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Construction Impact & Management Statement For Lodged Development Application (DA2021/0319)

April 2021

Site:	Lot 7 in DP 20097 190 McCarrs Creek Road CHURCH POINT, NSW
Client:	ADAM and KATRINA BACON 34a The Bulwark CASTLECrag, NSW 2068
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

Adam & Katrina Bacon (property owners) commissioned the Growing My Way Tree Consultancy (GMW) to prepare a *Construction Impact & Management Statement* relative to the proposed *Construction of a dwelling house including a swimming pool & inclinor* within the property known as 190 McCarrs Creek Road, Church Point, (from herein the subject site).

Two (2) individual trees have been identified as being required to be discussed, a group of soft-wooded perennials has been identified & is also discussed for clarity to assessing NBC planning officers relative to the proposal for *Construction of a dwelling house including a swimming pool & inclinor*.

The two (2) discussed in detail trees are 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 trees are 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 or exempt from protection & therefore not impacted upon by the proposed works supported within this document. This included the previously *unidentified tree* NBC officers have raised a query about.

All of the discussed trees are proposed to be replaced.

The proposal is able to satisfy compliance criteria with the *Australian Standard (AS4970-2009 Protection of trees on development sites)*.

Motor vehicle & pedestrian access is only via McCarrs Creek Road, water access is via McCarrs Creek.

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 trees was gathered by onsite data collection with cross referencing to:

- *Site Survey by Hammond & Smeallie & Co Pty Ltd, dated, 3 March 2021;*
- *Plans, Sections & Elevations, by Peter Downes Designs, dated, 11 March 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 trees health, vigour & condition considering any impact foreseen by the proposed demolition & redevelopment.*
2. *Provide list of suitable to the site with some locally indigenous replacement tree species included.*

This document supports (relative to tree management) the proposal for *Alterations/Additions – Construction of secondary dwelling*.

Kyle A Hill (AQF level 5 & 8 *Practicing/Consulting Arborist*) has prepared this report based on "*Visual Tree Assessment*" (VTA). Data was collected on Sunday, 18 April 2021.

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2 Introduction

This report contains observations & recommendations intended to assist in the management of the two (2) individual trees identified as necessary to be discussed by virtue of their location & proposed works, i.e. *Construction of a dwelling house including a swimming pool & inclinator*. The third group of soft-wooded perennials are interpreted to be exempt species as they are not trees by botanical classification. (The NBC Landscape Assessment officer requested additional information for one (1) plant, we have discussed all confirmed to be present as a same species group so as to eliminate any confusion as to what is actually present as opposed to the site survey relative to trees.

This document supports the proposed *Construction of a dwelling house including a swimming pool & inclinator*.

We confirm to be familiar with both the old *Pittwater Council* & now NBC “Tree Management Provisions” plus the 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”. Two (2) trees discussed are 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 be within a ‘C01’, “Wildlife Corridor” as defined within the *Pittwater 21 DCP* (see page 8).

All three (3) of the discussed trees are proposed to be replaced.

Other trees both within the adjoining west side property are assessed as able to be retained & managed without any formal specified protection.

The subject site is zoned “E4”, ‘Environmental Living’.

A Site Specific “Tree Plan of Management” is included within this document.

3 Methodology

Assessment of the trees 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 Site Survey

^{*} **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 7 of DP 20097. The site is 436.30m² by Site Survey in size. (The site also includes land between the high-water mark & the subject site boundary, known as Lot Sec LIC 395424, approximately 54.00m². The site is linked to one (1) public road, McCarrs Creek & two (2) residential lots.



Figure 1: Map courtesy of Whereis.com, Aerial photograph with lot boundaries courtesy of NBC website tools.

The subject site is Land Zoned “E4” ‘Environmental Living’.

