"GROWING MY WAY"

Tree Consultancy

Established 1977

EXCELLENCE in ALL ASPECTS OF TREE MANAGEMENT

FULL INSURANCE PROTECTION

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ABN 97 965 355 200

Construction Impact & Management Statement

June 2020

Site: Lot 89 in DP 13760
29 Wandeen Road
CLAREVILLE, NSW

Client: Trish Quirk
29 Wandeen Road
CLAREVILLE, 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

Trish Quirk (property owner) commissioned the Growing My Way Tree Consultancy (GMW) to prepare a *Construction Impact & Management Statement* relative to the proposed *Alterations/Additions to the existing dwelling* within the property known as 29 Wandeen Road, Clareville, (from herein the subject site).

Five (5) individual trees have been identified as being required to be discussed relative to the proposal for *Alterations/Additions to an existing dwelling, including swimming pool* with respect to tree management issues.

All 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 & therefore not impacted upon by the proposed works supported within this document.

All five (5) 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 via Wandeen 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-Side Surveyors, Issue B dated, 17 October 2018;*
- *Plans, Sections & Elevations, by Rapid Plans, dated, 10 February 2020;*
- *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 list of suitable to the local environment replacement tree species.*

This document supports (relative to tree management) the proposal for *Alterations/Additions to an existing dwelling, including swimming pool* with respect to tree management issues.

Kyle A Hill (AQF level 5 & 8 *Practicing/Consulting Arborist* has prepared this report based on "*Visual Tree Assessment" (VTA).* Data was collected on Saturday, 16 May 2020.

Table of Contents

2 Introduction

This report contains observations & recommendations intended to assist in the management of the five (5) individual trees identified as necessary to be discussed by virtue of their location & proposed works, i.e. *Alterations & Additions to an existing dwelling, including swimming pool* with respect to tree management issues.

Built form within the subject site is a single dwelling residence.

This document supports the proposed *Alterations/Additions to an existing dwelling, including 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*". All 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 five (5) of the individually discussed trees are proposed to be removed & replaced. Other trees, both within the subject site & adjoining side common boundary properties nearby 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

*** *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 89 of DP 13760. The site is 836.10m^2 by Site Survey in size. The site is linked to one (1) public road & three (3) residential lots.

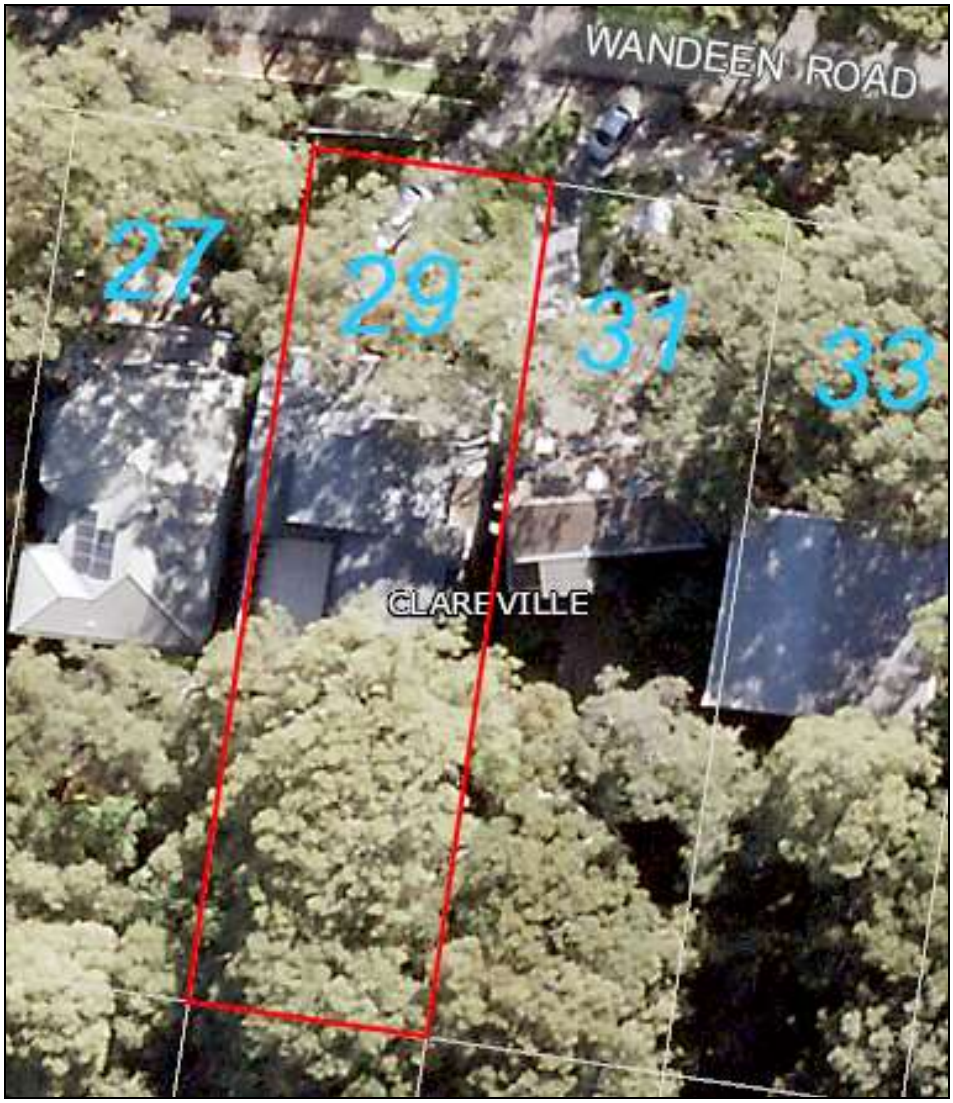


Figure 1: Aerial photograph with lot boundaries courtesy of NBC website tool.

