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Construction Impact & Management Statement

March 2021

Site:	**Lot 104 in DP 752046** **39 Attunga Road** **NEWPORT, NSW**
Client:	**Lance Horton** **c/ MHDP** **Level 2, 271 Alfred Street** **NORTH SYDNEY, NSW 2060**
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

Lance Horton (property owner) via MHDP (Kelvin Tan) commissioned the Growing My Way Tree Consultancy (GMW) to prepare a *Construction Impact & Management Statement* relative to the proposed *New Dwelling/Swimming Pool* within the property known as 39 Attunga Road, Newport, (from herein the subject site).

One (1) individual tree has been identified as potentially being impacted upon. It is confirmed to be a protected tree species & as such it is discussed in detail. The tree is confirmed to be located within the subject site (southern yard area).

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 SEPP "Vegetation in non–rural Areas, August 2017.*

No other NBC protected trees (near the proposed works) are located within either the subject site or adjoining common boundary properties.

The discussed tree is supported to be retained, managed & protected with an intensive 'Site Specific Tree Plan of Management'.

The proposal from a tree management perspective is considered as able to satisfy compliance criteria within the *Australian Standard (AS4970-2009 Protection of trees on development sites).*

Motor vehicle & pedestrian access is only via Attunga Road.

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 acknowledged/discussed tree was gathered by onsite data collection with cross referencing to:

- *Site Survey by Waterview Surveying Services, dated, 8 February 2020, updated 17 March 2021;*
- *Plans, Sections & Elevations, by MHDP, Sheets A001, A101 thru A104, A201 thru A203 & A301 thru A3031913, all dated, February 2021;*
- *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 potential impact foreseen by the proposed demolition & redevelopment.*

This document supports (relative to tree management) the proposal for *New Dwelling/Swimming Pool as per information provided by MHDP.*

Kyle A Hill (AQF level 5 & 8 *Practicing/Consulting Arborist* has prepared this report based on "*Visual Tree Assessment" (VTA).* Data was originally collected on Wednesday, 24 March 2021.

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 its location & proposed works, i.e. for *New Dwelling/Swimming Pool.*

This document supports the proposed *New Dwelling/Swimming Pool* 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 a *NBC* designated "*Heritage Conservation Area".* The subject site is confirmed to NOT be a listed "*Heritage Item*" nor are any of the discussed trees known to be listed on any "*Significant Tree Register*". The discussed tree, (*Araucaria heterophylla, Norfolk Island Pine, Tree #1*) is NOT 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 subject site is confirmed to NOT be within a mapped, "*Wildlife Corridor*" as defined within the *Pittwater 21 DCP (see page 8).*

The one (1) protected discussed tree is proposed to be retained, managed & protected by complying with the intensive 'Site Specific Tree Plan of Management' discussed within this document.

The subject site is zoned *"E4", 'Environmental Living'.*

3 Methodology

Assessment of the tree 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 one (1) tree within 39 Attunga Road, Lot 104 of DP 752046. The site is 678.50m^2 by Site Survey in size. The site is linked to one (1) public road/road reserve (front & rear boundaries) & two (2) residential lots.

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

The subject site is Land Zoned "E4" 'Environmental Living'.

