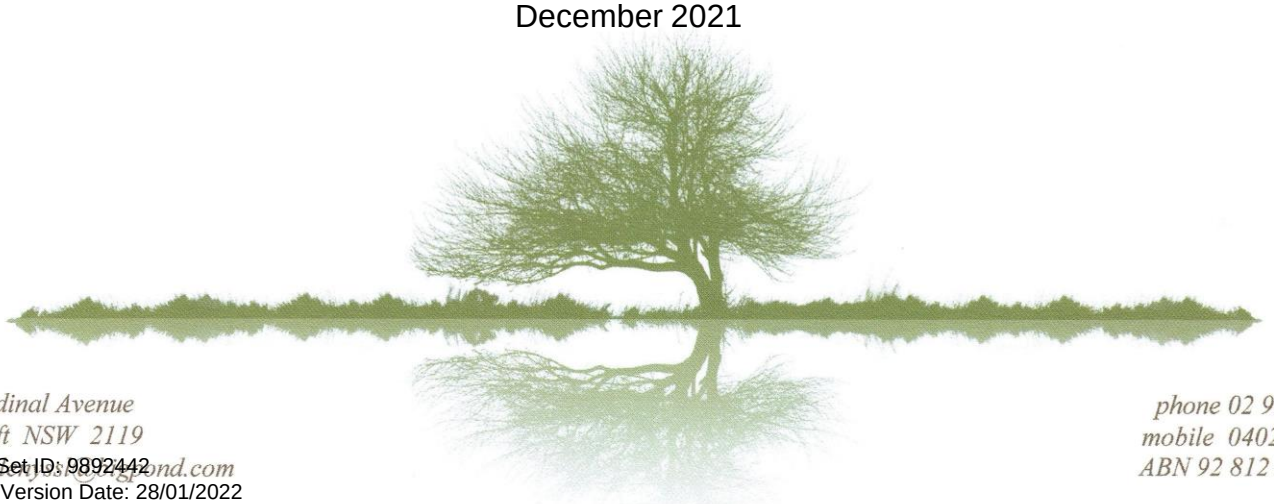
Glenyss Laws
Consulting Arborist

Arboricultural Impact Assessment Report

Prepared for
Penrith City Council

Property
11 Ashwick Circuit
St Clair

Date
December 2021



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1 Introduction

1.1 The following Arboricultural Impact Assessment Report is prepared for Penrith City Council. The report is an assessment of nine trees on the adjoining properties within proximity to the proposed residential subdivision of 11 Ashwick Circuit St, Clair.

1.2 The aim is to determine the tree's landscape significance, condition and vigour and provide appropriate development setbacks in accordance with AS4970-2009 whilst considering relevant tree and vegetation legislation.

1.3 The proposal entails subdivision of 11 Ashwick Circuit, St Clair to create two lots, one of which is planned for residential development.

1.4 The nine trees are protected under the terms of Penrith Council's DCP and are assessed with a high landscape significance. To maintain Tree 1, it is recommended thrust boring or directional drilling methods be engaged to install the proposed stormwater drainage. It is also recommended the future driveway adjoining Tree 9 maintain a minimum 2.3m setback. Appropriate development setbacks to guide the residential layout and a Tree Management Plan is provided to ensure the trees long-term viability.

2 Methodology

2.1 The trees were visually inspected from ground level to determine the crown condition, class, structural defects, decay, signs of stress, epicormic growth and dieback (refer Appendix A & B)

2.2 Useful Life Expectancy (ULE) was determined. A ULE rating provides an estimate of a tree's expected remaining life span and considers the current age, condition, vitality and life span of the species (refer Appendix B).

2.3 A Significance of a Tree Assessment Rating System (STARS) was determined. A STARS rating establishes the contribution of a tree to the overall landscape, amenity qualities or importance due to species, size, historical/cultural planting or significance to the site (refer Appendix C).

2.4 No root exploration, internal probing or aerial inspection was performed.

2.5 Tree height was measured with a Nikon Forestry Pro and rounded to the nearest metre. Canopy spread, and tree age were estimated. Due to site restrictions Diameter at Breast Height (DBH) and Diameter Above Root Buttress (DRB) were estimated.

2.6 The comments and recommendations in this report are based on findings from a site inspection on 27 October 2021.

2.7 A list of literature used in the preparation of this report is provided in the bibliography section.

2.8 The comments and recommendations in this report are based on findings from site inspections in October 2015 and 27 October 2021.

2.9 Two Preliminary Arboricultural Assessment Reports dated 10/11/2015 and 16/11/2021 were prepared for the site.

2.10 Plans sighted in the preparation of the report include:

- Plan of Detail and Levels dated 22/7/20 Version A by Richard Hogan and Company.
- Engineering Plans Sheet No DA401 Issue A dated 14/12/21 by J Wyndham Prince

3 Observations

3.1 The Site

3.1.1 The property is identified as Lot 35, DP 812241,11 Ashwick Circuit, St Clair. The property is bounded by residential properties to the south and west, vacant land to the east and the Western Motorway to the north (refer Figure 1).