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

All 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 7).*

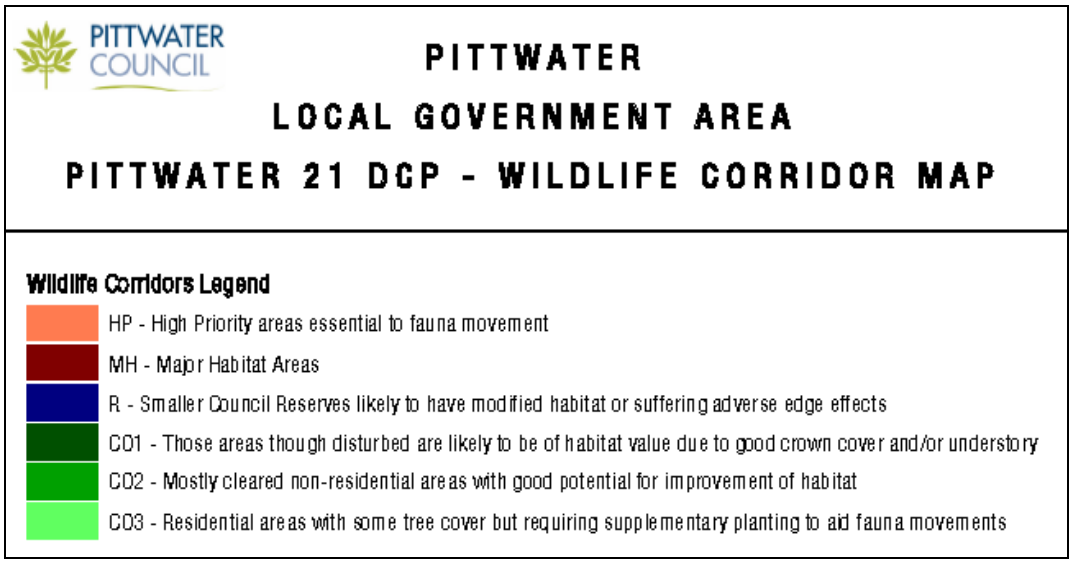
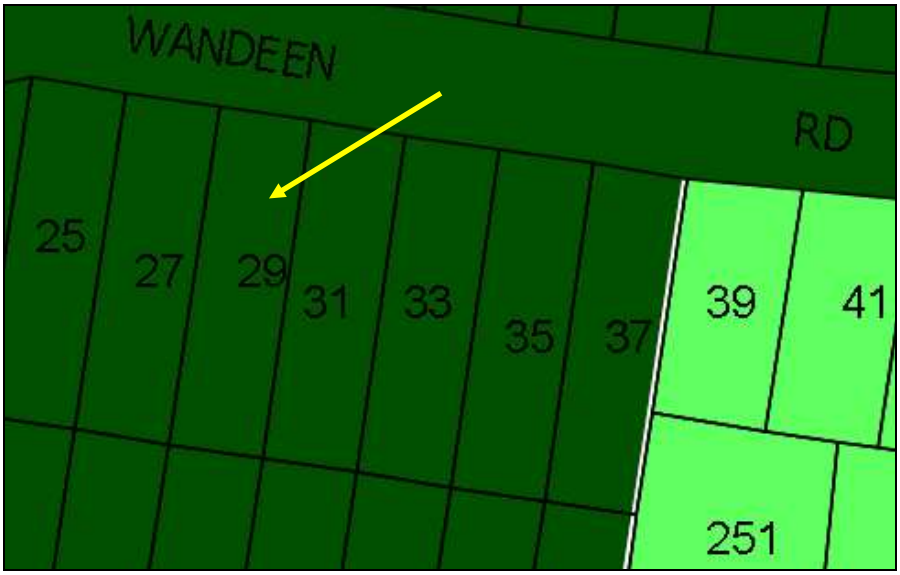


Figure 2: Confirms Pittwater 21 DCP-Wildlife Corridor Status.



PITTWATER COUNCIL

Pittwater Local Environmental Plan 2014

Land Zoning Map - Sheet LZN_010

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 the Subject Site Land Zoning Status

