Arboricultural Impact Assessment (AIA) report

for Louise St John Kennedy (Designer) regarding

18 Olphert Avenue, Vaucluse, NSW.

By David Shrimpton
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5/5/2020 V2

Office : 29 Evans St, Bronte, NSW 2024

Contents

1. Introduction

I was asked to attend the property at 18 Olphert Avenue, Vaucluse, NSW (also referred to hereafter as the site) by Louise St John Kennedy (Designer) to provide an Arboricultural Impact Assessment Report (AIA) in relation to a proposed DA for the property. This report is intended for the use by the owner, Council and the Project Manager/Builder.

Nine trees where located on the site which could be potentially affected by the development at the above address. No other trees were located on adjacent properties that would be affected by the development.

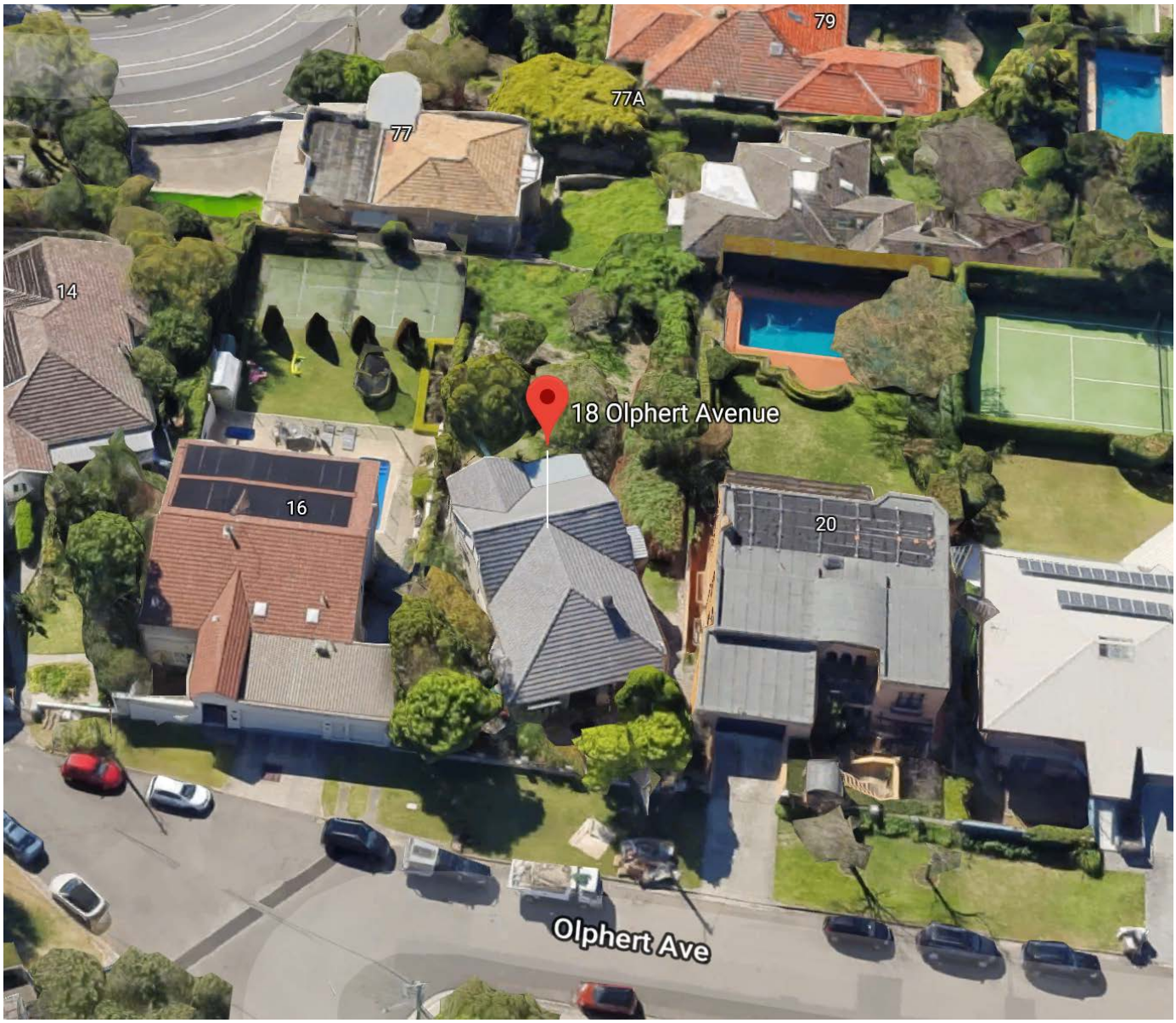

Fig 1.1 The site is shown with a red pin.

2. Aim

The aim of this report is to identify all trees to be removed, retained and or transplanted. The report will note any incursions to tree protection zones (TPZs) or to tree canopy spreads. If incursions are found, modifications will be outlined to mitigate or avoid the adverse impact to the trees in question. A tree protection plan will outline the measures to be implemented prior to and during the construction period. The exact location of the tree protection zone and fence positioning will be showing in a map. Any special tree protection measures will also be addressed. *AS4373-2007 Pruning of Amenity Trees* and *AS4970-2009 Protection of Trees on Development Sites* will be referenced in regard to all works. This report is designed to be used and relied upon by all persons working on the development site. It has also been designed so that council can directly reference the detail in the planning conditions. As such, allowing this report to be referred to directly and making the recommendations conditions of consent for the site.

3. Method

During the inspection various tools were used, including:

- A diameter tape for measuring the girth of the trunk.
- A camera for taking photographs.
- A clinometer for measuring the tree height.
- A Thor 710 hammer for sounding trunk and cavities
- A metal probe for assessing cavities

A Visual Tree Assessment (using the basic criteria outlined by Mattheck et al) was also undertaken (see 9. TreeABC Results p.6). The information recorded also included the height, diameter, crown spread ect. The Heritage, Ecological and Amenity values were also considered using an aspect of the classification for landscape significance (Morton, A) (Appendix A). The results were then applied into 'TreeABC' (Barrell, 2016) (Appendix B). TreeABC is an international method for assessing the importance of trees in the urban environment. It assigns categories of A, B, C and U with subcategories available for further explanation. These categories reflect which trees should be considered a material constraint, and which should not. TreeABC is an evolution of SULE (Safe Use Life Expectancy) (Barrell 1988) and TreesAZ (Barrell 2015).

After reviewing the initial construction plans, the general impacts of the proposed development could be understood. The application of a diagram and tabulated data were used to show this information.

The trees were given protective guidelines as per AS4970-2009 Protection of Trees on Development Sites to reduce any impact found. These specifications include tree protection measures and the use of hold points.

