Use (2015).

#### 4.0 SUMMARY & CONCLUSION

- 4.1.1 Seven (7) trees were addressed within this Report and consist of a mix of locally indigenous, Australian native and exotic species.
- 4.1.2 Trees 1-4 are located within the site boundaries. They are low value specimens and should not be considered a constraint to the design development. New tree plantings using healthy, advanced-sized specimens could replace the loss of amenity from tree removal within a short timeframe. Replacement trees should be grown in accordance with *Australian Standard 2303 Tree Stock for Landscape Use (2015)*.
- 4.1.3 Trees 5-7 are Council-managed street trees and should be retained and protected as part of future development works. The trees should not be adversely impacted provided the proposed development works are contained within site boundary on New South Head Road. Any public domain works within their TPZ areas should be undertaken using tree sensitive methods (i.e new pavements should be installed at or above existing grade and new landscape fixtures supported on isolated footings). Minor pruning to provide building clearance should be limited to less than 5% of total crown volume and undertaken in accordance with *Australian Standard* 4373-2007 Pruning of Amenity Trees.
- 4.1.4 An Arboricultural Impact Assessment and Tree Protection Plan should be prepared to examine the potential impact of any proposed works on the trees at 80% completion of the plans. The report should also detail the proposed design and construction methods, and tree protection measures to minimise impacts on the trees.

#### 5.0 LIMITATIONS & DISCLAIMER

TreeiQ takes care to obtain information from reliable sources. However, TreeiQ can neither guarantee nor be responsible for the accuracy of information provided by others. Plans, diagrams, graphs and photographs in this Arboricultural Report are visual aids only and are not necessarily to scale. This Report provides recommendations relating to tree management only. Advice should be sought from appropriately qualified consultants regarding design/construction/ecological/heritage etc issues.

This Report has been prepared for exclusive use by the client. This Report shall not be used by others or for any other reason outside its intended target or without the prior written consent of TreeiQ. Unauthorised alteration or separate use of any section of the Report invalidates the Report.

Many factors may contribute to tree failure and cannot always be predicted. TreeiQ takes care to accurately assess tree health and structural condition. However, a tree's internal structural condition may not always correlate to visible external indicators. There is no warranty or guarantee, expressed or implied that problems or deficiencies regarding the trees or site may not arise in the future. Information contained in this report covers only the trees assessed and reflects the condition of the trees at the time of inspection. Additional information regarding the methodology used in the preparation of this Report is attached as Appendix 1. A comprehensive tree risk assessment and management plan for the trees is beyond the scope of this Report.

Reference should be made to any relevant legislation including Tree Management Controls. All recommendations contained within this Report are subject to approval from the relevant Consent Authority.

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#### 6.0 BIBLIOGRAPHY& REFERENCES

Barrell (1995), 'Pre-development Tree Assessments', in *Trees & Building Sites, Proceedings of an International Conference Held in the Interest of Developing a Scientific Basis for Managing Trees in Proximity to Buildings*, International Society of Arboriculture, Illinois, USA, pp. 132-142

Dunster J, Smiley T, Matheny N, Lilly S (2013), Tree Risk Assessment Manual, Champaign, Illinois, International Society of Arboriculture, USA

Mattheck & Breloer (1994), The Body Language of Trees: A Handbook for Failure Analysis, The Stationary Office, London

NSW Office of Environment and Heritage's Atlas of NSW Wildlife (2011), BioNet Atlas of NSW Wildlife

Standards Australia (2009), Protection of Trees on Development Sites AS-4970

Standards Australia (2007), Pruning of Amenity Trees AS-4373

Standards Australia (2015), Tree Stock for Landscape Use AS-2303

Woollahra Municipal Council (2015), Development Control Plan Chapter E3 (Tree Management)

Woollahra Municipal Council (1991), Register of Significant Trees

#### 7.0 APPENDICES

#### Appendix 1: Methodology

- **1.1 Site Inspection**: This report was determined as a result of a comprehensive site inspection during June 2021.
- **1.2** Visual Tree Assessment (VTA): The subject tree(s) was assessed using the Visual Tree Assessment criteria and notes as described in *The Body Language of Trees A Handbook for Failure Analysis.*<sup>5</sup> The inspection was limited to a visual examination of the subject tree(s) from ground level only. The inspection was limited to a visual examination of the subject tree(s) from ground level only. No internal diagnostic or tissue testing was undertaken as part of this assessment. Trees outside the subject site were assessed from the property boundaries only.
- **1.3 Tree Dimensions**: The dimensions of the subject tree(s) are approximate only.
- **1.4 Tree Locations:** The location of the subject tree(s) was determined from the supplied plans. Trees not shown on the supplied plans have been plotted in their **approximate location only.**
- **1.5 Trees & Development**: Tree Protection Zones, Tree Protection Measures and Sensitive Construction Methods for the subject tree were based on methods outlined in *Australian Standard 4970-2009 Protection of Trees on Development Sites*.

