"GROWING MY WAY"

Tree Consultancy

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EXCELLENCE in ALL ASPECTS OF TREE MANAGEMENT

FULL INSURANCE PROTECTION

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Construction Impact & Management Statement

March 2022

Site:	**Lot 19 in DP 222134** **2 Yarrabee Place** **BILGOLA PLATEAU, NSW**
Client:	**Todd Kardash** **2 Yarrabee Place** **BILGOLA PLATEAU, NSW 2107**
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

Todd Kardash/Julie Elizabeth McCormack (property owners) commissioned the Growing My Way Tree Consultancy (GMW) to prepare a *Construction Impact & Management Statement* relative to the proposed *Alterations/Additions to Existing Residential Dwelling including swimming pool & pool surrounds* for the property known as 2 Yarrabee Place, Bilgola Plateau (from herein the subject site).

One (1) individual tree have been identified as being required to be discussed relative to the proposal for *Alterations/Additions to Existing Residential Dwelling including swimming pool & pool surrounds*. The discussed in detail tree is subject to the tree management provisions as defined within the *Northern Beaches Council (from herein NBC) "Tree Management Provisions" plus the new SEPP "Vegetation in non–rural Areas, August 2017.*

The discussed tree is confirmed to be within the subject site.

Multiple other trees are located within both the subject site & adjoining common boundary properties but are not discussed as they are well away from & therefore not impacted upon the proposed works supported within this document.

The discussed tree is supported to be retained with some pruning required. The discussed tree is are assessed as being of Fair to Good Health & Vigour, with an assessed Useful Life Expectancy (from herein ULE) of at least the medium term, i.e., more than fifteen (15) years.

The proposal (from a tree management perspective) is able to satisfy compliance criteria with both the *Australian Standard (AS4970-2009 Protection of trees on development sites) &* the *Australian Standard (AS4373-2007 Pruning of amenity trees).*

Existing & proposed to be retained motor vehicle & pedestrian access is only via Yarrabee Place. No access for the proposed works is required via any adjoining common boundary property.

The sole consent authority is the *NBC*. The old *Pittwater Council* Planning Instrument (*Local Environment Plan, 2014*) applies at the time of writing.

Information related to the discussed tree was gathered by onsite data collection with cross referencing to:

- *Site Survey by TerraLinks, dated, 10 December 2021*;
- *Part Site Plan, by Outside Living, dated, 11 February 2022*;
- *Pittwater Council/NBC "Tree Management Provisions" &*
- *SEPP 'Vegetation in Non-Rural Areas, 25 August 2017.*

The aim of this report is:

1. *To confirm individual tree health, vigour & condition considering any impact foreseen by the proposed demolition & redevelopment.*
2. *Confirm the Site–Specific 'Tree Plan of Management' for the tree to be retained, protected & managed is AS4970–2009 compliant. Additionally, confirm any Site–Specific Pruning is AS4373–2007 compliant*

This document supports (relative to tree management) the proposal for *Alterations/Additions.*

Kyle A Hill (AQF level 5 & 8 *Practicing/Consulting Arborist* has prepared this report based on "*Visual Tree Assessment" (VTA).* Onsite Data was collected on Saturday, 19 February 2022.

Table of Contents

2 Introduction

This report contains observations & recommendations intended to assist in the management of the one (1) tree identified as necessary to be discussed by virtue of their location & proposed works, i.e., *Alterations/Additions to Existing Residential Dwelling including swimming pool & pool surrounds.*

This document supports the proposed *Alterations/Additions to Existing Residential Dwelling including swimming pool & pool surrounds* with respect to tree management issues.