4. TreeABC Results

Id	Species- *Botanical* / Common name	Maturity	Height	Spread	DBH-cm	TPZ -R	DAB-cm	SRZ	Overall Health rating	Overall Condition rating	Heritage Value	Ecological Value	Amenity Value	TreeABC	Other
1	Plumeria sp. - Frangipani	M (Mature)	3.8	5	5/15/15/18/11/5/10/4/4 = 29	3.43r / 36.91m2	31	2.02r	Fair	Fair	N/A	Moderate	Low	C1.Size	-
2	Michelia figo - Port Wine Magnolia	ST (Senescent)	4.6	4	15/7.5/10/12.5/12/9/9/10/10/6.5/6.5/12/13.5=37	4.44r / 61.9m2	101	-	Fair	Poor	N/A	Moderate	Low	C3.Health	Lopped with areas of decay. Tree has either grown from an old stump or has been coppicied. See Figs 1.2 and 1.3.
3	Cupressus torulosa - Bhutan Cypress	M (Mature)	10.8	6	59/31=67	8r / 200.9m2	56	-	Good	Good	N/A	Moderate	Moderate	B. retained with limited intervention	Significantly crown lifted. See Fig 1.4.
4	Ceratopetalum gummiferum - NSW Christmas Bush	M (Mature)	8.8	6	24/22= 33	3.91r / 47.93m2	39	-	Fair	Poor	N/A	High	High	B. retained with limited intervention	Notable decay present in trunk. See 1.5 and 1.6.
5	Acmena smithii - Lilly Pilly	M (Mature)	9	5	33	3.91r / 47.93m2	37	-	Good	Fair	N/A	High	High	B. retained with limited intervention	Hazard beam in trunk. See Fig 1.7
6	Jacaranda mimosifolia - Jacaranda	ST (Senescent)	10	9	28/21/34= 49	5.86r / 107.7m2	54	-	Fair	Poor	N/A	Moderate	Moderate	C9.Benefit nearby trees	Suppressed and overcompeting with Acmena. See Fig 1.7
7	Pittosporum undulatum - Sweet Pittosporum	M (Mature)	8	5	25	3r / 28.2m2	28	-	Fair	Fair	N/A	High	Low	B. retained with limited intervention	Suppressed and overcompeting with Acmena. See Fig 1.7
8	Cupressus torulosa - Bhutan Cypress	M (Mature)	9	4	34	4.08r / 52.3m2	37	-	Good	Poor	N/A	Moderate	Moderate	C3.Health	Lopped with heavy epicormic regrowth. Significantly crown lifted. See Fig 1.8.
9	Pittosporum undulatum - Sweet Pittosporum	M (Mature)	8	6	31/28=42	5.01r / 78.9m2	47	-	Fair	Fair	N/A	High	Low	B. retained with limited intervention	-

TreeABC Categories - **See Appendix B for further information**

Category U (unsuitable for retention): Any remaining trees that are unsuitable for retention because they are dead; in irreversible decline; and/or have irremediable structural conditions; and/or are causing severe structural damage or inconvenience, are categorised as U.

Category C (low quality): Any remaining trees are systematically reviewed to decide if they fit into any of the four C subcategory groups.

Category B (moderate quality): Any remaining trees are automatically category B, with the possibility of being promoted to category A.

Category A (high quality) Ancient/veteran: Each tree is assessed by a visual check. If it is a veteran/ancient tree, then it is automatically categorised as A2, and not subjected to any of the category U, C or B considerations.

Fig 1.2. Tree 2 had been lopped with areas of decay. Deadwood had been recently removed. Tree has either grown from an old stump or has been coppiced at some point in the past.

Fig 1.3 Tree 2 was senescent and in poor condition.

Fig 1.4. Tree 3 had been significantly crown lifted.

Fig 1.5. Tree 4 was a tree of some age for its species. It was in poor condition.

Fig 1.6. Tree 4 had notable decay in the trunk when sounded and probed.

Fig 1.7. Trees 5, 6 and 7 are shown. The have been over-planted and are in competition.

Fig 1.8. Tree 8 had been lopped some time in the past, heavy epicormic growth was present. The tree had been significantly crown lifted.

5. Table of Plans Relied Upon

Schedule of Plans and Drawings

Author	Title	Drawing Number	Date	Original Drawn
Hill & Blume	Site Survey	61199001A	31/10/19	Not Listed
Louise St John Kennedy (Designer)	LANDSCAPE PLAN	DA.07	17/10/19	Not Listed
Louise St John Kennedy (Designer)	LOWER FLOOR PLAN	DA.08	17/10/19	Not Listed
Louise St John Kennedy (Designer)e	BASEMENT PLAN	DA.09	17/10/19	Not Listed
Louise St John Kennedy (Designer)	WEST ELEVATION	DA.10	17/10/19	Not Listed

6. Impact Assessment Schedule

Tree No.	Common Name	TreeABC rating	Construction tolerance	TPZ - m R and total Sq	SRZ- mR	Proposed encrt. to TPZ or canopy m2 and %	Minor or Major impact as per AS4970	Likely impact	Recommendations
1	Plumeria sp. - Frangipani	C1.Size	High	3.43r / 36.91m2	2.02r	-	Major	Tree to be transplanted.	As per tree protection plan.
2	Michelia figo - Port Wine Magnolia	C3.Health	Moderate	4.44r / 61.9m2	-	15.1+15.2=30.2m2 or 48%	Major	Tree cannot be retained.	Proposed design requires tree to be removed.
3	Cupressus torulosa - Bhutan Cypress (north)	B. retained with limited intervention	High	8r / 200.9m2	-	27.8+14.1+15.1 =57m2 or 28%	Major	Tree inside Footprint of Spa.	Proposed design requires tree to be removed.
4	Ceratopetalum gummiferum - NSW Christmas Bush	B. retained with limited intervention	Low	3.91r / 47.93m2	-	2m2 or 4%	Minor	No impact expected.	To to be retained and protected as per tree protection plan.
5	Acmena smithii - Lilly Pilly	B. retained with limited intervention	Moderate	3.91r / 47.93m2	-	10.9m2 or 22.7%	Major	Tree cannot be retained.	Proposed design requires tree to be removed.
6	Jacaranda mimosifolia - Jacaranda	C9.Benefit nearby trees	Moderate	5.86r / 107.7m2	-	66.1m2 or 61.3%	Major	Tree cannot be retained.	Proposed design requires tree to be removed.
7	Pittosporum undulatum - Sweet Pittosporum (west)	B. retained with limited intervention	High	3r / 28.2m2	-	6.9+ 0.5m2 or 26.2%	Major	Tree cannot be retained.	Proposed design requires tree to be removed.
8	Cupressus torulosa - Bhutan Cypress (south)	C3.Health	High	4.08r / 52.3m2	-	-	-	Footprint of garage over tree.	Proposed design requires tree to be removed.
9	Pittosporum undulatum - Sweet Pittosporum (east)	B. retained with limited intervention	High	5.01r / 78.9m2	-	-	-	Footprint of garage over tree.	Proposed design requires tree to be removed.