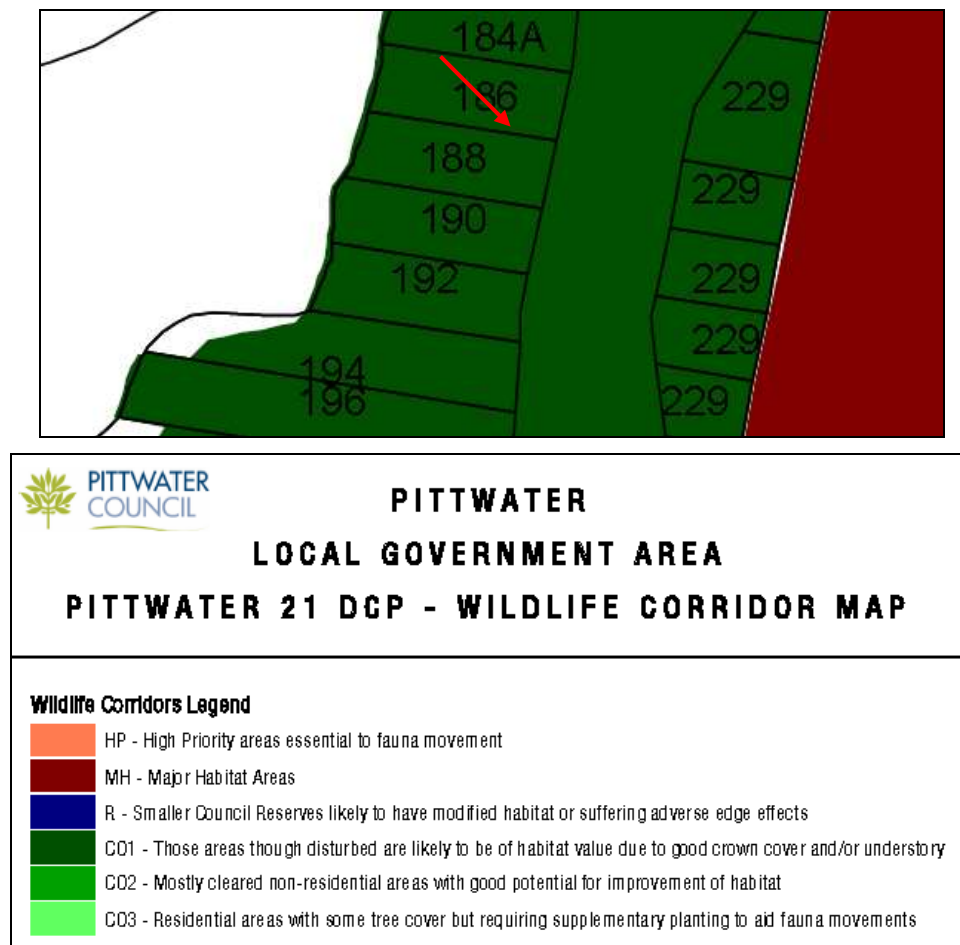


Figure 2: Confirms Pittwater 21 DCP-Wildlife Corridor Status.