We confirm to be familiar with both the old *Pittwater Council* & now *NBC "Tree Management Provisions" plus the new SEPP "Vegetation in non–rural Areas, August 2017".*

The sole consent authority is *NBC.*

The subject site is NOT within any *NBC* designated "*Heritage Conservation Area*". The subject site is confirmed to NOT be a listed "*Heritage Item*" nor is the discussed tree known to be listed on any "*Significant Tree Register*". The discussed tree is captured as being subject to the protection provisions within the state legislated *'NSW Scientific Committee'–final determination,* (*Threatened Species Conservation Act*) which identifies & protects the '*Pittwater spotted gum forest–endangered ecological community listing*' under '*NSW legislation'.* The discussed site is not captured by the NSW Biodiversity Values Mapping legislation. The subject site is confirmed to be within a *C03 – 'Residential areas with some tree cover but requiring supplementary [planting to aid fauna movements'*, "*Wildlife Corridor*" as defined within the *Pittwater 21 DCP (see page 8).*

The discussed tree will be specified to be isolated & protected from any works (including demolition) prior to & throughout all phases of construction. Other nearby trees are assessed as not being impacted upon in any manner by the as proposed works.

The subject site is zoned *"C4", 'Conservation Area'.*

A *Preliminary Site Specific "Tree Plan of Management*" is included within this document.

3 Methodology

Assessment of the trees discussed has been from ground level by eye, using *Visual Tree Assessment* * *(VTA)* techniques developed by Claus Mattheck. The principles of *VTA* are explained in his widely-used reference book *"The Body Language of Trees (1994)"*.

Assessment includes:

- Tree's current condition & likely future health. Species tolerance to root disturbance &/or development
- Likely future hazard potential to persons & property
- Tree's amenity value, such as significance, screening & habitat.

No root analysis, soil testing, 'Resistograph'® drilling or aerial canopy inspection was undertaken. See the following Appendices for further information:

- Appendix A Glossary of Common Arboreal terms
- Appendix B Tree Protection & Management

*** *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

The report discusses only trees within Lot 19 of DP 222134 (1A Elvina Avenue). The site is 729.10m^2 by Site Survey in size. The site is linked to one (1) public road & residential (4) residential lots. The subject site is Land Zoned 'C4' "Conservation Area" (old Environmental Living).

Figure 1: Aerial photograph with lot boundaries courtesy of NBC website tool.

