AURA TREE SERVICES pty ltd

"We go out on a limb for you"

Arboriculture Assessment & Management Report

September 2021

Site:	**Lot 4 in DP 567442** **23 Baroona Road** **CHURCH POINT, NSW**
Client;	**Andriv (Andrew) & Ganna Konareva** **23 Baroona Road** **CHURCH POINT, NSW** **Phone: 61 425 257 142** **Email:** andrew@aesaus.com.au
Commissioned:	**Andriv (Andrew) & Ganna Konareva**
Author:	**Kyle A Hill** Registered (Arb Aus #1884) Practising & Consulting Arborist Post Graduate Certificate in Arboriculture, Uni of Melb 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

Andrew Konarev as the property owner commissioned *Aura Tree Services Pty Ltd* to prepare an "*Arboriculture Assessment & Management Report* for two (2) trees as part of a soon to be lodged Development Application for Alterations & additions to an existing dwelling house.

The subject site is known as 23 Baroona Road, Church Point (Lot 4 in DP 567442).

The subject site is currently developed to have the proposed to be modified dwelling house plus a near complete Secondary Dwelling. The AURA Tree Services Pty Ltd (from herein AURA) group has provided no consultation services relative to the active DA for Construction of Secondary Dwelling (DA2020/1278).

The subject site is within the Northern Beaches Council–Local Government Area, i.e. previously within the Pittwater Council –Local Government Area. From herein acknowledged as the NBC.

The two (2) trees subject of this document are confirmed to be Northern Beaches Council (from herein NBC) protected tree species.

The NBC is the sole consent authority relative to the trees discussed within this document.

Both discussed trees are located within the subject site. No trees within any common boundary to the subject site are interpreted as being required to be discussed.

Technically, the trees are still subject to the old *Pittwater Council Development Control Plan, Pittwater 21 adopted 2003, see Part B4 Controls Relating to the Natural Environment*. This document additionally acknowledges the SEPP 'Vegetation in Non-Rural Areas', August 2017. The discussed trees are medium term established (i.e., likely less than twenty-five years old). Neither discussed tree is a locally indigenous species.

This document focuses on managing Tree #1 & replacing Tree #2.

Kyle Hill, Practicing & Consulting Arborist AQF Level 5 & 8, has prepared this document based on our most recent onsite observations of Tuesday, 7 September 2021.

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2 Introduction

The NBC is the sole consent authority relative to development & tree management for the discussed site.

The discussed two (2) trees are identified as being; Tree #1: : *Corymbia citriodora* (Lemon Scent Gum) & Tree #2: *Araucaria columnaris* (Cooks Pine). On the basis neither discussed tree is locally indigenous it is reasonable to presume both are planted or wind/bird seed sown specimens.

Relative to the Pittwater 21 DCP, the following Part b, section B4 Controls are believed to apply to the subject site; B4.1 Flora & Fauna Conservation Area Category 1, B4.2 Flora & Fauna Habitat Enhancement Category 2 Land, B4.4 Wildlife Corridors, B4.5 Protection of Native Wildlife , B4.6 Pittwater Spotted Gum Forest-Endangered Ecological Community, B4.10 Land Adjoining Bushland & B4.22 Preservation of Trees Bushland Vegetation.. Also acknowledged is the SEPP 'Vegetation in Non-Rural Areas', August 2017.

Tree #1 is proposed to be retained, as such, this document contains management specifications. Tree #2 by client brief is promoted to be replaced. The reason being, an inappropriate species relative to its location.

The subject site is 'Land Zoned' R5, Large Lot Residential. The subject site is NOT within a "Heritage Conservation Area". (See page 7 of this document.) The subject site & adjoining sites are not listed "Heritage Items". The discussed trees are not known to be listed on any "Significant Tree Register". Relative to "Habitat Potential" both trees have canopy nesting only potential.

This document is based on Visual Tree Assessment (Stage 1 & 2) plus observations made when onsite where discussion/data collection was undertaken.

This document will support the proposal for Alterations & additions (for only hardstand parking space & tree replacement) to the existing dwelling house as has been presented in documents provided by Lifestyle Home Designs (Jeremy Adams).