7. Tree Location Map

Additional drawing completed by David Shrimpton of Koala Arbor. IF PRINTED, THIS MAP MUST BE AT A3 MINIMUM AS INTENDED TO BE LEGIBLE.

KEY

TPZ

ROOF LANDSCAPE PLAN

LANDSCAPE PLAN

OLPHERT AVENUE

SITE ANALYSIS:
LANDSCAPED + PRIVATE OPEN SPACE CLAUSE B3.7.1

DEEP SOIL

TOTAL SITE
REQUIRED 280.9175M2 50%
PROVIDED 420.235M2
74.79%

FRONT SET BACK
REQUIRED 25.5328M2 40%
PROVIDED 32.765M2 51.33%

REAR SET BACK
REQUIRED 184.15M2 50%
PROVIDED 295.91M2 80%

PRIVATE OPEN SPACE
REQUIRED 35M2 AT LESS THAN 1:10: IN EXCESS PROVIDED

LANDSCAPING KEY
- FRUIT TREE
- NATIVE MURRAYA PANICULATA HEDGE 3M HT
- NATIVE ZANTHOREA BLACK BOY IN RAPHIOLEPSIS INDICA: INDIAN HAWTHORN OR BUXUS HEDGE: BUXUS MICROPHYLLIA JAPONICA: JAPANESE BOX HEDGE. 1 -1.5M HT
- CREEPER VIRGINIA OR SIMILAR
- NATIVE ALOCASIA BRISBANENSIS: CUNJEVOI ELEPHANT EARS
- NATIVE DICHONDRA IN PAVING
- SCULPTURE
- LAWN
- PAVING + POOL

0 1 2 5 10

LOUISE ST JOHN KENNEDY

BUILDING DESIGN | INTERIOR ARCHITECTURE | LANDSCAPE
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TEXTS TELEPHONE +61 412 988 266

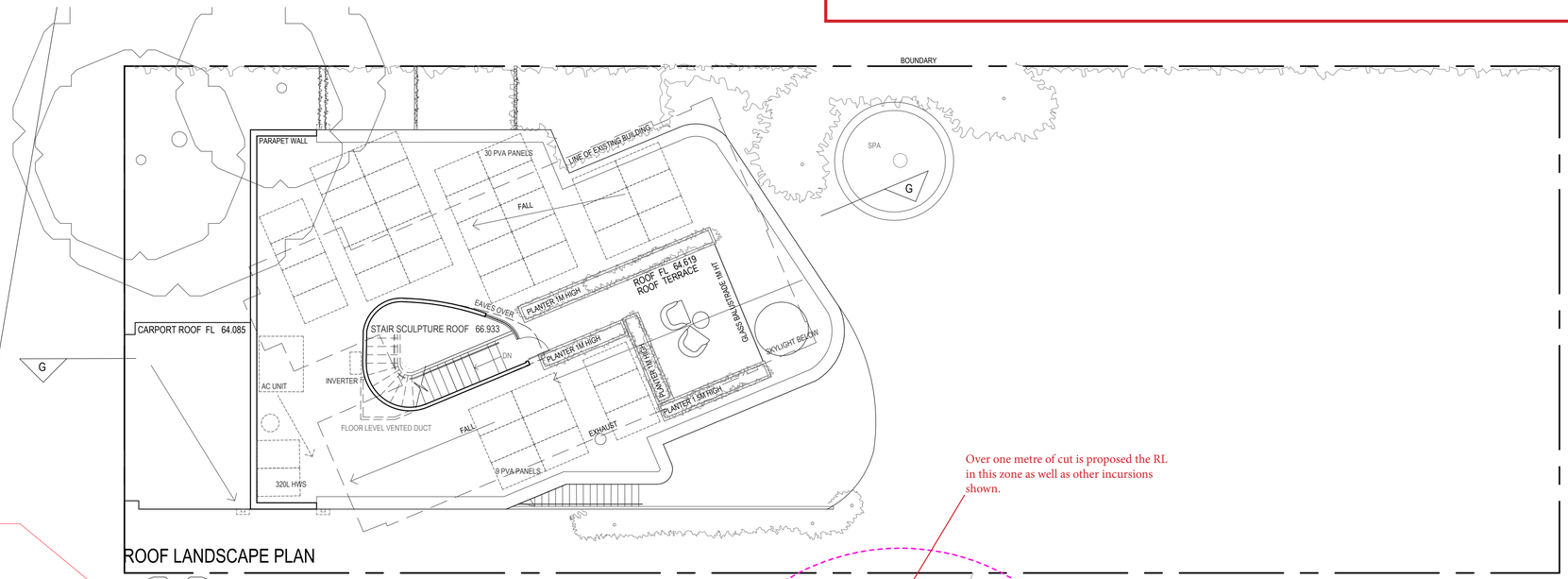
OLPHERT AVENUE RESIDENCE

CAMPBELL D TAYLOR + SARAH J CURTIS
+ AUTUMN, RUPERT + PALOMA
18 OLPHERT AVENUE VAUCLUSE SYDNEY NSW 2030
DATE 17.10.2019 PLOT 28.11.2019 SCALE 1:100 @ A1