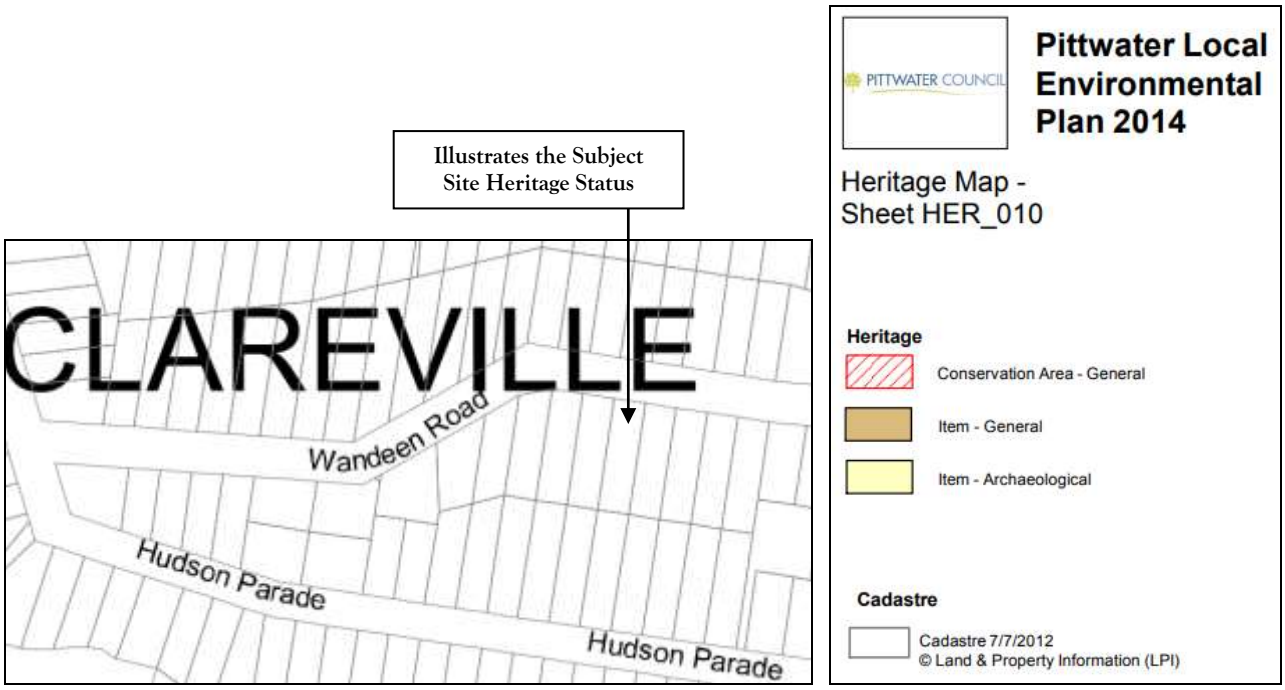
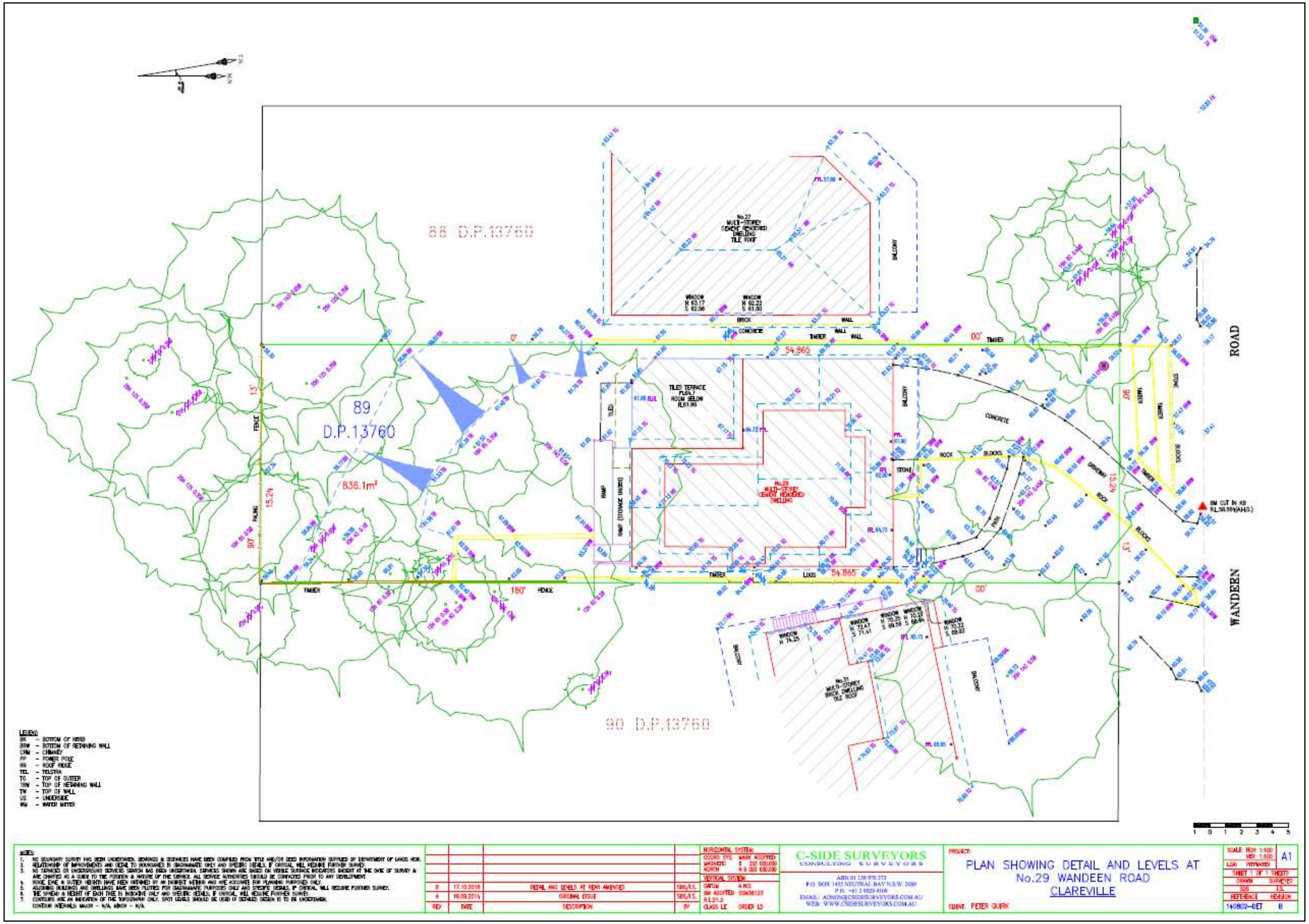
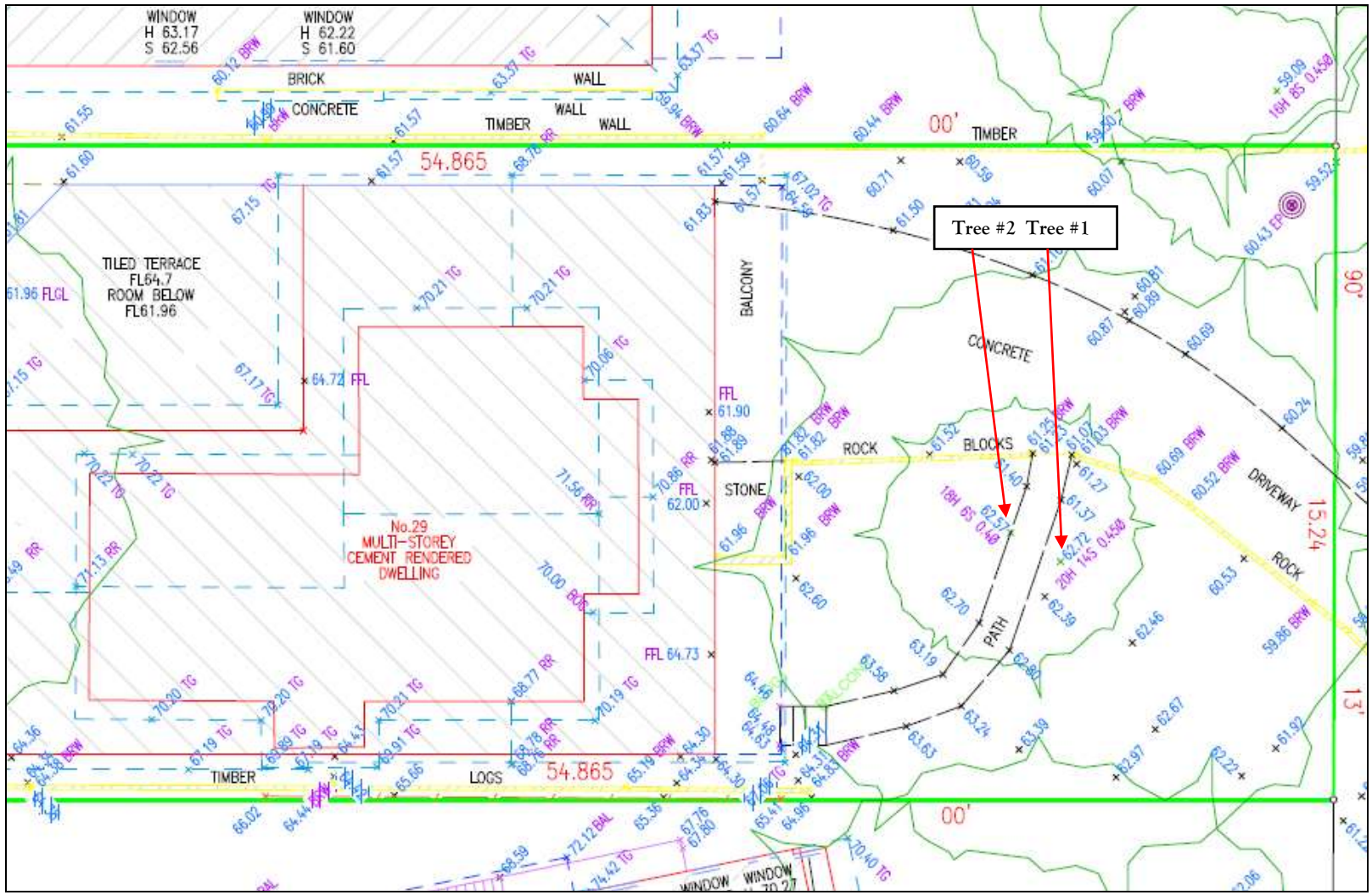


Figure 3: Above & previous page illustrates Land Zoning & Heritage Conservation Area status.

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 located within a designated *'Wildlife Corridor' CO1 – "Those areas though disturbed are likely to be of habitat value due to good crown cover &/or understory'.*


88 D.P.13760
89
D.P.13760
836.1m²
90 D.P.13760
54.865
15.24
ROAD
WANDEEN
C-SIDE SURVEYORS
CONSULTING SURVEYORS
PLAN SHOWING DETAIL AND LEVELS AT
No.29 WANDEEN ROAD
CLAREVILLE
CLIENT: PETER QUIRK
SCALE HOR 1:100 VER 1:100
A1
140802-DET
B


Tree #2 Tree #1
WINDOW H 63.17 S 62.56
WINDOW H 62.22 S 61.60
BRICK
CONCRETE
WALL
TIMBER
54.865
TILED TERRACE FL64.7 ROOM BELOW FL61.96
61.96 FLGL
No.29 MULTI-STOREY CEMENT RENDERED DWELLING
BALCONY
FFL 61.90
FFL 62.00
FFL 64.73
STONE
ROCK
BLOCKS
CONCRETE
DRIVEWAY
PATH
LOGS
00'
90'
15.24
13'

