

# “GROWING MY WAY”

## Tree Consultancy

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## *Construction Impact & Management Statement (Arboriculture Impact Assessment) For Lodged Development Application (DA2021/1189)*

September 2021

Site:	Lot 103 in DP 860197 73 McCarrs Creek Road CHURCH POINT, NSW
Client:	Chris and Debbie Charlton c/- Archit Project Design (Attention: Brent Gasson) 103A Alexander Street CROWS NEST, NSW 2065
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

Chris & Debbie Charlton (property owners) via the Archit Design practice (Brent Gasson) commissioned the Growing My Way Tree Consultancy (GMW) to prepare a *Construction Impact & Management Statement* relative to the proposed *Alterations & additions to a Dwelling House* within the property known as 73 McCarrs Creek Road, Church Point, (from herein the subject site).

Seven (7) individual trees have been identified as being within five metres (5.00m) of the proposed works. Four (4) are exempt species so are not required to be discussed in detail. Four (4) of the seven (7) identified to be discussed trees are located just outside the subject site.

The three (3) required to be 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*. 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.

None of the discussed trees are proposed to be replaced as part of the DA proposal.

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

Motor vehicle & pedestrian access is only via McCarrs Creek 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 discussed trees was gathered by onsite data collection with cross referencing to:

- *Site Survey by C & A Surveyors , NSW Pty Ltd, V1 dated, 1 April 2021 (V2 26 April 2021, V3 4 May 2021);*
- *Plans, Sections & Elevations, by Archit Project Design, dated, 2 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 a preliminary Site Specific – 'Plan of Tree Management'.*

This document supports (relative to tree management) the proposal for *Alterations & additions to a Dwelling House*.

Kyle A Hill (AQF level 5 & 8 *Practicing/Consulting Arborist*) has prepared this report based on "*Visual Tree Assessment*" (VTA). Data was collected on Tuesday, 7 September 2021.

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## 2 Introduction

This report contains observations & recommendations intended to assist in the management of especially the three (3) individual trees identified as necessary to be discussed by virtue of their location, proposed works & the Australian Standard (AS4970-2009) Protection of trees on development sites. This document addresses issues raised by the NBC Landscape Officer. The issues raised are *“Concern is raised regarding the potential impacts of proposed works on existing trees to be retained, particularly those located to the south-west of the proposed pool cabana, as well as those located to the north of the existing garage.”*

This document with complying intensive tree management within this document supports the proposed *Alterations & additions to a Dwelling House*.

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”*. All three (3) trees discussed are captured as being subject to the protection provisions with respect to trees located 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 any named, *“Wildlife Corridor”* as defined within the *Pittwater 21 DCP (see page 8)*.

All three (3) of the discussed trees are proposed to be retained, protected & managed in a manner whereby their individual Useful Life Expectancy is not compromised by the as proposed lodged DA submission works.

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 *“Plan of Tree Management”* is included within this document.

### 3 Methodology

Assessment of the trees has been from ground level by eye, using *Visual Tree Assessment*<sup>\*</sup> (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 Management & Protection on Development Sites

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

## 4 Observations

### 4.1 The Site

The report discusses trees within Lot 103 (the subject site) & Lot 104 of DP 860197. The subject site is 1254.00m<sup>2</sup> by Site Survey in size. Both sites are linked to one (1) public road. The subject site is linked to two (2) residential lots.

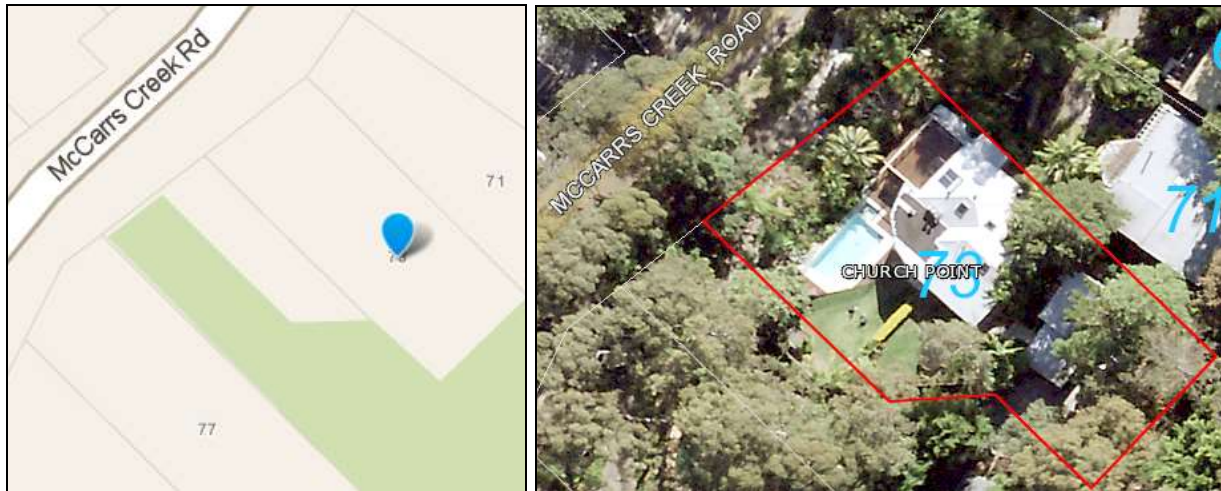


Figure 1: Map courtesy of Whereis.com, Aerial photograph with lot boundaries courtesy of NBC website tools.