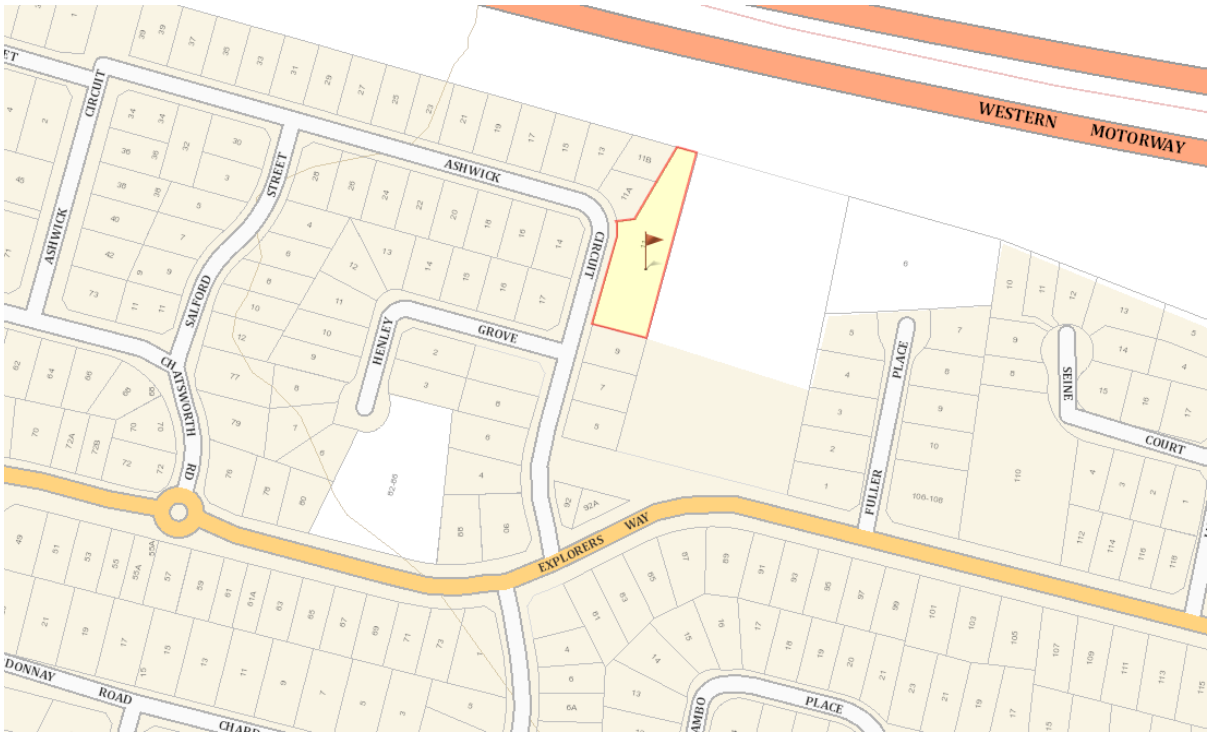

Figure 1. Location 11 Ashwick Circuit, St Clair (Source NSW Six Maps https://maps.six.nsw.gov.au/)

3.2 The Trees

3.2.1 Details of the trees, their dimensions, condition, Useful Life Expectancy (ULE) and landscape significance (STARS) are attached in Appendix A.

4 Discussion

4.1 Tree Protection, Ecological and Heritage Significance

4.1.1 Tree Management Controls Penrith City Council applies under DCP 2014 and SEPP 2017 – Vegetation in Non-Rural Areas and State Environmental Planning Policy No 19—Bushland in Urban Areas. The Tree Management Controls protect:

- Any native tree (both living and dead) or other vegetation that is on land zoned E2 Environmental Conservation in the Penrith LEP 2010 Land Zoning Map, or on natural resources sensitive land identified in the Penrith LEP 2010 Natural Resources Sensitivity Land Map.
- In all areas, any native vegetation community including remnant native vegetation.
- In all areas, any tree or other vegetation whether native or introduced having a height of 3.5 metres or more or a trunk diameter exceeding 100mm at 1.4m above ground level.
- Any tree or other vegetation that is, or forms part of, a heritage item or is within a heritage conservation area.
- Any tree or other vegetation that is culturally, socially or biologically significant or a unique specimen and has been formally recognised by an appropriate government authority (e.g. a significant tree or vegetation register).

4.1.2 The property does not fall within a Heritage Conservation Area nor is the property listed as an item of heritage under Sheet HER 019 of LEP 2010.

4.1.3 The property is not identified as being of sensitive land within Council's LEP 2010 Natural Resources Sensitivity Land Map, Sheet NRL 019. However, the northern boundary of the reserve is identified as being of biodiversity significance within the NSW Department of Planning, Industry and Environment Biodiversity Values Map. In addition, the neighbouring property on which the subject trees reside is identified as being of biodiversity significance within the NSW Department of Planning, Industry and Environment Biodiversity Values Map (refer Figure 2).

