"GROWING MY WAY"

Tree Consultancy

Established 1977

EXCELLENCE in ALL ASPECTS OF TREE MANAGEMENT

FULL INSURANCE PROTECTION

PO Box 35, Newport Beach NSW 2106

Phone: (02) 9997-4101 Mobile: 0412-221-962 Fax: (02) 9940-0217

E-mail: kyleahill@optusnet.com.au

ABN 97 965 355 200

Construction Impact & Management Statement

May 2020

Site: Lot 55 in DP 11462
61 Dress Circle Road
AVALON BEACH, NSW

Client: Haidee & Simon Keegan
c61 Dress Circle Road
AVALON BEACH, 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

Haidee & Simon Keegan (property owners) 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 61 Dress Circle Road, Avalon Beach, (from herein the subject site).

Two (2) individual trees have been identified as being required to be discussed relative to the proposal for *Alterations/Additions*, (i.e. the as proposed new driveway/driveway crossover) with respect to tree management issues.

. Both 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 & the Dress Circle Road road reserve. Multiple other trees are located within both the subject site, road reserve & 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.

Both 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 Dress circle 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 Adam Clerke Surveyors dated, April 2020;*
- *Plans, Sections & Elevations, by Jamie King (Landscape Architect), Issue D, Sht 101 thru Sht 106, dated, 22 June 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. *Confirm the Site–Specific 'Tree Plan of Management' for nearby trees to be retained, protected & managed is AS4970–2009 compliant.*

This document supports (relative to tree management) the proposal for *Alterations/Additions* i.e. the as proposed new driveway/driveway crossover).

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, 3 March & Thursday, 19 March 2020.

Table of Contents

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. *Alterations & Additions*. This document focuses only on the as proposed new driveway/driveway crossover.

An existing single dwelling residence, with hard & soft landscaping (including inground swimming pool & a proposed to be deleted/replaced in another location driveway/driveway crossover.

This document supports the proposed *Alterations/Additions*, (i.e. the as proposed new driveway/driveway crossover) 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*". No 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).*

Both of the two (2) individually discussed trees are proposed to be removed & replaced. Other trees, both within the subject site, the road reserve & 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
- Appendix B Site Survey
- Appendix C Tree Protection & Management

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

4 Observations

4.1 The Site

The report discusses only trees within Lot 55 of DP 11462. The site is 2023.00m^2 by Title in size. The site is linked to one (2) public roads & 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'.