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

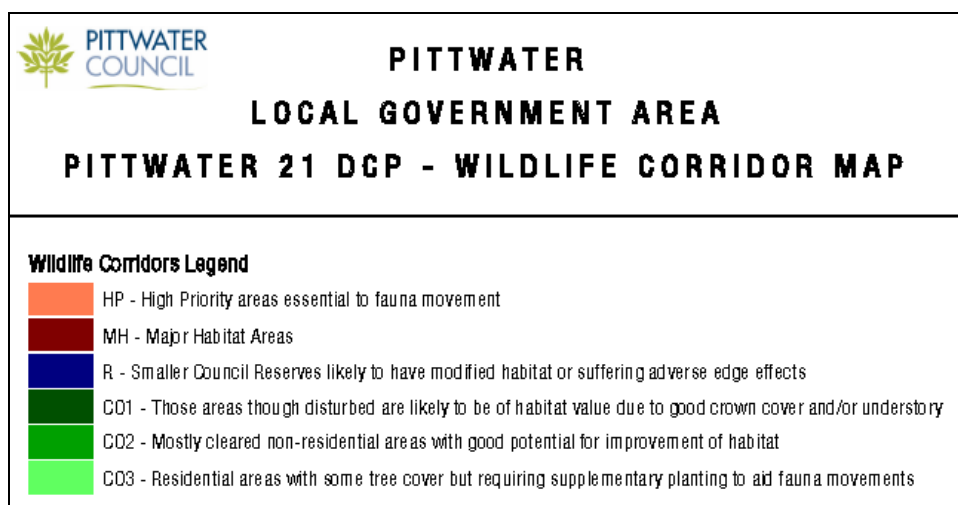
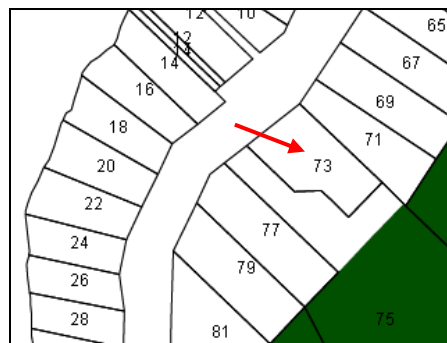


Figure 2: Confirms Pittwater 21 DCP-Wildlife Corridor Status.