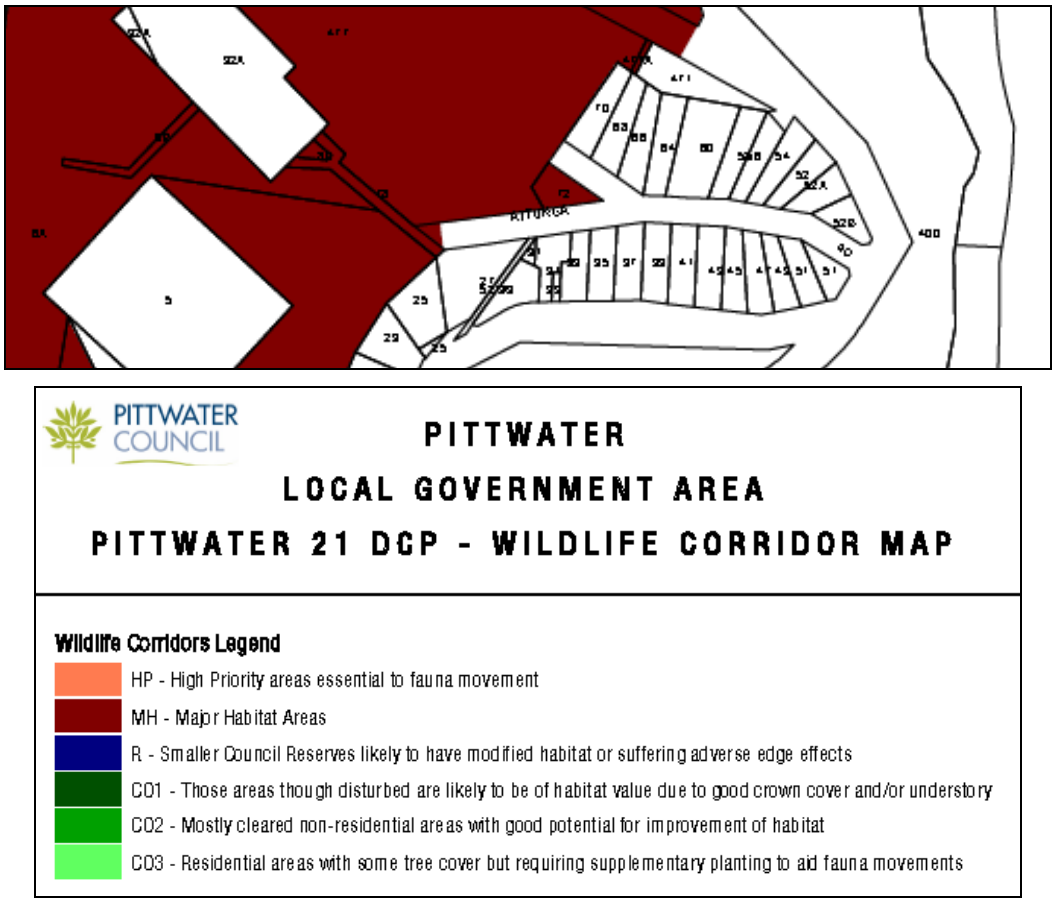
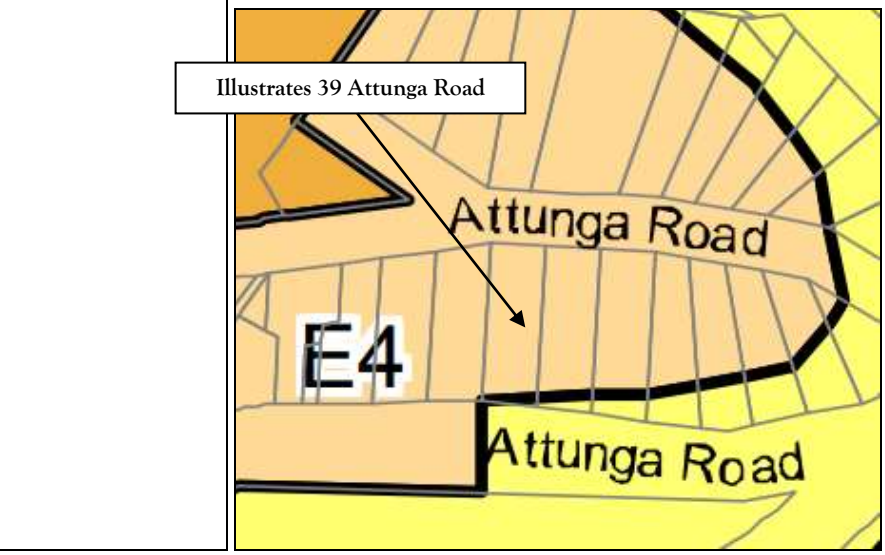


Figure 2: Confirms Pittwater 21 DCP-Wildlife Corridor Status.


PITTWATER COUNCIL
Pittwater Local Environmental Plan 2014
Land Zoning Map - Sheet LZN_017
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)