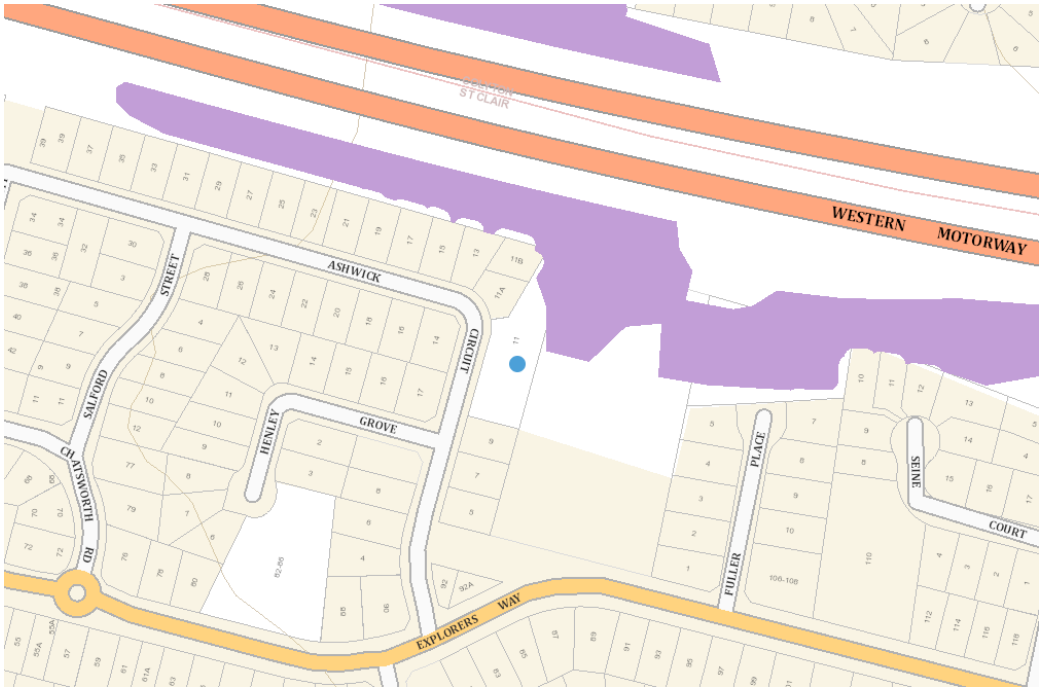

Figure 2. NSW Biodiversity Value Map (https://www.lmbc.nsw.gov.au/Maps/index.html?viewer=BOSETMap) accessed 16/11/21).

4.2 Tree Retention Value and Landscape Significance

4.2.1 A tree's significance and retention value can be determined based upon several factors including size, condition and maturity coupled with the methodologies STARS and ULE.

4.2.2 Generally trees identified as having a medium to long ULE and of high landscape value, street trees and trees on adjoining properties are given a high priority for retention in the design process.

Trees 1, 2, 3, 4, 5, 6, 7, 8 & 9 fall within this category.

4.3 AS4970-2009 Protection of trees on development sites

4.3.1 Australian Standard 4970-2009, Protection of trees on development sites, provides appropriate guidelines to ensure the long-term viability and stability of trees to be retained on development sites.

4.3.2 Tree Protection Zones (TPZ) are based on the diameter of the tree measured at 1.4 metres above ground level x 12 (refer Table 1 for calculated TPZ's). **The TPZ is a radial distance measured from the centre of the tree's trunk to the edge of proposed works**. The TPZ is an exclusion zone where construction, trenching, soil level changes and use of machinery is avoided.

4.3.3 The Structural Root Zone (SRZ) is the area required for stability, a far larger area is necessary to maintain a viable tree. Therefore, **no** excavation or construction shall encroach within the SRZ (refer Table 1 for calculated SRZ's). The SRZ is determined adopting the formula from AS4970-2009 where the SRZ radius = $(D \times 50)^{0.42} \times 0.64$. Where D = trunk diameter, in m, measured above the root buttress.

4.3.4 Under AS4970-2009 a minor encroachment of 10% of the area is allowable, provided this is compensated for elsewhere and contiguous to the TPZ. Should more than a 10% encroachment occur then the Project Arborist must demonstrate the tree or palm can be protected and remain in a viable state.

4.3.5 Under Clause 3.3.4 of AS4970 when determining the impacts of an encroachment into the TPZ, some consideration may be given to the following;

- The potential loss of root mass resulting from the encroachment determined by root mapping (number, size and percentage)
- Species tolerance to root disturbance
- Age and vigour of the trees
- or tree sensitive design construction such as pier and beam, suspended slab systems or discontinuous footings which may minimise the impact upon a tree's root system.