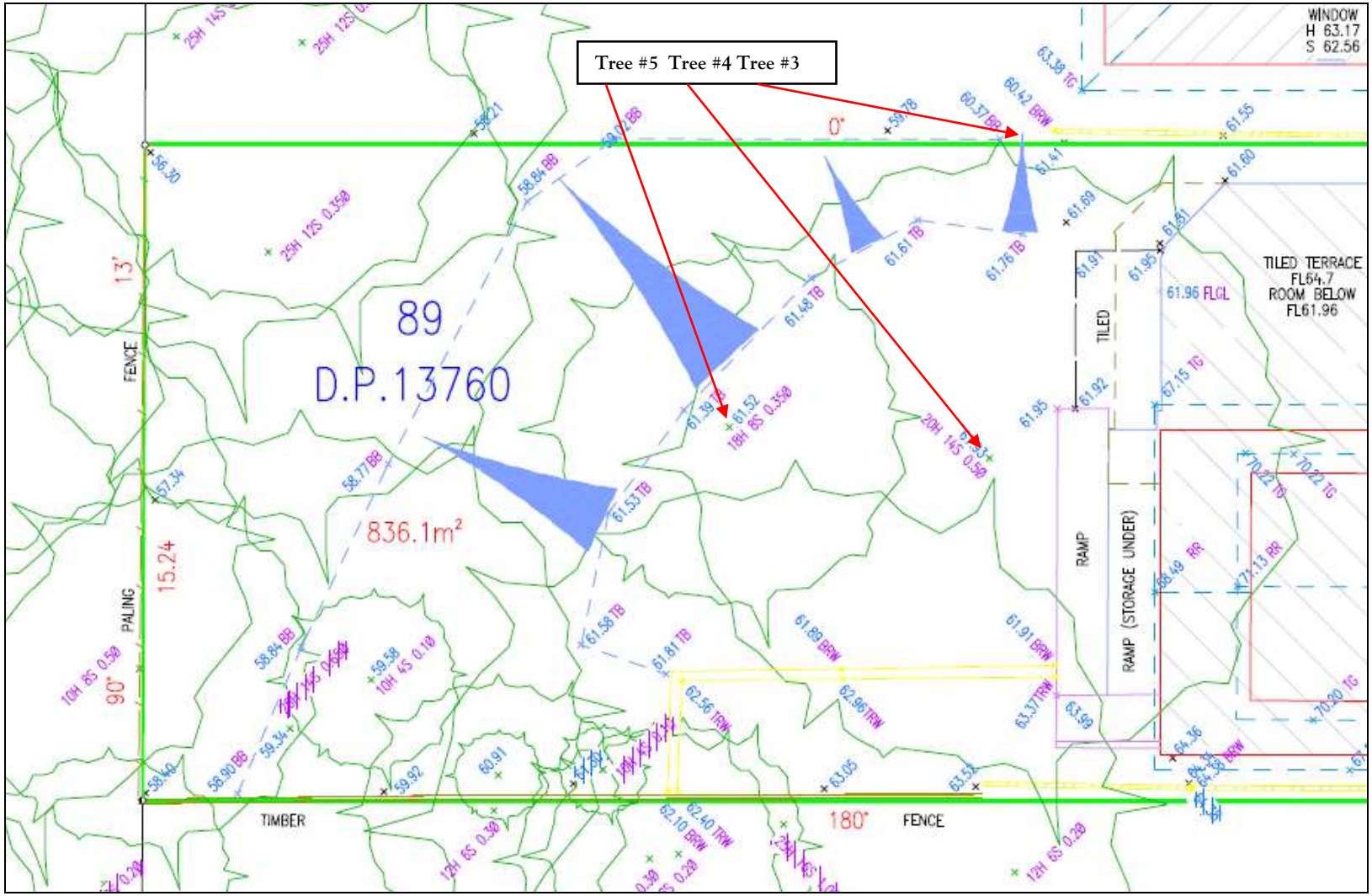
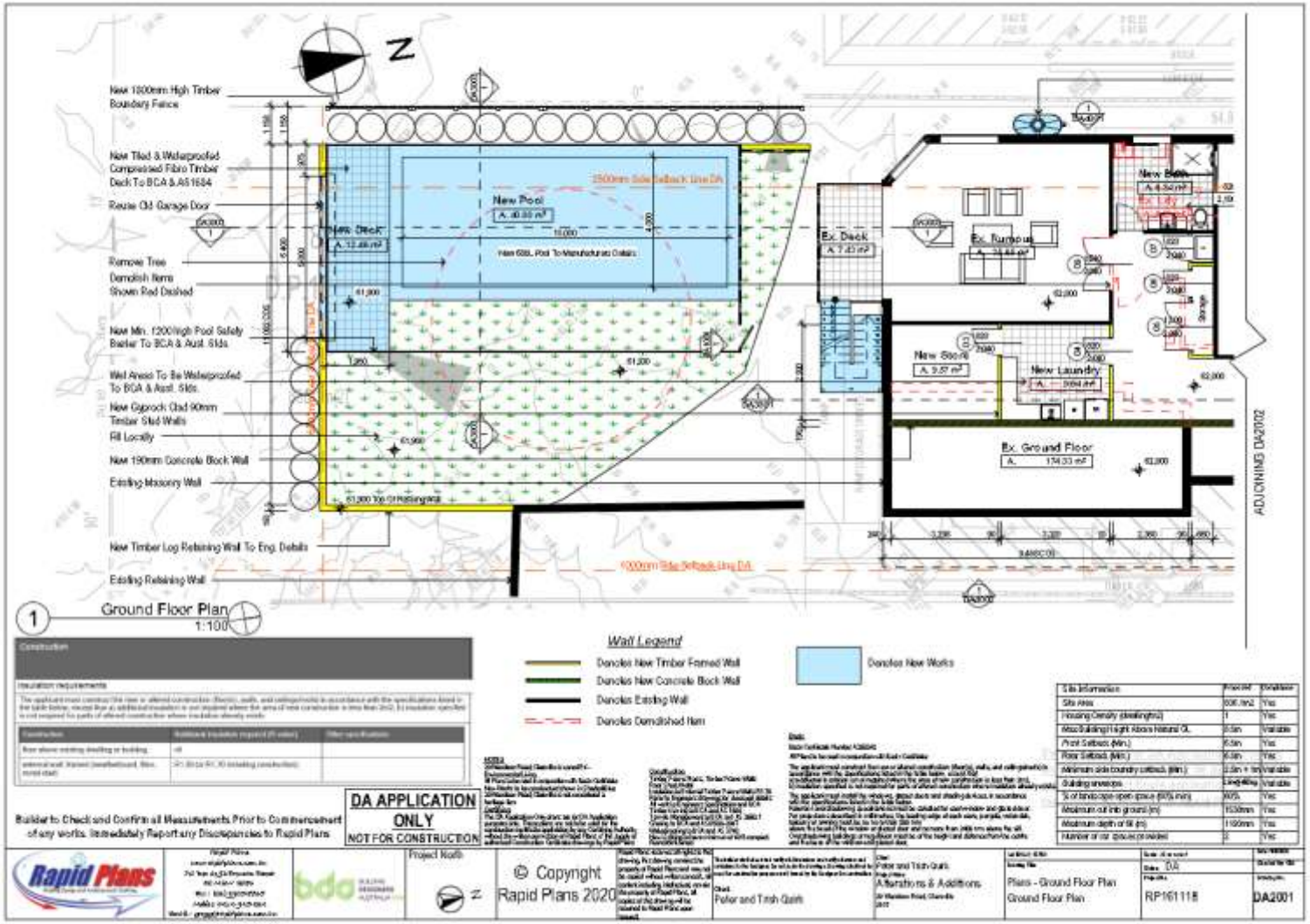