Illustrates 39 Attunga Road
Attunga Road
E4
Attunga Road

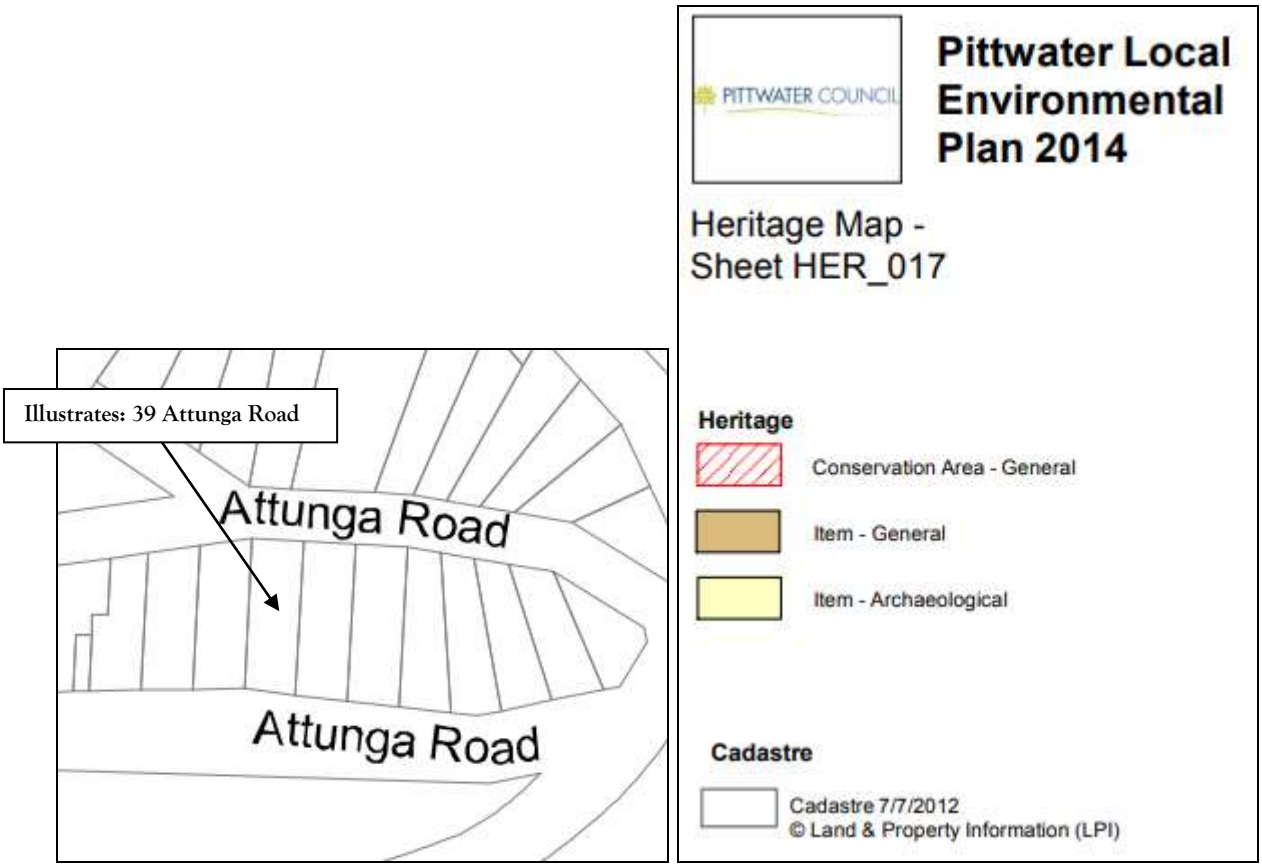


Figure 3: Above & previous page illustrates Land Zoning & Heritage Conservation Area status.

The site is NOT within a *NBC* designated "*Heritage Conservation Area*" (*see page 6*). 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' HP – "High priority areas essential to fauna movement'.*

