## **GROWING MY WAY"**

## Tree Consultancy

#### Established 1977

EXCELLENCE in ALL ASPECTS OF TREE MANAGEMENT

FULL INSURANCE PROTECTION

PO Box 35, Newport Beach NSW 2106

Phone: (02) 9997-4101 Mobile: 0412-221-962 Fax: (02) 9940-0217

E-mail: kyleahill@optusnet.com.au
ABN 97 965 355 200

## Arboriculture Assessment & Management Statement

for lodged Development Application (2022/2090)

January 2023

Site: Lot 37 in DP 236064

8 The Crest

FRENCHS FOREST, NSW

Client: Craig B / Nicola R McMenamin (as applicants)

C/- Hargroves Design Consultants

Attention: Jacqui Hargroves

Phone: 61 410 669 148

Email: jacqui@hargroves.com.au

Commissioned: Jacqui Hargrove via C & R McManamin

Author: Kyle A Hill

Registered (Arb Aus #1884) Practising & Consulting Arborist

Post Graduate Certificate in Arboriculture, Melbourne University

Diploma of Horticulture-Arboriculture TAFE, Grow SA

Certificate of Horticulture, TAFE

Certificate Advanced Tree Care TAFE

Founder - Growing My Way Tree Services (1977)

Member of International Society of Arboriculture

Member of Arboriculture Australia

## 1 Summary

C & R McMenimin (as the property owners) via the Jacqui Hargroves Design Consultancy have commissioned the Growing My Way Tree Consultancy to prepare an "Arboriculture Assessment & Management Statement-Preliminary Tree Management Strategy" to be linked to the as lodged Development Application submission for Alterations & Additions to a dwelling house.

The site is within the Northern Beaches Council (from herein NBC) local government area.

NBC is the sole consent authority for the soon to be lodged DA submission.

Relative to tree management this document focuses on four (4) trees protected by NBC 'Tree management Provisions'. By site survey/drawings provided all discussed in detail trees are located within the private lot adjoining the subject site, (8 The Crest, Frenchs Forest). One (1) discussed in detail tree is confirmed as able to be supported for immediate removal on the grounds of very advanced natural decline in condition. Simply, regardless of any DA proposal this tree has no Useful Life Expectancy (from herein ULE).

It is our opinion that all discussed in detail trees are able to be retained, relative to the as lodged DA proposal.

The site is not listed within the NBC (old Warringah Council) 'Local Environment Plan, 2011' (from herein LEP) as being part of any 'Heritage Conservation Area'. The subject site plus all common boundary properties not listed 'Heritage Items'. No trees discussed in detail are species within any endangered ecological community. (See Part 3 of Schedule 1within the Threatened Species Conservation Act.) The discussed trees are not listed within any known "significant tree register".

From a Local Government Tree Management perspective, all four (4) discussed in detail trees are subject to the provisions within the NBC (old Warringah Council) 'Development Control Plan, 2011' (from herein DCP) & the SEPP 'Vegetation in Non-Rural Areas, 25 August 2017'

This document supports the as lodged DA submission based on information supplied by our client/client representative. This document acknowledges the provisions within the Australian Standard (AS4970–2009 Protection of trees on development sites).

This scope of this document includes:

- ➤ NBC DA Tracking webtool for as lodged documents & communications from NBC,
- NBC Landscape Response request for Additional Information, dated 6 December 2022,
- > general site & tree assessment,
- tree's condition assessment (i.e., present condition & Useful Life Expectancy),
- > perusal of as lodged Architectural Plans/Elevations/Sections by Hargroves Design Consultants, Rev. E, dated 8 November 2022,
- Site Survey by Wumara Group, dated 28 March 2022 &
- provision of a "Site Specific Plan of Management".

Kyle Hill, Practicing & Consulting Arborist AQF Level 5 & 8, has prepared this document based on onsite inspection (Wednesday, 4 January 2023).

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### 2 Introduction

*NBC* is the *local government area* primary consent authority relative to development & tree management for the discussed & surrounding properties.

The discussed in detail trees are from two (2) genera of different species. Two (2) discussed in detail trees are locally indigenous. (They are both assessed as being naturally occurring as opposed to being planted specimens.) are confirmed to be locally indigenous tree species.

Drawings & Site Survey provided confirm the discussed tree to be accurate.

The Warringah DCP & NBC 'Tree Management Provisions/Guidelines' plus the SEPP 'Vegetation in Non-Rural Areas, 25 August 2017 are acknowledged to be the management criteria required to be addressed.

The subject site is Zoned R2 "Low Density Residential" (old Warringah Council LEP, 2011, Land Zoning Map-Sheet LZN\_007).