Figure 4: Page 10 Illustrates the total Site, Page 11 illustrates tree locations (discussed) within the front portion of the site, above illustrates tree locations (discussed) within the rear portion of the site

4.2 The Proposal



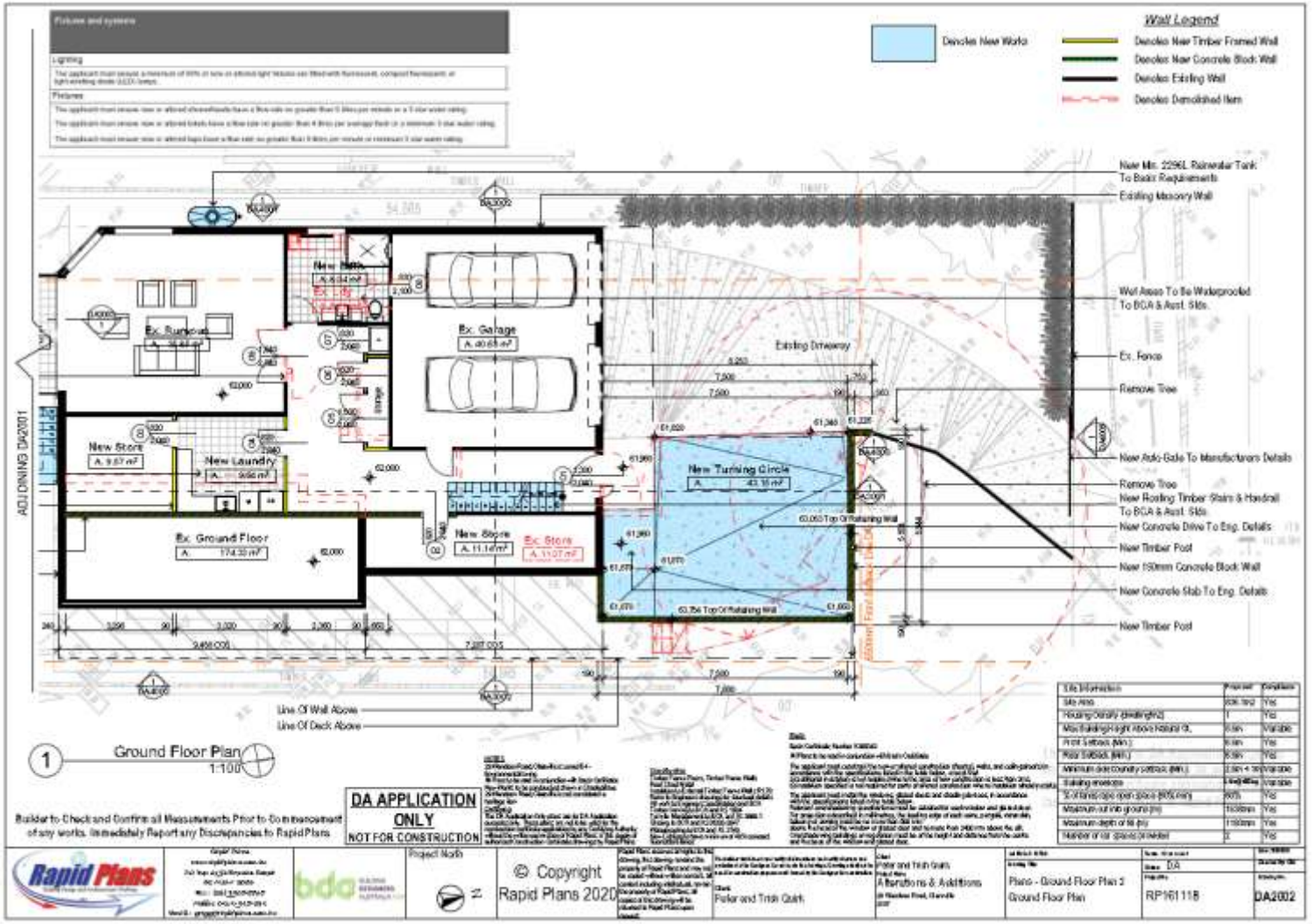


Figure 5: Previous & above illustrates the as proposed Ground Floor Plan.

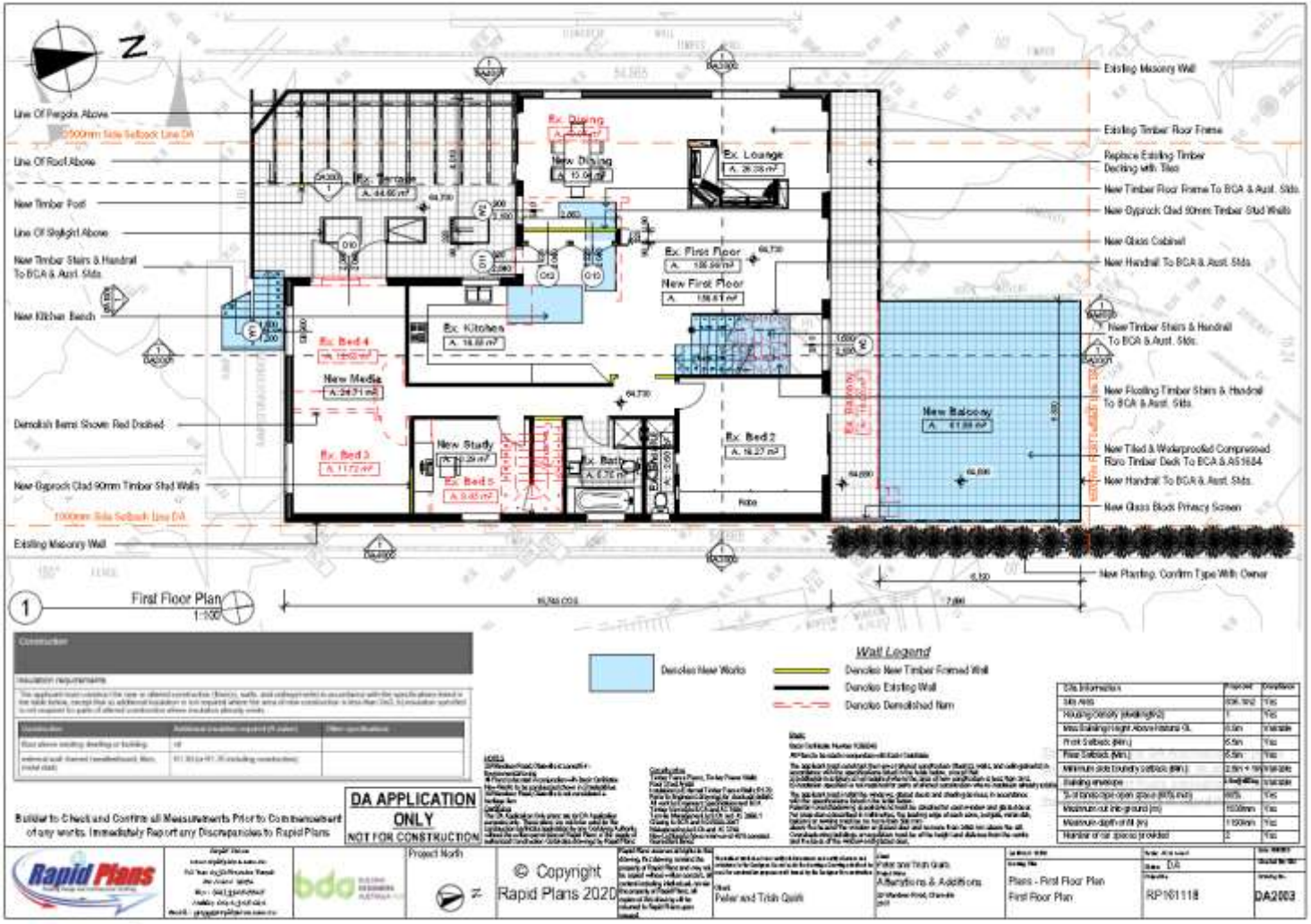


Figure 6: Illustrates the as proposed First Floor Plan.

