



# ARBORICULTURAL IMPACT ASSESSMENT

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80 WOODLAND ST, BALGOWLAH 2093

**Prepared by: Colin Curtis**

AQF 5 Arboriculture Diploma

Quantified Tree Risk Assessor (QTRA) #4498

Consulting Member of Arboriculture Australia #2332

Member of the International Society of Arboriculture #228182

[completearbor@mail.com](mailto:completearbor@mail.com)

**Prepared for: Paul Duggan**

[duggos76@yahoo.com.au](mailto:duggos76@yahoo.com.au)

0407 709 276

7/10/2018

## EXECUTIVE SUMMARY

Complete Arborcare has been commissioned by Paul Duggan to undertake an Arboricultural Impact Assessment (AIA) regarding proposed alterations & additions upon SP 33894 No.80 Woodland St, Balgowlah 2093 (the subject site).

Four (4) x trees upon & adjacent to the subject site were assessed to produce this report.

Following an assessment of construction impacts (detailed in section 7 of this report) the following Recommendations/Conclusions (detailed in section 7 of this report) have been developed.

- 9.1 Tree **T1** shows a cut into both the TPZ & SRZ from the proposed works, it is recommended this tree is removed (no approval from NBC is required due to its location being within 2 metres of a DA approved structure).
- 9.2 Tree **T2** (which is located upon NBC land) has no TPZ encroachments & should not be impacted by the proposed development. According to clause 4.3 of AS 4970-2009, no specific protection is required to be installed due the presence of existing perimeter fencing.
- 9.3 Tree **T3** (which is located upon NBC land) has only a minor (3%) TPZ encroachments & should not be impacted by the proposed development. According to clause 4.3 of AS 4970-2009, no specific protection is required to be installed due the presence of existing perimeter fencing. Activities restricted within the TPZ must be adhered to throughout the entire course of the development (see appendix C).
- 9.4 Tree **T4** has a minor 2% encroachment into its TPZ. No additional TPZ/SRZ encroachments, other than those already existent, will occur. A minor north western upper canopy encroachment may take place upon limbs <60mmØ. According to clause 4.3 of AS 4970-2009, no specific protection is required to be installed due the presence of existing perimeter fencing. Activities restricted within the TPZ must be adhered to throughout the entire course of the development (see appendix C).
- 9.5 Any tree pruning/removal works that may be required, shall be undertaken by an arborist with a minimum AQF level 3 standing. Pruning shall be conducted in accordance with clause 7.2.4 (Selective pruning) of AS 4373-2007 & comply with the current Code of Practice: Amenity tree Industry 1998.

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## 1. INTRODUCTION

- 1.1 Complete Arborcare has been commissioned by Paul Duggan to undertake an Arboricultural Impact Assessment (AIA) regarding proposed alterations & additions upon SP 33894 No.80 Woodland St, Balgowlah 2093 (the subject site).
- 1.2 This AIA is to be presented to Northern Beaches Council (NBC) as part of the Development Application (DA). It has been prepared following the guidelines provided in the Australian Standard (AS) 4970-2009, *Protection of Trees on Development Sites* & AS 4373-2007, *Pruning of Amenity Trees*.

## 2. LEGISLATION REQUIREMENTS

- 2.1 Northern Beaches Council (Northern Beaches Council, 2017) considers a tree to be:
  - (a) *any palm or woody perennial plant greater than five (5) metres in height or any palm or woody perennial plant with a canopy greater than 10 m in width; or*
  - (b) *any native palm or native woody perennial plant at any stage of its lifecycle that is 0.5 metres or greater in height and is within any area mapped by Council as containing:*
    - *Threatened and High Conservation Habitat*
    - *Wildlife Corridors*
    - *Native Vegetation Known or potential habitat for threatened species, populations or ecological communities*
- 2.2 State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 (NSW Government, 2017) has been considered in the preparation of this report. The aims of the policy are to;
  - (a) *to protect the biodiversity values of trees and other vegetation in non-rural areas of the State, and*
  - (b) *to preserve the amenity of non-rural areas of the State through the preservation of trees and other Vegetation*
- 2.3 The subject site is zoned as R2-Low Density Residential & located within a Scenic Protection area.