3 Methodology

Assessment of the discussed 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 his publication *The Body Language of Trees (1994).*

Assessment includes:

- *Tree's current condition & likely ULE.*
- *Perusal of NBC 'Tree Management Provisions' i.e. the old Pittwater Council Development Control Plan, Pittwater 21, adopted 2003. Part B, Section B4,*
- *Perusal of "Heritage Conservation Area" Pittwater Council LEP 2014 mapping*
- *Perusal of NBC "Endangered Ecological Community listing" information.*
- *Research for listing on any "Significant Tree Register".*
- *Discussion of environment where the trees are growing &*
- *Tree's amenity & retention value, related to significance, screening & habitat.*

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

See the Attachments included as Appendix A & Appendix B for further information:

- *Appendix A Glossary of Common Arboreal terms*
- *Appendix B Tree Protection & Management Prior to & During Construction*

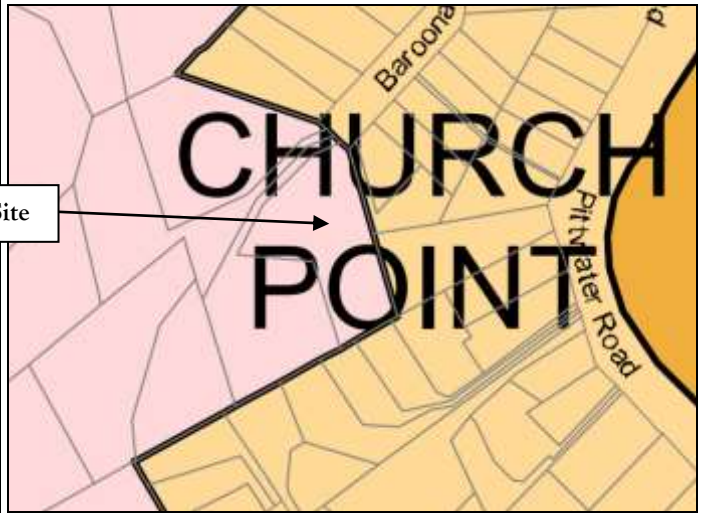
4 Observations

4.1 The Site

The subject sit is Land Zoned 'R5' Large Lot Residential. By Site Survey the lot is 3709.00m^2. It is additionally classified as being subject to the provisions within the Pittwater spotted gum forest in the Sydney Bioregion–endangered ecological community listing (NSW Scientific Committee – final determination, see Part 3 of schedule 1of the Act.)

Figure 1: Map & Aerial photograph courtesy Whereis.com & NBC (web tools)


Pittwater Local Environmental Plan 2014
Land Zoning Map - Sheet LZN_011
Zone
B1 Neighbourhood Centre
B2 Local Centre
B4 Mixed Use
B6 Enterprise Corridor
B7 Business Park
E1 National Parks and Nature Reserves
E2 Environment Conservation
E3 Environmental Management
E4 Environmental Living
IN2 Light Industrial
IN4 Working Waterfront
R2 Low Density Residential
R3 Medium Density Residential
R5 Large Lot Residential
RE1 Public Recreation
RE2 Private Recreation
RU2 Rural Landscape
SP1 Special Activities
SP2 Infrastructure
SP3 Tourist
W1 Natural Waterways
W2 Recreational Waterways