Trees discussed in detail are not assessed as being potentially compromised by the as lodged DA proposal & as such are not proposed to be removed relative to the DA proposal. (See Tree #1 in Discussion/Trees Summary Table relative to its *ULE*, regardless of any DA proposal.)

This document supports the proposed *DA* submission as lodged based on information supplied by our client/client representative.

With implementation of Australian Standard (AS4970–2009 Protection of trees on development sites) compliance provisions & the site specific 'Preliminary Plan of Management' it is considered all discussed trees can be retained without any compromise to any tree's Useful Life Expectancy (from herein ULE).

## 3 Methodology

Assessment of the trees has been by eye from ground level & aerial photography from multiple sources. Implementation of the *Visual Tree Assessment (VTA)* Stage 1 principles developed by Claus Mattheck, et.al is the assessment method & tool chosen for this site. The principles of *VTA* Stage 1 are explained & illustrated in the publication *The Body Language of Trees (1994)*.

#### Assessment includes:

- Tree's current condition & likely future health.
- Perusal of NBC (old Warringah Council) "Tree Management Provisions". Perusal of NBC (old Warringah Council) "Endangered Ecological Community listing" information.
- Perusal of NBC communication/responses to the as lodged DA submission
- Review of as lodged Plans, Elevations & Sections.
- Discussion of environment where the trees are growing. Tree's amenity & retention value, such as significance, screening & habitat.

No root tissue analysis, soil testing, 'Resistograph'®, 'ArborTom'® assessment or similar was undertaken.

See the following Appendices for further information:

- Appendix A Glossary of Common Arboreal terms
- Appendix B Site Survey
- Appendix C Protection/Management Prior to & During Construction

<sup>\*</sup> VTA-Visual Tree Assessment, as referenced is a systematic inspection of a tree for indicators of structural defects that may pose a risk due to failure. Stage 1 is made from ground level (i.e. no aerial inspection is undertaken). An aerial inspection (Stage 2) is undertaken when there are easily identified visual indicators that suggest such an inspection is merited. Visual indicators are outlined within The Body Language of Trees (Mattheck & Breloer, 1994). VTA is a broadly used relatively standardised approach. More complex (can be invasive) diagnostic fault detection equipment may be recommended once visual indicators of potential defects are confirmed.

## 4 Observations

## 4.1 The Site

By NB website 'Property Search tool the site area is 695.60m<sup>2</sup> by Site Survey.

The site is presently developed to contain a single (multi-level) dwelling residence. The subject site & adjoining common boundary sites are zoned R2 'Low Density residential'.





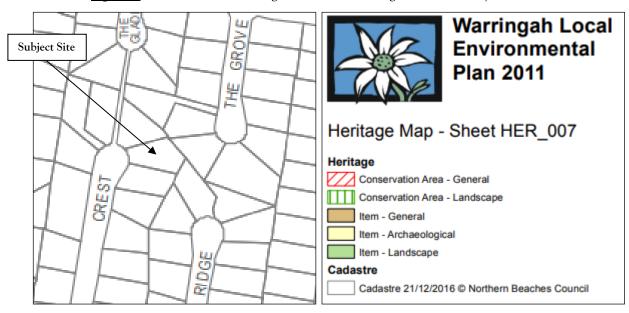
Figure 1: Location Map courtesy of NBC website tool & Whereis.com website tool.

Of the four (4) discussed in detail trees, one (1), the larger of the two (2) Tree #1 is estimated as being very long term, i.e., greater than sixty years (>60 years) established. All others are estimated to be less than thirty (30) years established. The site is NOT within an area noted to be a classified area of "Wildlife Corridor" significance. The discussed trees are not listed on any known "significant tree register".