DA.07

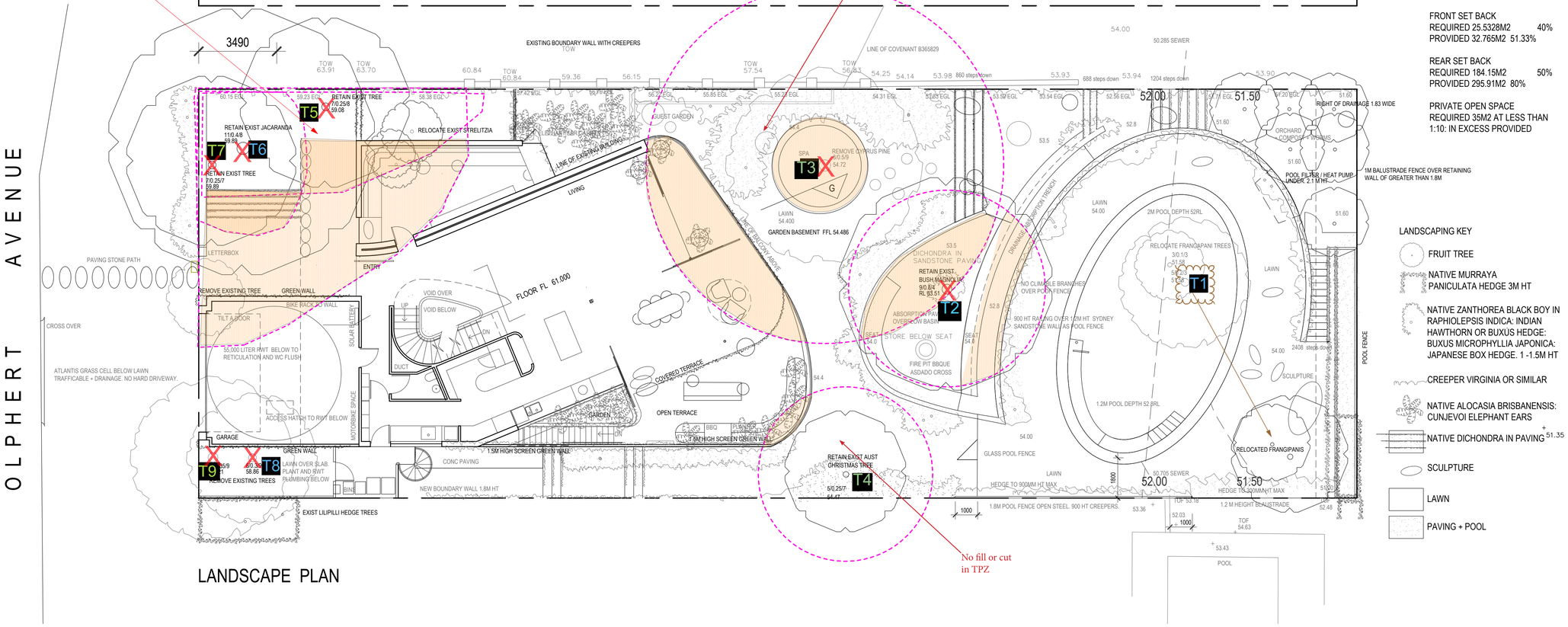
LANDSCAPE PLAN

Additional drawing completed by David Shrimpton of Koala Arbor. IF PRINTED, THIS MAP MUST BE AT A3 MINIMUM AS INTENDED TO BE LEGIBLE.



Level changes owith both cut and fill are also proposed around Tree 5 and 6

Over one metre of cut is proposed the RL in this zone as well as other incursions shown.



KEY

TPZ

Incursion areas

Tree removal X

Tree Transplant

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LANDSCAPE PLAN

9. Discussion

9.1 The Proposed Development

The proposed development will see the existing house removed and a new house built. The development includes notable RL changes due to the sloping nature of the site. A swimming pool and a spa are also proposed as well as soak away trenches and significant hard landscaping items.

9.2 The Tree Removal And Retention

The proposed development will require the removal of trees 2, 3, 5, 6, 7, 8 and 9. All these trees have major incursions with no mitigating options due to the nature of the proposed works (i.e basements and level changes).

Of these trees proposed for removal, numbers 2, 6 and 8 are category C trees and as such are regarded as low quality. Trees 3, 5, 7 and 9 are also proposed for removal and are rated as category B moderate quality (TreeABC).

Of the trees being retained, tree 4 is proposed for retention due to only a minor impact. Tree 1 is proposed for transplanting to elsewhere on the site.

Tree 1 is a category C tree low quality and tree 4 is rated as category B moderate quality (TreeABC).

9.3 Pruning

No pruning is required to the trees on site due to the proposed building works.

9.4 Trees Retained - TPZ's and Incursion by The Proposed Works

As per *AS4970-2009 Protection of Trees on Development Sites*, 3.3.4 (g) states a TPZ can be modified due to physical obstacles. Of most note in this regard are the following: Trees 5, 6 and 7 have modified TPZ's. This is due to the double story brick wall to the east and the long standing retaining wall to the south. As such the TPZ m2 for each tree has been broadcast over the existing site as the tree roots would be expected to be growing.

9.5 Works Beyond The Current Scope - Please Be Aware

Any yet to be finalised plumbing or electrical work that overlaps with the TPZ as shown on page 21 “TPZ’s and Incursions Map” will need to be considered or avoided. Often trees are significantly damaged by things such as the above or other services like irrigation. The installation of new plants should be achieved with smaller pots sizes if possible to reduce the impact on the TPZ.

10. Conclusion

Trees 2, 3, 5, 6, 7, 8 and 9 will require removal due to the proposed development. Tree 1 will be transplanted and Tree 4 retained.

Of the trees to be retained, Tree 4 is a category B tree. Of the trees to be removed, 3, 5, 7 and 9 are also category B trees. There are no category A trees on site.

To mitigate the loss of low and moderate quality trees from the site, a replant commitment could be applied to the development application to ensure an equal number of trees are planted and a their successful establishment achieved to replace the trees proposed for removal. The same number of trees have been proposed on the site and street frontage.

Significant damage to trees can occur from yet to be specified services. The project arborist will need to be aware of any proposed changes or yet to be specified locations of services. This may include plumbing, electrical works and landscaping.

11. Recommendations

Tree 1 should be transplanted and tree 4 should be retained and protected during the construction period as per *AS4970-2009 Protection of Trees on Development Sites*. This should include a sign on the trees of the project arborist details as well as at the front of the property.

Any works undertaken around the trees to be retained should be as per the Tree Protection Plan included in this report. Hold points and compliance letters should be obtained at critical stages of the construction to ensure the trees are not impacted by the proposed works.

With council permission, the trees 2, 3, 5, 6, 7, 8 and 9 marked for removal should be completed before building works commence at the site.

A replanting commitment should be considered by council if the proposed development is approved. It is noted that seven new trees are shown on the plans (including one street tree) which may suffice.

Appendix D has a quick site reference for the recommendations and other hold points as per *AS4970-2009* from stage 3 of this report.

Tree Protection Plan / Specifications

12. Specifications for Tree Protection Measures

A pre-construction meeting should be attended by the site manager, the project arborist and contractors to introduce the Tree Protection Plan and its requirements as found in this report. These measures are listed below. A copy of this section of the report should be kept on site and all contractors inducted to upon starting at this site.

A. Once approved, trees marked for removal and all the work should be completed by a minimum AQF Level 3 Arborist with all insurances required for undertaking the work being valid and up to date.

B. A protective fence should be installed as indicated on the Tree Removal, Retention and Protection Map found on Page 22. The fence should be a 1.8m high chain-link fence with concrete feet (see Fig 1.9). The fence must be locked at all times and access is only to be granted with approval from the Project Arborist. The fence must be maintained for the entirety of the project. Appropriate signs must be displayed on the fence with the words TPZ clearly shown (see Fig 2.0).