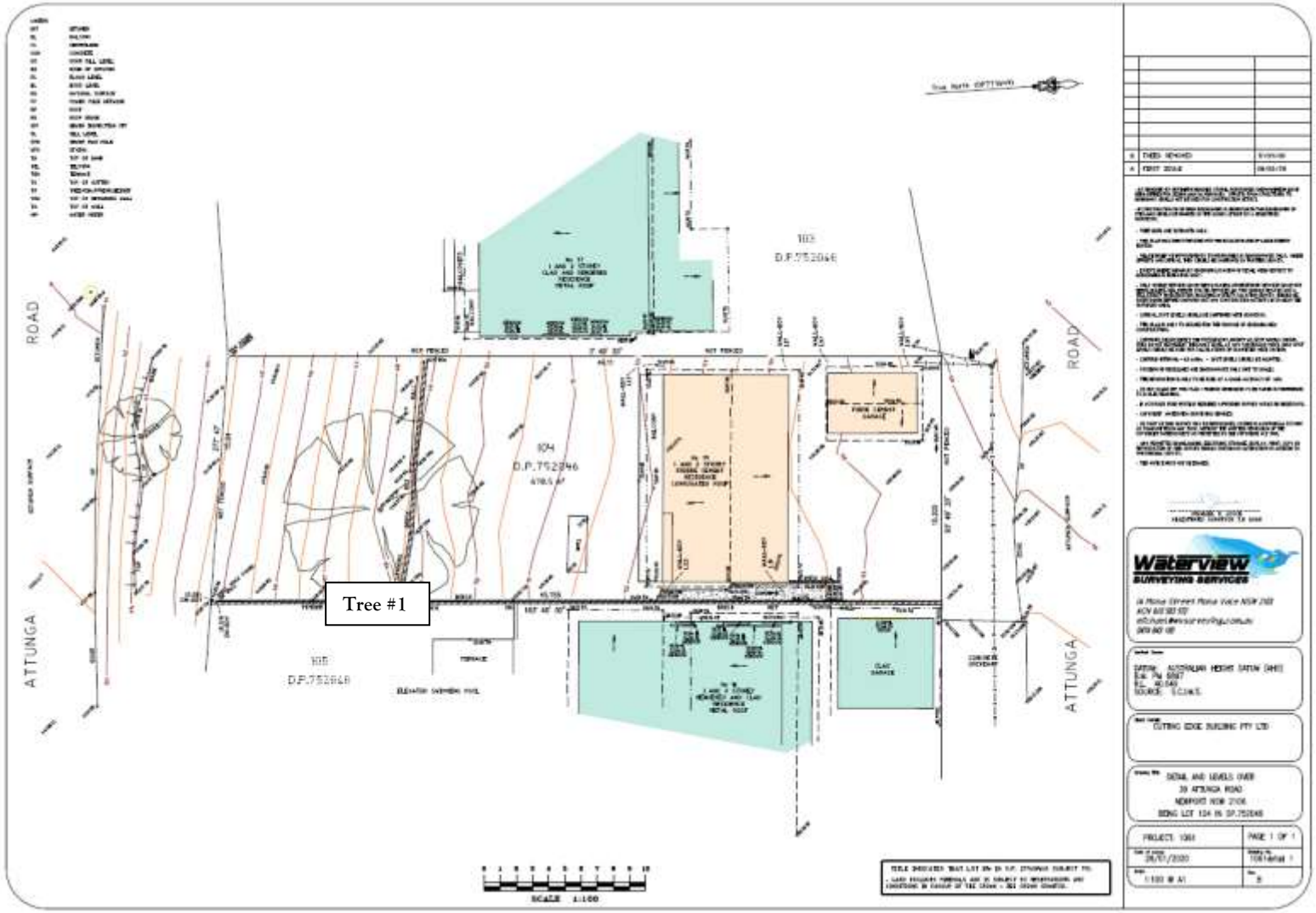
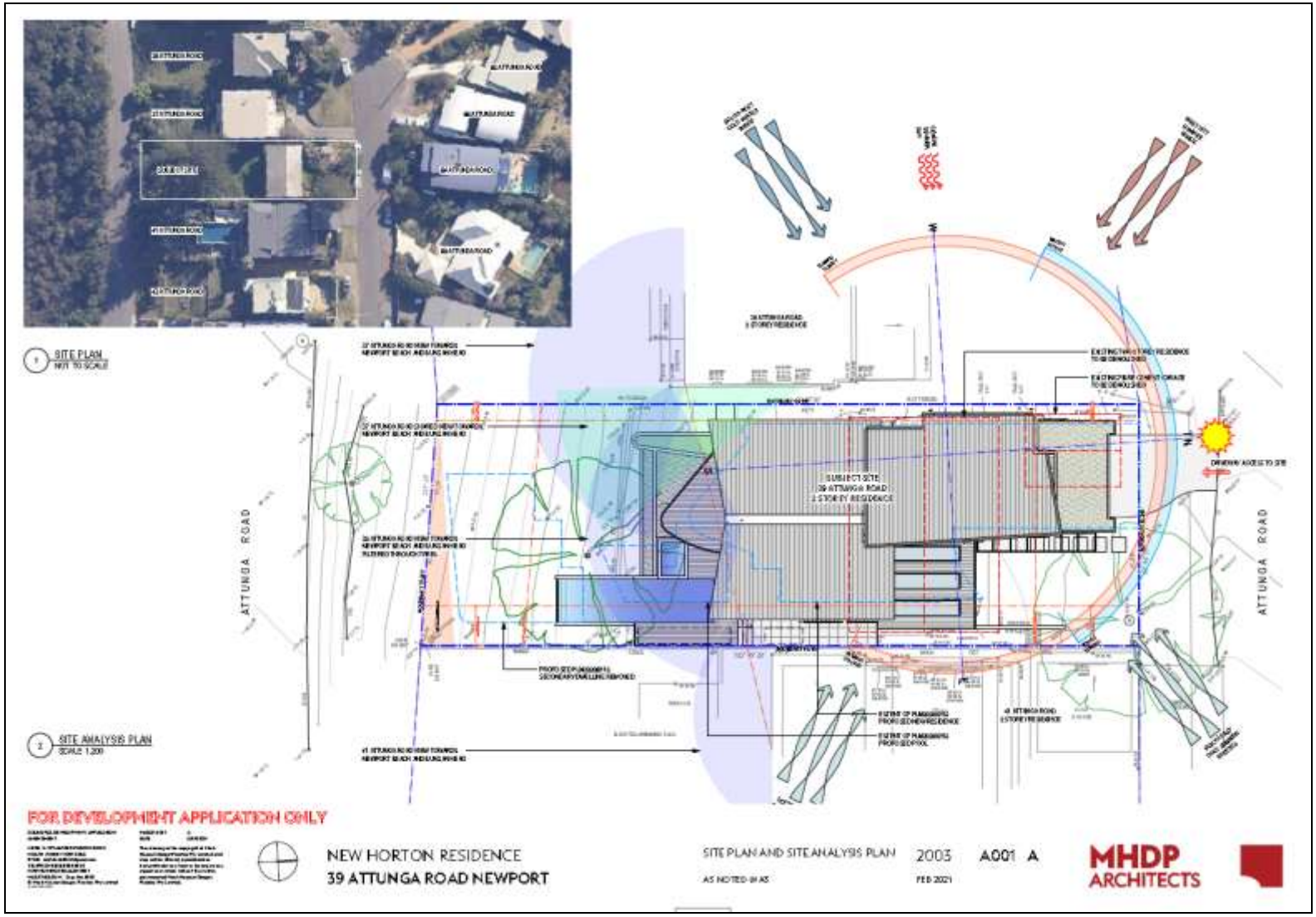