### 3. THE SITE



**Figure 1:** The subject site outlined in red (*nearmap 2018*).

## 4. METHOD

- 4.1 The subject site & trees were visually assessed on the 29<sup>th</sup> of September 2018, from ground level. The Genus/ species of the subject tree/s were recorded as well as dimensions @ Diameter at Breast Height (DBH) & Diameter at Base (DAB), along with crown and canopy width. Height and age of the trees were estimated as well as the percentage of deadwood. The subject tree/s were given a Condition / Vigour rating and signs and symptoms of pests and diseases were noted (if apparent). Structural defects were looked for and comments recorded.
- 4.2 Calculations have been made using guidelines supplied in AS 4970-2009 Protection of Trees on Development Sites (Standards Australia, 2009) for the:
- Tree Protection Zone (TPZ)
  - Structural Root Zone (SRZ)
  - Live Crown Ratio (LCR)
  - Live Crown Size (LCS)
  - Height/Diameter ratio (H/D)
- 4.3 The trees have been allocated a landscape significance rating of Low, Medium or High using the *IACA Significance of a Tree, Assessment Rating System (STARS)*© (IACA, 2010). Stars assessment criteria includes:
- Condition and Vigour
  - Form, species specific
  - Provenance, age and botanical significance
  - Heritage and Ecological significance
  - Size, shape, and local amenity value
  - Restrictions to tree growth
- Appendix B contains the assessment criteria in full.
- 4.4 The trees have been given a Useful Life Expectancy (ULE) rating, categorised as either;
- Long – 40 + years
  - Medium – 15-40 years
  - Short – 5-15 years
  - Consider for removal - <5 years

## 5. OBSERVATIONS

5.1 Listed in Table 1 below are observations from the subject tree relating to;

- Health and vigour.
- Deadwood. An overall % has been estimated.
- Structural defects and comments.
- Any signs/symptoms of pest and disease attack.
- Previous pruning or wounds.
- A landscape significance rating determined using the STARS© (IACA, 2010) matrix.
- A Useful Life Expectancy (ULE) rating of either long, medium, short or consider for removal.

Tree No.	Common Name <i>Genus/Species</i>	Health/ Vigour	Dead wood %	Structural Defects/ Comments	Pests/ Disease	Pruning/Wounds	Landscape Significance Rating	ULE Rating
1	Coastal Banksia <i>Banksia integrifolia</i>	G/G	<5%	None observed	None observed	Lower canopy branch failure	Medium	Medium
2	Red Bloodwood <i>Corymbia gummifera</i>	F/F	10-15%	Asymmetrical crown	None observed	None observed	Medium	Short
3	Sydney Red Gum <i>Angophora costata</i>	G/G	<5%	Asymmetrical crown	None observed	None observed	High	Long
4	Willow Bottlebrush <i>Callistemon salignus</i>	G/G	<5%	None observed	None observed	None observed	Medium	Medium

Table 1: Tree Observations

5.2 Listed in Table 2 below are measurements from the subject tree relating to;

- Diameter at Breast Height (DBH).
- Diameter above Buttress (DAB).
- Canopy spread – measured to the North, South, East and West (N, S, E, W).
- Tree height.
- Lowest scaffold branch.