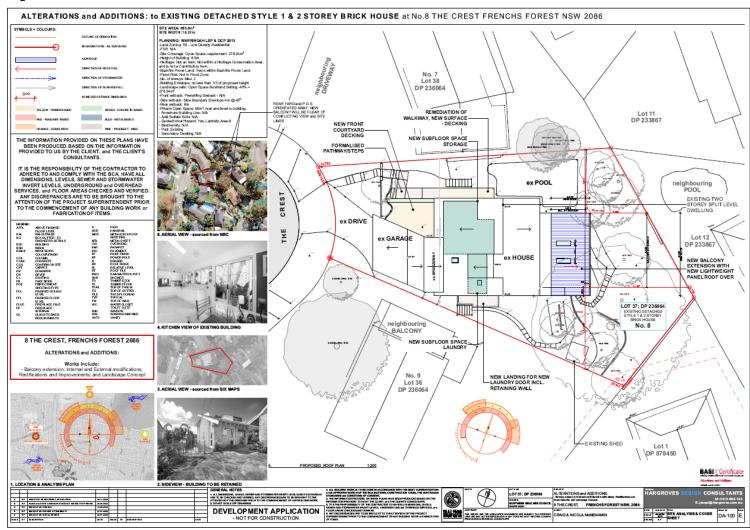
WEARDEN

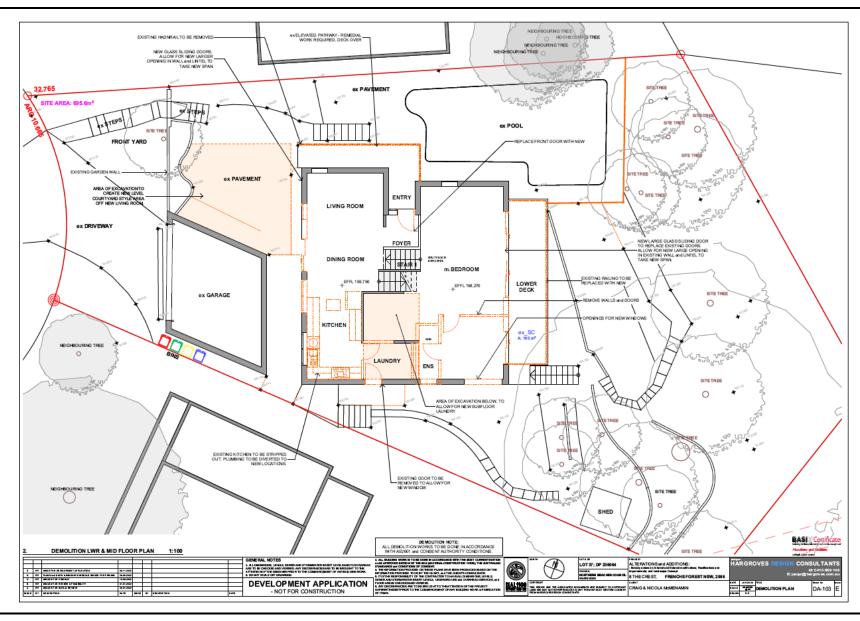


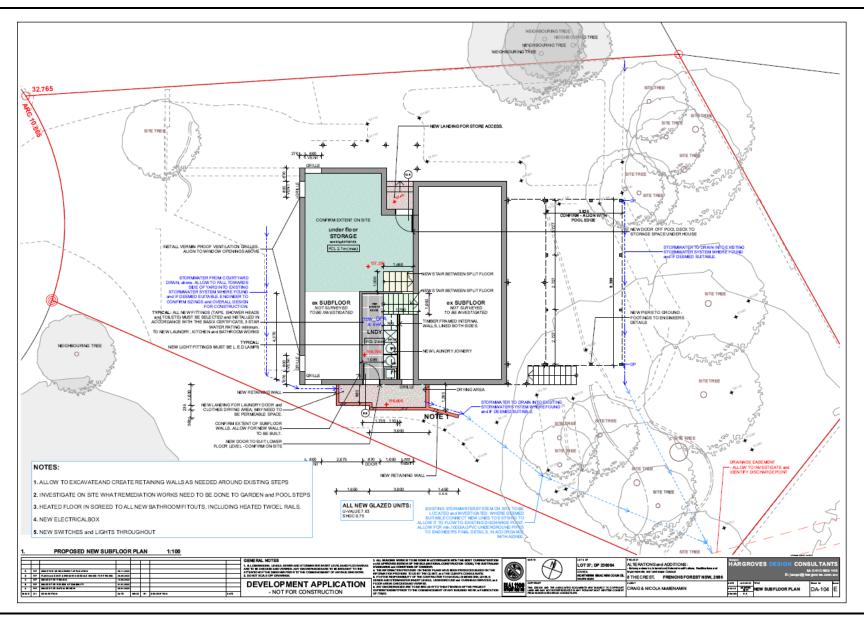
*Figure 2*: Confirms Land Zoning classification as being R2 'Low Density Residential'.