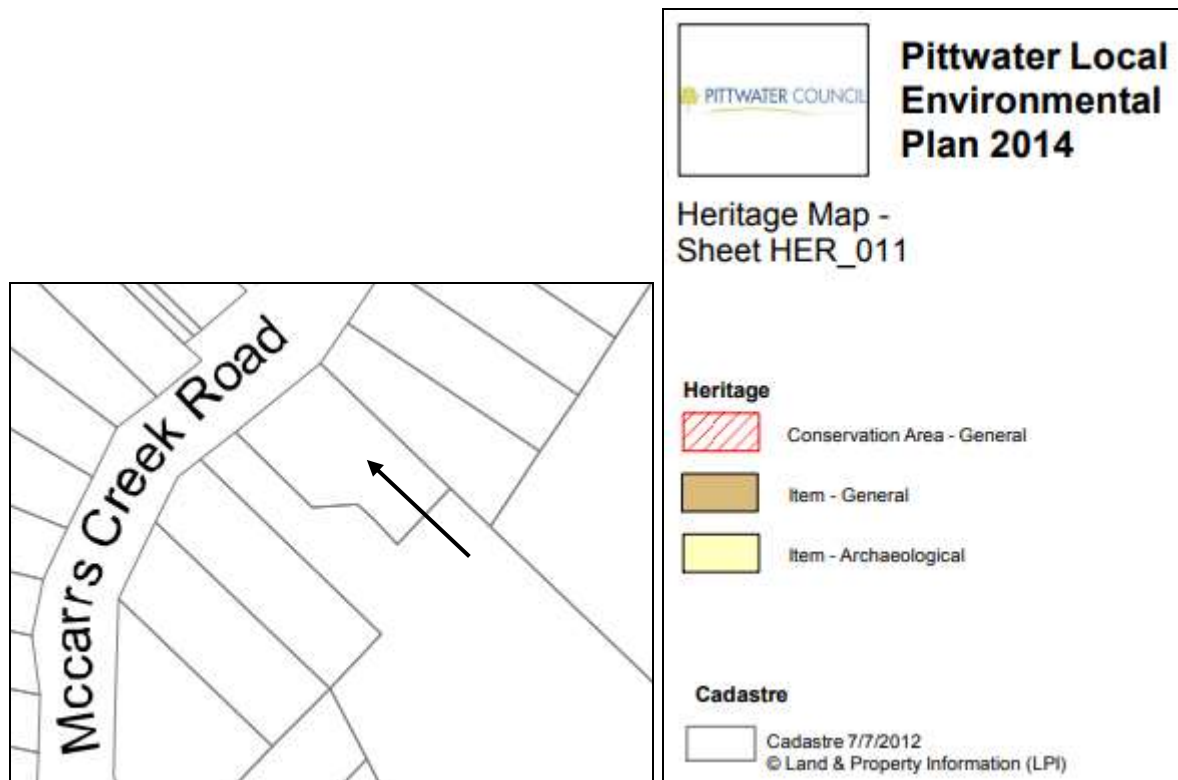


Figure 3: Above & previous page illustrates Land Zoning & Heritage Conservation Area status.

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 NOT be located within any designated ‘Wildlife Corridor’.