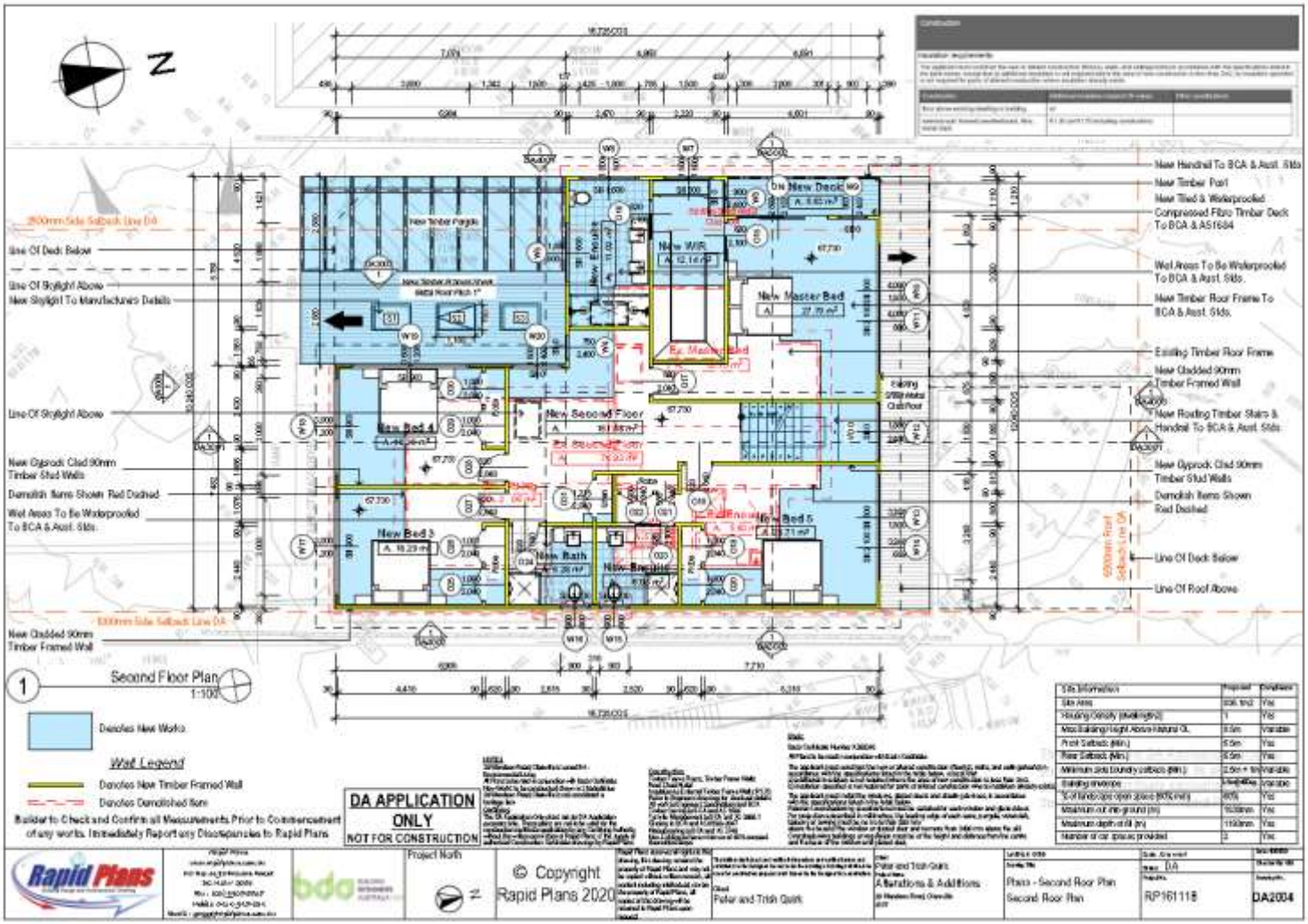


Figure 7: Illustrates the as proposed Second Floor Plan.