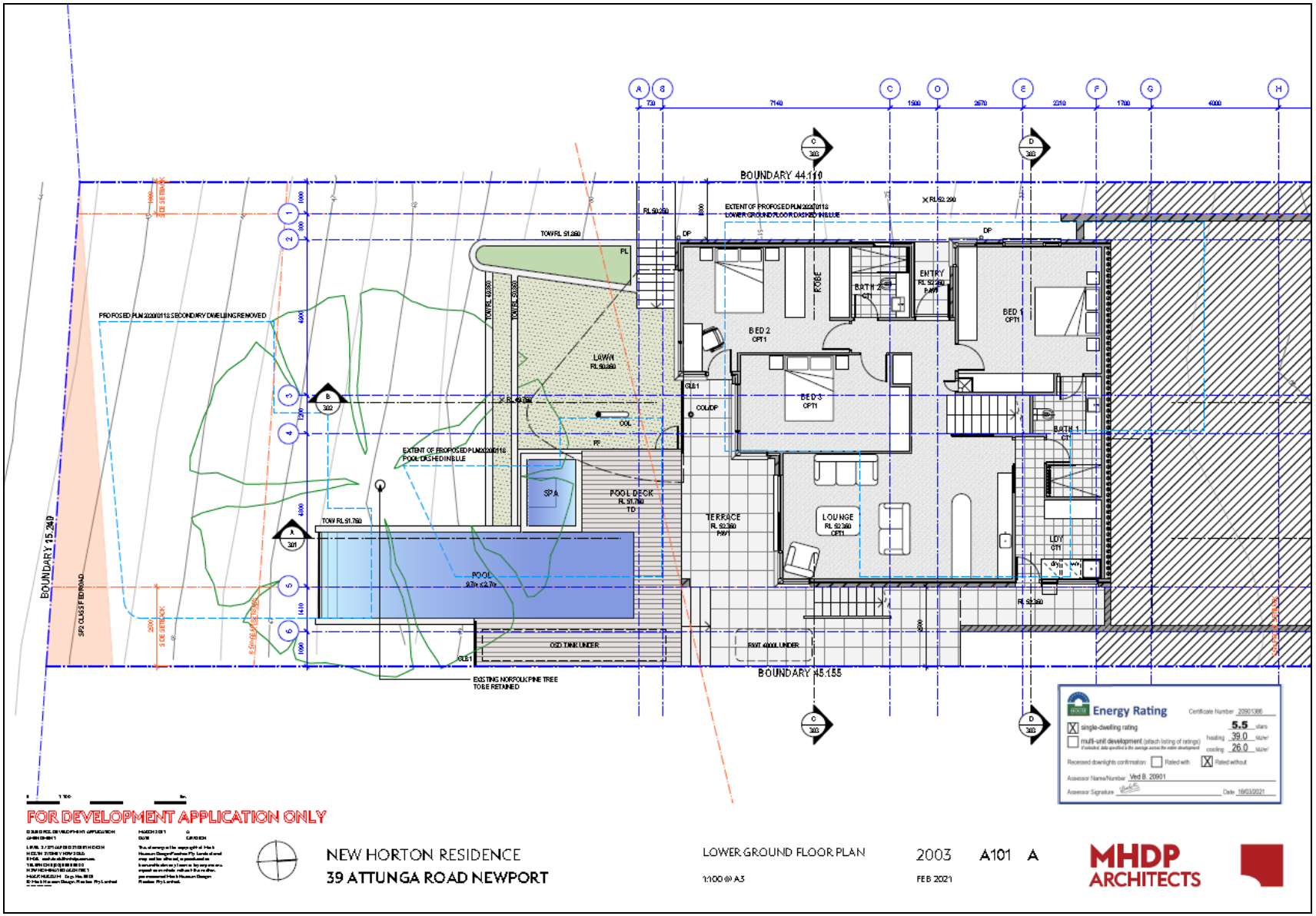
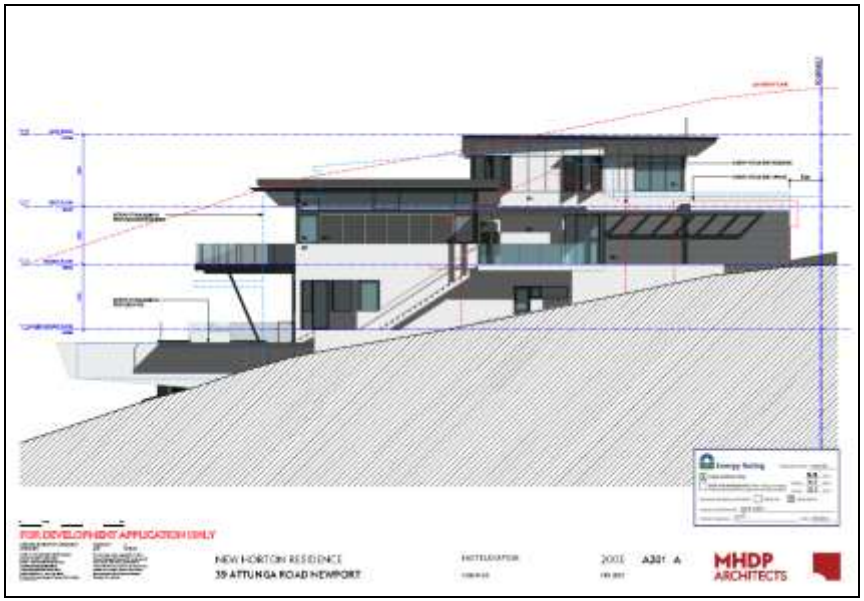