Subject Site
CHURCH POINT
Pittwater Road

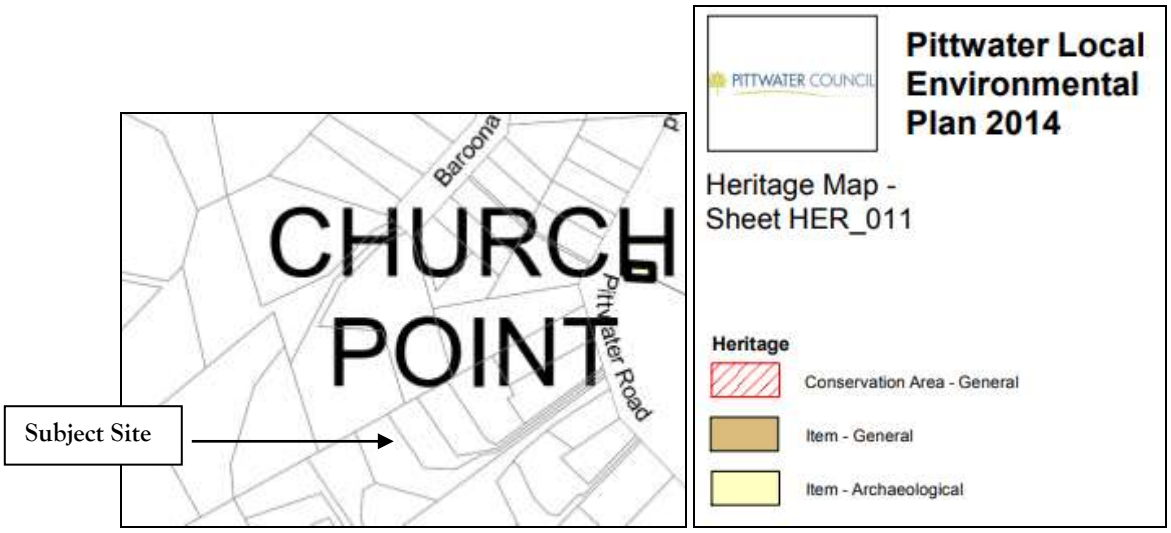
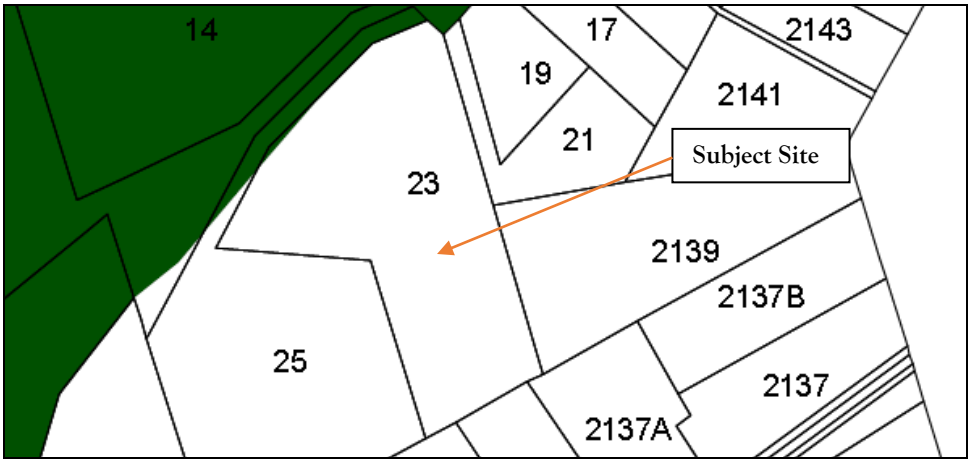
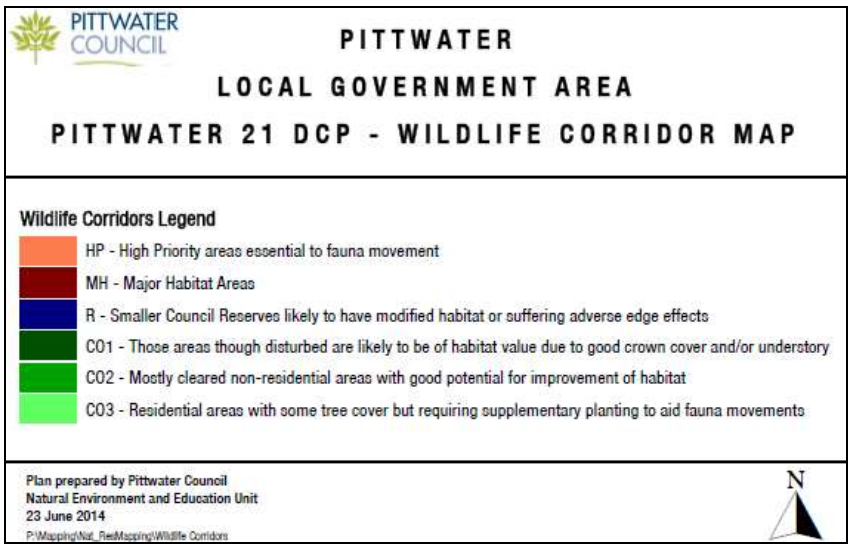


Figure 2: Above, confirms 'Heritage Conservation Area & Land Zoning Status', Below, confirms Wildlife Corridor Status.