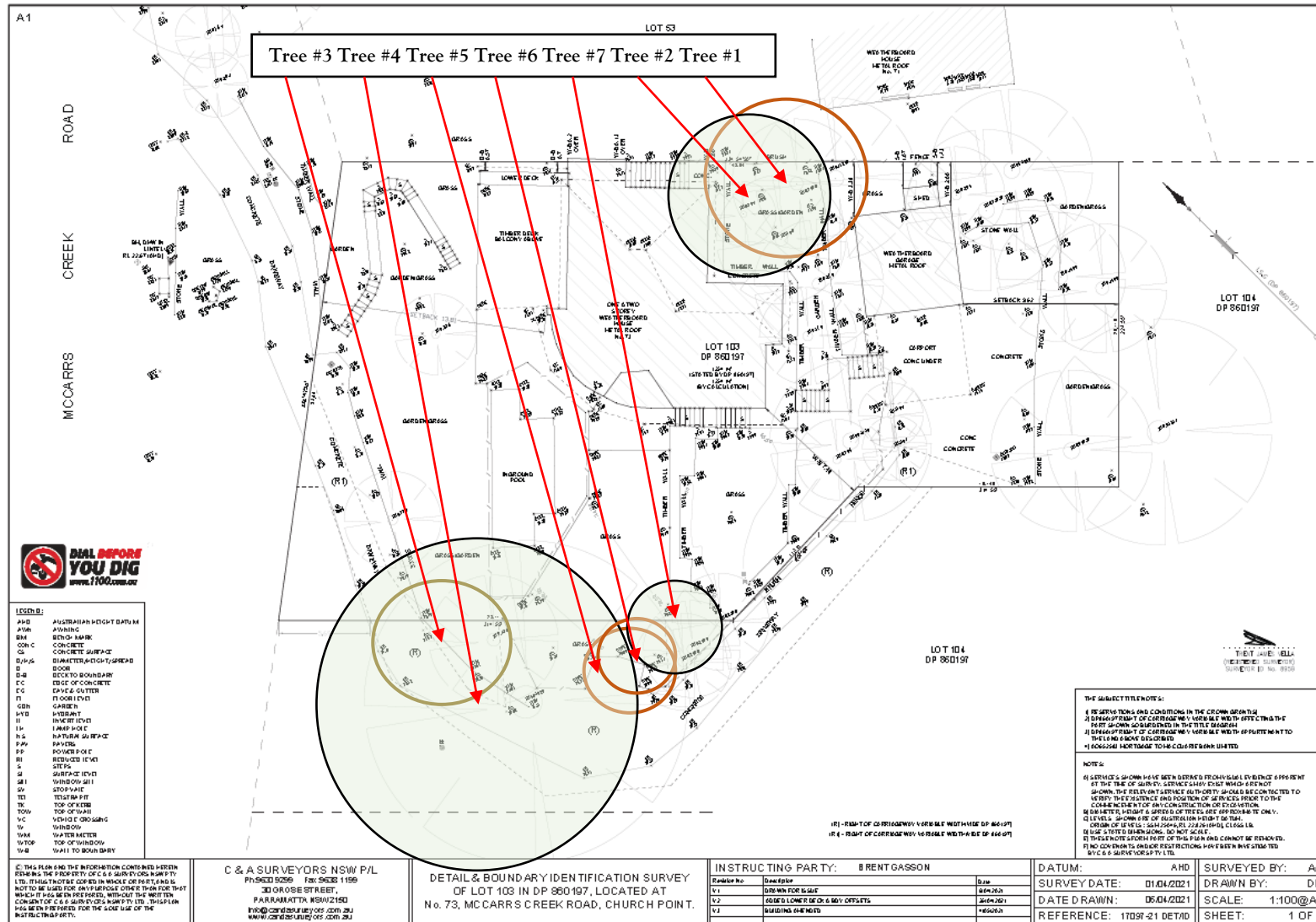