C. Ground protection should be added to the ground as shown in the Tree Removal, Retention and Protection Map found on Page 22 to assist in the protection of Tree 3. The material must remain in place for the length of the project. It also must not be a trip hazard. 20mm thick marine ply or truck mats such as the Envirex product, Versadeck

(www.envirex.com.au) should be considered.

D. No storage of materials (OR WORKS) of any kind other than those approved in the DA can be carried out within the TPZ without the strict agreement of the project arborist. The Project Arborist should explain where the TPZ is and the effect various actions can have on the tree to the principle contractor. Items such as designated cutting/refuelling area should be selected and agreed. These should not be in the TPZ.

E. Mulch 75mm deep covering the inside of the fenced area for tree 3 should be installed wide (but not placed hard up against the trunk itself).

G. Hold points will be agreed to prior to the commencement of works. A minimum of three (3) will be required unless the project arborist considers more to be needed due to the construction process. The minimum hold points should consist of the following:

1. Prior to commencement of construction to ensure the correct tree protection is in place and that mulch has been added to the TPZ of tree 3.
2. During the general works to ensure all tree and ground protection are remaining in place.
3. For final sign off on the completion of works. Please see the quick reference guide Appendix C.

Signed

David Shrimpton
Koala Arbor Consulting Arborists
David Shrimpton Qualifications (AQF's) from Ryde TAFE and private courses:
AQF Level 3 Arborist (Credit)
AQF Level 3 Parks and Gardens (Distinction)
AQF Level 5 Arborist (Distinction)
Advanced QTRA registration number: 4193
TRAQ Certified
VALID Certified

13. References

Mattheck, C. and Breloer, H. 1999 The Body Language of Trees: A Handbook for Failure Analysis, The Stationary Office, Norwich, England.

Morton, A (2006) Determining the Retention Value of Trees on Development Sites. TreeNet - Proceedings of the 7th National Street Tree Symposium 2006 Government of South Australia Department for Transport, Energy and Infrastructure

Barrell. J, TreeABC. 2016 http://www.treeaz.com

Additional drawing completed by David Shrimpton of Koala Arbor. IF PRINTED, THIS MAP MUST BE AT A3 MINIMUM AS INTENDED TO BE LEGIBLE.