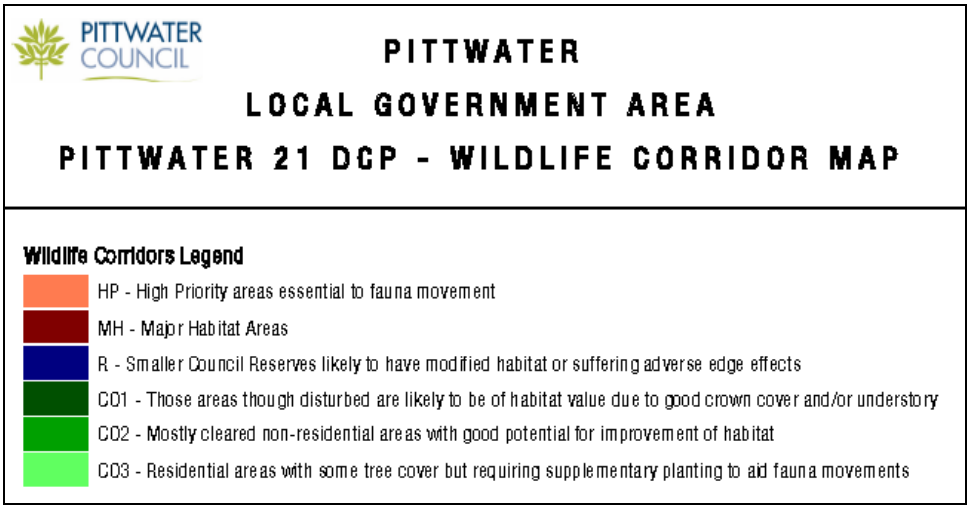
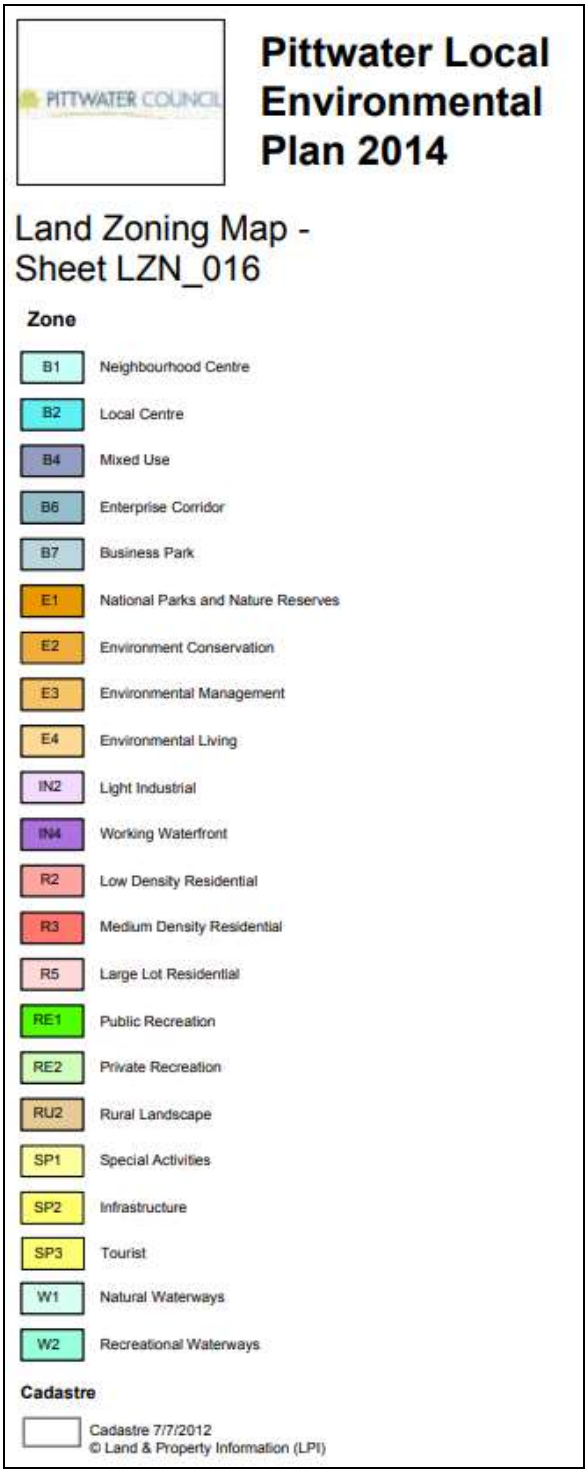
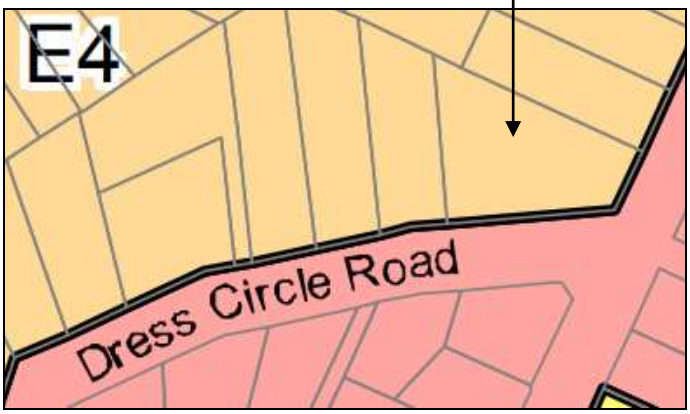


Figure 2: Confirms Pittwater 21 DCP-Wildlife Corridor Status.