Tree No.	Genus/species	Age	Height (m)	Lowest Scaffold (m)	Spread (m)				DBH (cm)	DAB (cm)
					N	S	E	W		
1	<i>Banksia integrifolia</i>	M	10	3	2	5	2	6	59	65
2	<i>Corymbia gummifera</i>	M	7	6	5	0	0	2	43	61
3	<i>Angophora costata</i>	M	10	3	6	1	6	3	61	82
4	<i>Callistemon salignus</i>	M	7	2	3	3	3	3	39	46

Table 2: Tree Measurements

5.3 Listed in Table 3 Below are calculations from the subject trees relating to:

- Tree Protection Zone (TPZ)
- Structural Root Zone (SRZ)
- Live Crown Ratio (LCR)
- Live Crown Size (LCS)
- Height/Diameter ratio (H/D)

Tree No.	Genus/Species	SRZ (m)	TPZ (m)	Live Crown Ratio (%)	Live Crown Size (m <sup>2</sup> )	H over D Ratio
1	<i>Banksia integrifolia</i>	2.76	7.08	75	56	16
2	<i>Corymbia gummifera</i>	2.69	5.16	20	10	16
3	<i>Angophora costata</i>	3.04	7.32	70	63	16
4	<i>Callistemon salignus</i>	2.39	4.68	80	36	17

Table 3: Tree Calculations

## 6. TREE RETENTION VALUES

6.1 Trees have been allocated a retention value using the priority Matrix in the *IACA Significance of a Tree, Assessment Rating System (STARS)*© (IACA, 2010). The Matrix uses the Landscape Significance rating combined with the Useful Life Expectancy (ULE) to determine a retention value of either;

- Priority for Retention (High) – All measures must be taken to retain and protect these trees. If the guidelines set out in AS4970-2009 Protection of trees on development sites cannot be used to protect the trees, design modification or re-location of the proposed development should be considered.
- Consider for Retention (Medium) – Retention of these trees should remain a priority. If the trees are adversely affecting the proposed development and all protection measures have been considered but are not viable, removal can be considered.
- Consider for Removal (Low) – Retention of these trees is not important. No modification to design should be considered for their retention.
- Priority for Removal – Trees in an irreversible decline, weed species or hazardous trees. These trees should be removed.

Tree No.	Genus/Species	Landscape Significance Rating	Useful Life Expectancy	Retention Value
1	<i>Banksia integrifolia</i>	Medium	Medium	Medium
2	<i>Corymbia gummifera</i>	Medium	Short	Medium
3	<i>Angophora costata</i>	High	Long	High
4	<i>Callistemon salignus</i>	Medium	Medium	Medium

Table 4: Tree Retention Values



## 7. CONSTRUCTION IMPACTS

7.1 Listed in table 5 below are likely impacts from the proposed construction upon the trees.

Tree No.	Proposed encroachments into TPZ and/or canopy	Likely Impacts from proposed construction (Discussion)	Conclusion
1	The base of this tree has been determined to be within two metres of a DA approved structure.	N/A	This tree can be removed without Northern Beaches Council consent under the current tree management policy.
2	No encroachment will take place into the TPZ or canopy.	None	This tree should not be impacted from the proposed development.
3	A Minor 3% encroachment into the TPZ has been calculated to take place. No canopy encroachment has been calculated to take place.	None	Due to the minor TPZ encroachment & the presence of existing structures, this tree should not be impacted from the proposed development.
4	Tree T4 has a minor 2% encroachment into its TPZ. No additional TPZ/SRZ encroachments, other than those already existent, will occur. A minor (<10%) upper canopy encroachment may occur on the north western crown.	None foreseen	Any canopy pruning that may be required will be upon limbs <60mm ø. This tree should not be impacted from the proposed development.