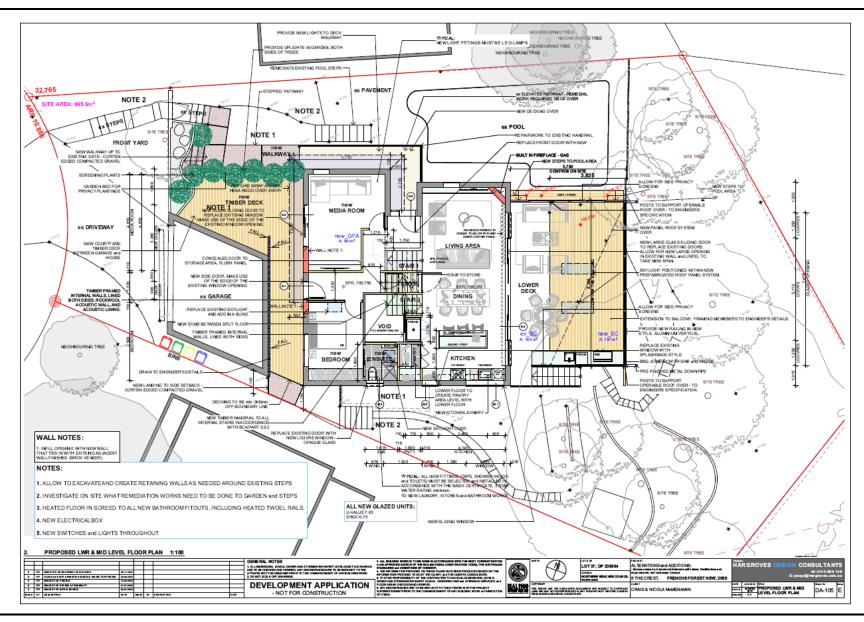


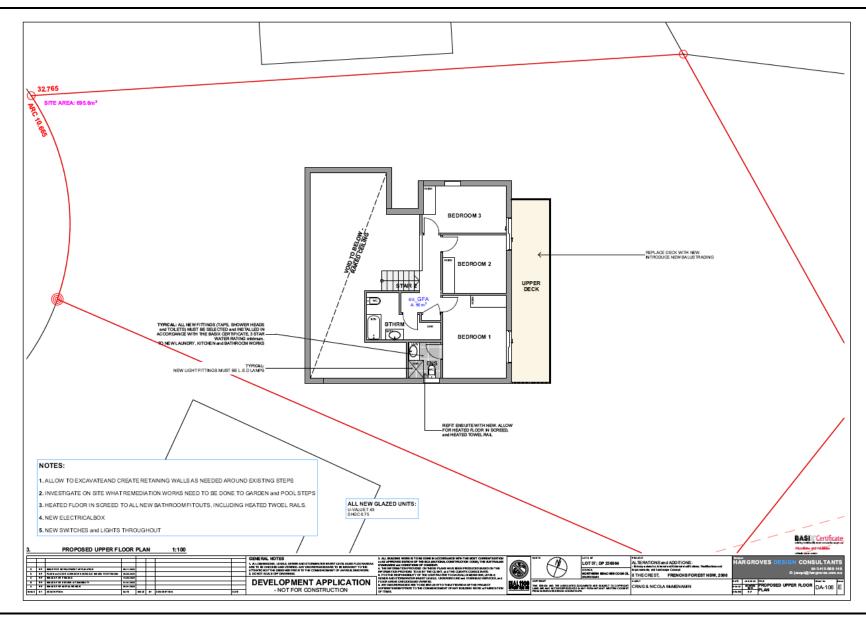
## 4.2 The Proposal

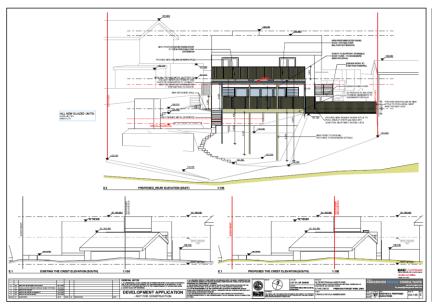


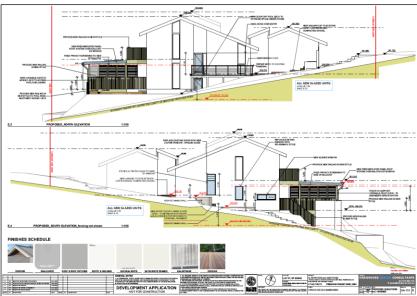


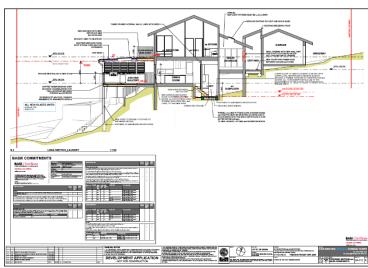












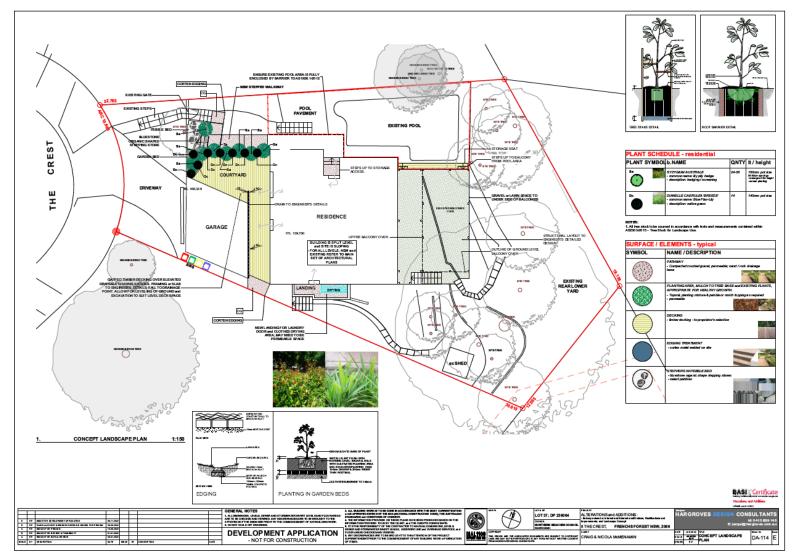


Figure 3: Plans/Elevations/Sections/Landscape Concept as per lodged DA submission.

### 4.3 The Trees

Read this table in conjunction with Appendix A-Common Arboreal Terms

Trees Recommended for removal relative to site characteristics

Trees Recommended for protection & retention

Exempt species

Trees retainable but of low amenity/significance

	Identification	Height (approx in m)	Crown (approx in m)	DBH (approx in m)	TPZ (approx in m)	SRZ (approx in m)	Age	Health/ Vigour	Retention & Significance Value	Structure/ Form	Comments
1	Angophora costata Sydney Red Gum	<16.50	<15.50	0.75	9.00	3.03	ОМ	Very Poor/ Very Poor	High/High	Typical	Retain, Protect & Manage: Tree is considered as able to be retained without compromise to its Useful Life Expectancy.