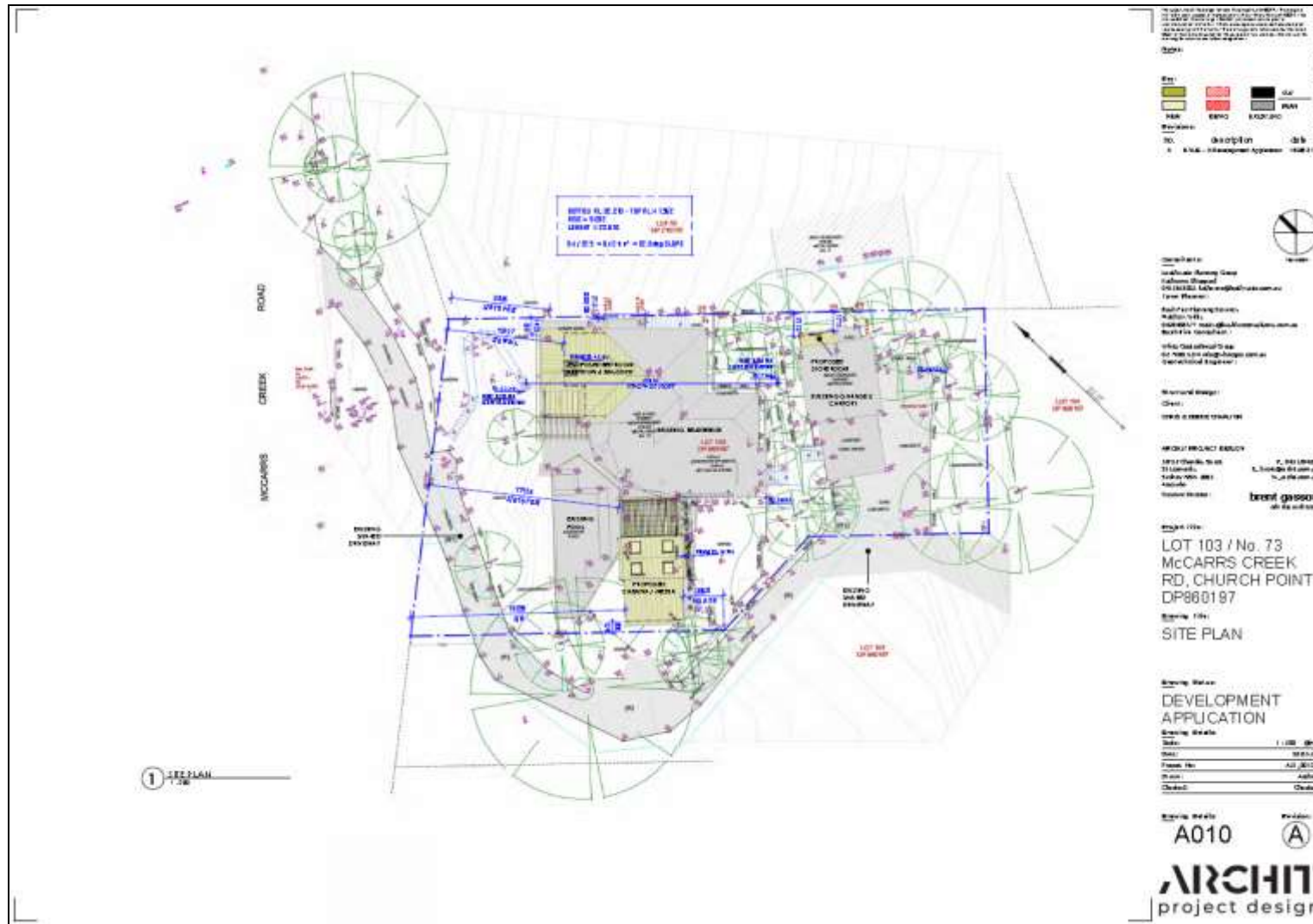
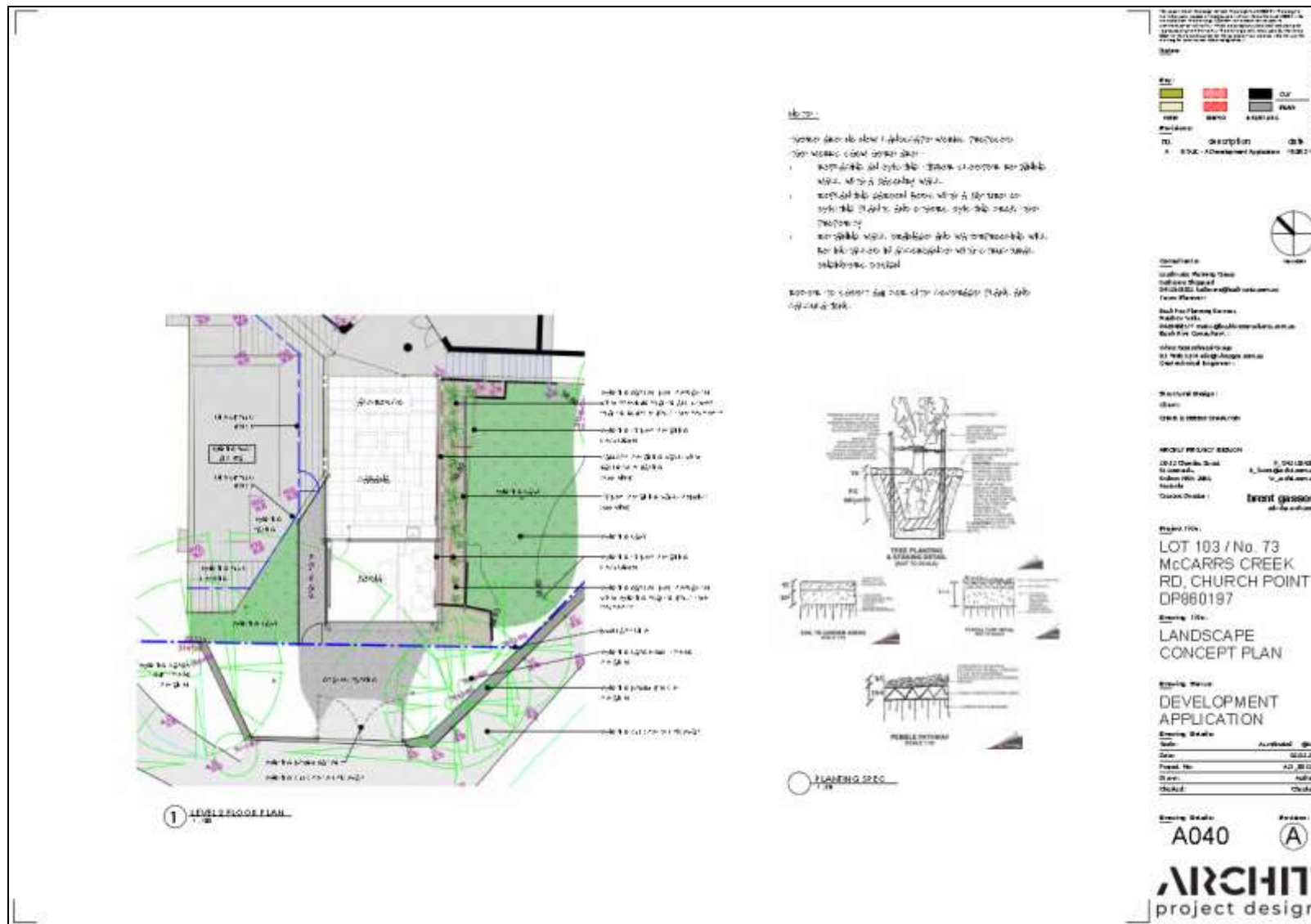