4.2 Site Survey with Tree Locations Confirmed & Tree Images

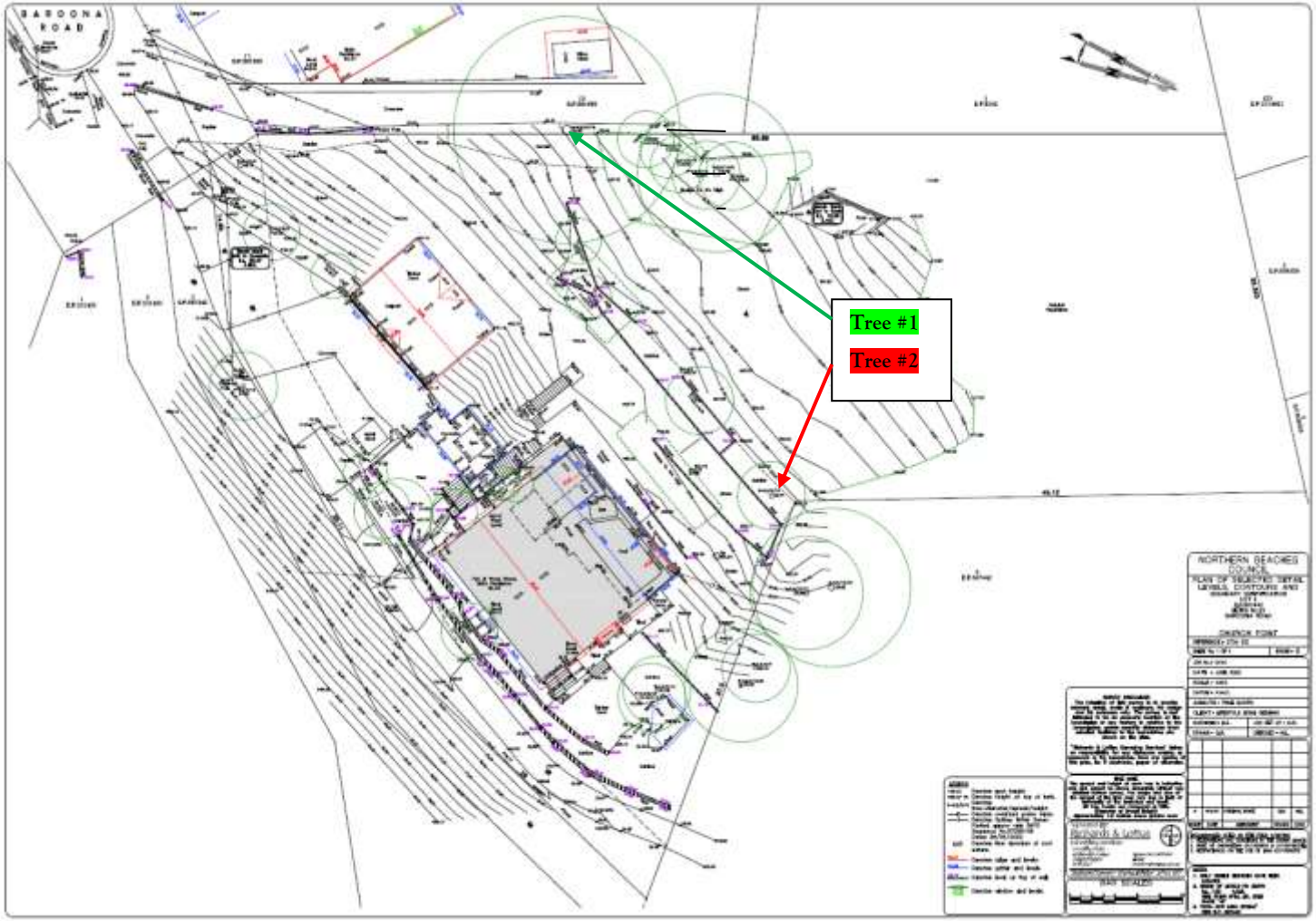


Figure 3: Site Survey with discussed tree locations plotted.