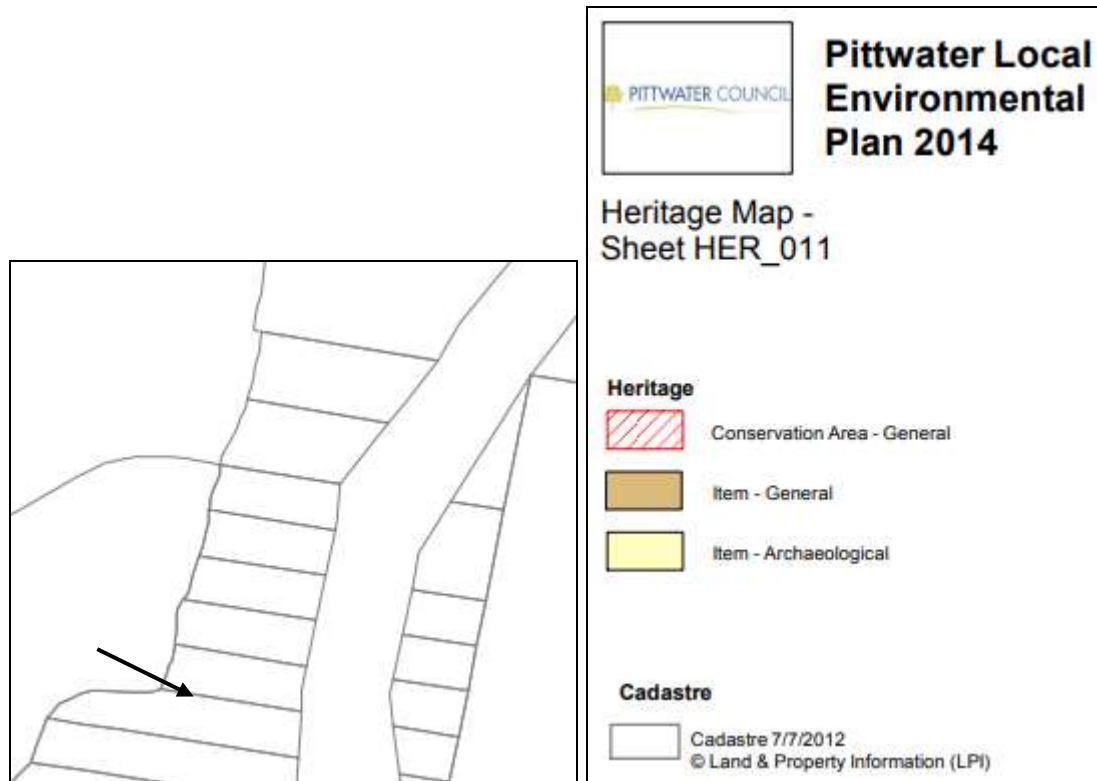


Figure 3: Above & previous page illustrates Land Zoning & Heritage Conservation Area status.

The site is NOT 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 trees are NOT known to be on any ‘significant tree register’. The subject site & local environs are additionally confirmed to be located within a designated ‘C01’ ‘Wildlife Corridor’.