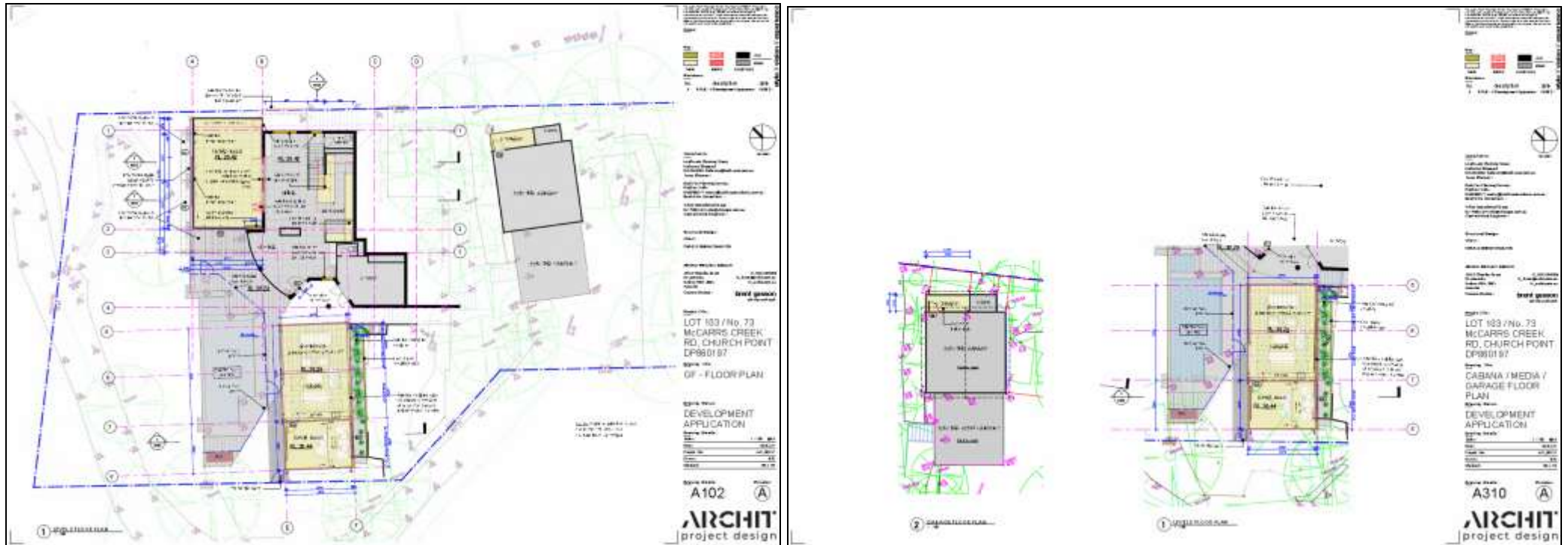