The *Tree Protection Zone* (TPZ) is described in AS-4970 as a combination of the root area and crown area requiring protection. It is an area isolated from construction disturbance, so that the tree remains viable.

The *Structural Root Zone* (SRZ) is described in AS-4970 as the area around the base of a tree required for the tree's stability in the ground. Severance of structural roots within the SRZ is not recommended as it may lead to the destabilisation and/or demise of the tree.

In some cases it may be possible to encroach into or make variations to the theoretical TPZ. A *Minor Encroachment* is less than 10% of the area of the TPZ and is outside the SRZ. The area lost to this encroachment should be compensated for elsewhere and contiguous with the TPZ. A *Major Encroachment* is greater than 10% of the TPZ or inside the SRZ. In this situation the Project Arborist must demonstrate that the tree would remain viable. This may require root investigation by non-destructive methods or the use of sensitive construction methods.

- **1.6** Tree Health: The health of the subject tree(s) was determined by assessing:
  - I. Foliage size and colour
  - II. Pest and disease infestation
  - III. Extension growth
  - IV. Crown density
  - V. Deadwood size and volume
  - VI. Presence of epicormic growth
- **1.7** Tree Structural Condition: The structural condition of the subject tree(s) was assessed by:
  - I. Assessment of branching structure
  - (i.e co-dominant/bark inclusions, crossing branches, branch taper, terminal loading, previous branch failures)
  - II. Visible evidence of structural defects or instability
    - (i.e root plate movement, wounds, decay, cavities, fungal brackets, adaptive growth)
  - Evidence of previous pruning or physical damage (root severance/damage, lopping, flush-cutting, lions tailing, mechanical damage)
- **1.8** Useful Life Expectancy (ULE): The ULE is an estimate of the longevity of the subject tree(s) in its growing environment. The ULE is modified where necessary to take in consideration tree(s) health, structural condition and site suitability. The tree(s) has been allocated one of the following ULE categories (Modified from Barrell, 2001):
  - I. 40 years +
  - II. 15-40 years
  - III. 5-15 years
  - IV. Less than 5 years

<sup>&</sup>lt;sup>5</sup> Mattheck & Breloer (2003)

**1.9** Landscape Significance: Landscape Significance was determined by assessing the combination of the cultural, environmental and aesthetic values of the subject tree(s). Whilst these values are subjective, a rating of high, moderate, low or insignificant has been allocated to the tree(s). This provides a relative value of the tree's Landscape Significance which may aid in determining its Retention Value. If the tree(s) can be categorized into more than one value, the higher value has been allocated.

Landscape	Description					
Significance	Description					
	The subject tree is listed as a Heritage Item under the <i>Local Environmental Plan</i> with a local or state level of significance.					
Very High	The subject tree is listed on Council's Significant Tree Register or is considered to meet the criteria for significance assessment of trees and/or landscapes by a suitably qualified professional. The criteria are based on general principles outlines in the Burra Charter and on criteria from the Register of the National Estate.					
	The subject tree is a remnant tree.					
	The subject tree creates a 'sense of place' or is considered 'landmark' tree.					
	The subject tree is of local, cultural or historical importance or is widely known.					
High	The subject tree has been identified by a suitably qualified professional as a species scheduled as a Threatened or Vulnerable Species or forms part of an Endangered Ecological Community associated with the site, as defined under the provisions of the NSW <i>Biodiversity Conservation Act (2016)</i> or the Commonwealth <i>Environmental Protection and Biodiversity Conservation Act</i> (1999).					
півн	The subject tree is known to provide habitat to a threatened species.					
	The subject tree is an excellent representative of the species in terms of aesthetic value.					
	The subject tree is of significant size, scale or makes a significant contribution to the canopy cover of the locality.					
	The subject tree forms part of the curtilage of a heritage item with a known or documented association with that item.					
	The subject tree makes a positive contribution to the visual character or amenity of the area.					
Modorato	The subject tree provides a specific function such as screening or minimising the scale of a building.					
wouerate	The subject tree has a known habitat value.					
	The subject tree is a good representative of the species in terms of aesthetic value.					
	The subject tree is an environmental pest species or is exempt under the provisions of the local Council's Tree					
	Management Controls					
Low	The subject tree makes little or no contribution to the amenity of the locality.					
	The subject tree is a poor representative of the species in terms of aesthetic value.					
	The subject tree is a recognised environmental weed species for the area.					