4.3.6 Tree sensitive construction shall be implemented if a major encroachment of the TPZ is contemplated.

Tree No	DBH (cm)	DRB (cm)	TPZ Radius (m)	TPZ Area (m²)	SRZ Radius (m)
1	80	90	9.6	290	3.2
2	47	45	5.6	100	2.4
3	50	60	6.0	113	2.7
4	54	65	6.5	132	2.8
5	45	65	5.4	92	2.8
6	34	40	4.1	52	2.3
7	50	50	6.0	113	2.5
8	107	100	11.9	443	3.4
9	29	30	3.5	38	2.0

Table 1. Tree Protection and Structural Root Zones

4.4 Potential impacts of the proposed subdivision

4.4.1 Tree 1, works within the 9.6m TPZ include:

- Stormwater drainage line and pit offset ~2.5m

The proposal is a major TPZ/SRZ encroachment of ~36.5%, and is beyond an acceptable level of tolerance. To maintain the stability and long-term viability of Tree 1 it will be mandatory directional drilling or thrust boring methods (only) are employed to preserve and maintain the stability of the tree. As the drainage lines fall within the SRZ, in this instance hand excavation or air spade work is not recommended. The tunnelling shall be directed to minimum depth of 800mm beneath natural ground level and the launching pit for the tunnelling machine be located outside the tree protection zone.

4.4.2 Without a proposed building footprint or design guidelines, it is challenging to determine the future residential layout. However, with good design and adequate building setbacks it will be feasible to retain Trees 2, 3, 4, 5, 6, 7 & 8. When designing the new residential layout, underground services, associated grade changes and hard landscaping, consideration may be given the reducing the TPZ's in Table 1 by 10% providing all works are excluded within the SRZ.

4.4.3 Tree 9 works within the 3.5m TPZ include:

- Vehicular cross over offset ~ 2.3m.

The proposal accounts for ~1.8m² or 4.7% of the TPZ and is a minor and acceptable encroachment. However, the future driveway has the potential to be major TPZ and possible SRZ encroachment. It is recommended the future driveway maintain a minimum 2.3m offset.

5 Conclusions/Recommendations

5.1 Nine (9) trees within the adjoining properties were assessed. The proposal seeks to subdivide 11 Ashwick Circuit, St Clair to create two lots, one of which is planned for residential development.

5.2 The nine trees are protected under the terms of Penrith Council's DCP and are assessed with a high landscape significance.

5.3 The proposed stormwater drainage is a major TPZ/SRZ encroachment to Tree 1. It is recommended excavation for the drainage lines be conditioned to utilise thrust boring or directional drilling methods to preserve and maintain the tree and:

- The tunnelling shall be carried out at least 800mm beneath natural ground level &
- The launching pit for the tunnelling machine shall be located outside the 9.6m tree protection zone.

5.4 The vehicular crossover is a minor and acceptable encroachment to Tree 9. However, the future driveway has the potential to be a major TPZ/SRZ encroachment. It is recommended conditions be set to ensure any future driveway affords a minimum 2.3m setback to Tree 9.

5.5 Recommended development setbacks to guide the underground services, building and driveway layout are provided in Table 1 to retain the nine trees.

5.6 The retained trees shall be protected in accordance with the following Arboricultural Method Statement and Tree Management Plan.

6 Arboricultural Method Statement

6.1 Pre-commencement and Arboricultural Hold Points

6.1.1 Prior to demolition and construction works, a Project Arborist shall be appointed to supervise all tree protection procedures detailed in this statement. The Project Arborist shall have a minimum level 5 AQF qualification in Arboriculture.

6.1.2 A pre-commencement site meeting shall take place between the Project Manager and the Project Arborist, the meeting is to take place before any development activity to determine specific arboricultural inspections and required tree protection.

6.1.3 Development Stage is subject to site monitoring by the Project Arborist at intervals as agreed at the pre-commencement site meeting. These visits are to ensure the protection measures are maintained in good order and works within the Tree Protection Zone (TPZ) meet with this Arboricultural Method Statement and AS4970.

6.1.4 It is the responsibility of the Project Manager to provide a minimum 3 days' notice to the Project Arborist for the pre-determined witness points.

6.1.5 Any breaches to the Arboricultural Method Statement shall be reported immediately.

6.1.6 The following pre-determined stages are Project Arborist hold points to document the works and demonstrate an inspection has taken place.

Hold Point	Action	Project Arborist Supervision
Tree Protection	The Site Arborist shall inspect the Tree Protection Fencing and any necessary Ground Protection complies with Appendix E & F and section 6.2.	Inspected, documented & certified by Project Arborist
Machinery Access	An access route for machinery shall be determined prior to construction works. Any temporary ground protection within the Tree Protection Zones shall be undertaken as per Appendix E & F and section 6.2	Inspected, documented & certified by Project Arborist
Earth Works	The Site Arborist to monitor any earthworks within the TPZ's. **Note** these works must be undertaken by hand or with an air knife.	Inspected, documented & certified by Project Arborist
Practical Completion	The Site Arborist to inspect and assess the trees condition and provide certification of tree protection at all the above-mentioned Hold Points.	Inspected, documented & certified by Project Arborist

Table 4. Hold Points for Project Arborist Inspections

6.2 Tree Protection – to be installed prior to commencement of works

6.2.1 Tree Protection Fencing shall be installed prior to commencement of works and be maintained in a good condition during the construction processes.