Figure 4: Illustrates the locations of tree identified to be within 5.00m of proposed works, Trees in Green are those identified to be protected.

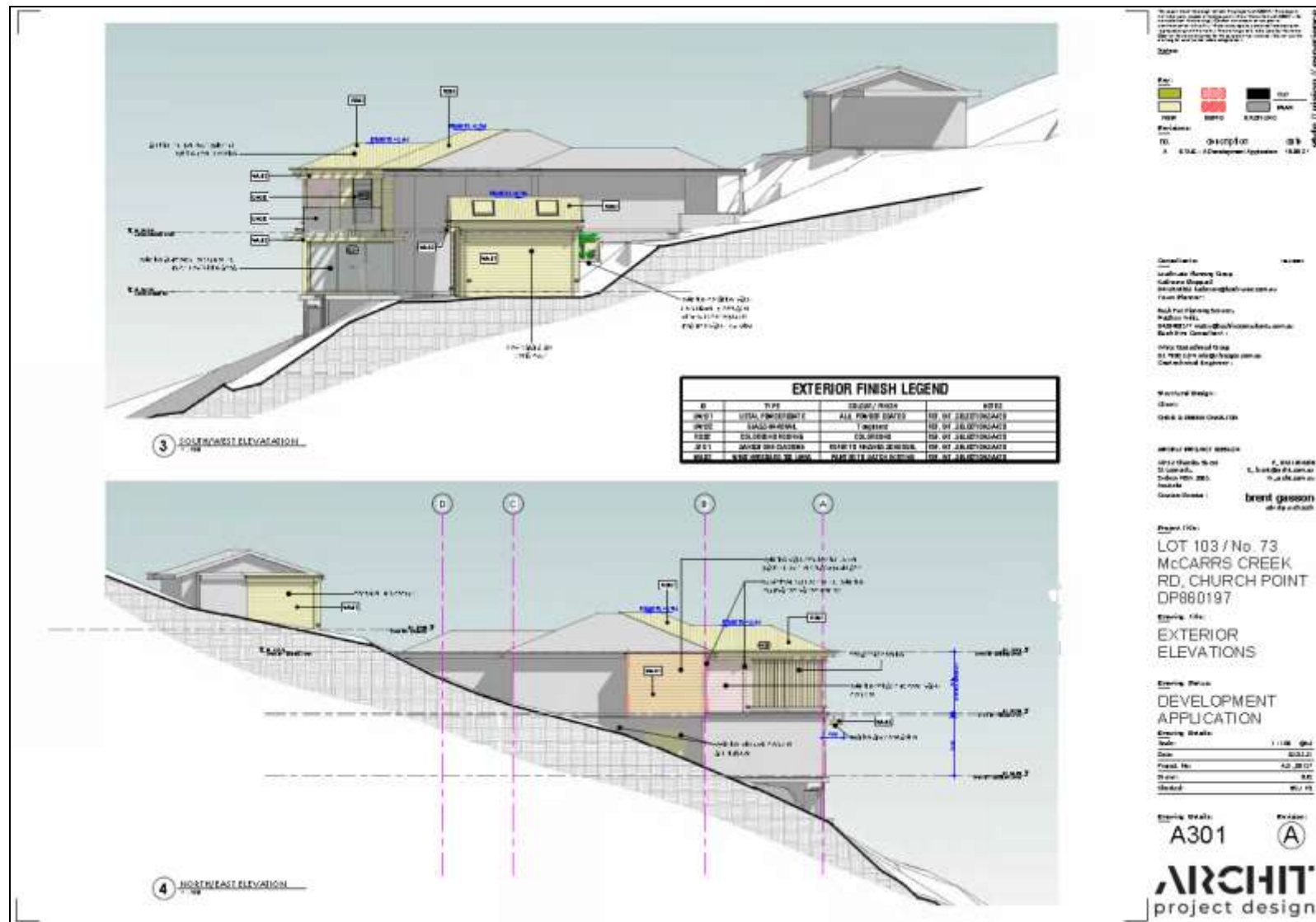
## 4.2 The Proposal











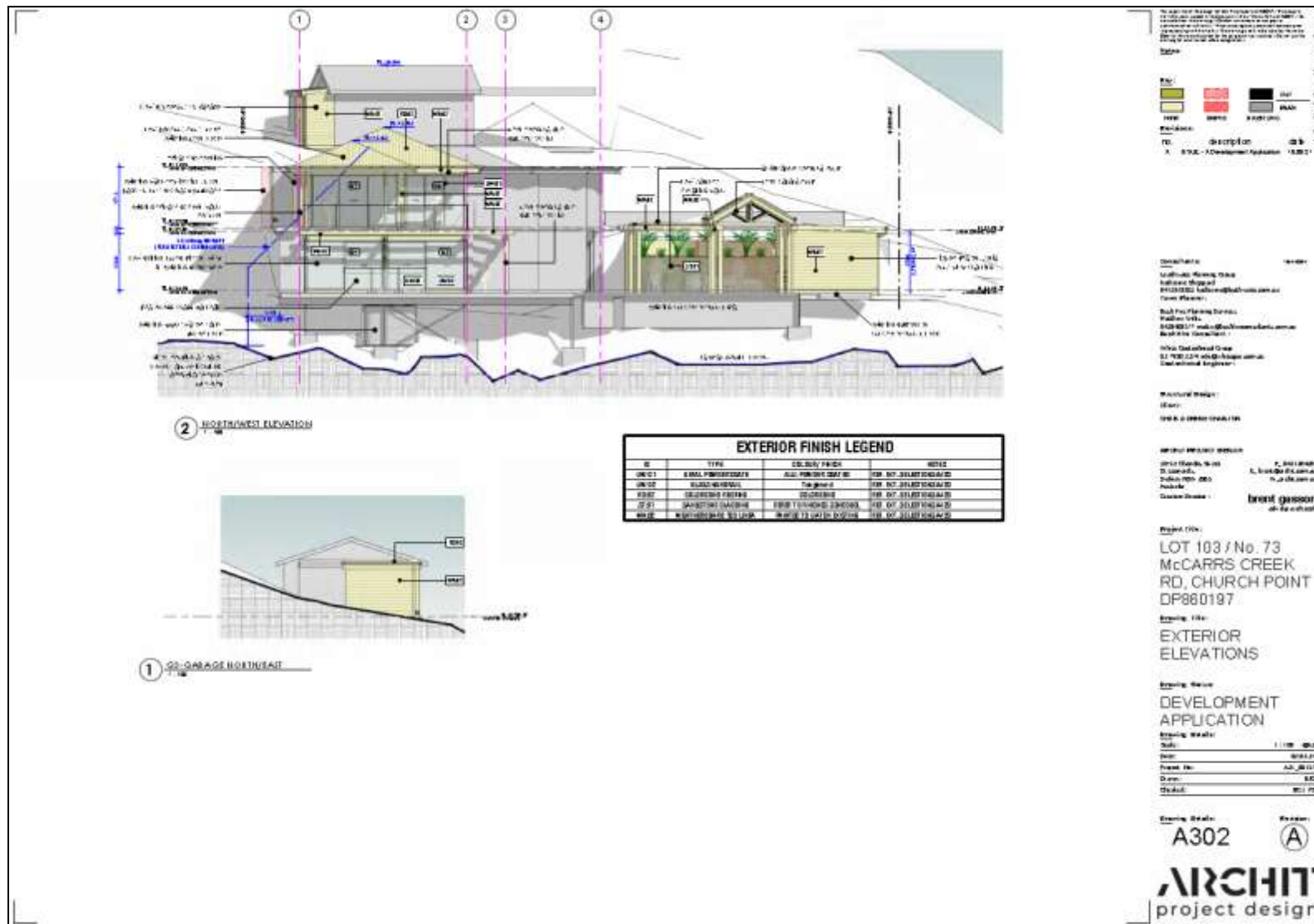


Figure 5: Page 10, Site Plan, Page 1 Landscape Concept Plan, Page 12, Page 13 Ground Floor Plans, Pages 13 & 14 Elevations.

### 4.3 Site Images



Figure 6: Illustrates locations & canopies of Tree 1 thru Tree 4.





Figure 7: Illustrates tree canopies & location area for Tree 5, Tree 6, Tree 7.