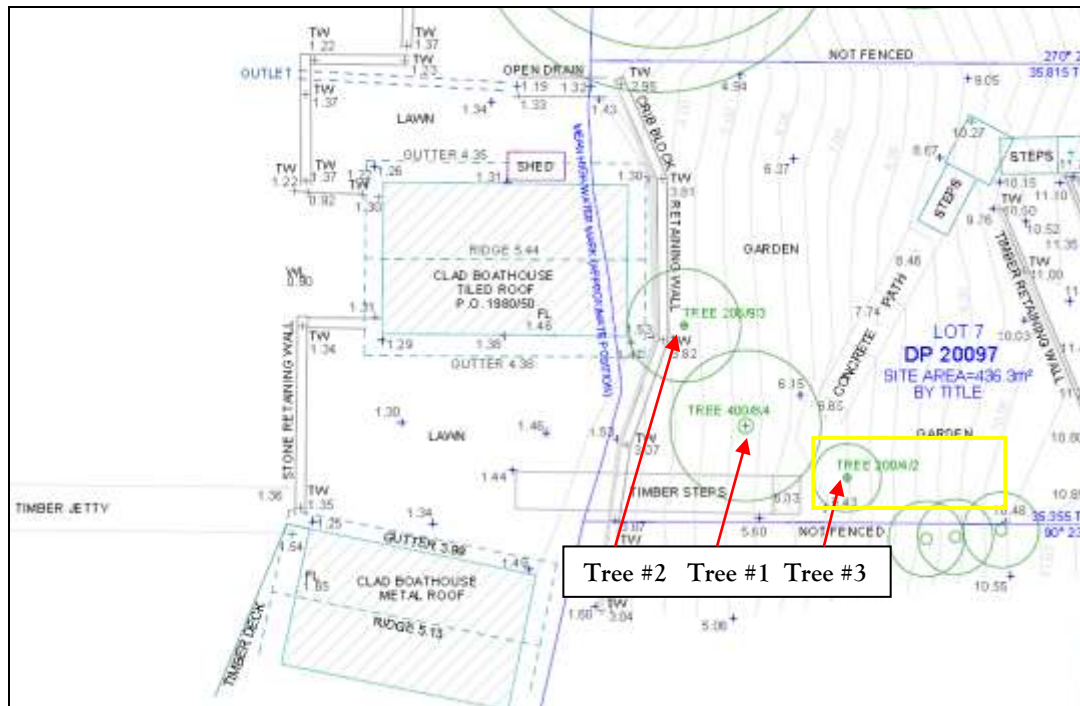
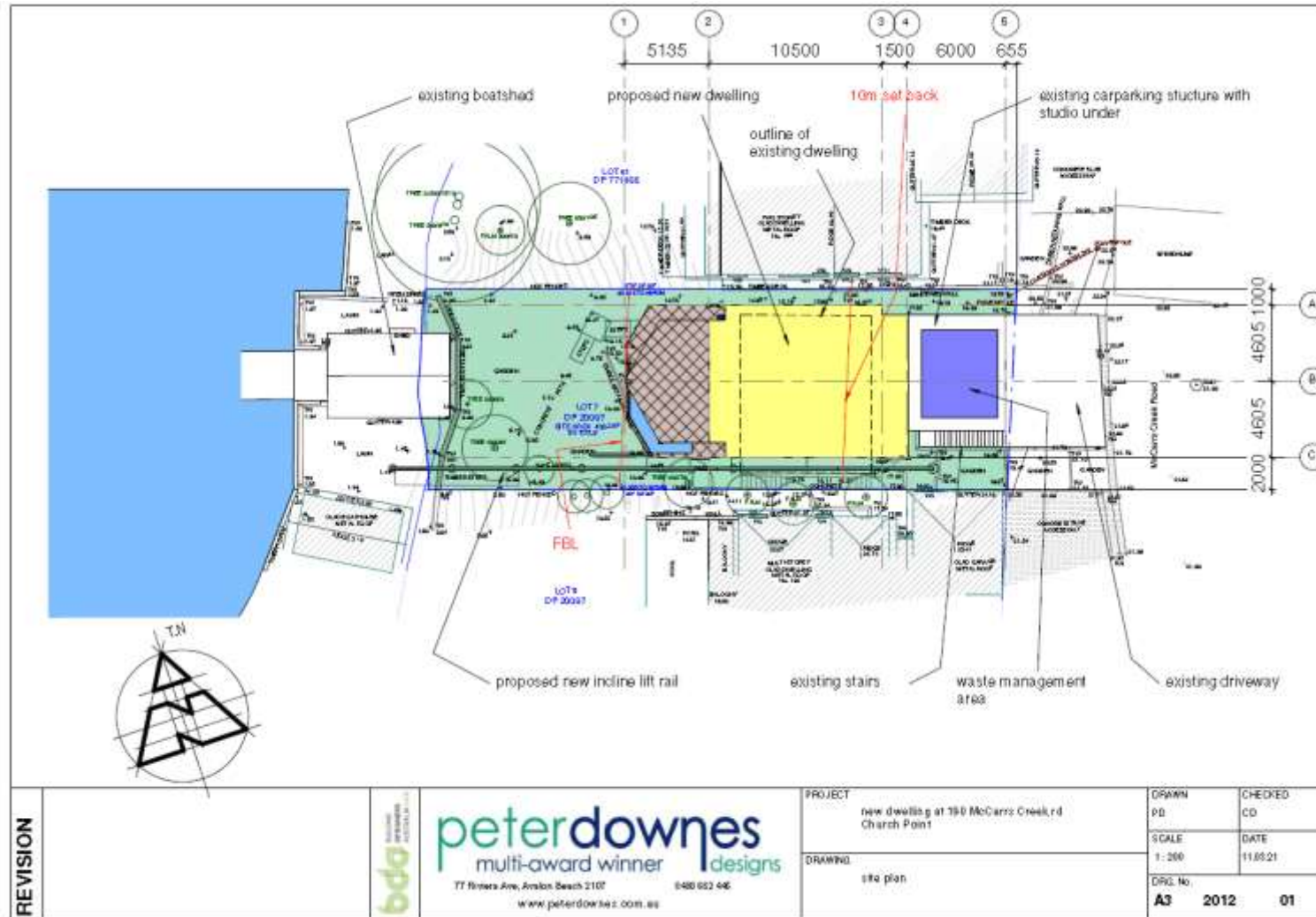


Figure 4: Portion of Site Survey with discussed Tree Locations plotted. Within the yellow box are additional same species plants.