- **1.10 Retention Value**: Retention Value was based on the subject tree's Useful Life Expectancy and Landscape Significance. The Retention Value was modified where necessary to take in consideration the subject tree's health, structural condition and site suitability. The subject tree(s) has been allocated one of the following Retention Values:
  - I. Priority for Retention
  - II. Consider for Retention
  - III. Consider for Removal
  - IV. Priority for Removal

ULE			Landscape Signi	ificance	
	Very High	High	Moderate	Low	Insignificant
40 years +		Priorit	ty for Retention		
15-40 years	Priority for Retention	Priority for Retention	Consider for Retention	Consider for Removal	Priority for Removal
5-15 years	-	Consid	er for Retention		
Less than 5 years	Consider for Removal		Priority for Re	moval	

The above table has been modified from the Footprint Green Tree Significance and Retention Value Matrix.

#### Appendix 2: Tree Assessment Schedule

Tree No.	Species	DBH comb. (mm)	Est. Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	Age Class	ULE (years)	L/Sign	Retention Value	Radial TPZ (m)	Radial SRZ (m)	TPZ area (m2)
1	<i>Cryptocarya laevigata</i> (Red Fruited Laurel)	200	10	2	Good	Good	Trunk contact with building eve. Small (<25mmø) deadwood in low volumes.	Mature	<5	Low	Priority for Removal	2.4	1.8	18.1
2	<i>Syzygium luehmannii</i> (Small Leaf Lillypilly)	150	8	2	Good	Good	Crown contact with facade of building. Pruning for clearance will impact tree form and amenity value. Small (<25mmø) deadwood in low volumes.	Mature	<5	Low	Priority for Removal	2.0	1.6	12.6
3	<i>Cinnamomum camphora</i> (Camphor Laurel)	450	9	7	Dormant. No rating.	Fair	Weed species. Appears to be self-sown. Growing on top of boundary wall. Limited building clearance. Small (<25mmø) & medium (25-75mmø) deadwood in low volumes.	Mature	<5	Low	Priority for Removal	5.4	2.5	91.6
4	<i>Ailanthus altissima</i> (Tree of Heaven)	400	6	3	Dormant. No rating.	No access to base. No rating.	Weed species. Appears to be self-sown. Growing on top of boundary wall. Limited building clearance. Small (<25mmø) & medium (25-75mmø) deadwood in low volumes.	Mature	<5	Low	Priority for Removal	4.8	2.3	72.4
5	Lophostemon confertus (Brush Box)	350	7	5	Good	Good	Street tree. Crown density 75-95%. Small (<25mmø) deadwood in low volumes.	Mature	15-40	Moderate	Consider for Retention	4.2	2.2	55.4
6	Lophostemon confertus (Brush Box)	425	8	5	Good	Good	Small (<25mmø) deadwood in low volumes. Small (<25mmø) epicormic growth in low volumes.	Mature	15-40	Moderate	Consider for Retention	5.1	2.4	81.7
7	Lophostemon confertus (Brush Box)	450	11	4	Fair	Good	Crown density 50-75%. Small (<25mmø) deadwood in moderate volumes. Wound(s), early signs of decay.	Mature	5-15	Moderate	Consider for Retention	5.4	2.5	91.6





NNG SELECTED DETA SOUTH HEAD ROAD, A ENTRAL PTY LTD DATUM : AHD	SCALE (AT A1) 1:100	CLIENT : EDGECLIFF CI	LGA: WOOLLAHR	No.146 NEW	
	DATUM: AHD S	CENTRAL PTY LTD	1RA F	W SOUTH HEAD ROAD, ED	

<u>No. 138-140</u>

				PARAPET
	STONE	BRICK		RL 35.65
STONE			US PPT RL 35.48	PARAPET RL 35.81

<u>No. 166</u>



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#### **Appendix 4: Plates**





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