Illustrates the Subject Site Land Zoning Status



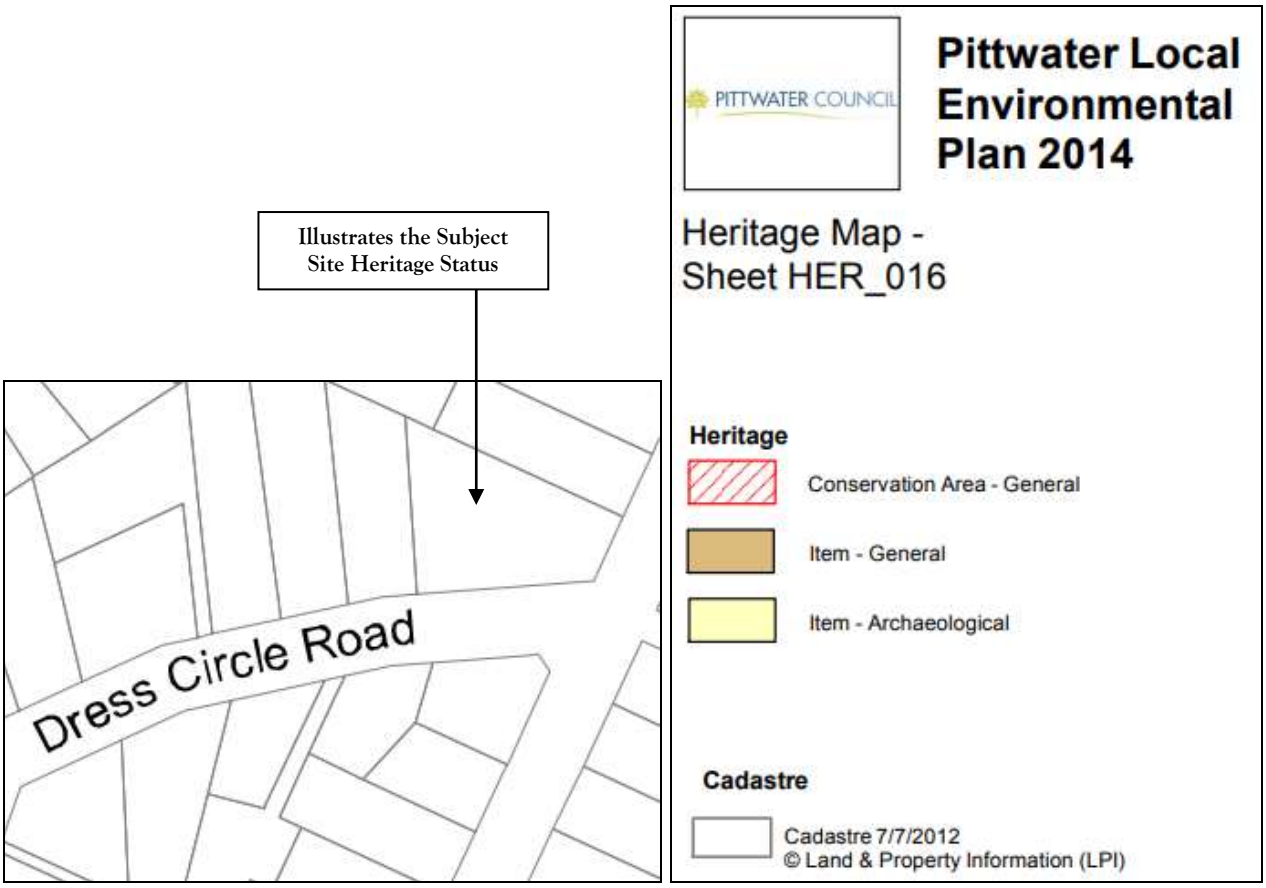


Figure 3: Above & previous page illustrates Land Zoning & Heritage Conservation Area status.