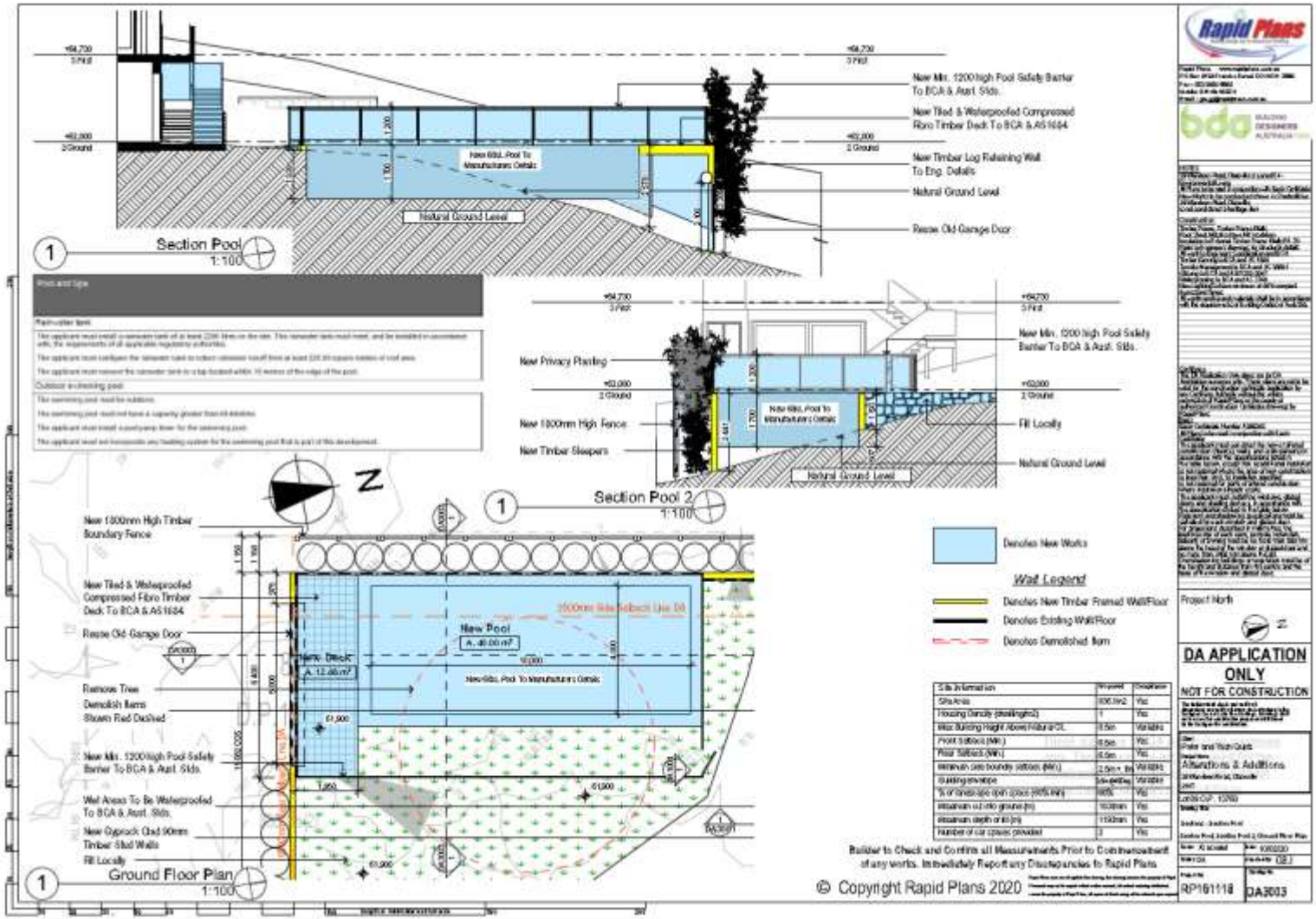


Figure 8: Illustrates the as proposed swimming pool.

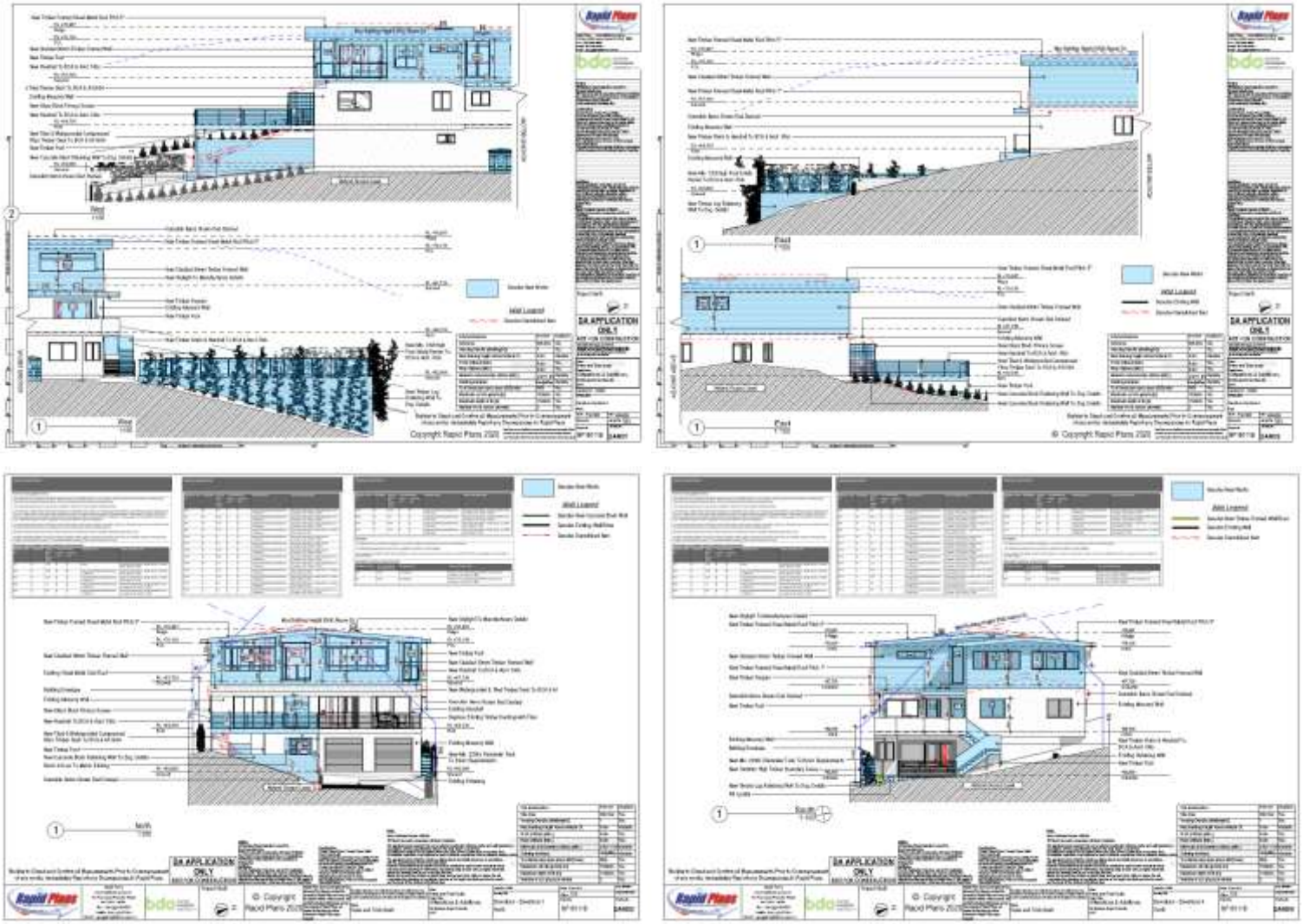


Figure 9: Illustrates the as proposed Elevations.