Table 5: Construction Impacts

## 8. DOCUMENTS USED IN THE PREPARATION OF THIS REPORT

8.1 Listed in Table 6 below are documents used in the preparation of this report.

Document type	Source/ Author	Title	Date	Summary
Plan	Nikki Mote Architect	Existing site/roof plan	04/05/2018	DRW No. AR DA 1 00 over SP 33894 No.80 Woodland St, Balgowlah 2093
Plan	Nikki Mote Architect	Proposed site/roof plan	04/05/2018	DRW No. AR DA 1 01 over SP 33894 No.80 Woodland St, Balgowlah 2093
Plan	Nikki Mote Architect	Proposed ground floor plan	04/05/2018	DRW No. AR DA 3 001 over SP 33894 No.80 Woodland St, Balgowlah 2093
Plan	Nikki Mote Architect	Existing & proposed northern elevations	04/05/2018	DRW No. AR DA 5 00 over SP 33894 No.80 Woodland St, Balgowlah 2093
Plan	Nikki Mote Architect	Existing & proposed southern elevations	04/05/2018	DRW No. AR DA 5 01 over SP 33894 No.80 Woodland St, Balgowlah 2093
Plan	Nikki Mote Architect	Existing & proposed southern elevations	04/05/2018	DRW No. AR DA 5 02 over SP 33894 No.80 Woodland St, Balgowlah 2093
Plan	Nikki Mote Architect	Existing & proposed western elevations	04/05/2018	DRW No. AR DA 5 03 over SP 33894 No.80 Woodland St, Balgowlah 2093
Plan	Complete Arborcare	TPZ/SRZ Plan	8/10/2018	TPZ/SRZ plan over SP 33894 No.80 Woodland St, Balgowlah 2093.

Table 6: Documents used in the preparation of this report

## 9. RECOMMENDATIONS/CONCLUSIONS

- 9.1 Tree **T1** shows a cut into both the TPZ & SRZ from the proposed works, it is recommended this tree is removed (no approval from NBC is required due to its location being within 2 metres of a DA approved structure).
- 9.2 Tree **T2** (which is located upon NBC land) has no TPZ encroachments & should not be impacted by the proposed development. According to clause 4.3 of AS 4970-2009, no specific protection is required to be installed due the presence of existing perimeter fencing.
- 9.3 Tree **T3** (which is located upon NBC land) has only a minor (3%) TPZ encroachments & should not be impacted by the proposed development. According to clause 4.3 of AS 4970-2009, no specific protection is required to be installed due the presence of existing perimeter fencing. Activities restricted within the TPZ must be adhered to throughout the entire course of the development (see appendix C).
- 9.4 Tree **T4** has a minor 2% encroachment into its TPZ. No additional TPZ/SRZ encroachments, other than those already existent, will occur. A minor north western upper canopy encroachment may take place upon limbs <60mmØ. According to clause 4.3 of AS 4970-2009, no specific protection is required to be installed due the presence of existing perimeter fencing. Activities restricted within the TPZ must be adhered to throughout the entire course of the development (see appendix C).
- 9.5 Any tree pruning/removal works that may be required, shall be undertaken by an arborist with a minimum AQF level 3 standing. Pruning shall be conducted in accordance with clause 7.2.4 (Selective pruning) of AS 4373-2007 & comply with the current Code of Practice: Amenity tree Industry 1998.

## 10. 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.

## 11. ASSUMPTIONS

Care has been taken to obtain information from reliable resources. All data has been verified insofar as possible; however, the author of this report 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.

This report does not represent or contain a tree risk assessment.

## 12. REFERENCES

IACA, 2010. *IACA Significance of a Tree, Assessment Rating System (STARS)*, Institute of Australian Consulting Arboriculturists, Australia. [Online]

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## RELEVANT APPENDICES - APPENDIX A: GLOSSARY OF TERMS

**Photographs** – all images have been taken from near maps.

**Common name/genus** - the common name and genus/ species of the tree.

**Age Class**- assessment of the trees current age.

**Immature (IM)** - refers to a tree at growth stages between immaturity and full size.

**Semi-mature (SM)** - refers to a full-sized tree with some capacity for further growth.

**Mature (M)**-refers to a full-sized tree with some capacity for further growth.

**Over-mature (OM)** - a mature tree has reached a near stable size (biomass) above and below the ground. Trees can have a Mature Age Class for > 90% of their life span. Over-mature (**OM**) trees show symptoms of irreversible decline and decreasing biomass.