2	<b>Cyathea cooperi</b> Dollar Spot Tree Fern	<7.50	<4.50	0.23	2.76	1.88	М	Good/ Good	High/High	Typical	Retain, Protect & Manage: Tree is considered as able to be retained without compromise to its Useful Life Expectancy.
3	<i>Syzygium</i> spp. Lilly Pilly	<6.50	<5.00	0.26	3.12	2.00	М	Good/ Good	Medium/ Medium	Typical	Retain, Protect & Manage: Tree is considered as able to be retained without compromise to its Useful Life Expectancy.
4	Melaleuca quinquenervia Broadleaf Paperbark	<8.00	<4.50	0.30	3.60	2.18	SM	Good/ Good	Medium/ Medium	Typical	Retain, Protect & Manage: Tree is considered as able to be retained without compromise to its Useful Life Expectancy.

NOTE: As previously identified, Tree #1 has no ULE regardless of any DA submission. This tree is confirmed to be in an advanced state of Natural Senescence.

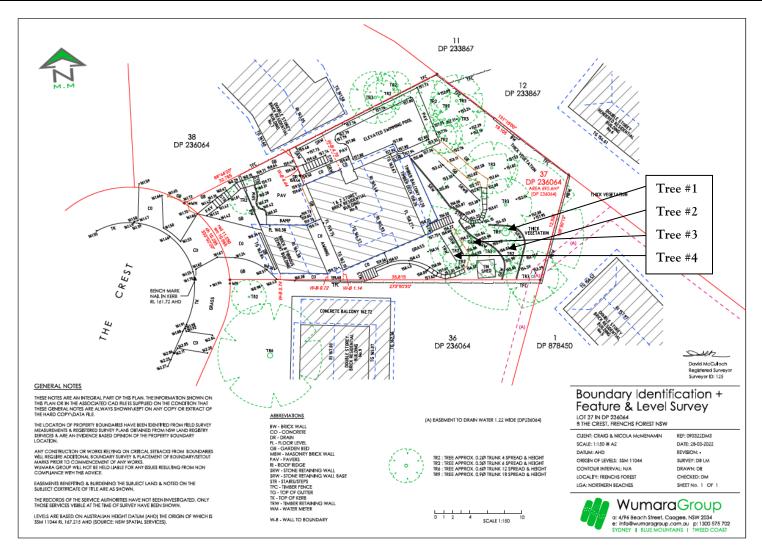


Figure 4: Portion of Site Survey Confirms discussed tree locations.