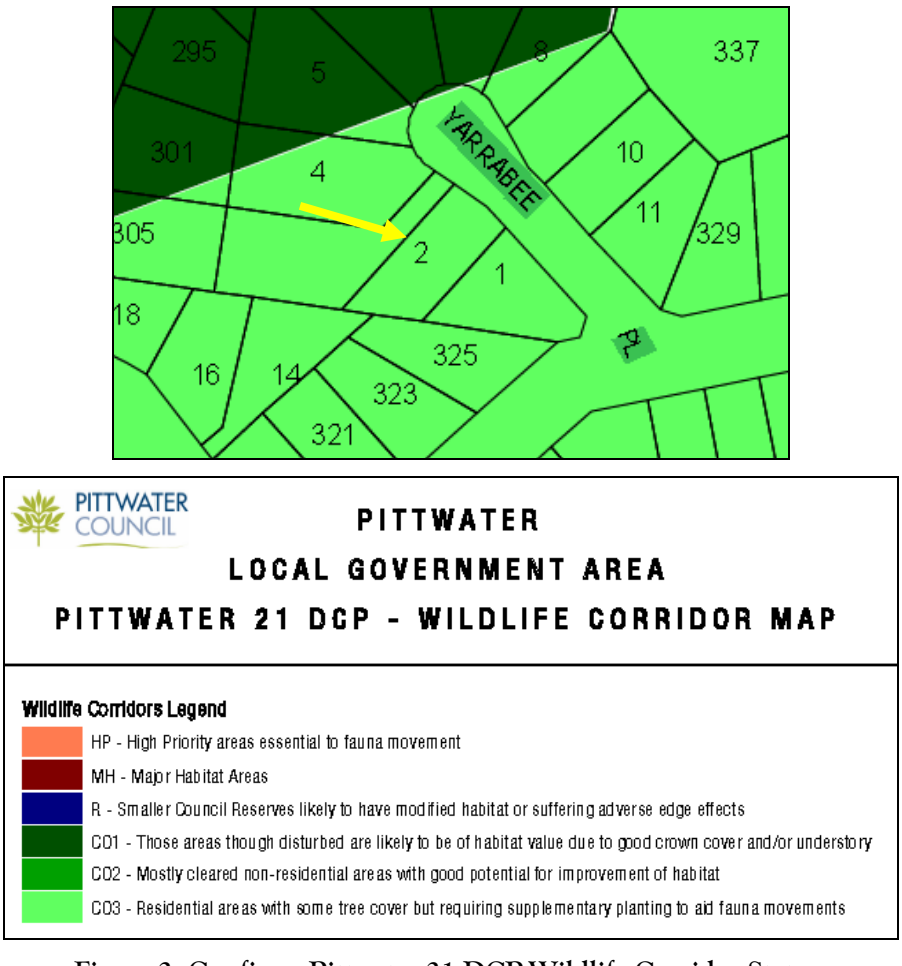
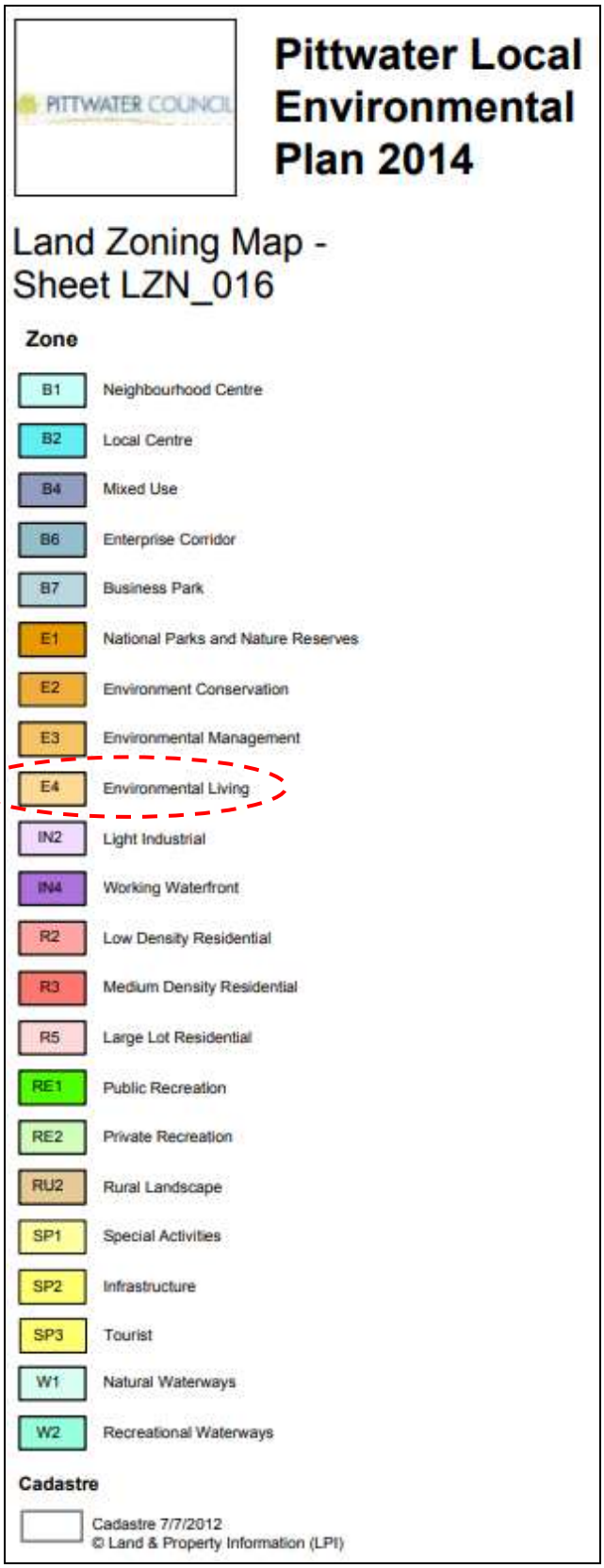
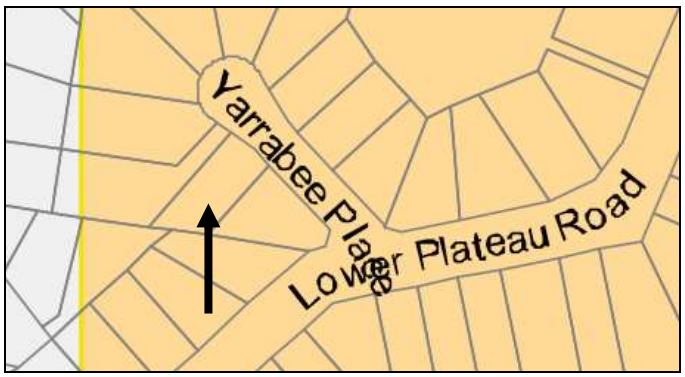