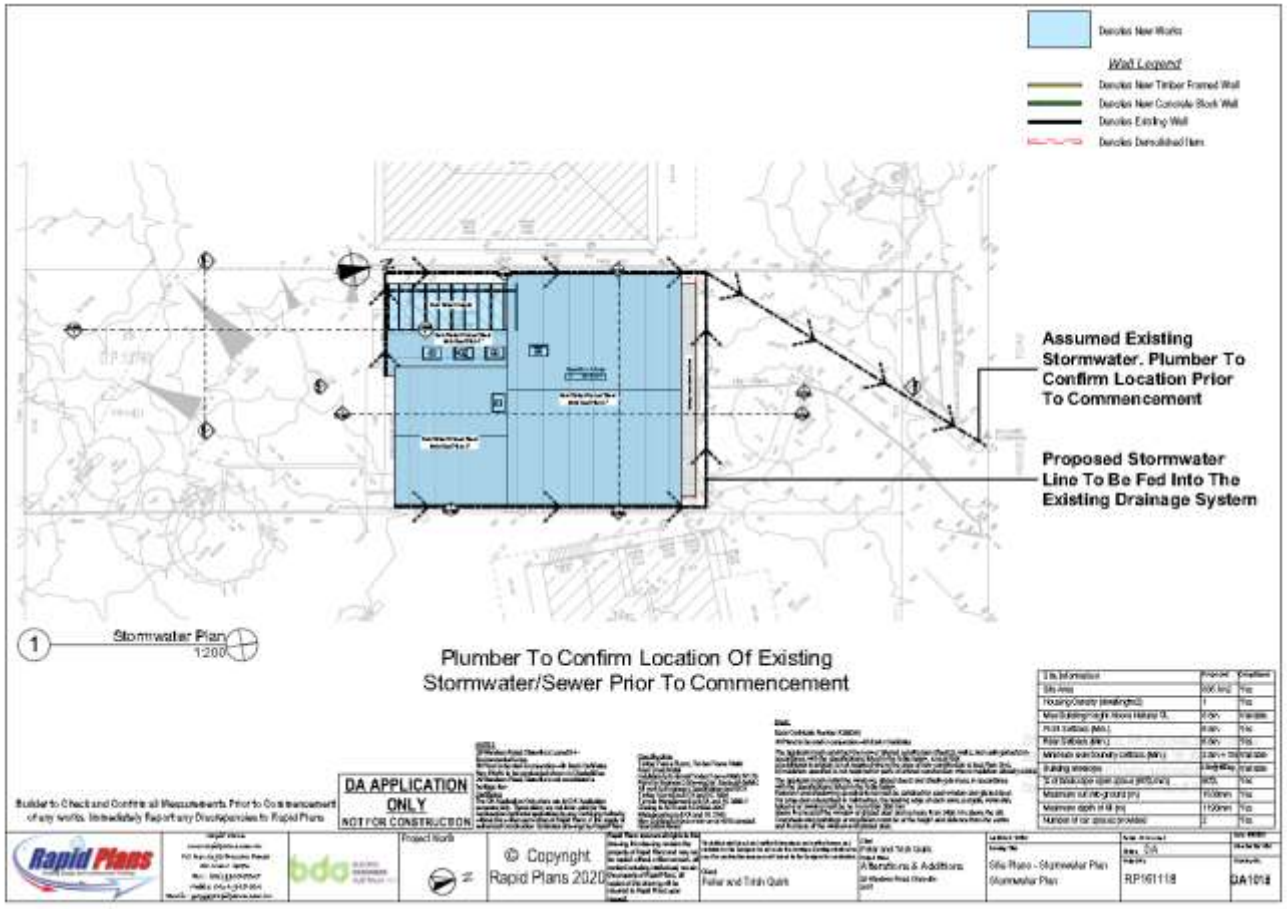


Figure 10: Illustrates the as proposed Storm Water Management Plan.

4.3 Tree Locations & Site Images

Figure 11: Confirms Tree #1 & Tree #2 location & canopy appearance.

Figure 12> Confirms the locations of discussed Tree #3, Tree #4 & Tree #5.

Figure 13: Clockwise from top left, Tree #3, Tree #4 Tree #5 canopy appearance

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	***Corymbia maculata*** *Spotted Gum*	<15.00	<10.00	0.42	5.20	2.40	Mature	Good & Good	Typical	High/ High	**Remove & Replace: Tree s are within the proposed excavation area for vehicle turning area.**
2	***Corymbia maculata*** *Spotted Gum*	<13.00	<10.00	0.36	4.40	2.20	Mature	Good & Good	Typical	High/ High	**Remove & Replace: Tree s are within the proposed excavation area for vehicle turning area.**
3	***Corymbia maculata*** *Spotted Gum*	<19.00	<9.00	0.40	4.80	2.30	Mature	Good & Good	Typical	High/ High	**Remove & Replace: Tree TPZ/SRZ radial distances significantly adversely impacted upon by the as proposed swimming pool.**
4	***Corymbia maculata*** *Spotted Gum*	<20.50	<11.00	0.46	5.60	2.50	Mature	Good & Good	Typical	High/ High	**Remove & Replace: Tree TPZ/SRZ radial distances significantly adversely impacted upon by the as proposed swimming pool & rear of dwelling stairs.**
5	***Corymbia maculata*** *Spotted Gum*	<18.00	<9.50	0.33	4.10	2.20	Mature	Good & Good	Typical	High/ High	**Remove & Replace: Tree TPZ/SRZ radial distances significantly adversely impacted upon by the as proposed swimming pool.**

5 Discussion

This document acknowledges the *Australian Standard (AS4970–2009 Protection of trees on development sites)* & the *Australian Standard (AS4373–2007 Pruning of amenity trees)* as the best practice guideline documents for the management of trees in Australia.

Discussed Tree #1 & Tree #2 are confirmed to be within the as proposed turning area footprint which requires significant excavation. (See Figure 5, page 14.)

Discussed Tree #3, Tree #4 & Tree #5 are located within the rear of the subject site. (Tree #3 when established is assessed as being totally within the subject site.) The current grassed relatively level existing rear yard is confirmed to have been created by the addition of a significant volume of imported soil/media. Tree #3 & Tree #5 appear to be the most impacted upon by the change to natural ground levels.

All five (5) discussed trees are locally indigenous species subject to the old *Pittwater Council* & now *NBC "Tree Management Provisions" plus the new SEPP "Vegetation in non–rural Areas, August 2017".* The subject site is confirmed to be mapped as part of the *Pittwater Spotted Gum Forest Endangered Ecological Community.* All five (5) discussed trees are confirmed to be *Corymbia maculata* (Spotted Gum) trees.

All five (5) as proposed to be replaced trees are to be replaced with the same species.

Four (4) new trees can be planted & established within the rear yard. Four (4) within the lower level 'bush garden' area, one (1) within the front of residence bush garden.

A web site search confirms *Corymbia maculata* (Spotted Gum) trees in various container sizes (up to 40cm diameter) as able to be purchased on demand. It is suggested the replacement trees be secured/obtained as soon as DA determination is made so as to guarantee them being planted at the appropriate stage of the development, i.e. when the new landscape concept installation is undertaken.

"Site Specific Tree Plan of Management"

TREE # & IDENTIFICATION	RETAIN MANAGE PROTECT	Replacement Required	MANUAL EXCAVATION (for footings)	Install TPZ Fencing Install Tree Trunk Guard	CC Signoff	OC Signoff (confirming new trees to have been planted)
1 *Corymbia maculata* (Spotted Gum)	No	Yes (40cm container diameter is specified)	No	No No	No	Yes (confirming specified trees as being planted)
2 *Corymbia maculata* (Spotted Gum)	No	Yes (40cm	No	No	No	Yes (confirming

		container diameter is specified)		**No**		**specified trees as being planted)**
3 *Corymbia maculata* *(Spotted Gum)*	**No**	**Yes (40cm container diameter is specified)**	**No**	**No** **No**	**No**	**Yes (confirming specified trees as being planted)**
4 *Corymbia maculata* *(Spotted Gum)*	**No**	**Yes (40cm container diameter is specified)**	**No**	**No** **No**	**No**	**Yes (confirming specified trees as being planted)**
5 *Corymbia maculata* *(Spotted Gum)*	**No**	**Yes (40cm container diameter is specified)**	**No**	**No** **No**	**No**	**Yes (confirming specified trees as being planted)**

- **Tree Removal must be undertaken by suitably experienced & qualified tree removal practitioners in compliance with the abide at all times to the "*WorkCover NSW Industry Code of Practice, (1998)*".**
- **New tree specimens are to be sourced from growers/suppliers whose stock meets the production benchmarks of the *Australian Standard (AS2303.2015 Tree stock for landscape use).***
- **New tree specimens are to be professionally planted & maintained for a minimum period of six (6) months once installed.**

6 Conclusions

- **Relative to the information as presented the** *GMW consultancy* **supports the proposed works as presented in documentation reviewed.**
- **The** *DA submission* **is 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 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