KEY

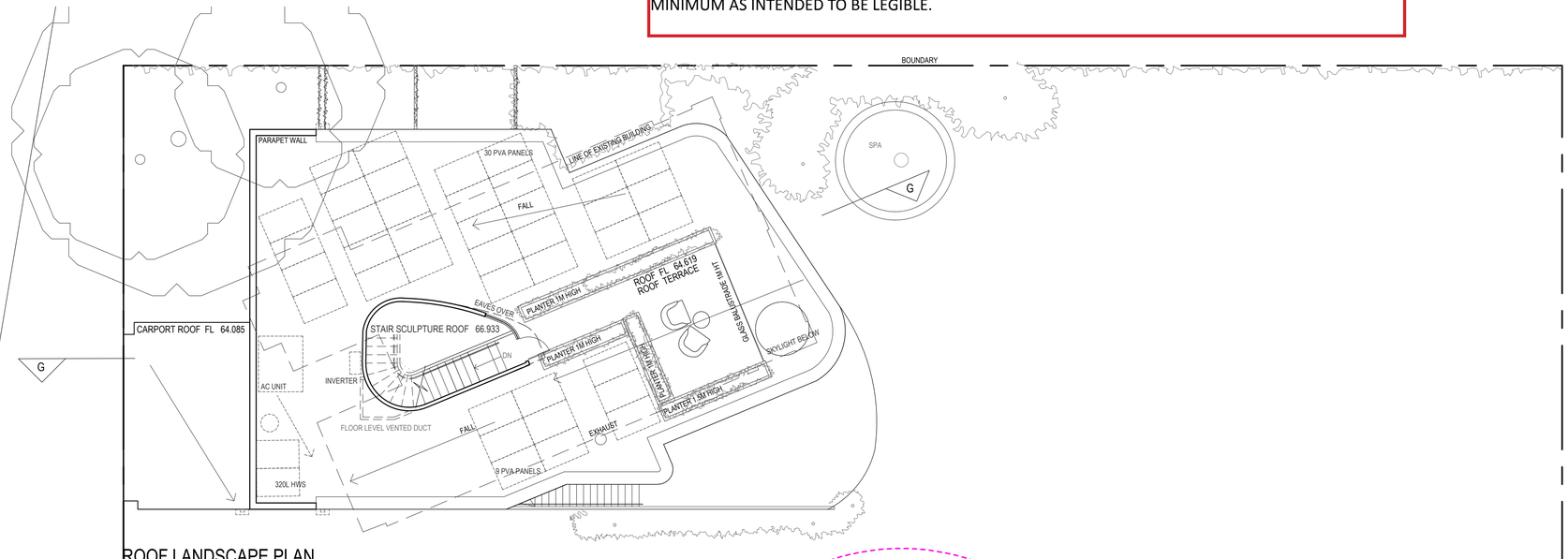
1.8m High mesh fence

Ground protection

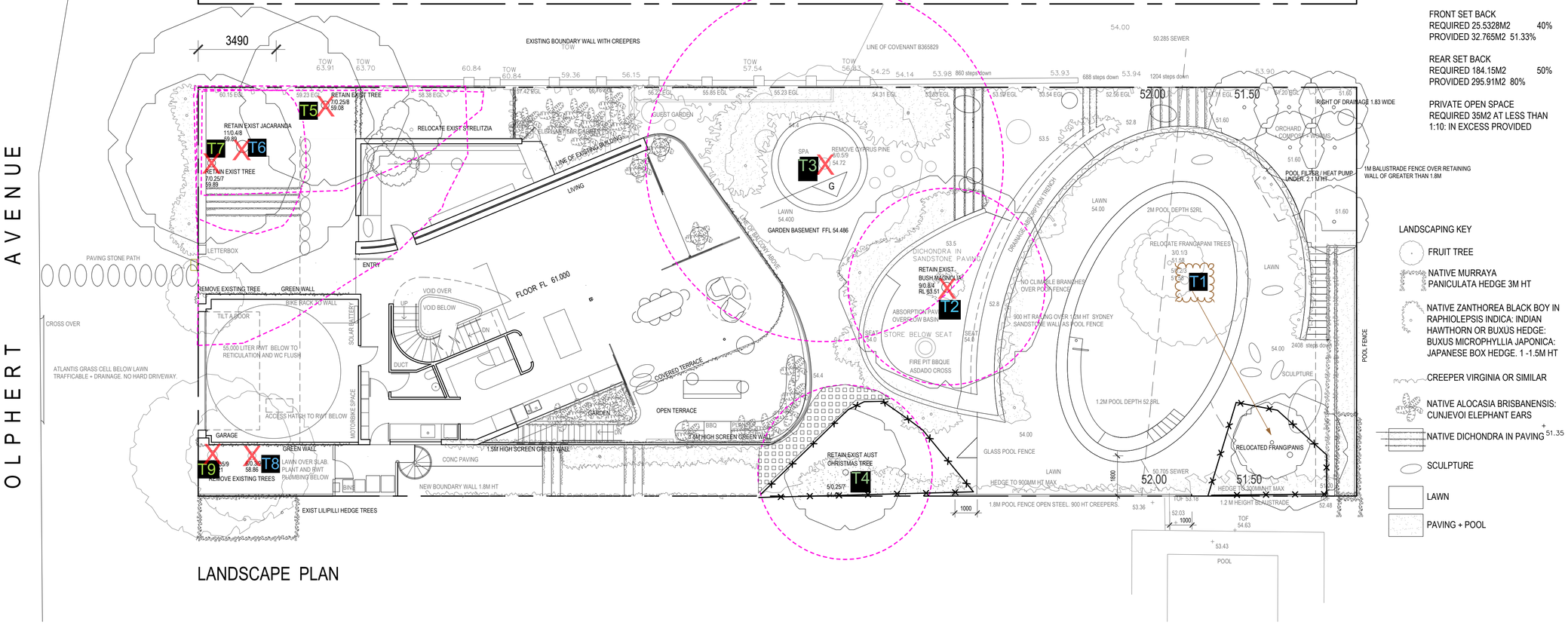
TPZ

Tree removal X

Tree Transplant



ROOF LANDSCAPE PLAN



LANDSCAPE PLAN

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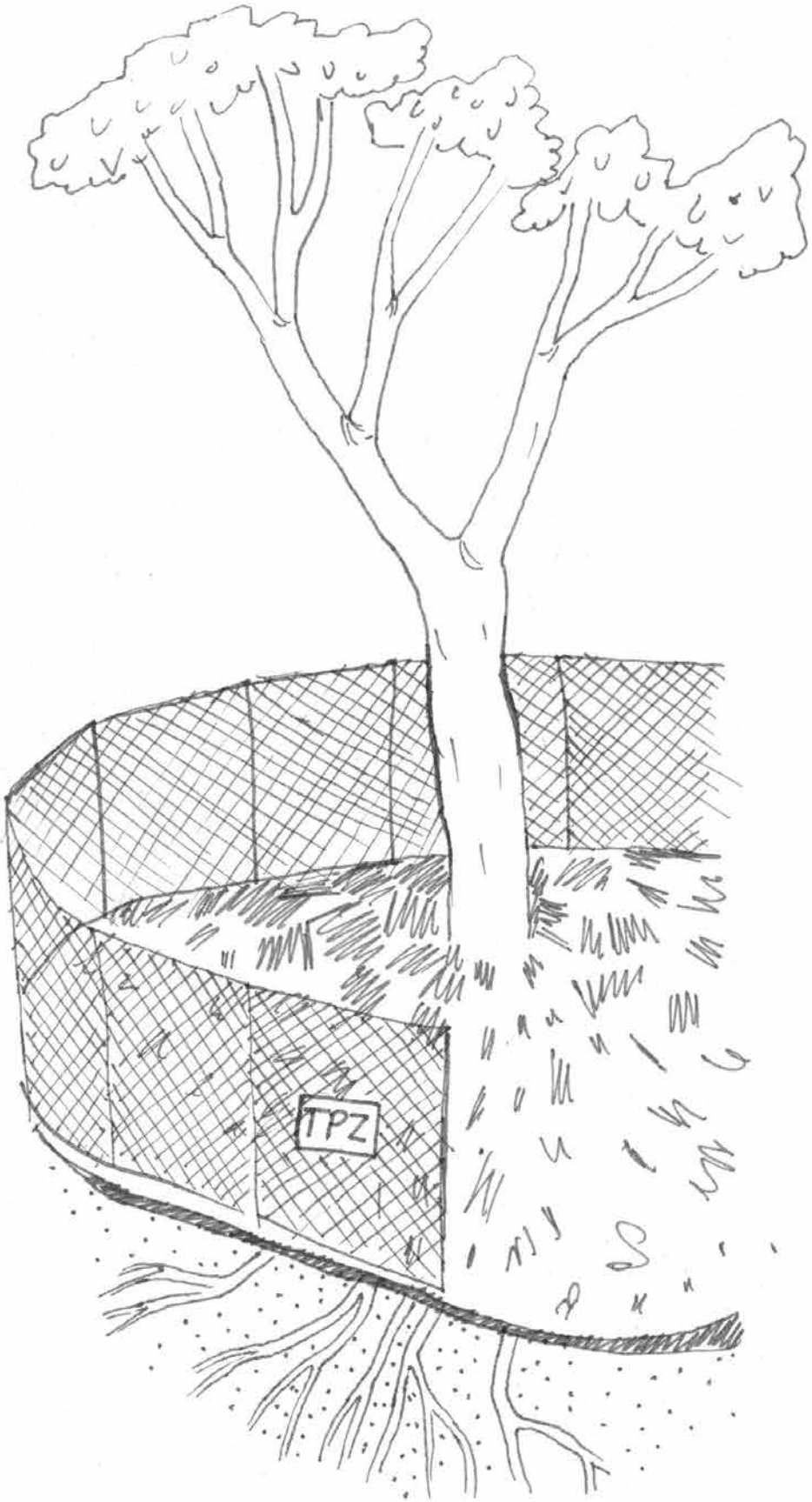

TPZ fence to be 1.8 meters high chain link fence with concrete feet

Fig 1.9 Examples of sufficient TPZ fencing.