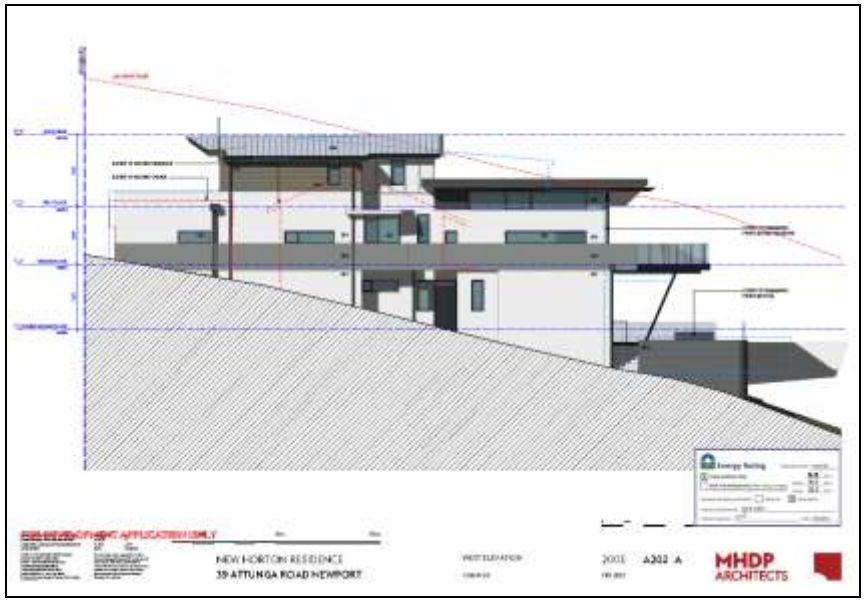
Figure 4: Site Survey with discussed Tree Location plotted.