6.2.2 Tree Protection shall consist of a 1.8m high chain link temporary fencing erected at the distances nominated in Appendix F - Tree Protection Plan.

6.2.3 Weatherproof signage indicating the area is a Tree Protection Zone (TPZ) shall be displayed on the fence line at 10m intervals. Signage shall be a minimum A4 and state No Access – Tree Protection Zone and include the contact details of the Project Manager and Project Arborist.

6.2.4 Once erected, the TPF shall be regarded as sacrosanct and shall not be removed or altered without prior agreement of the project arborist.

6.2.5 Attention shall be given to ensuring the TPZ remains rigid and complete and excludes all construction activity and storage of materials.

6.2.6 If works occur within the TPZ the Project Arborist shall determine if appropriate ground protection is required. Ground protection shall consist of a layer of geotextile fabric spread with a 100mm layer of fine woodchip mulch and overlaid with thick recycled railway sleepers, timber planks or steel plates in accordance Appendix F.

6.2.7 Mulch shall be spread within the TPZ's of the retained trees or as instructed by the Project Arborist. The mulch shall consist of mixed leaf and fine woodchip mulch as certified to AS4454:2012 Composts, Soil Conditioners and Mulches. Mulch shall be spread to a depth of 75mm and maintained at this depth for the duration of works.

6.3 Restricted Activities

6.3.1 The following activities are restricted within the Tree Protection Zone;

- Parking of vehicles or plant
- Installation of temporary site offices or amenities.
- Wash down areas
- No mechanical excavation
- Preparation of chemicals including paint, cement or mortar.
- Vehicular movement
- Pedestrian access
- Excavation, trenching or tunnelling unless under the supervision of the Project Arborist
- No ground level changes are permitted

6.4 Installation of Services

6.4.1 Where feasible, all underground services will be routed & installed beyond the identified TPZ's. Where it is impossible to divert services beyond the TPZ's, detailed plans showing the proposed routing will be drawn in conjunction with advice from an AQF Level 5 Arborist.

6.4.2 The method for trenching within a TPZ of Trees 2 – 9 shall either be by hand methods e.g. hand digging with a spade or trowel or an air spade.

6.4.3 Trenchless technology such as directional underground boring is mandatory for Tree 1. The launching pits shall maintain a minimum 9.6m offset and the drill shall be directed to 800mm below natural ground level.

6.4.4 Topsoil and subsoil excavated from the trench shall be deposited into separate piles and kept apart and covered until required for backfilling.

6.4.5 No roots > 30mm in diameter are to be severed without prior agreement with the Project Arborist.

6.4.6 In cases of extreme heat or unless the trench is to be backfilled within the same day, all exposed roots > 30mm in diameter shall be wrapped with damp hessian to prevent drying out.

6.4.7 Where is it necessary to sever any woody roots, they shall be clean cut with secateurs or a pruning saw.

6.4.8 The underground services shall be positioned below the network of protected roots without causing damage to roots > 30mm in diameter. The hessian shall be removed prior to backfilling.

6.5 Back filling

6.5.1 Once works have been completed, backfilling shall be undertaken by hand using the subsoil first. The subsoil shall be filled into the trench in layers of no > 20cm and each layer shall be gently consolidated. Once the subsoil has reached the level of the existing subsoil, the topsoil shall be placed on top until the original levels are reached.

6.6 Construction of masonry fences and retaining walls

6.6.1 Where retaining walls or masonry fences are proposed, exploratory hand excavation to a depth of 600mm will determine the presence of any woody roots > 30mm in diameter. Exploratory trenching shall be under the supervision of and documented by the Project Arborist.

6.6.2 In cases of extreme heat or unless the footings are to be backfilled within the same day, then the exposed roots shall be covered in damp hessian until back filling takes place.

6.6.3 Backfill shall be undertaken in accordance with section 6.5 of the method statement.

6.7 Soft and Hard Landscaping

6.7.1 Installation of soft or hard landscaping including paving, turf or plant material within the TPZ shall be undertaken by hand.

6.7.2 Planting holes are to be hand dug with a shovel or garden trowel.

6.8 Breach of tree protection

6.8.1 Any above or below ground damage (including soil compaction) to a protected tree shall be reported to the Project Arborist immediately.

6.8.2 Where activities occur which breach the tree protection measures, the Project Arborist shall be advised immediately and work within the TPZ be halted until an assessment has been made and any mitigation measures deemed necessary have been undertaken.

Any questions relating to this arborist report should be directed to the undersigned.

[redacted]

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ISA Tree Risk Assessment Qualified Assessor (2014)
Member I.A.C.A, A.I.H & I.S.A
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Since 1997

Assumptions/Disclaimer

Care has been taken to obtain all information from reliable sources. All data has been verified as far as possible. However, Glenyss Laws – Consulting Arborist 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 and reflects the condition of the trees at the time of inspection: and
- The inspection was limited to visual examination of the subject trees without dissection, probing or coring.
- No risk assessment was commissioned or carried out as part of the investigation.
- Trees are living organisms whose health and condition can change rapidly. Any changes to the soil surrounds e.g. excavation or construction works or extreme weather events will invalidate this report.
- There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future.
- Any tree, whether it has a visible weakness or not, will fail if the forces applied exceed the strength of the tree or its parts.