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'.*

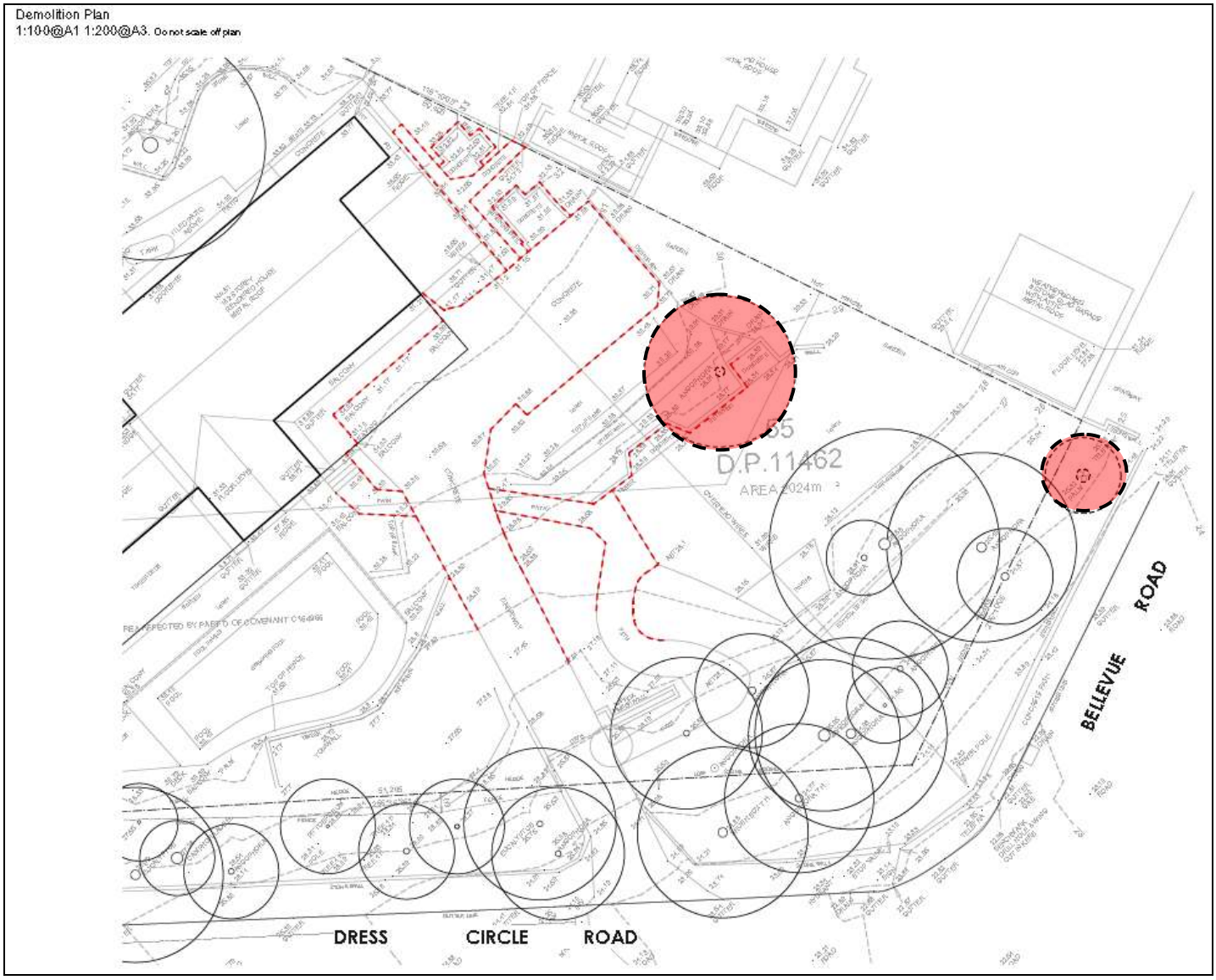
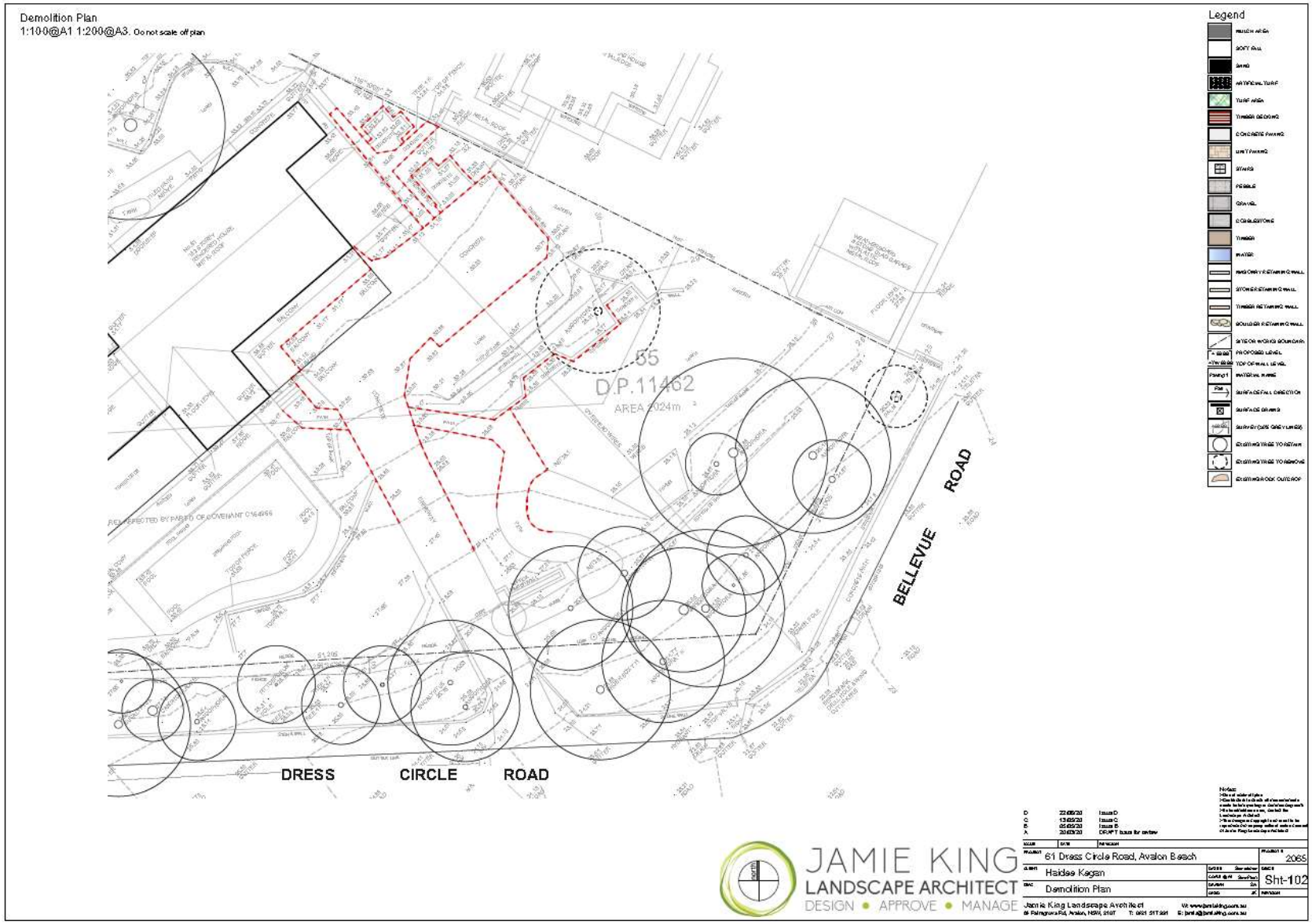