**Live Stag (LS)** - refers to a tree in a significant state of decline. This is the last stage of a tree prior to death.

**Height** -estimated overall height of the tree.

**Tree Protection Zone (TPZ)** - is a “No Go Zone” surrounding a tree to aid in its ability to cope with disturbances associated with construction works. 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.

**Diameter at Breast Height (DBH)** - the trunk diameter at breast height (in metres) of the tree, 1.4 meters above ground level.

**Diameter above the Buttress (DAB)** - refers to the tree trunk diameter measured above the root buttress and is used to calculate the radius of the SRZ.

**Structural root zone (SRZ)** – the structural root zone is the area required for the trees stability. A larger area is required to maintain a viable tree. The SRZ is only needed to be calculated when a major encroachment into the TPZ is proposed. There are many factors that affect the size of the SRZ (e.g. tree height, crown area, soil type, soil moisture). The SRZ may also be influenced by natural or built structures, such as rock and footings.

**Vigour - Good (G), Fair (F) or Poor (P)** - the general appearance of the canopy of the tree at the time of inspection. Vigour can vary with the season and rainfall frequency

**Condition – Excellent (E), Very Good (VG), Good (G), Fair (F), Declining (D), Poor (P),Very Poor (VP).**this refers to the tree’s form & growth habit, as modified by its environment (aspect suppression by other tree/s, soils,) & the state of the scaffold (i.e. 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.

**Deadwood** – this refers to any whole limb that no longer contains living issues (i.e. living leaves & /or bark). Some dead wood is common in a number of species.

**Crown Spread** - the greatest width from drip line to drip line of a branch across the trees crown.

**Crown Form** -the density of foliage (expressed as a percentage), that would be expected to be displayed in a tree of its genus/species. Many factors such as the presence of pests and/or diseases, drought and other associated environmental conditions contribute to crown form.

**Epicormic Growth** - these are advantageous shoots that grow from secondary bud development. They are an indicator that the tree has/or is under stress.

**Live Crown Ratio (LCR)** -the height of a trees crown, relative to the total height of the tree. Often used as an indicator of overall stability.

**Live Crown Size (LCS)** - the area of the crown as viewed from one aspect.

## APPENDIX B: SIGNIFICANCE OF A TREE, ASSESSMENT RATING SYSTEM\* (IACA 2010) – S.T.A.R.S. ©

### Significance of a Tree, Assessment Rating System\* (IACA 2010) – S.T.A.R.S. ©

The landscape significance of a tree is an essential criterion to establish the importance that a particular tree may have on a site. However, rating the significance of a tree becomes subjective and difficult to ascertain in a consistent and repetitive fashion due to assessor bias. It is therefore necessary to have a rating system utilising structured qualitative criteria to assist in determining the retention value for a tree. To assist this process all definitions for terms used in the *Tree Significance - Assessment Criteria* and *Tree Retention Value - Priority Matrix*, are taken from the IACA Dictionary for Managing Trees in Urban Environments 2009.

This rating system will assist in the planning processes for proposed works, above and below ground where trees are to be retained on or adjacent a development site. The system uses a scale of *High*, *Medium* and *Low* significance in the landscape. Once the landscape significance of an individual tree has been defined, the retention value can be determined. An example of its use in an Arboricultural report is shown as Appendix A.



### Tree Significance - Assessment Criteria

#### High Significance in landscape

- The tree is in Good condition and Good vigour;
- The tree has a form typical for the species;
- The tree is a remnant or is a planted locally indigenous specimen and/or is rare or uncommon in the local area or of botanical interest or of substantial age;
- The tree is listed as a Heritage Item, Threatened Species or part of an endangered ecological community or listed on Councils Significant Tree Register;
- The tree is visually prominent and visible from a considerable distance when viewed from most directions within the landscape due to its size and scale and makes a positive contribution to the local amenity;
- The tree supports social and cultural sentiments or spiritual associations, reflected by the broader population or community group or has commemorative values;
- The tree's growth is unrestricted by above and below ground influences, supporting its ability to reach dimensions typical for the taxa *in situ* - tree is appropriate to the site conditions.