BIBLIOGRAPHY/REFERENCES

Barrell J (1995). 'Pre-development Tree Assessments', in Trees and Building Sites, Proceedings of an International Conference held in the Interest of Development a Scientific Basis for Managing Trees in Proximity to Buildings. International Society of Arboriculture, Illinois, USA pp132-142.

IACA (2010) IACA Significance of a Tree, Assessment Rating System (STARS). Institute of Australian Consulting Arboriculturists, Australia, www.iaca.org.au

Standards Australia (2007), AS4970-2009 Protection of trees on development sites.

APPENDIX A
Tree Survey Notes

Tree No	Tree Species	Age Class	DBH (mm)	DRB (mm)	Tree height (m)	Crown diameter (m)	Crown Condition	Crown Class	STARS	ULE	Root Zone/ Defects/ Services	Comments
1	*Melaleuca decora* (Ridge Myrtle)	M	Est 800	Est 900	13	8	4	D	1	1	Gr/-/-	Tree in close proximity of boundary, limited VTA.
2	*Melaleuca decora* (Ridge Myrtle)	M	Est 300 & 350	Est 450	10	6	4	C	1	1	Gr/-/-	Tree in close proximity of adjoining boundary. Limited VTA
3	*Melaleuca decora* (Ridge Myrtle)	M	Est 500	Est 600	11	5	4	C	1	1	Gr/-/-	Forms 3 fused leaders. Tree in close proximity of adjoining boundary. Limited VTA
4	*Melaleuca decora* (Ridge Myrtle)	M	Est 400, 300 & 180	Est 650	11	5	4	C	1	1	Gr/-/-	Tree in close proximity of adjoining boundary. Limited VTA
5	*Melaleuca decora* (Ridge Myrtle)	M	Est 150, 200 & 370	Est 650	10	4	3	C	1	1	Gr/-/-	Tree in close proximity of adjoining boundary. Limited VTA
6	*Melaleuca decora* (Ridge Myrtle)	M	Est 300 & 150	Est 400	12	4	3	C	1	2	Gr/-/-	Tree in close proximity of adjoining boundary. Limited VTA
7	*Melaleuca decora* (Ridge Myrtle)	M	Est 350 & 350	Est 550	11	6	4	C	1	1	Gr/-/-	Tree in close proximity of adjoining boundary. Limited VTA

Tree No	Tree Species	Age Class	DBH (mm)	DRB (mm)	Tree Height (m)	Crown Width (m)	Crown Condition	Crown Class	STARS	ULE	Root Zone/ Defects/ Services	Comments
8	*Eucalyptus fibrosa (Blue-leaved Ironbark)*	M	Est 700 & 700	Est 1000	23	16	3	D	1	2	Gr/-/-	Tree in close proximity of adjoining boundary. Limited VTA
9	*Callistemon viminalis* (Bottle Brush)	M	Multi Est 150, 160 & 190	Est 300	3.5	3	4	D	2	2	Gr/-/-	Tree on neighbouring property 11A Ashwick Circuit. Trees on neighbouring properties are allocated a high retention value regardless of STARS. Specimen has been perpetually pruned to form a topiary/ circular canopy.

Trees in Green assessed with a high landscape value coupled with a medium to long ULE are allocated a high priority for retention.
Trees in Blue are assessed as less critical for retention, their retention should be a priority with removal considered if all design options have been exhausted & adversely affecting the proposal.
Trees in Pink are of low retention value, nor require special works or design modifications to be implemented.
Tree in Orange are considered hazardous, in irreversible decline or environmental weed species and recommended for removal irrespective of development.

APPENDIX B

Notes on tree inventory schedule

Tree No:	Relates to number on site diagram.		
Species:	Botanical and Common Name		
Age Class:	**Y**	Young- recently planted	
	S	Semi mature- <20% of life expectancy	
	M	Mature- 20-80% of life expectancy	
	O	Over mature- >80% of life expectancy	
Height:	In metres		
Crown Spread:	In metres		
Crown Class:	**D**	Dominant	Crown extends above general canopy; not restricted by other trees.
	C	Co-dominant	Crown forms the bulk of the general Canopy but crowded by other trees.
	I	Intermediate	Crown extends into dominant/ codominant canopy but quite crowded on all sides.
	S	Suppressed	Crown development restricted from Overgrowing trees.
Crown Condition:	Overall vitality		
	0	Dead	
	1	Severe decline (<20% canopy density; major dead wood)	
	2	Declining (20-60% canopy density; twig and branch dieback)	
	3	Average/ low vigour (60-90% canopy density; twig dieback)	
	4	Good (90-100% canopy density; little or no dieback or other problems)	
	5	Excellent (100% canopy density; no deadwood or other problems)	
Root Zone:	C	Compaction	
	D	Damaged/wounded roots	
	E	Exposed roots	
	Ga	Tree in garden bed	
	Gi	Girdled roots	
	Gr	Grass	
	K	Kerb close to tree	
	L+	Raised soil level	
	L-	Lowered soil level	
	M	Mulched	
	Pa	Paving/concrete/bitumen	
	Pr	Roots pruned	
	O	Other	