4.2 The Proposal




BOUNDARY 44.110
BOUNDARY 15.240
BOUNDARY 45.155
PROPOSED PLN 2200/0118 SECONDARY DWELLING REMOVED
EXTENT OF PROPOSED PLN 2200/0118 LOWER GROUND FLOOR DASHED IN BLUE
EXTENT OF PROPOSED PLN 2200/0118 POOL DASHED IN BLUE
LAWN
POOL DECK
TERRACE
POOL
SPA
BED 1
BED 2
BED 3
ENTRY
LOUNGE
LDY
BATH 1
BATH 2
ROBE
COUDP
OSD TANK UNDER
RWT 4000L UNDER
EXISTING NORFOLK PINE TREE TO BE RETAINED
SP2 CLASS F ROAD
Energy Rating
FOR DEVELOPMENT APPLICATION ONLY
NEW HORTON RESIDENCE
39 ATTUNGA ROAD NEWPORT
LOWER GROUND FLOOR PLAN
1:100 @ A3
2003 A101 A
FEB 2021
MHDP ARCHITECTS


FOR DEVELOPMENT APPLICATION ONLY
NEW HORTON RESIDENCE
39 ATTUNGA ROAD NEWPORT
A201 A
MHDP
ARCHITECTS


NEW HORTON RESIDENCE
39 ATTUNGA ROAD NEWPORT
A202 A
MHDP
ARCHITECTS


FOR DEVELOPMENT APPLICATION ONLY
NEW HORTON RESIDENCE
39 ATTUNGA ROAD NEWPORT
A203 A
MHDP
ARCHITECTS

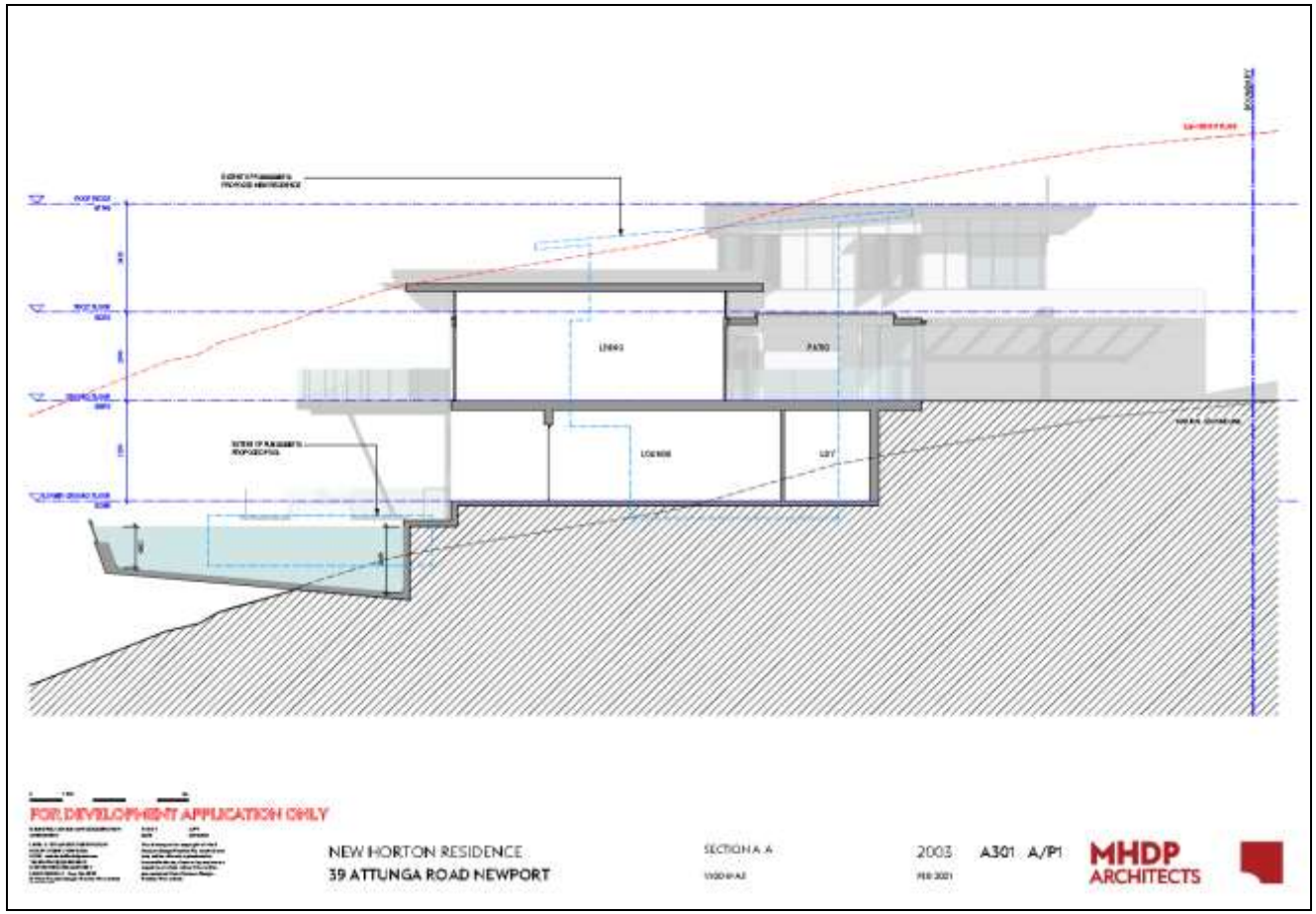


Figure 5: Illustrates the as proposed: Page 9 Site Plan/Site Analysis Plan, Page 10 Lower Floor Plan, Page 11 Elevations & above Section AA.

4.3 Tree Location & Site Images

Figure 6: Photographs confirm the location & habit of the one (1) discussed tree. Note: Asymmetrical canopy profile.

4.4 The Tree – Summary Table

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

Trees Recommended for removal	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	***Araucaria heterophylla*** *Norfolk Island Pine*	<25.00	<11.50	0.67	8.04	2.90	Mature	Fair & Fair	Atypical, tree has asymmetrical canopy as a consequence of competition for solar access with recently removed (2x) same species trees.	Low/ Low	**Remove, Protect & Manage: Tree looks silly by virtue of its poor appearance at a landscape amenity level.** **Tree will never be typical of its species** **Tree is assessed as easily managed (below ground level) by implementation of the 'Site Specific Plan of management' within this document.**

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 with the *Australian Standard (AS4373-2007 Pruning of amenity trees)* is required to be addressed as pruning prior to the purchase of this property by its current owner is confirmed to be non-compliant & certainly aesthetically very displeasing.

The discussed tree is confirmed to be within the subject site (southern area).

Tree #1 is acknowledged as being of Low Significance & Low Retention value with respect to its present landscape amenity value, (deemed to be very low).