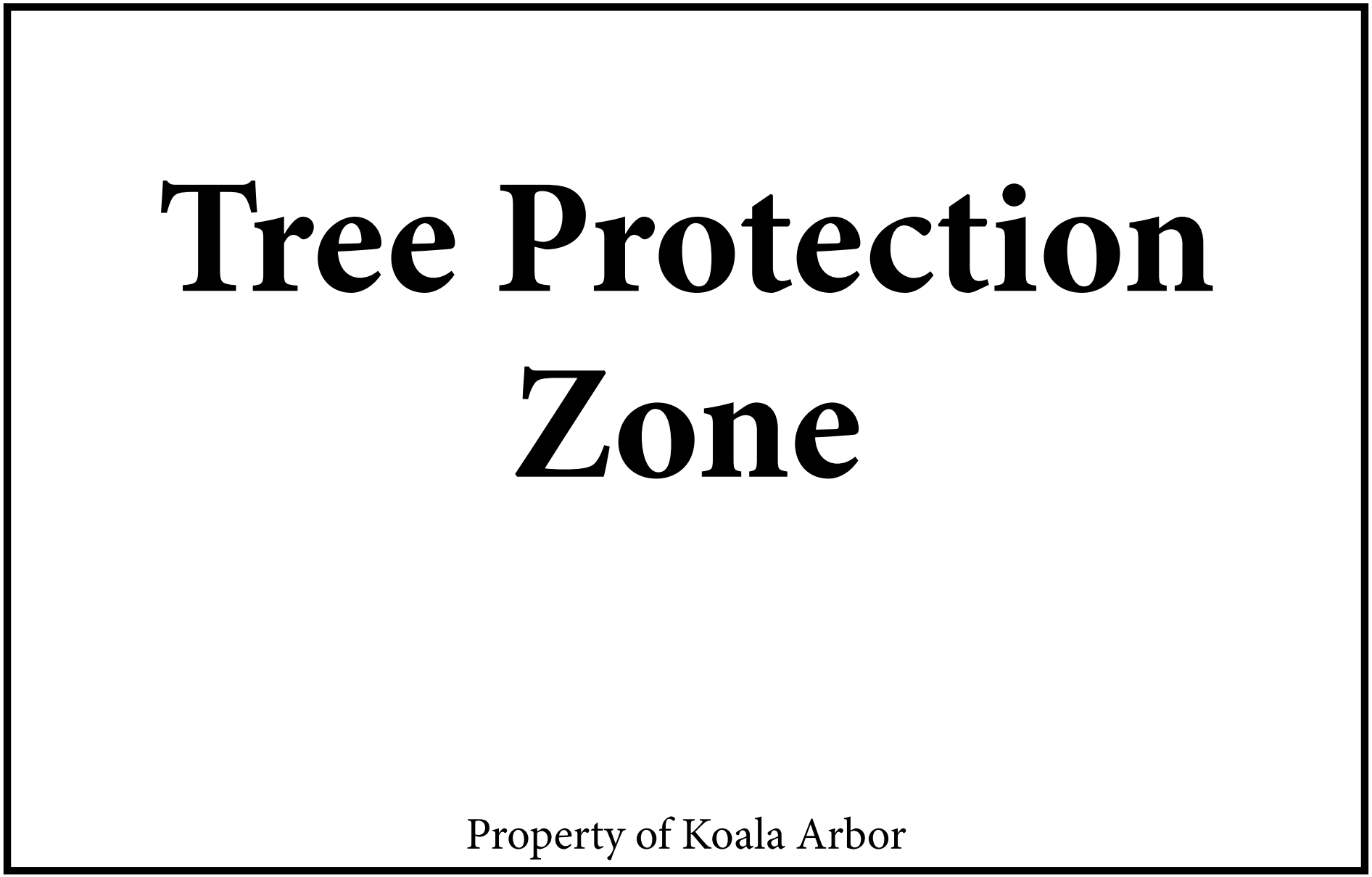

Fig 2.0 Example of TPZ sign.

Appendix A - Determining Landscape Significance

TABLE 3 – DETERMINING LANDSCAPE SIGNIFICANCE RATING

RATING	HERITAGE VALUE	ECOLOGICAL VALUE	AMENITY VALUE
1. SIGNIFICANT	The subject tree is listed as a Heritage Item under the Local Environment Plan (LEP) with a local, state or national level of significance or is listed on Council's Significant Tree Register	The subject tree is scheduled as a Threatened or Vulnerable Species as defined under the provisions of the *Biodiversity Conservation Act 2016* (NSW) or the *Environment Protection and Biodiversity Conservation Act 1999*.	The subject tree has a very large live crown size exceeding 300m² with normal to dense foliage cover, is located in a visually prominent position in the landscape, exhibits very good form and habit typical of the species
	The subject tree forms part of the curtilage of a Heritage Item (building /structure /artefact as defined under the LEP) and has a known or documented association with that item	The tree is a locally indigenous species, representative of the original vegetation of the area and is known as an important food, shelter or nesting tree for endangered or threatened fauna species	The subject tree makes a significant contribution to the amenity and visual character of the area by creating a sense of place or creating a sense of identity
	The subject tree is a Commemorative Planting having been planted by an important historical person (s) or to commemorate an important historical event	The subject tree is a Remnant Tree, being a tree in existence prior to development of the area	The tree is visually prominent in view from surrounding areas, being a landmark or visible from a considerable distance.
2. VERY HIGH	The tree has a strong historical association with a heritage item (building/structure/artefact/garden etc) within or adjacent the property and/or exemplifies a particular era or style of landscape design associated with the original development of the site.	The tree is a locally-indigenous species, representative of the original vegetation of the area and is a dominant or associated canopy species of an Endangered Ecological Community (EEC) formerly occurring in the area occupied by the site.	The subject tree has a very large live crown size exceeding 200m²; a crown density exceeding 70% (normal-dense), is a very good representative of the species in terms of its form and branching habit or is aesthetically distinctive and makes a positive contribution to the visual character and the amenity of the area
3. HIGH	The tree has a suspected historical association with a heritage item or landscape supported by anecdotal or visual evidence	The tree is a locally-indigenous species and representative of the original vegetation of the area and the tree is located within a defined Vegetation Link / Wildlife Corridor or has known wildlife habitat value	The subject tree has a large live crown size exceeding 100m²; The tree is a good representative of the species in terms of its form and branching habit with minor deviations from normal (e.g. crown distortion/suppression) with a crown density of at least 70% (normal); The subject tree is visible from the street and surrounding properties and makes a positive contribution to the visual character and the amenity of the area
4. MODERATE	The tree has no known or suspected historical association, but does not detract or diminish the value of the item and is sympathetic to the original era of planting.	The subject tree is a non-local native or exotic species that is protected under the provisions of the local or state planning controls (Development Control Plan etc).	The subject tree has a medium live crown size exceeding 40m²; the tree is a fair representative of the species, exhibiting moderate deviations from typical form (distortion/suppression etc) with a crown density of more than 50% (thinning to normal); and
			The tree is visible from surrounding properties, but is not visually prominent – view may be partially obscured by other vegetation or built forms. The tree makes a fair contribution to the visual character and amenity of the area.
5. LOW	The subject tree detracts from heritage values or diminishes the value of a heritage item	The subject tree is scheduled as exempt (not protected) under the provisions of the local or state planning controls (DCP etc) due to its species, nuisance or position relative to buildings or other structures.	The subject tree has a small live crown size of less than 40m² and can be replaced within the short term (5-10 years) with new tree planting
6. VERY LOW	The subject tree is causing significant damage to a heritage Item.	The subject tree is listed as an Environment Weed Species in the relevant Local Government Area, being invasive, or is a known nuisance species.	The subject tree is not visible from surrounding properties (visibility obscured) and makes a negligible contribution or has a negative impact on the amenity and visual character of the area. The tree is a poor representative of the species, showing significant deviations from the typical form and branching habit with a crown density of less than 50% (sparse).
7. INSIGNIFICANT	The tree is completely dead and has no known heritage value (or any habitat value)	The tree is scheduled as a potential 'Biosecurity Risk' ('Priority Weed' – formerly 'Noxious Weed') within NSW or within the relevant Local Government Area under the provisions of the *Biosecurity Act 2015*	The tree is completely dead and represents a potential hazard.