Defects:

B	Borers
C	Cavity
D	Decay
F	Previous failures
I	Inclusions
L	Lopped
M	Mistletoe/parasites
S	Splits/Cracks
T	Termites
O	Other

Services adjacent structures:

Bs	Bus stop
Bu	Building within 3 metres
Hvo	High voltage open wire construction
Hvb	High voltage bundled (ABC)
Lvo	Low voltage open wire construction
Lvb	Low voltage bundled (ABC)
Na	No services above
Nb	No services below
Si	Signage
Sl	Street light
T	Transmission lines
U	Underground services
O	Other

STARS: Significance of a Tree Assessment Rating System (copyright Institute of Australian Consulting Arborists 2010)

ULE: Useful Life Expectancy adapted from Barrell J (2001)

1	**Long ULE**	**Trees that appear to be retainable at the time of assessment for more than 40 years**
2	Medium ULE	Trees that appear to be retainable at the time of assessment for more than 15-40 years
3	Short ULE	Trees that appear to be retainable at the time of assessment for more than 5-15 years
4	Remove	Trees that should be removed within the next 5 years
5	Small, young or regularly pruned	Small trees less than 5 metres in height or young trees less than 15 years old but over 5 metres in height.

APPENDIX C
IACA Significance of a Tree, Assessment Rating System (STARS) © (IACA 2010) ©

In the development of this document IACA acknowledges the contribution and original concept of the Footprint Green Tree Significance & Retention Value Matrix, developed by Footprint Green Pty Ltd in June 2001.

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

1. 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.

2. 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*.

3. 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.