On the basis, the proposed swimming pool structure is designed to be mostly suspended, the as presented proposal is assessed as not likely to further compromise an already compromised Useful Life Expectancy (from herein ULE) for the discussed tree with intensive management.

Intensive management requires;

- tree trunk protection,
- below ground 'live root management' that minimises any Tree Protection Zone (from herein TPZ) total surface area (203.08m^2) intrusion relative to existing soil level
- the installation of a composted mulch maintained from prior to commencement until completion of the project at a minimum thickness of 75mm
- a Tree Trunk Guard is specified to be installed from ground level to 3.50m high so as to protect the tree trunk from works to form/build the swimming pool structure.

Any required footing located within its TPZ radial distance (8.04m) must be designed to have the capacity to be flexibly located should any significant diameter 'live root' be exposed. Simply, any 'live root' exposed greater than fifty millimetres (50mm) in diameter is defined as being of a significant diameter & as such every effort for viable preservation must be undertaken. (The reason: to not further compromise its already compromised ULE.)

Final footing location/s must be inspected & documented in writing with supporting photographic evidence of any exposed significant diameter 'live root' not being compromised by the retained Project Arborist. This document must be provided to the appointed Principle Certifying Authority.

No canopy pruning is envisaged as being required.

No Builders Materials of any description, including excavated or imported soils can be stored within the 8.04m TPZ radial distance.

Tree Plan of Management

(Hold Points are in Pink)

TREE # & IDENTIFICATION	RETAIN MANAGE PROTECT or REPLACE	Install TPZ Fencing or Install Tree Trunk Guard	INSTALL MULCH	CC Signoff	MANUAL EXCAVATION (for footings &/or excavation related to the swimming pool) Signoff	OC Signoff
1 *Araucaria heterophylla* *(Norfolk Island Pine)*	Retain	TPZ fencing	Yes	Yes	Yes Yes	Yes

6 Conclusions

- **Relative to the information as presented, the** *GMW consultancy* **supports the proposed works as per documentation reviewed.**
- **The** *DA submission* **is supported to be lodged for determination by council officers as per plans referenced considering the specified "**Site Specific *Tree Plan of Management***".**

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 2 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 monthly checks by an Arborist.

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

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