5 The Trees Summary Table, The Proposal & Discussion

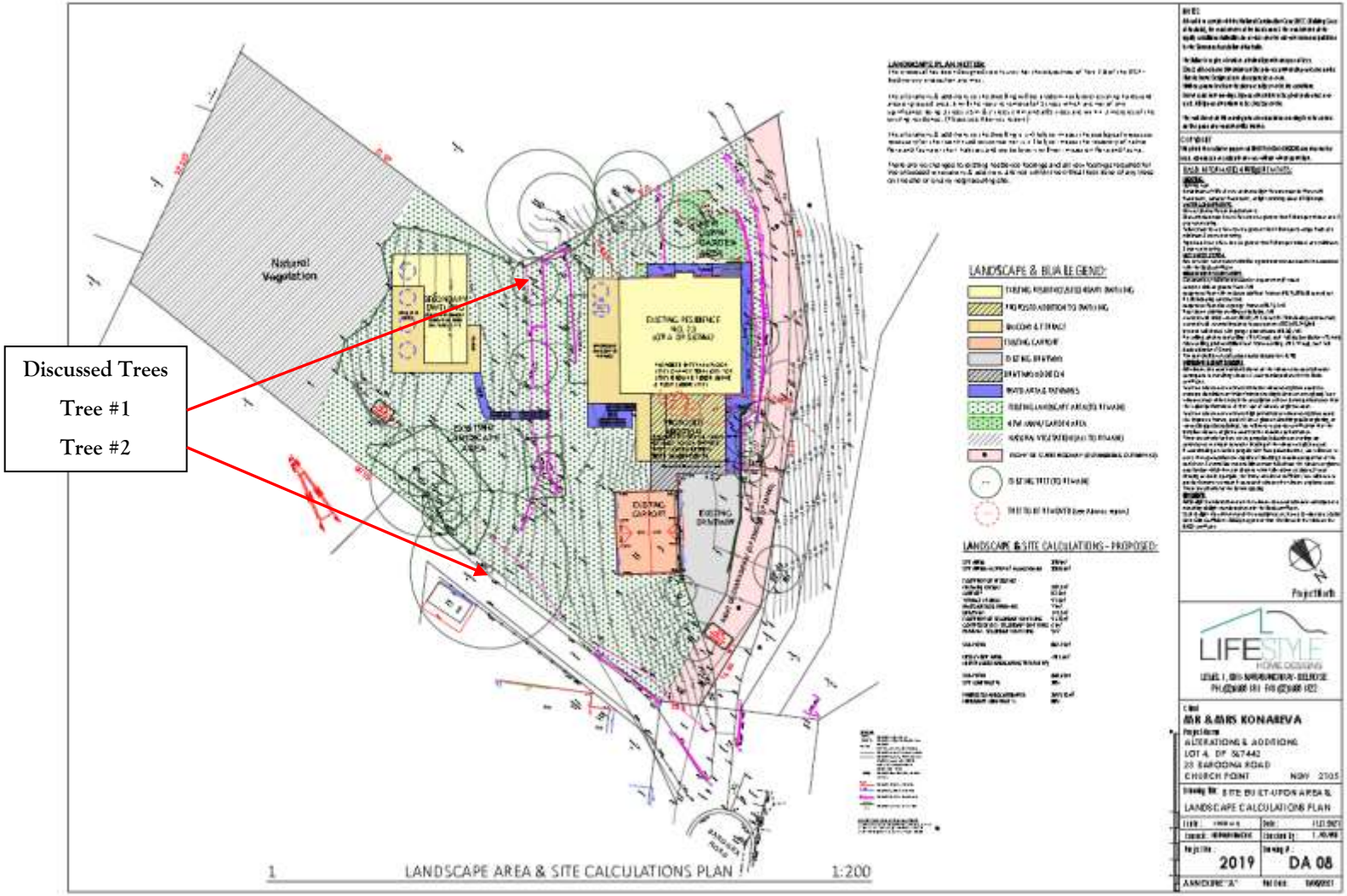
5.1 The Trees Summary Table:

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

Trees Recommended for replacement	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	***Corymbia maculata*** *Lemon Scent Gum*	<20.00	<14.00	<0.60	7.20	2.70	M	Good & Good	Moderate/ Moderate	Typical	**Retain, Manage & Protect: Tree is considered as easily retained by keeping all building materials & excavated materials more than 3.00m from the trunk centre.**
2	***Araucaria columnaris*** *Cooks Pine*	<1.00	<3.00	<0.43	5.30	2.40	M	Good & Good	Moderate/ Moderate	Typical	**Replace: Tree is considered as easily retained by keeping all building materials & excavated materials more than 2.00m from the trunk centre.**

5.2 The Proposal:


Discussed Trees
Tree #1
Tree #2
Natural Vegetation
LANDSCAPE & BUILDING LEGEND:
LANDSCAPE & SITE CALCULATIONS - PROPOSED:
MR & MRS KONAREVA
ALTERATIONS & ADDITIONS
LOT 4 DP 547442
23 BAROONA ROAD
CHURCH POINT NSW 2105
LANDSCAPE CALCULATIONS PLAN
2019
DA 08
1 LANDSCAPE AREA & SITE CALCULATIONS PLAN 1:200

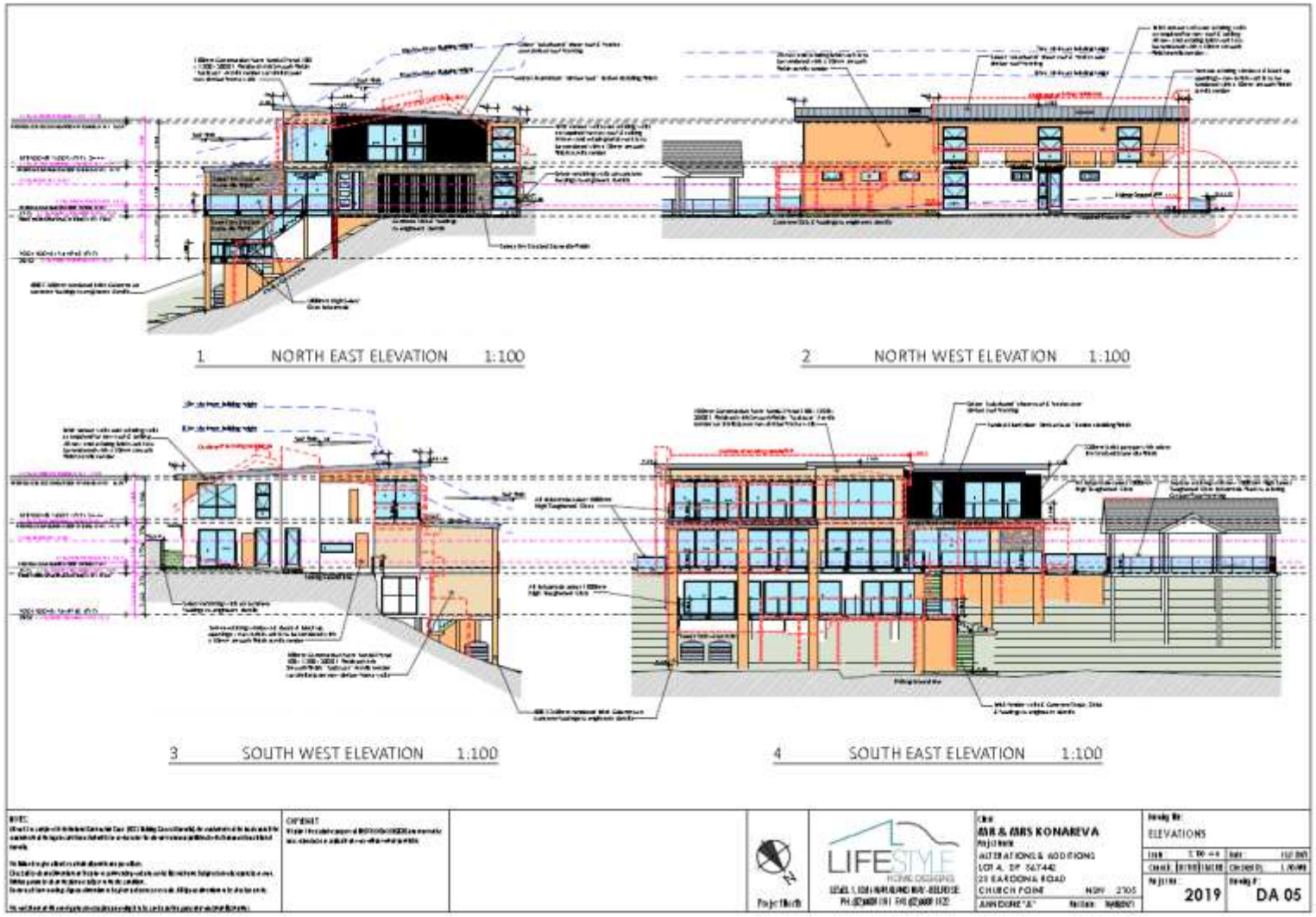


Figure 4: Landscape/Site Plan & Elevations.

5.3 Discussion:

Tree #1 is proposed to have a hardstand car space created at least partially within its TPZ total surface area. Our requirements are that the finished level for the hard stand parking space does not involve any excavation into natural soil levels (our opinion is existing soil levels are not truly natural) & is constructed using 'live tree root friendly' materials. This simply mean permeable or pervious finished surfaces. In this situ, we suggest investigating s 'cell type' solution. See below photographs of potentially suitable commercially available products.

Figure 5: Examples of 'cell style' hardstand parking space/driveway solutions.

In addition to the specified 'live tree root friendly' materials we additionally specify the tree trunk be protected prior to commencement of any DA (new) determined works by a 'temporary 'Tree Trunk Guard'. See Attachment B.

No builders' materials of any description (including excavated material) can be stored within the tree's calculated TPZ radial distance of 7.20m.

Any ground level disturbance required the existing (TPZ total surface area) is specified to be manually excavated. Should the manual excavation process expose a 'structural supporting large diameter live woody tree root' (defined as being I excess of 50mm in diameter) the sites retained Project Arborist must be summoned to site to determine the best practice strategy able to be applied for the situation. This process must be documented in writing with supporting photographic evidence that disturbance to any 'live supporting tree roots' is has been minimal. (The documentation process must be completed by the sites retained Practicing/Consulting Arborist.) The documentation is an essential component of the appointed Principle Certifying Authority compliance process.