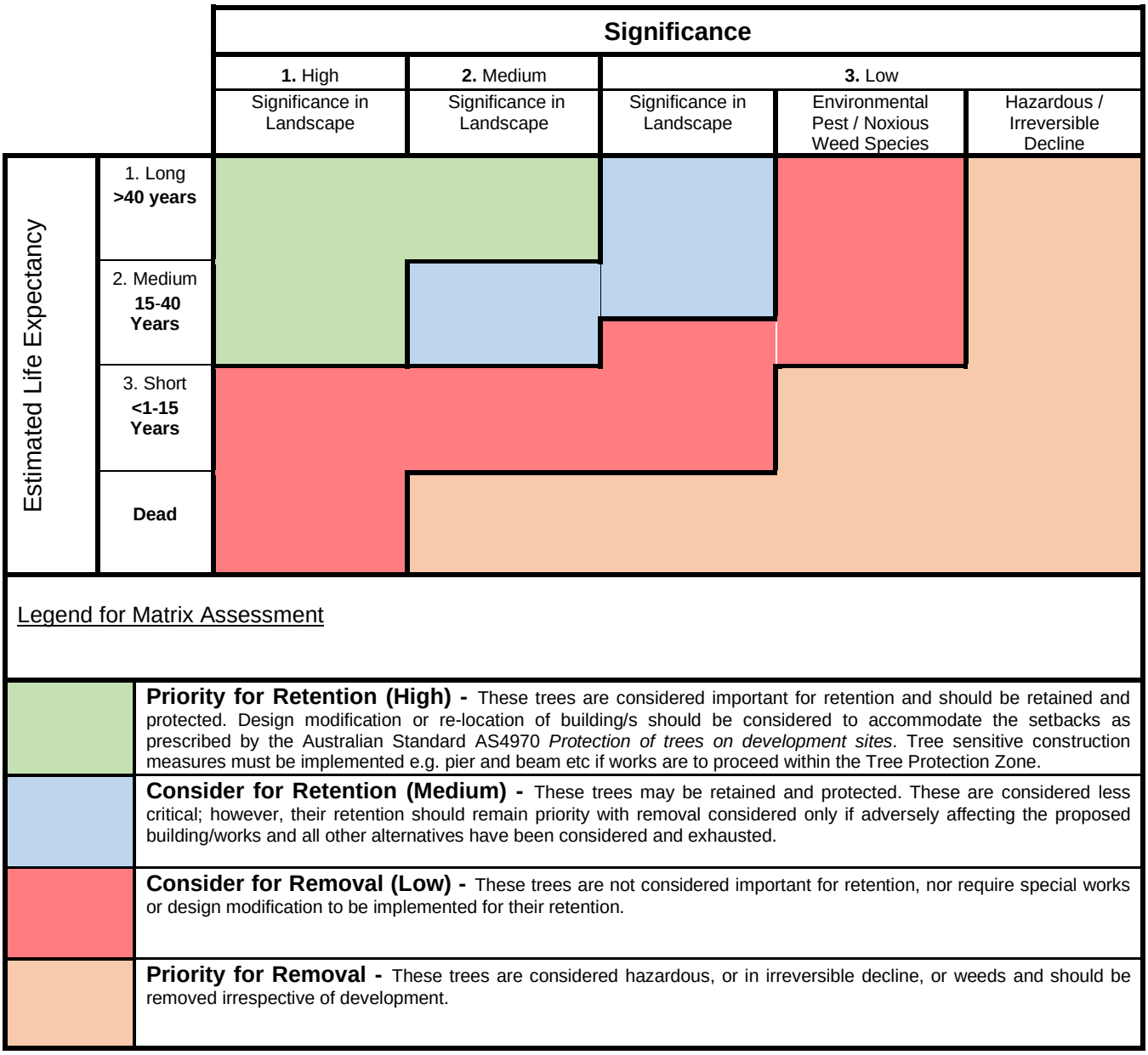
Hazardous/Irreversible Decline

- 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 monocultural stand in its entirety e.g. hedge.

Table 1.0 Tree Retention Value - Priority Matrix



Legend for Matrix Assessment

	Priority for Retention (High) - 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 *Protection of trees on development sites*. Tree sensitive construction measures must be implemented e.g. pier and beam etc if works are to proceed within the Tree Protection Zone.
	Consider for Retention (Medium) - 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.
	Consider for Removal (Low) - These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.
	Priority for Removal - 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

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

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

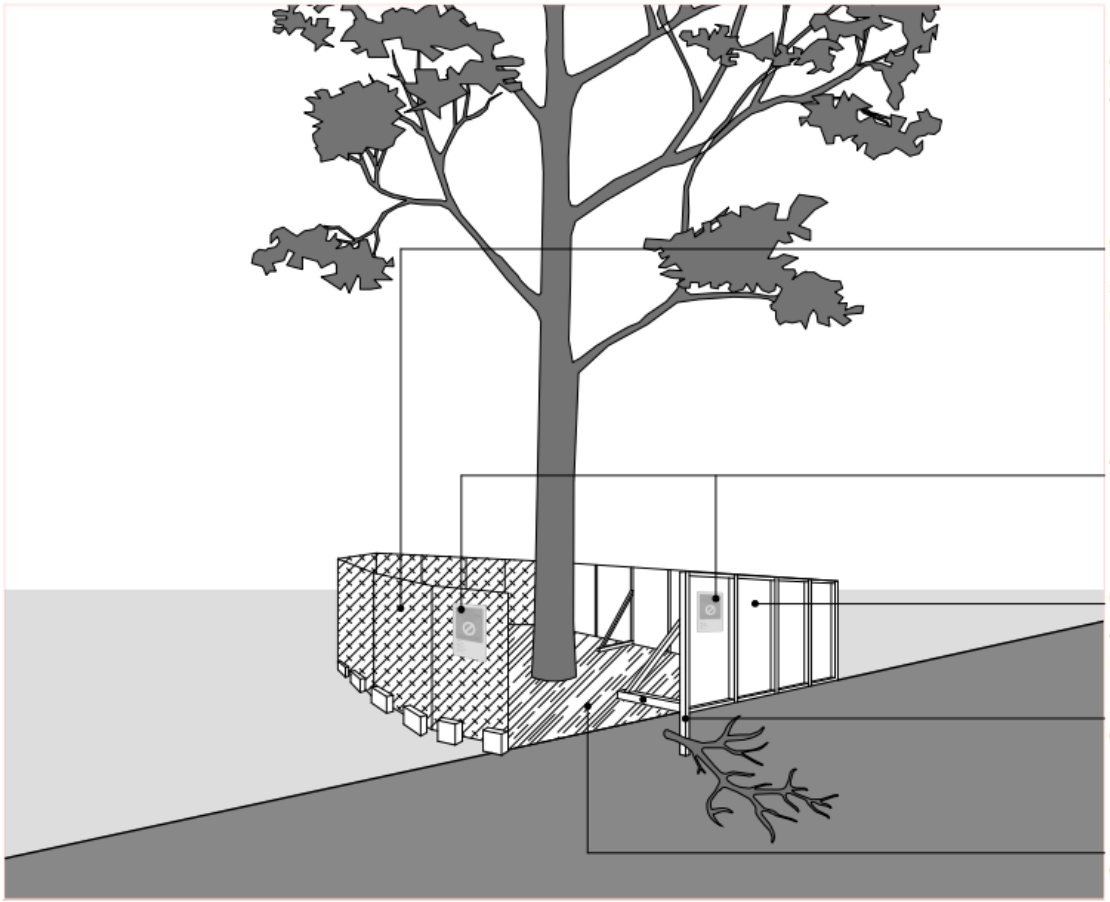
APPENDIX D
Site Photographs

Figure 3. Tree 1

Figure 4. Trees 2 - 7

Figure 5. Tree 8

APPENDIX E
Example of Tree Protection Fencing



Tree Protection Fencing

APPENDIX F
Engineering Plan and Tree Protection Zones