4.2 The Proposal

(Plans, Elevations/Landscape Concept)







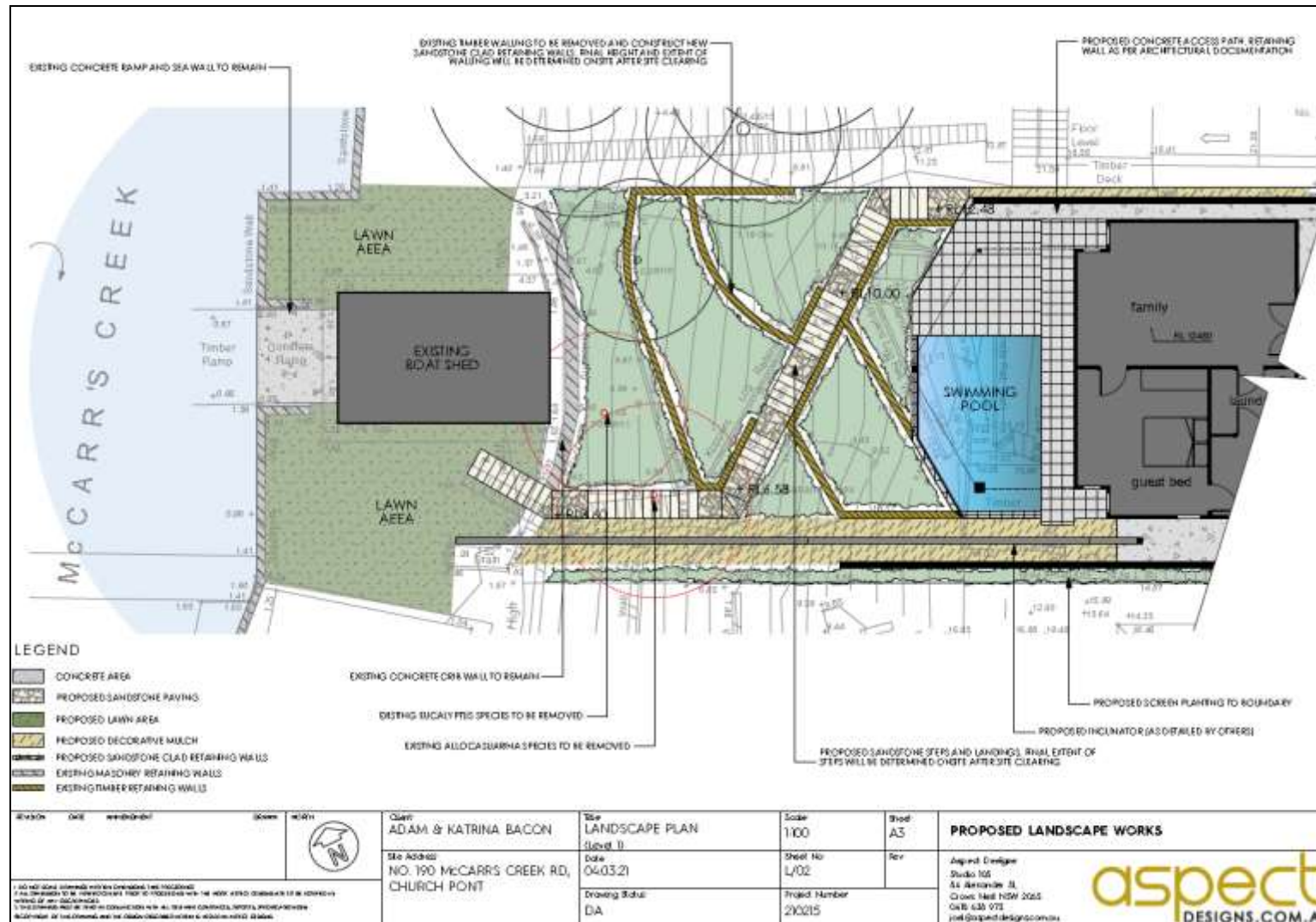


Figure 5: Illustrates proposed Plans, Elevations & Landscape Concept.

4.3 *Tree Locations & Site Images*



Figure 6: Aerial Photograph, courtesy of NearMap.com, dated Saturday, 10 April 2021 illustrates discussed tree locations.



Figure 7: Left illustrates discussed in detail Tree #1 & Tree #2. Right illustrates *Yucca* spp. plants of varying heights (up to approximately 7.00m tall).