#### Medium Significance in landscape

- The tree is in Fair-Good condition and Good or Low vigour;
- The tree has form typical or atypical of the species;
- The tree is a planted locally indigenous or a common species with its taxa commonly planted in the local area
- The tree is visible from surrounding properties, although not visually prominent as partially obstructed by other vegetation or buildings when viewed from the street,
- The tree provides a fair contribution to the visual character and amenity of the local area,
- The tree's growth is moderately restricted by above or below ground influences, reducing its ability to reach dimensions typical for the taxa *in situ*.

#### Low Significance in landscape

- The tree is in fair-poor condition and good or low vigour;
- The tree has form atypical of the species;
- The tree is not visible or is partly visible from surrounding properties as obstructed by other vegetation or buildings,
- The tree provides a minor contribution or has a negative impact on the visual character and amenity of the local area,
- The tree is a young specimen which may or may not have reached dimension to be protected by local Tree Preservation orders or similar protection mechanisms and can easily be replaced with a suitable specimen,
- The tree's growth is severely restricted by above or below ground influences, unlikely to reach dimensions typical for the taxa *in situ* - tree is inappropriate to the site conditions,
- The tree is listed as exempt under the provisions of the local Council Tree Preservation Order or similar protection mechanisms,
- The tree has a wound or defect that has potential to become structurally unsound.

**Environmental Pest / Noxious Weed Species**

- The tree is an Environmental Pest Species due to its invasiveness or poisonous/ allergenic properties,
- The tree is a declared noxious weed by legislation.

**Hazardous/Irreversible Decline**

- The tree is structurally unsound and/or unstable and is considered potentially dangerous,
- The tree is dead, or is in irreversible decline, or has the potential to fail or collapse in full or part in the immediate to short term.

**The tree is to have a minimum of three (3) criteria in a category to be classified in that group.**

Note: The assessment criteria are for individual trees only, however, can be applied to a monoculture stand in its entirety e.g. hedge.

Institute of Australian Consulting Arboriculturists (IACA 2010), *IACA Significance of a Tree, Assessment Rating System (STARS)*, [www.iaca.org.au](http://www.iaca.org.au)

**Table 1.0 Tree Retention Value - Priority Matrix.**

		Significance				
		1. High	2. Medium	3. Low		
		Significance in Landscape	Significance in Landscape	Significance in Landscape	Environmental Pest / Noxious Weed Species	Hazardous / Irreversible Decline
Estimated Life Expectancy	1. Long >40 years					
	2. Medium 15-40 Years					
	3. Short <1-15 Years					
	Dead					
Legend for Matrix Assessment						
	<b>Priority for Retention (High)</b> - These trees are considered important for retention and should be retained and protected. Design modification or re-location of building/s should be considered to accommodate the setbacks as prescribed by the Australian Standard AS4970 <i>Protection of trees on development sites</i> . Tree sensitive construction measures must be implemented e.g. pier and beam etc if works are to proceed within the Tree Protection Zone.					
	<b>Consider for Retention (Medium)</b> - These trees may be retained and protected. These are considered less critical; however their retention should remain priority with removal considered only if adversely affecting the proposed building/works and all other alternatives have been considered and exhausted.					
	<b>Consider for Removal (Low)</b> - These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.					
	<b>Priority for Removal</b> - These trees are considered hazardous, or in irreversible decline, or weeds and should be removed irrespective of development.					