Tree #2 is supported to be replaced on the grounds multiple, potentially up to four (4) new trees can be planted within the low edge soil with respect to the existing (as briefed at this time) timber retaining wall proposed to be retained.

The NBC has a widely known policy for development site s where [possible to increase 'tree canopy density'. This can easily be achieved by careful selection of locally indigenous or other suitable to the local area species that would not mature to a height where by views from at least the upper main living areas of the remodelled existing dwelling would not be compromised.

This is seen as a win/win outcome for both the NBC implementation of increased canopy density policy as well as providing green structures able to contribute to soil conservation/stabilisation below the dwelling & the existing timber retaining wall.

Tree Removal & Replacement Trees Requirements:

- *Any tree proposed for replacement must be removed by persons that abide at all times to the "WorkCover NSW Industry Code of Practice, (1998)".*
- *The replacement trees are to be professionally planted & maintained for a minimum period of one (1) full active growing season in the Sydney Environment.*
- *A post construction inspection with written & photographic evidence of the discussed tree condition can only be completed by the sites retained Practicing/Consulting Arborist.*

6 Conclusion

- **Tree #1 with implementation of the specified ground level management 'Plan of Management' is considered as able to be viably retained, managed & protected prior to the commencement & throughout the development process in a manner that will not compromise any individual tree's ULE.**
- **Tree #2 is supported for replacement. New trees must at maturity be able to increase the tree canopy density within the subject site in a manner so as to not only repair but actually increase total canopy density associated with the temporary loss of 'landscape amenity' by replacing Tree #2.**
- **The replacement trees must be a Genus/species of the Pittwater spotted gum forest in the Sydney Bioregion – endangered ecological community listing (NSW Scientific Committee – final determination, see Part 3 of schedule 1of the Act.) or proven as suitable species for similar NBC sites.**

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

7 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.

8 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.

9 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.

10 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

M *Mature* refers to a full sized tree with some capacity for further growth

LM *Late Mature* refers to a full sized tree with little capacity for growth that is not yet about to enter decline

OM *Over-mature* 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 x 50)$^{0.42}$ x 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 Powerlines
HVOHP	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.