Figure 2: Confirms Pittwater 21 DCP-Wildlife Corridor Status.


PITTWATER COUNCIL
Pittwater Local Environmental Plan 2014
Land Zoning Map - Sheet LZN_016
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
Cadastre
Cadastre 7/7/2012
© Land & Property Information (LPI)


Yarrabee Place
Lower Plateau Road

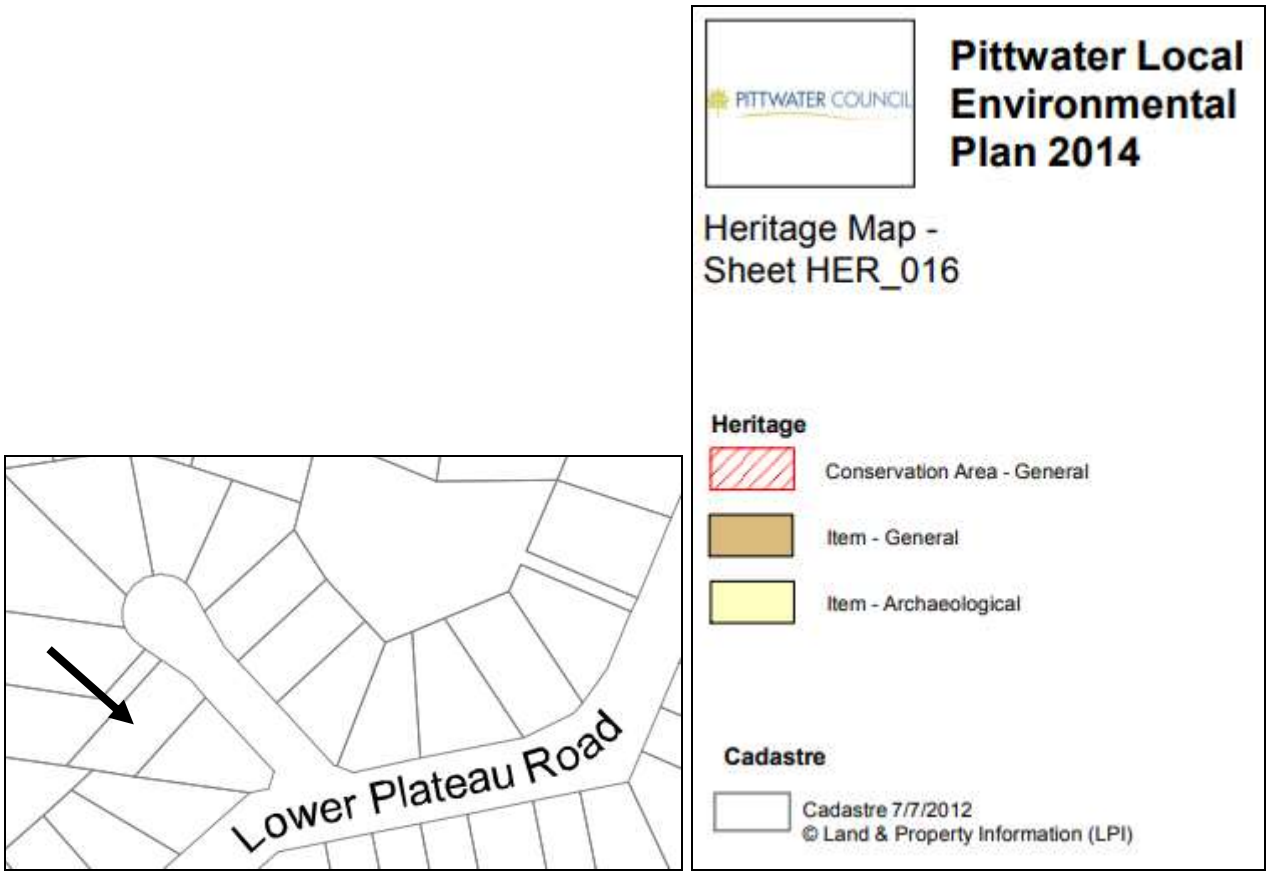


Figure 3: Above & previous page illustrates Land Zoning & Heritage Conservation Area status. Below, confirms NSW Government Biodiversity Values Mapping status.

The site is confirmed to NOT be within a *NBC* designated "*Heritage Conservation Area*" *(see above)*. The site is also confirmed to NOT be a listed "*Heritage Item*" nor is it near any listed "*Heritage Item*". The discussed tree is NOT known to be on any '*significant tree register*'. The subject site & local environs are located within a designated *'Wildlife Corridor' C03 – Resdidential areas with some tree cover but requiring supplementary [planting to aid fauna movements'.*