### 5 Discussion

The proposed as per lodged DA submission Alterations & Additions to a dwelling house confirms by virtue of distances from individual tree trunk centres four (4) potentially impacted upon discussed in detail trees relative to their individual *ULE*. Additional trees/vegetation within the subject site &/or common boundary adjoining sites presence is acknowledged but not discussed in detail as they are all either exempt from protection by species or location or at a distance greater than five (5.00m) metres from any proposed works.

No ground level disturbance other than for footings /piers (specified to be flexibly located) supporting suspended different floor levels Alterations & Additions can be con firmed by drawings referenced & onsite assessment/discussion with Ruth McMenimin.

On this basis, preservation of trees discussed in detail (i.e., the 4 trees discussed in detail) realistically equates to a very simple management strategy being applied/monitored/documented with respect to not compromising any individually discussed tree & its *ULE*.

Tree #1 as previously noted is confirmed by photographs (see *Figure 5*) within this document to be:

- a) well away from any proposed works relative to TPZ/SRZ radial distances &
- b) in a state of very advanced Natural Senescence. Regardless of any DA proposal, this tree has no ULE.

Tree #2, Tree #3 & Tree #4 are specified to be Retained/Managed/Protected from the as proposed works by basic 'temporary fencing' being instated plus 'manual excavation' for 'footings/piers' specified as able to be 'flexibly located'. The excavation process prior to commencement/during excavation & post completion of excavation is to be documented in writing with supporting photographic evidence. Photograph confirming tree locations are additionally included (see *Figure 6*) within this document. See below specifications.





*Figure 5*: Illustrates the location/condition for Tree #1.



*Figure 6*: Illustrates the locations of Tree #2, Tree #3 Tree #4.

The installation of the specified 'Tree Protection' measures must be certified in writing with supporting photographic evidence as being Australian Standard (AS4970-2009 Protection of trees on development sites) compliant. This can be completed by either the site manager or the retained Practicing/Consulting Arborist for submission to the appointed Principle Certifying Authority (from herein PCA).

In the event a 'live root' of a 'significant diameter' - defined in this situation as being greater than 50mm (0.050m) in diameter is exposed the retained Project Arborist is to be brought to site to interpret/apply & document the 'management strategy' required to achieve 'best practice' Arboriculture process. It is essential this process be documented in writing with supporting photographic evidence by only the retained Project Arborist for provision to the appointed PCA.

# 6 Site Specific 'Preliminary Tree Plan of Management' *Tree #1:*

- Retain, Protect & Manage
- Install to a minimum height of 2.50m temporary 'Tree Isolation fencing panels as close as possible to calculated TPZ radial distance. See Appendix B.
- No excavated or builders' materials of any description is allowed to be stored on existing ground levels within the trees calculated 9.00m TPZ radial distance.
- Any excavation required within 9.00m of the tree trunk centre must be completed manually. Any 'live woody tree root less than 50mm in diameter may be severed cleanly without the input of the sites retained Practicing/Consulting Arborist, (both written & photographic evidence of works completed must be provided to the Principle Certifying Authority).
- Any 'live woody tree root greater than 50mm in diameter can only be managed with input from the sites retained Practicing/Consulting Arborist, (both written & photographic evidence of the strategy adopted for individual root management must be provided to the Principle Certifying Authority).
- Photograph installed 'Tree Protection Fencing'.
- Photograph the tree canopy prior to the beginning of any DA determined works.

### *Tree #2:*

- Install to a minimum height of 2.50m temporary 'Tree Isolation fencing panels as close as possible to calculated TPZ radial distance. See Appendix B.
- No excavated or builders' materials of any description is allowed to be stored on existing ground levels within the trees calculated 2.76m TPZ radial distance.
- Any excavation required within 2.76m of the tree trunk centre must be completed manually. Any 'live woody tree root less than 50mm in diameter may be severed cleanly without the input of the sites retained Practicing/Consulting Arborist, (both written & photographic evidence of works completed must be provided to the Principle Certifying Authority).
- Any 'live woody tree root <u>greater than 50mm in diameter</u> can only be managed with input from the sites retained Practicing/Consulting Arborist, (both written & photographic evidence of the strategy adopted for individual root management must be provided to the Principle Certifying Authority).
- Photograph installed 'Tree Protection Fencing'.

Photograph the tree canopy prior to the beginning of any DA determined works.

### *Tree #3:*

- Install to a minimum height of 3.12m temporary 'Tree Isolation fencing panels as close as possible to calculated TPZ radial distance. See Appendix B.
- No excavated or builders' materials of any description is allowed to be stored on existing ground levels within the trees calculated 3.12m TPZ radial distance.
- Any excavation required within 3.12m of the tree trunk centre must be completed manually. Any live woody tree root less than 50mm in diameter may be severed cleanly without the input of the sites retained Practicing/Consulting Arborist, (both written & photographic evidence of works completed must be provided to the Principle Certifying Authority).
- Any 'live woody tree root <u>greater than 50mm in diameter</u> can only be managed with input from the sites retained Practicing/Consulting Arborist, (both written & photographic evidence of the strategy adopted for individual root management must be provided to the Principle Certifying Authority).
- Photograph installed 'Tree Protection Fencing'.
- Photograph the tree canopy prior to the beginning of any DA determined works.