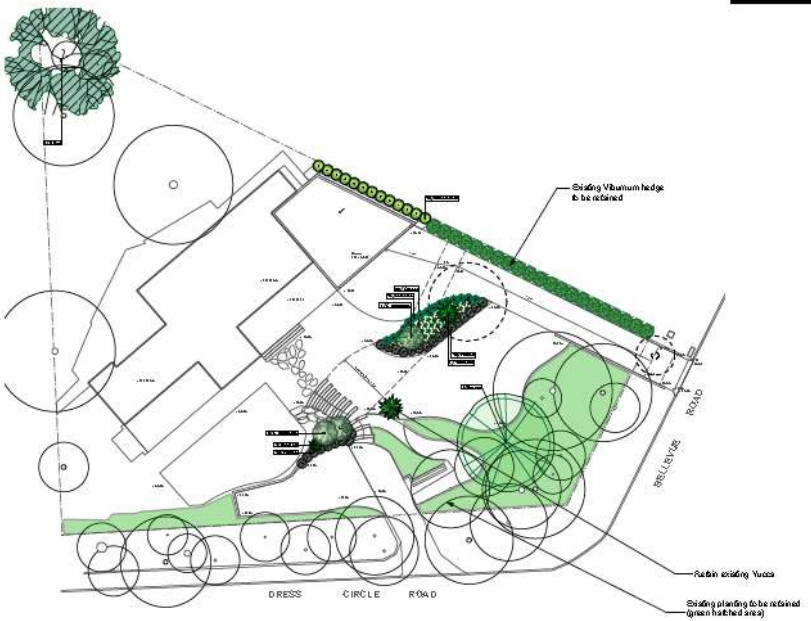
Figure 4: Portion of Jamie King (Landscape Architect) Demolition Plan with with discussed Tree Locations Plotted in RED.