Ref:- Morton, A (2006)

Determining the Retention Value of Trees on Development Sites

TreeNet - Proceedings of the 7th National Street Tree Symposium 2006 Government of South Australia Department for Transport, Energy and Infrastructure

TreeABC field sheet (Version 16.03-UK)

Ancient/veteran: Each tree is assessed by a visual check. If it is a veteran/ancient tree, then it is automatically categorised as A2, and not subjected to any of the category U, C or B considerations.

Category U (unsuitable for retention): Any remaining trees that are unsuitable for retention because they are dead; in irreversible decline; and/or have irremediable structural conditions; and/or are causing severe structural damage or inconvenience, are categorised as U.

Category C (low quality): Any remaining trees are systematically reviewed to decide if they fit into any of the four C subcategory groups listed below.

Category B (moderate quality): Any remaining trees are automatically category B, with the possibility of being promoted to category A.

Category A (high quality): If a category B tree is already large, or has the potential to become so, it can be promoted to category A, at the discretion of the assessor.

Category C: Low quality trees not worthy of being a material constraint

C		**Size and legal exemptions:** Trees that are too small to be important or unlikely to be suitable for legal protection
	1	**Size:** Young or insignificant small tree
	2	**Legal exemptions:** Trees unlikely to be suitable for legal protection, e.g. a maintained urban hedge, shrubs, etc
		Deteriorating health/condition: Trees that are likely to be removed within 10 years because of deteriorating health and/or structural condition
	3	**Health:** Deteriorating health with little realistic prospect of recovery
	4	**Crown instability:** Deteriorating structural conditions where an increasing risk of failure can be temporarily addressed by reasonable intervention, e.g. storm damage, cavities, decay, included bark, wounds, excessive imbalance, etc
	5	**Root instability:** Deteriorating whole tree stability through poor anchorage, increased exposure to weather, etc
		Excessive nuisance: Trees that are likely to be removed within 10 years because of unacceptable impact on people
	6	**Inconvenience:** Ongoing and increasing inconvenience to residents to the extent that a TPO appeal is likely to result in tree removal, e.g. dominance, debris, interference, etc
	7	**Damage:** Ongoing and increasing structural damage to property to the extent that a TPO appeal is likely to result in tree removal, e.g. severe damage to surfacing and structures, etc
		Good management: Trees that are likely to be removed within 10 years through responsible management of the tree population
	8	**No future potential:** Poor condition or location with no realistic potential for recovery or improvement, e.g. dominated by adjacent trees or buildings, poor architectural framework, etc
	9	**Benefit nearby trees:** Removal would benefit better adjacent trees, e.g. relieve physical interference, suppression, etc
	10	**Maintenance costs:** Unacceptably high maintenance costs, e.g. structural conditions requiring high levels of regular pruning, etc

NOTE: Although C trees are not worthy of influencing new designs, urgent removal is not essential and they could be retained in the short term, if appropriate.

Categories B and A: Moderate and high quality trees suitable for retention for more than 10 years, and worthy of being a material constraint

B	All trees that are not categories U or C that can be retained with minimal or limited intervention

NOTE: Category B trees that are already large, or have the potential to become so, with minimal or limited intervention, can be promoted to category A1, at the discretion of the assessor. Veteran/ancient trees are automatically category A2. Although all category A and B trees are sufficiently important to be material constraints, category A trees are at the top of the categorisation hierarchy and should be given the most weight in any selection process.

A	1	Single category B trees or small groups which, at the discretion of the assessor, have been promoted to category A because they are already large, or have the potential to become large
	2	Veteran/ancient tree

Further explanation of this enhancement of the BS 5837 method can be found at www.TreeAZ.com.

Schedule of works and responsibilities

Hold Point	Task	Responsibility	Certification	Timing of inspection
1	Prior to commencement of construction to ensure the correct tree protection and signs are in place and all approved trees and pruning works are completed. Also that Tree 3 has been mulched and ground protection added in the area where the TPZ which is not fenced.	Principal Contractor	Project Arborist	Prior to demolition and site establishment.
2	During General construction.	Project Arborist	Project Arborist	Approximately half way through the works.
3	For final sign off on the completion of works.	Principal Contractor	Project Arborist	Prior to the issue of Occupation Certificate
4				
5				
6				

Additional hold points - add here if needed

Disclaimer by Koala Arbor Consulting Arborists ('the Arborist')

The limits of this report: The Arborist has inspected the trees referred to in this report ('report trees') for the purposes set out in this report. Information contained in this report covers only the report trees as documented and reflects their condition at the time of inspection only. Whilst the Arborist has used all reasonable endeavours to assess the report trees, the report is not evidence that no other issues exist in respect of those report trees. The limits of observations made: This assessment was carried out from the ground, and covers what was reasonable to be assessed at the time of inspection. Unless stated otherwise no aerial or underground inspections were carried out and unseen structural weakness may exist within roots, trunk or branches. There are many factors that contribute to limb and tree failure and not all symptoms are visible.

Arborist not liable or responsible: The Arborist is not liable for damage to any property or injury or death to any person caused by the report trees and no liability or responsibility is accepted regardless of whether or not any recommendations in this report are carried out.

No warranties or guarantees by the Arborist: Any protection or preservation methods recommended are not a warranty or guarantee of tree survival or safety. The Arborist gives or makes no warranty or guarantee expressed or implied that problems or deficiencies in respect of the report trees will not arise in the future. The Arborist recommends annual inspection of report trees to assess continuing status.

The limits on use of report: This report is only for the benefit of the legal entity which paid for the report and is to be utilized in its entirety only. The Arborist is not liable in any way whatsoever whether in contract, quasi-contract or tort to any third party who views this report. Any written or verbal submission that includes statements taken from this report may only be used where the whole report is referenced.

Report invalidated by alteration: Unauthorised alteration of this report invalidates the whole report. No liability for information supplied by others: The Arborist is not liable in any way for information or data provided to the Arborist by the person ordering this report or any third parties. Sketches, diagrams, graphs, photographs, maps etc: Any non-verbal visual aids contained in the report are not necessarily to scale. The limits of the fee: The fee paid for the report includes only such acts as necessary for the preparation, drafting and issue of this report. Any work required after the provision of this report will attract additional fees.