### *Tree #4:*

- Install to a minimum height of 3.12m temporary 'Tree Isolation fencing panels as close as possible to calculated TPZ radial distance. See Appendix B.
- No excavated or builders' materials of any description is allowed to be stored on existing ground levels within the trees calculated 3.60m TPZ radial distance.
- Any excavation required within 3.60m of the tree trunk centre must be completed manually. Any live woody tree root less than 50mm in diameter may be severed cleanly without the input of the sites retained Practicing/Consulting Arborist, (both written & photographic evidence of works completed must be provided to the Principle Certifying Authority).
- Any live woody tree root <u>greater than 50mm in diameter</u> can only be managed with input from the sites retained Practicing/Consulting Arborist, (both written & photographic evidence of the strategy adopted for individual root management must be provided to the Principle Certifying Authority).
- Photograph installed 'Tree Protection Fencing'.
- Photograph the tree canopy prior to the beginning of any DA determined works.

### 7 Recommendations:

By providing the requested additional information within this document relative to 'tree management' to the *NBC* officers assessing/determining the as lodged Development Application (2022/2090) the proposal should now be able to be determined.

If you have any questions relating to this report or require the implementation of recommendations, please contact Kyle Hill (Monday to Friday) on 02 9939 0078. Yours faithfully,

1/Hel

Kyle A Hill, Practicing & Consulting Arborist (AQF level 8)

## 8 Limitations on the use of this report

This report is to be utilised in its entirety only. Any written or verbal submission, report or presentation that includes statements taken from the findings, discussions, conclusions or recommendations made in this report, may only be used where the whole of the original report (or a copy) is referenced in, & directly attached to that submission, report or presentation.

## 9 Assumptions

Care has been taken to obtain information from reliable resources. All data has been verified insofar as possible; however, AURA Tree Services Pty Ltd, can neither guarantee nor be responsible for the accuracy of information provided by others.

### Unless stated otherwise:

Information contained in this report covers only the trees that were examined & reflects the condition of the trees at the time of inspection; and

The inspection was limited to visual examination of the subject trees without dissection, excavation, probing or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future.

## 10 Recommended References

Barrell, J. 1993. 'Preplanning Tree Surveys: Safe Useful Life Expectancy (SULE) is the Natural Progression', Arboricultural Journal 17:1, February 1993,

Barrell, J. 1995, 'Pre-development Tree Assessments', in Trees & Building Sites, Proceedings of n International Conference Held in the Interest of Developing a Scientific Basis for Managing Trees in Proximity to Buildings, International Society of Arboriculture, Illinois,

Dr. G. Watson & Dr. D. Neely, 'Trees & Building Sites', ISA Illinois USA 1995,

Dr. N. Matheny & Dr. J.R. Clark, 'Trees & Development', ISA Illinois USA 1998,

Phillip J. Craul, 'Urban Soil in Landscape Design', J. Wiley & Sons, New York USA 1992,

Clark, Ross, 'A Guide to Assessment of Tree Quality'. NATSPEC/ Construction Information, Milson's Point NSW, 2003 &

Clark, Ross. 'Purchasing Landscape Trees', Construction Information Systems Australia Pty. Ltd., Milson's Point NSW, 1996.

## 11 Selected Bibliography

Hitchmough, J.D. 1994. 'Urban Landscape Management', Inkata Press, Sydney.

Mattheck, C. & Breloar, H. (1994) 'Body Language of Trees'. The Stationery Office. London.

AS4373.2007 'Pruning of amenity trees', Standards Australia.

AS4970.2009 'Protection of trees on development sites', Standards Australia.

BS5837-2005. 'Guide for Trees in Relation to Construction', Standards Board, UK.