4.2 The Proposal


Demolition Plan
1:100@A1 1:200@A3. Do not scale off plan
Legend
55
D.P.11462
AREA 1024m²
BELLEVUE ROAD
DRESS CIRCLE ROAD
JAMIE KING
LANDSCAPE ARCHITECT
DESIGN • APPROVE • MANAGE
61 Dress Circle Road, Avalon Beach
Haidee Kagan
Demolition Plan
Sht-102


Detail plan
1:100@A1 1:200@A3. Do not scale off plan
Legend
Ramp
Proposed new sandstone retaining wall to replace existing timber wall
Proposed location new driveway
Existing Viburnum hedge to be retained
Turf area
Proposed new masonry retaining wall to height of existing ground level
Proposed new masonry retaining wall
Telstra pit
Telstra pit
Existing Palm to be removed
Proposed new timber steps
Organic shaped Sandstone steppers
Lawn grades up at 1:3
Timber steps in lawn.
Organic Sandstone Boulders to make rock entertainment
Timber steps
Existing wall to be retained
Proposed location new driveway
DP 11402
ROAD
BELLEVUE
Gutter line
Garden edge
Retain existing Yucca
Proposed new gravel path
Existing gravel path and retaining wall to be retained
DRESS
CIRCLE
ROAD
Existing driveway to be retained
JAMIE KING
LANDSCAPE ARCHITECT
DESIGN • APPROVE • MANAGE
61 Dress Circle Road, Avalon Beach
2065
Haidee Kegan
Detail plan
Sht-103
Jamie King Landscape Architect

Planting plan
1:100@A1 1:200@A3. Do not scale off plan



[redacted]

D 22/05/20 Issue D
C 13/05/20 Issue C
B 05/05/20 Issue B
A 20/04/20 DRAFT Issue for review

JAMIE KING
LANDSCAPE ARCHITECT
DESIGN • APPROVE • MANAGE

61 Dress Circle Road, Avalon Beach
2065
Haidee Kagan
Planting plan
Sht-106
Jamie King Landscape Architect
68 Palmgrove Rd, Avalon, NSW, 2107 T: 0401 317 321 E: jamie@jamieking.com.au W: www.jamieking.com.au

4.3 Tree Locations & Site Images

Figure 5: Illustrates the location & condition of Tree #1.

Figure 6: Confirms predictable 'atypical root system'.

Figure 7: Illustrates location of the discussed Tree #2.

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	***Angophora costata*** *Sydney Red Gum*	<18.00	<13.00	0.55	6.60	2.80	Mature	Good & Good	Trunk base displays atypical 'butt form' & 'supporting root pattern'	High/ High	**Remove & Replace: Tree TPZ/SRZ radial distances are significantly compromised by the as proposed new driveway/driveway infrastructure & new retaining wall.**
2	***Syagrus* spp.** *(3 x trunks)* *Closely related but not Cocos Palm*	<7.00	<6.00	0.30	3.60	N/A	Mature	Good & Good	Typical	Low/ Low	**Remove & Replace: Tree is within the proposed new driveway crossover within the Bellevue Road road reserve.**

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.

Not discussed but considered as desirable to retain is the common boundary (subject site & 28 Bellevue Road) *Vibunum odaratissimum, (Viburnum) hedge.* This is best achieved by installing temporary metal mesh fencing panel between the hedge & the as proposed new driveway. (See Appendix C.)

Discussed Tree #1 & Tree #2 are confirmed to be very close to the proposed new driveway & driveway crossover.

Tree #1 is a 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.*

Tree #2 whilst technically not a protected tree species, it is confirmed to be located within public lands (i.e. Bellevue Road road reserve) & as such must be discussed.

Tree #1 is acknowledged as being of High Significance & High Retention value by size, species, condition &/or presence. However, by actual specimen these ratings are significantly exaggerated by virtue of the 'body language' of its trunk base. The southern side of the trunk base is quite deformed. Only two trunk base points of origin for 'Structural Supporting Roots' were able to be obviously confirmed. (See below photograph red arrows.) This observation plus the fact the tree trunk on its northern side displayed no likely able to be located 'Structural Supporting Roots' as well as having been subjected to both increased (i.e. infill) & reduced (i.e. excavated) soil levels prompted an earlier exploratory 'root location' excavation. This was undertaken to determine the location of any northern side of tree trunk 'Structural Supporting Roots', none were found. (See page ?? photograph.)

Based on these findings, it would be easy to support the total removal of this tree regardless of any development proposal.

Figure 8: Illustrates & confirms the description of the tree trunk body language causing concern about total tree stability regardless of any proposal for development.

Tree #2 as an exotic planted tree not protected by the old *Pittwater Council* & now *NBC "Tree Management Provisions" plus the new SEPP "Vegetation in non–rural Areas, August 2017"* has been given Low Retention & Significance values. At the very least, it is incompatibly with the local floral plant community as well as the concept of the subject site existing & proposed to be enhanced landscape concept.