**USE OF THIS DOCUMENT AND REFERENCING** The IACA Significance of a Tree, Assessment Rating System (STARS) is free to use, but only in its entirety and must be cited as follows: IACA, 2010, *IACA Significance of a Tree, Assessment Rating System (STARS)*, Institute of Australian Consulting Arboriculturists, Australia, [www.iaca.org.au](http://www.iaca.org.au)

**REFERENCES** Australia ICOMOS Inc. 1999, *The Burra Charter –The Australian ICOMOS Charter for Places of Cultural Significance*, International Council of Monuments and Sites, [www.icomos.org/australia](http://www.icomos.org/australia) Draper BD and Richards PA 2009, *Dictionary for Managing Trees in Urban Environments*, Institute of Australian Consulting Arboriculturists (IACA), CSIRO Publishing, Collingwood, Victoria, Australia. Footprint Green Pty Ltd 2001, *Footprint Green Tree Significance & Retention Value Matrix*, Avalon, NSW Australia, [www.footprintgreen.com.au](http://www.footprintgreen.com.au)

IACA 2010, *IACA Significance of a Tree, Assessment Rating System (STARS)*, Institute of Australian Consulting Arboriculturists, [www.iaca.org.au](http://www.iaca.org.au)

## APPENDIX C: ACTIVITIES RESTRICTED IN THE TREE PROTECTION ZONE

Tree Protection Zones (TPZs), will be set out before the commencement of construction works.

According to AS 4970-2009, activities excluded from the TPZ include but are not limited to:-

- (a) machine excavation including trenching
- (b) excavation for silt fencing
- (c) cultivation
- (d) storage
- (e) preparation of chemicals, including preparation of cement products
- (f) parking of vehicles and plant
- (g) refuelling
- (h) dumping of waste
- (i) wash down and cleaning of equipment
- (j) placement of fill
- (k) lighting of fires
- (l) soil level changes
- (m) temporary or permanent installation of utilities and signs
- (n) physical damage to the tree.

Source Australian Standard AS 4970-2009 *Protection of trees on development sites*.

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TPZ & SRZ PLAN WITH TREE PROTECTION ZONES AND STRUCTURAL ROOT ZONES SHOWN TO SCALE.  
PLAN HAS BEEN OVERLAYED ON THE SITE/ROOF PLAN – PROPOSED, BY NIKKI MOTE ARCHITECT (04/05/2018)

PLAN SHOWS LOCATION OF TREES WITH TRUNK CENTERS MARKED AND TREE PROTECTION ZONES  
AND STRUCTURAL ROOT ZONES SHOWN TO SCALE.

THIS PLAN SHOULD BE READ IN CONJUNCTION WITH THE ARBORICULTURAL IMPACT ASSESSMENT FOR 80 WOODLAND ST SOUTH, BALGOWLAH NSW 2093