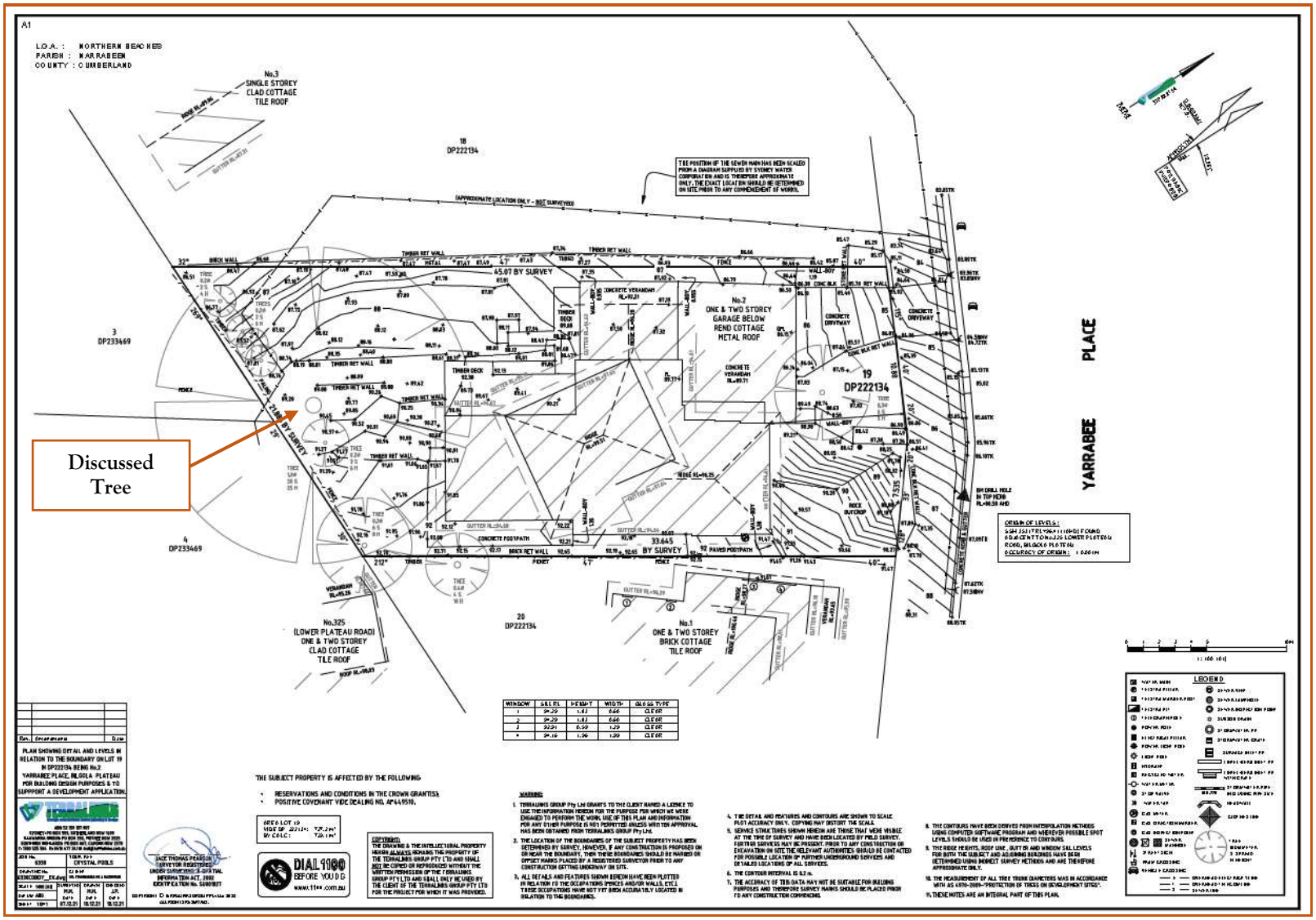


Figure 4: Site Survey

.2 The Proposal

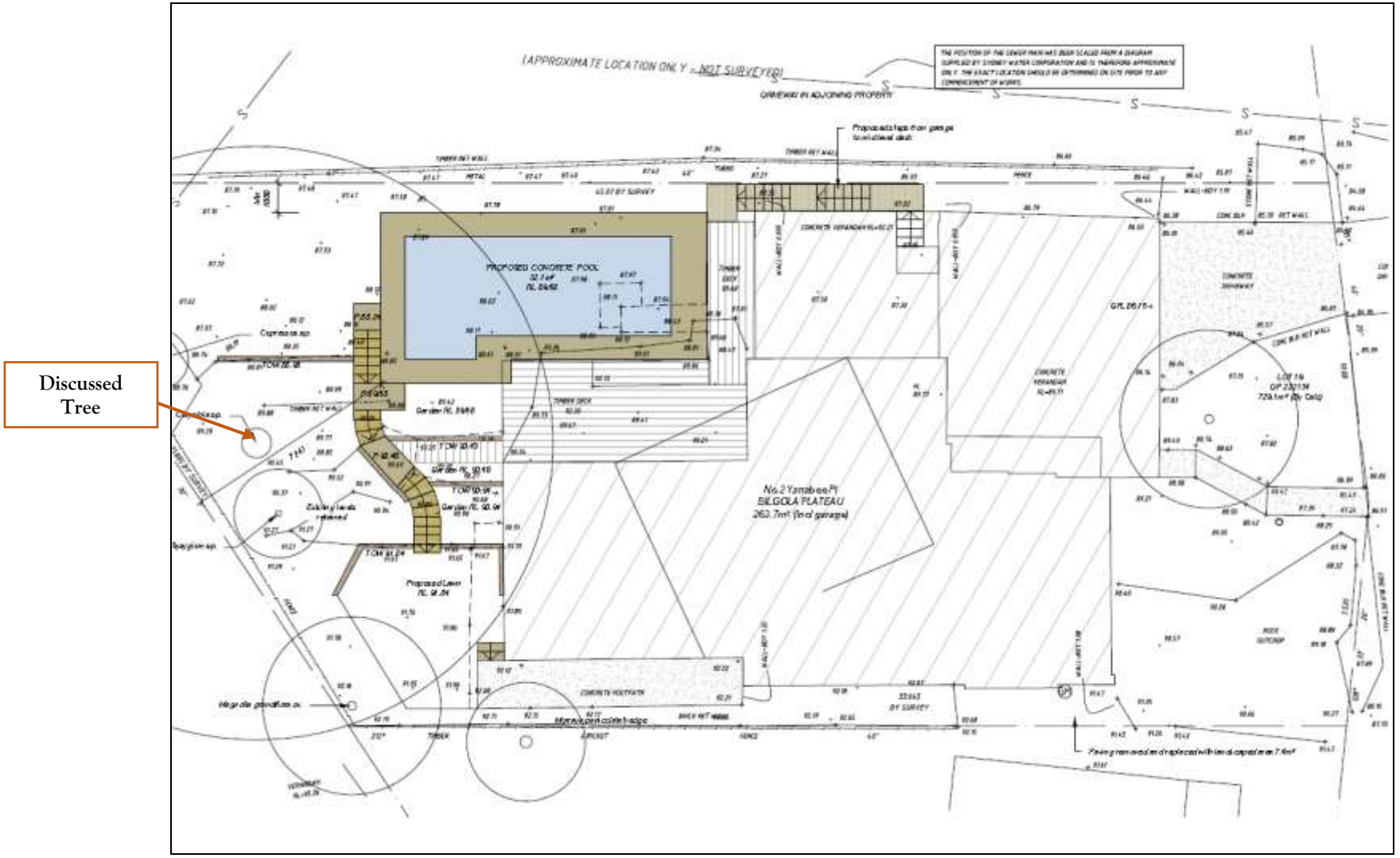


Figure 5: Proposed Part Site Plan.

4.3 Tree Location & Site Images

Figure 6: Left illustrates the location of the discussed tree. Right illustrates the location of the swimming pool.

Figure 7: Illustrates current condition of discussed tree canopy. Note: dead/dying branches present.

4.4 The Tree – Summary Table

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

Trees Recommended for removal/replacement	Trees Recommended for retention
Exempt species	Trees retainable but of low amenity

	Identification	Height (m)	Crown (m)	DBH (m)	TPZ (m)	SRZ (m)	Age	Health/ Vigour	Structure	Significance/ Retention Values	Comments
1	***Eucalyptus punctata*** *Northern Grey Gum*	<23.00	<20.00	<1.00	<12.00	<3.47	Mature	Good & Good	Typical	High/ Hugh	**Retain, Protect & Manage:** **Tree is considered as easily retained with site specific management plan.** **Pruning is supported.**

5 Discussion

The *Australian Standard (AS4970–2009 Protection of trees on development sites)* is the guideline required to be addressed relative to best practice '*Tree Management Principles*'. See Chapters 3, 4 & 5 of this document. Additionally, compliance criteria within the *Australian Standard (AS4373-2007 Pruning of amenity trees)* is required to be addressed.

The one (1) discussed tree is confirmed to be totally located within the subject site.

The one (1) discussed tree is subject to the NBC 'Tree Management' provisions. It is proposed to be retained. This is considered a sustainable proposal with the implementation of intensive management, i.e., 'live root management, pruning of dead/dying branches/ stubs etc., as well as the pruning of one (1) third order branch that will overhang the proposed swimming pool/pool surrounds footprint. The tree is additionally confirmed to have dropped at least one (1) significant diameter 'live branch' in the past. On the basis this incident occurred in weather conditions not verifiable our suggestion is; to monitor the tree, especially for any 'still weather' significant diameter 'live branch' failure incidents into the future.

The discussed tree is confirmed to be locally indigenous (genus/species).

On the basis of genus/species, Retention & Significance values we class this tree as being of High Retention & High Significance values.