"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
1 *Angophora costata*	No	Yes (x3)	No	No No	No	Yes
2 *Syagrus spp. (x 3)*	No	Yes (x1)	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* **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.

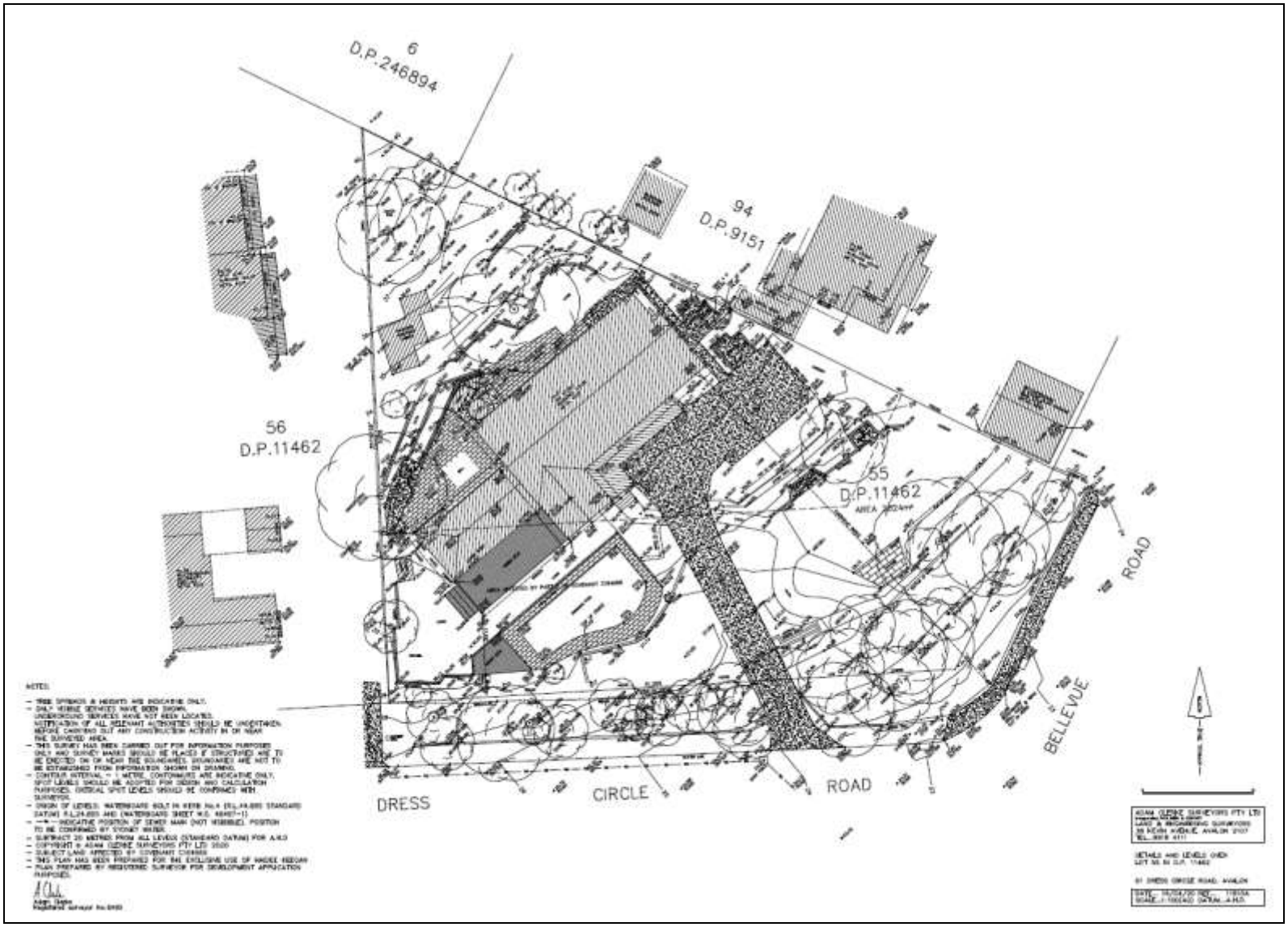
Crown Foliage Density of Potential (CFDP) refers to the density of a tree's crown in relation to the expected density of a healthy specimen of the same species. CFDP is measured as a percentage.

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

Appendix B – Site Survey



Appendix C – 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.