## Appendix A - Glossary of Common Arboreal Terms

- **Age:** I Immature refers to a refers to a well-established but juvenile tree
  - SM Semi-mature refers to a tree at growth stages between immaturity & full size
  - Mature refers to a full sized tree with some capacity for further growth
  - Late Mature refers to a full sized tree with little capacity for growth that is not yet about to enter decline
  - **OM** Overmature refers to a tree about to enter decline or already declining
  - LS Live Stag refers to a tree in a significant state of decline. This is the last life stage of a tree prior to death.
- Hth & Vig Health & Vigour
- Health refers to the tree's form & growth habit, as modified by its environment (aspect, suppression by other tree, soils) & the state of the scaffold (ie. 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 be healthy but in poor condition/vigour. Classes are:
  - Excellent (E), V. Good (VG), Good (G), Fair (F), Declining (D), Poor (P), Very Poor (VP)
- **Vigour** refers to the tree's growth rate/condition as exhibited by the crown density, leaf colour, presence of epicormic shoots, ability to withstand disease invasion & the degree of dieback. **Classes are:** 
  - Excellent (E), V. Good (VG), Good (G), Fair (F), Declining (D), Poor (P), Very Poor (VP)
- Useful Life Expectancy refers to any trees potential life expectancy (viability) not related to potential disturbances based on VTA assessment, classifications are: Short, (0 5 years), Medium, (5 15 years) & Long, (15 or more years).
- Retention Value is expressed as Low, Medium, High or of Heritage Importance
- **Diameter at Breast Height (DBH)** refers to the tree trunk diameter at breast height (1.4 metres above ground level).
- **Significant Diameter Roots** are defined as being woody roots with a diameter greater than 0.05m/50mm. (Unless otherwise specified)
- **Structural Root Zone (SRZ)** refers to a radial offset which relates to tree stability. This zone is presumed to be main location of the tree's structural support roots. It is calculated using the formula SRZ radius=  $(D \times 50)^{0.42} \times 0.64$ .
- Tree Protection Zone (TPZ) is ideally a "No Go Zone" surrounding a tree to aid in its ability to cope with disturbances associated with construction works. TPZ = DBH x 12. Tree protection involves minimising root damage that is caused by activities such as construction. Tree protection also reduces the chance of a tree's decline in health or death & the possibly damage to structural stability of the tree from root damage
  - To limit damage to the tree, protection within a specified distance of the tree's trunk must be maintained throughout the proposed development works. No excavation, stockpiling of building materials or the use of machinery is permitted within the TPZ
  - A TPZ is required for each tree or group of trees within five metres (unless otherwise specified) of building envelopes.
- **Stem/bark inclusion** refers to a genetic fault in the tree's structure. This fault is located at the point where the stems/branches meet. In the case of an inclusion this point of attachment is potentially weak due to bark obstructing healthy tissue from joining together to strengthen the joint

- **Decay** refers to the break down tissues within the tree. There are numerous types of decay that affect different types of tissues, spread at different rates & have different affect on both the tree's health & structural integrity
- Point of Attachment refers to the point at which a stem/branch etc join
- **Dead wood** refers to any whole limb that no longer contains living tissues (eg live leaves &/or bark). Some dead wood is common in a number of tree species.
- Die back refers to the death of growth tips/shoots & partial limbs. Die back is often an indicator of stress & tree health
- One dimensional crown refers to branching habits & leaves that extend/grow in One direction only. There are many causes for this growth habit such as competition & pruning
- **Crown Foliage Density of Potential (CFDP)** refers to the density of a tree's crown in relation to the expected density of a healthy specimen of the same species. CFDP is measured as a percentage
- **Epicormic growth/shoots** refers to growth/shoots that are/have sprouted from axillary buds within the bark. Epicormic growth/shoots are a survival mechanism that often indicates the presence of a current or past stress even such as fire, pruning, drought etc

Over Head Powerlines (OHP) Over head electricity wiring.

LVOHP Low Voltage Over head PowerlinesHVOHP High Voltage Over head Powerlines

ABC Aerial Bundled Cable

# Appendix B – Tree Protection/Management Prior to & During Construction

The installation of Tree Protection Zone (TPZ) fencing is to be carried out prior to commencement of all works. The most suitable fencing material is 1.8m tall chain link mesh with 50mm metal pole supports, see **detail 1: tree protection fencing**.

Trunk protection "Tree Guards" are detailed (below) by generic diagram.

A mulch layer of composted leaf & woodchip to a depth of 75mm is required within the TPZ to aid in retention of soil moisture & to protect soil from contaminants. Water is to be applied by handheld or soaker/leaky hose within TPZ as required & in Accordance with Stage 3 Water Restrictions. Watering is to be carried out by either an Arborist or is to form part of the Builder's/Contractor's contract, with recommended fortnightly checks by an Arborist.

There is to be no stock piling of building material (including waste), machinery or any other item within the TPZ of any retained tree. Access to personnel, machinery, & storage of fuel, chemicals, cement or site sheds is prohibited

Regular monitoring of protected trees during development works for unforeseen changes or decline, will aid in the success & longevity of the retained trees.