Tree #1 is confirmed to be located in a raised garden area (see page 11 photograph). On this basis, only basic temporary metal mesh fencing panels with above ground supports is specified to be instated, these are most important & are to be instated on the turf at the base of the timber retaining wall, (See Appendix B.)

Any excavation within five (5.00m) of the base of the tree trunk centre is specified to initially be manually excavated (not total area, only line of excavation closest to the tree) to a minimum depth of one (1.00m) or to rock. 'Live roots' exposed less than 50mm in diameter are not considered to be of a significant diameter. As such, they can be cleanly pruned without any input from the retained Project Arborist. The completed excavation must be documented (with supporting photographic evidence) by the site manager for provision to the appointed Principlal Certifying Authority (from herein the PCA) confirming no 'live root' of a significant diameter has been damaged. In the event any 'live roots' greater than 50mm in diameter are exposed works must cease until the retained Project Arborist can assess & prepare the most suitable management strategy. This process can only be completed by the retained Project Arborist. The strategy adopted must be documented (with supporting evidence photographs) by only the retained Project Arborist & provided to the appointed PCA.

Pruning of dead/dying branches is recommended. The prunin of one (1) third order 'live branch' which will overhang the swimming pool/pool surrounds is additionally supported to be undertaken. Any pruning must at all times be compliant with the relevant Clauses within the AS4373-2007 Pruning of amenity trees. See Chapter 7, sections 7.2 Crown maintenance & 7.3 Crown modification. These works can only be undertaken by suitably qualified/experienced tree management practitioners or those persons under the direct supervision of such a qualified/experienced person.

Preliminary "Site Specific Tree Plan of Management"

TREE # & IDENTIFICATION	RETAIN MANAGE PROTECT/ REPLACE	MANUAL EXCAVATION (for footings/piers/services)	CANOPY PRUNING	Install TPZ Fencing Install Tree Trunk Guard	Excavation Signoff	CC Signoff	OC Signoff
1 *Eucalyptus punctata*	Retain	Yes Line of pool excavation closest to the tree trunk base centre	Yes Prune to remove dead/dying branches (safety) Prune to remove third order live branch over the proposed swimming pool/pool surrounds (See below photograph)	Yes No	Yes	Yes	Yes

Figure 8: Yellow line & arrows illustrates the 'live branch' supported to be pruned.

6 Conclusions

- **Relative to the information as presented the** *GMW consultancy* **supports the proposed works as presented in documentation reviewed.**
- **The** *DA submission* **is supported to be lodged for determination by council officers as per plans referenced with the specified Site Specific "***Tree Plan of Management***" & Section 5 Discussion specifications being applied.**

If you have any questions relating to this report or implementation of recommendations, please contact Kyle Hill on 0412-221-962.

Kyle A. Hill
[AQF level 5 & AQF level 8 Registered with Arboriculture Australia (Reg #1884) Practicing & Consulting Arborist]

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, Growing My Way Tree Services, 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.

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, pp.

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'*, LSA 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

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.

AS 4373:2007, '*Pruning of Amenity Trees*', Standards Australia.

AS 4970:2009, 'Protection of Trees on Development Sites", Standards Australia.

BS 5837:2005, '*Guide for Trees in Relation to Construction*', Standards Board, UK.

Appendix A – Glossary

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 (ULE) refers to any individual tree specimen's potential life

expectancy (viability) based on VTA assessment, three groups are described,

Short = Less than Fifteen years

Medium = Fifteen – Twenty-five years

Long = more than Twenty-five years

Significant diameter roots are defined as those being greater than 0.05m/50mm in diameter.

Diameter at Breast Height (DBH) refers to the tree trunk diameter at breast height (1.4 metres above ground level)

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.*

Primary Root Zone (PRZ) refers to a radial offset of ten (10) times the trunk DBH measured from the centre of the trunk. This zone often contains a significant amount of (but by no means all of a tree's) fine, non-woody roots required for uptake of nutrients, oxygen & water.

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

Tree Protection & Management Prior to Excavation &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.