PREPARED BY COMPLETE ARBORCARE  
20/11/2018

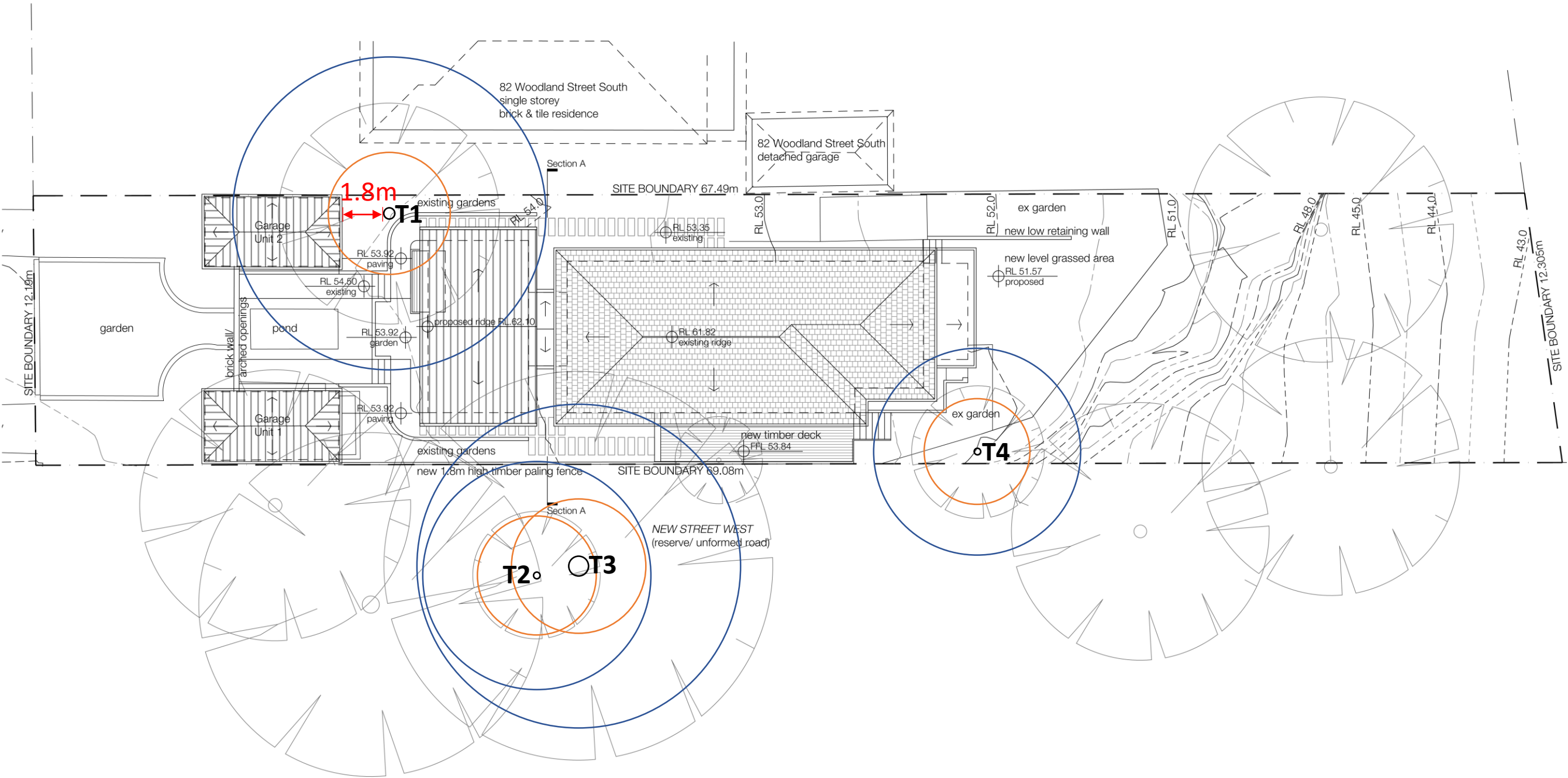
LEGEND: TREE PROTECTION ZONE STRUCTURAL ROOT ZONE



Check all dimensions and site conditions prior to commencement of any work, the purchase or ordering of any materials, fittings, plant, services or equipment and the preparation of shop drawings and/or the fabrication of any components.  
Do not scale drawings - refer to figured dimensions only. Any discrepancies shall immediately be referred to the architect for clarification.  
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- existing double-brick wall
- existing single brick wall
- proposed timber-framed wall
- proposed masonry wall (brick veneer)
- wall to be demolished

- LEGEND
- cbd cupboard
  - dp downpipe
  - dw dishwasher
  - ex existing
  - f fridge
  - fg fixed glazing
  - fp fireplace (gas)
  - gl glazed louvres
  - ogl opaque glazed louvres
  - p pantry
  - wrm washing machine



01 Site/ Roof Plan - Proposed  
1:200@A3

Rev. Date Description

Paul Duggan & Alexandra Brown

80 Woodland St South  
Balgowlah  
SP 33894

Site/ Roof Plan - Proposed

Status Development Application  
Scale 1:200 @ A3  
Project no. 1705  
Date 04.05.18

Drawing no. AR DA 1 01

Discipline Stage/ Package Type No Revision

Drawn by:



Nikki Mote Architect  
NSW ARB Reg# 8638  
0420 503363  
nikki@nikkimotearchitect.com