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	<i>Allocasuarina littoralis</i> Black She Oak	<14.50	<8.00	0.30	3.60	2.00	Mature	Very Poor & Very Poor	Co-dominant stems	Nil/Nil (by condition)	<u>Remove & Replace:</u> Tree regardless of any proposed development has no Useful Life Expectancy. The tree is assessed as unlikely to survive the proposed new adjacent retaining walls infrastructure construction process.
2	<i>Angophora floribunda</i> Narrow Leaf Rough Bark Angophora	<5.50	<4.50	0.25	3.00	1.90	Mature	Poor & Poor	Atypical, very poor form	Low/Low (by condition)	<u>Remove & Replace:</u> Tree regardless of any proposed development has at best only a very short term Useful Life Expectancy. The tree is assessed as unlikely to survive the proposed new adjacent retaining walls infrastructure construction process.
3	<i>Yukka spp.</i> (multiple individuals) Yukka Plants	<7.00	<2.00	<0.25	2.00	N/A	Juvenile to Mature	Good & Good	Typical	Low/Low	<u>Remove & Replace:</u> Tree as per our assessment are exempt species. They are not part of the as proposed Landscape Concept Plan.

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.

Discussed Tree #1 & Tree #2 are confirmed to be within the area proposed to have existing timber retaining walls replaced with a new crib retaining wall & inclinor structure. The group of *Yukka* spp. plants are not discussed in detail as they are interpreted to be exempt species.

Tree #1 is classed as being of Very Low Significance & Retention value by virtue of its very advanced decline in health & vigour., presence & condition. Simply, the tree is considered as unsustainable regardless of any development proposal. (If of Good Health & Vigour by presence it would attract way higher Value ratings.) Simply, the tree is considered as unsustainable regardless of any development proposal.

By genus/species, Tree #1 is confirmed to be additionally subject to 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*' as well as 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*."

. The subject site is confirmed to be within a 'C01', "*Wildlife Corridor*" as defined within the *Pittwater 21 DCP (see page 8)*.

Tree #1 can easily be replaced within the subject site with either the same species or another species from the '*Pittwater spotted gum forest–endangered ecological community listing*' plant community as part of the Landscape Concept proposal.

Tree #2 is classed as being of Low Significance & Retention values by virtue of its very advanced decline in health & vigour. (If of Good Health & Vigour by presence it would attract way higher Value ratings.) Simply, the tree is considered as unsustainable regardless of any development proposal.

By genus/species, Tree #2 is confirmed to be additionally subject to 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*' as well as 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*."

. The subject site is confirmed to be within a 'C01', "*Wildlife Corridor*" as defined within the *Pittwater 21 DCP (see page 8)*.

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*".

Excavation for the secondary dwelling footings/outdoor seating area is specified to be completed manually with all excavated material removed from the subject site so as to protect other nearby & adjoining trees proposed to be retained.

Tree #1 can easily be replaced within the subject site with either the same species or another species from the 'Pittwater spotted gum forest–endangered ecological community listing' plant community as part of the Landscape Concept proposal.

“Site Specific Tree Plan of Management”

TREE # & IDENTIFICATION	RETAIN MANAGE PROTECT	MANUAL EXCAVATION (for footings)	Install TPZ Fencing Install Tree Trunk Guard	Excavation Signoff	CC Signoff (confirms site isolation fencing is installed)	OC Signoff (confirming new tre installations as being planted & in good condition)
1 <i>Allocasuarina littoralis</i> Black She Oak	No	No	No No	No	No	Yes
2 <i>Angophora floribunda</i> Narrow Leaf Rough Bark Angophora	No	No	No No	No	No	Yes

6 Conclusions

- Relative to the information as presented the GMW consultancy supports the proposed works as presented in documentation reviewed.
- The DA submission lodged for determination by council officers as per plans referenced & considering the specified Site Specific “Tree Plan of Management” for new locally indigenous trees being planted is considered to now be viable relative to tree 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 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	<i>Immature</i> refers to a refers to a well-established but juvenile tree
	SM	<i>Semi-mature</i> refers to a tree at growth stages between immaturity & full size
	M	<i>Mature</i> refers to a full sized tree with some capacity for further growth
	LM	<i>Late Mature</i> refers to a full sized tree with little capacity for growth that is not yet about to enter decline
	OM	<i>Over-mature</i> refers to a tree about to enter decline or already declining
	LS	<i>Live Stag</i> 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 $SRZ\ radius = (D \times 50)^{0.42} \times 0.64$.

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. $TPZ = DBH \times 12$. 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 – Site Survey