#### 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

Tree #	Identification	Height (m)	Crown (m)	DBH (m)	TPZ (m)	SRZ (m)	Age	Health/Vigour	Structure	Significance/Retention Values	Comments
1	<i>Syncarpia glomulifera</i> Turpentine Tree	<16.00	<7.50	0.60	3.60	2.00	Mature	Good & Good	Typical	Hugh/High	<u>Retain &amp; Protect:</u> Proposed works is very minor above existing ground extension the rear of existing garage.  Tree Trunk Guard & manual excavation for garage extension is specified.
4	<i>Corymbia maculata</i> Spottet Gum	<25.50	<16.50	0.85	10.20	3.22	Over-Mature	Good & Good	Typical	Hugh/High	<u>Retain &amp; Protect:</u> Tree is confirmed to already be long term expose to TPZ/SRZ radial distance breaches. Proposed works are only to upgrade existing site/adjoining site character.  Tree Trunk Guard & manual excavation for garage extension is specified
7	<i>Livistona australis</i> Cabbage Tree Palm	<10.50	<5.50	<0.28	3.36	N/A	Mature	Good & Good	Typical	Hugh/High	<u>Retain &amp; Protect:</u> No protection is specified. Tree is located within raised garden bed where no excavation is proposed.
2,3,5,6	3 X <i>Cocos Palms</i> 1 X <i>Illawarra Flame</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<u>All are exempt species:</u>  None are proposed to be removed

## 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.

All seven (7) trees within five (5.00m) metres are assessed as able to be viably retained.

Required to be discussed Tree #1, Tree #4 & Tree #7 are confirmed to mathematically only have their Tree Protection Zone (from herein TPZ) radial distances breached by the as proposed works. Tree #1 & Tree #4 are additionally confirmed to again at an only mathematical level have their Structural Root Zone (from herein SRZ) radial distances breached. Tree #7 is not threatened in any manner as it is a palm, (Monocotyledon by classification). Simply, they have fibrous roots of a similar diameter (not woody roots as per for Dicotyledon plants) & as such in general are way more tolerant of ground level/root disturbance. In this situation the existing ground level is significantly higher (a totally different area) where no disturbance is proposed. On this basis, this tree is naturally isolated from the proposed works & on that basis does not require any management strategy to be specified or applied.

Proposed works near Tree 1 are for an above ground very minor extension to the northwest rear of the existing garage. Footings (if required) are into an already unnatural soil level (soils have been raised) as can clearly be seen in the page 15 top left photograph where its tree trunk base displays NO basal flare.

On this basis the specified Tree Protection Strategy is for 1) footing locations to be flexible, 2) excavation is to be completed manually in a manner than avoids any defined as being a significant diameter 'live woody root' i.e., greater than fifty millimetres (50mm) in diameter. 3) a 'Tree Trunk Guard' will isolate this tree from the very minor works as proposed. (See Appendix B).

The sites retained 'Project Arborist' must be consulted prior to, during & post footing excavation (completed manually) so as to document in writing with supporting evidence photographs that significant diameter 'live woody roots' have not been impacted upon. In the event a significant diameter. In the event a significant diameter 'live woody root' is exposed & a suitable footing site cannot be established the retained Project Arborist is to be summonsed to site to create, oversee & document the most suitable strategy to be adopted.

Proposed works near Tree 4 by plans provided do not propose any change to existing site character (subject site plus 'right of carriageway driveway to the subject plus 75 McCarrs Creek Road dwelling) are to remain the same. Only the surface material/s is proposed to change. Provided no (again manually completed) 'live woody roots of a significant diameter are exposed, the management strategy to be applied is 1) excavation is to be completed manually in a manner than avoids any defined as being a significant diameter 'live woody root' i.e., greater than fifty millimetres (50mm) in diameter. 2) a 'Tree Trunk Guard' will isolate this tree from the very minor works as proposed. (See Appendix B).

***“Site Specific Plan of Tree Management”***

TREE # & IDENTIFICATION	RETAIN MANAGE PROTECT	MANUAL EXCAVATION (for footings- Tree #1, for new driveway surface Tree #4)	Install TPZ Fencing Install Tree Trunk Guard	Excavation Signoff	CC Signoff (confirms site isolation Tree Trunk Protection is installed)	OC Signoff
1 <i>Allocasuarina littoralis</i> Black She Oak	YES	YES	NO YES	YES	YES	YES
4 <i>Angophora floribunda</i> Narrow Leaf Rough Bark Angophora	YES	YES	NO YES	YES	YES	YES
7 <i>Livistona australis</i> Cabbage Tree Palm	YES	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 “Plan of 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

<b>Age:</b>	<b>I</b>	<i>Immature</i> refers to a refers to a well-established but juvenile tree
	<b>SM</b>	<i>Semi-mature</i> refers to a tree at growth stages between immaturity & full size
	<b>M</b>	<i>Mature</i> refers to a full sized tree with some capacity for further growth
	<b>LM</b>	<i>Late Mature</i> refers to a full sized tree with little capacity for growth that is not yet about to enter decline
	<b>OM</b>	<i>Over-mature</i> refers to a tree about to enter decline or already declining
	<b>LS</b>	<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 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.

<b>LVOHP</b>	Low Voltage Over head Powerlines
<b>HVOHP</b>	High Voltage Over head Powerlines
<b>ABC</b>	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.

