

ARBORICULTURAL IMPACT ASSESSMENT REPORT

relating to the proposed alterations and additions at

**11 COUTTS CRESCENT
COLLARROY NSW 2097**

Prepared for Megan Matthews
23 September 2022

Revision A

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1. INTRODUCTION

- 1.1 This report was commissioned by Megan Matthews, the owner of 11 Couotts Crescent, Collaroy to provide an Arboricultural Impact Assessment (AIA) report relating to the proposed alterations and additions on the property and the existing trees located on the site or on an adjoining site and within close proximity to the works. This report shall accompany a development application submission to Northern Beaches Council involving the construction of a new double carport and driveway extension to the front of the site, a swimming pool to the rear of the property and alterations and additions to the existing dwelling.
- 1.2 A total of six (6) trees are included in this assessment including three (3) trees located within the site boundaries and three (3) trees located on the council verge or a neighbouring property. Generally, a tree is protected in accordance with the Northern Beaches Council Local Environment Plan if it is a height greater than five (5) metres. In some instances a tree may meet the prescribed size, however may not be protected for other reasons such as it being a noxious weed species or a species listed by Council as exempt.
- 1.3 The purpose of this report is to undertake a visual assessment of the trees, determine the sustainability of the trees in the landscape, determine the impact of the proposed works on the trees and provide recommendations for tree protection measures to be implemented for those trees being retained.
- 1.4 This report shall reflect the expert opinion of the Arborist. The Arborist is acting independently of and not as the advocate for the owner. The Arborist shall not receive any commission to prune or remove the tree/s which is the subject of this report.
- 1.5 This report has been prepared in accordance the Australian Standard "*Protection of Trees on Development Sites*" (AS 4970:2009).

- 1.6 Details shown on the following plans were reviewed in this assessment:

Title	Author	Dwg No.	Date
Architectural drawings (DA01-06)	Lifestyle Home Designs	2202	Sept 22

- 1.7 Key Definitions and Abbreviations used in this report.
- TPZ = Tree Protection Zone.** This is the area as defined by AS 4970 – "*Protection of trees on development sites*" and means the typical minimum area above and below ground at a given distance from the trunk to provide for protection of the tree. Most importantly it represents the root zone required to be kept uninjured to maintain a healthy and viable tree. Note, roots will usually extend well beyond this zone, so this represents the minimum remaining root zone required, assuming all others are lost or damaged due to construction. It is typically calculated as a circle centred on the trunk unless existing site conditions can be assessed and indicate otherwise. According to the Australian Standard, a minor encroachment of 10% of the TPZ is allowable, provided the 10% is compensated for elsewhere and contiguous to the TPZ. For the purpose of this report the extent of impact has been broken down to the following categories:
 - 0% of root zone impacted – no impact of significance
 - 0 to 10% of root zone impacted – low level of impact
 - 10 to 15% of root zone impacted – low to moderate level of impact
 - 15 to 20% of root zone impacted – moderate level of impact
 - 20 to 25% of root zone impacted – moderate to high level of impact
 - 25 to 35% of root zone impacted – high level of impact
 - >35% of root zone impacted – significant level of impact
 - SRZ = Structural Root Zone.** This is the area as defined by AS 4970 – "*Protection of trees on development sites*" and means the area immediately around the base of the tree at a given distance from the trunk. The woody roots and soil cohesion in this area are considered vital to the structural stability of the tree. Damage or removal of soil and roots from this area will typically render the tree unstable and require its removal. It is typically calculated as a circle, centred on the trunk, unless existing site conditions can be assessed and indicate otherwise.

2. METHODOLOGY

2.1 Health and Condition Assessment

A site inspection was undertaken on 14 September 2022 to visually assess the trees in view from ground level. This report is limited to the methods of assessment listed below (and outlined in **Appendix 1**), and does not include any internal probing, compaction testing, drilling, root mapping, aerial inspection or diagnostic testing.

- Tree Species (botanical and common name).
- Tree height was measured using a Nikon Rangefinder Forestry Pro (where possible).
- Canopy spread was estimated.
- Diameter at Breast Height (DBH) and Diameter at Ground Level (DGL) was measured using a forestry diameter tape or estimated for those trees inaccessible.
- Health and vigour assessed, including indicators such as foliage size, colour, extension growth, presence of disease or pest infestation, canopy density, presence of deadwood, dieback, epicormic growth.
- Condition assessed, including visible evidence of structural defects, instability, evidence of previous pruning and physical damage as indicators.
- Life expectancy of the tree was estimated, suitability of the tree to the site and its existing location.
- The photographs included in this report were taken at the time of inspection.
- Assessment was carried out visually from ground level within the property.
- The comments and recommendations in this report are based on findings from the site inspection.

2.2 Landscape Significance

The significance of a tree in the landscape is a combination of its environmental, heritage and amenity values. A criteria for the assessment of landscape significance as devised by Andrew Morton (2003) and shown in **Appendix 2** have been applied. Whilst it may be somewhat subjective to assess these values consistently, it is appropriate to assign some measure to assist in determining the overall retention value of a tree.

The rating system which has been applied to the tree and to assist in determining a priority for retention, includes the following categories:

- | | |
|----------------|------------------|
| 1. Significant | 5. Low |
| 2. Very High | 6. Very Low |
| 3. High | 7. Insignificant |
| 4. Moderate | |

2.3 Tree Retention Value

The retention value shown in the Tree Assessment Schedule in **Figure 2** has been determined on the basis of the estimated longevity of the tree and its landscape significance rating, in accordance with Table 1 below. These retention values can help to determine the most appropriate position of any future building footprints and/or structures within the site, to minimise the impact on trees considered worthy of preservation.

Estimated Life Expectancy	Landscape Significance Rating							
	1	2	3	4	5	6	7	
Long (>40 yrs)	High Retention Value			Moderate Retention Value		Low Retention Value		Very Low Retention Value
Medium (15-40 yrs)	High Retention Value		Moderate Retention Value			Low Retention Value		Very Low Retention Value
Short (5-15 yrs)	High Retention Value		Moderate Retention Value		Low Retention Value			Very Low Retention Value
Transient (<5 yrs)	High Retention Value		Moderate Retention Value			Low Retention Value		
Dead or poses an unacceptable risk to life	High Retention Value			Moderate Retention Value				Very Low Retention Value

Table 1: Tree Retention Values - assessment methodology (Ref:- Morton, Andrew 2006 modified from Couston, Mark & Howden, Melanie (2001) Footprint Green Pty Ltd, Sydney, Australia)

3. OBSERVATIONS

3.1 The Site

The property is legally identified as Lot 47 in Deposited Plan 236457 and is located on the southern side of Couatts Crescent (refer to **Figure 1**). Almost rectangular in shape, the site has a total area of approximately 708.2 square metres. Currently on the property is a multiple storey residence positioned relatively central to the site. Vehicular access is via a steep concrete driveway which leads to a double garage within the building envelope. Pedestrian access is via a tiled walkway which leads to the entry area on the first floor level. The site slopes down quite steeply from the front northern boundary to the rear southern boundary. The open space areas to the front and rear of the dwelling consist of lawn area with shrubs scattered around to the perimeter of the site. A series of retaining walls extend across the width of the site to accommodate the slope. Residential properties adjoin the east, west and southern boundaries.

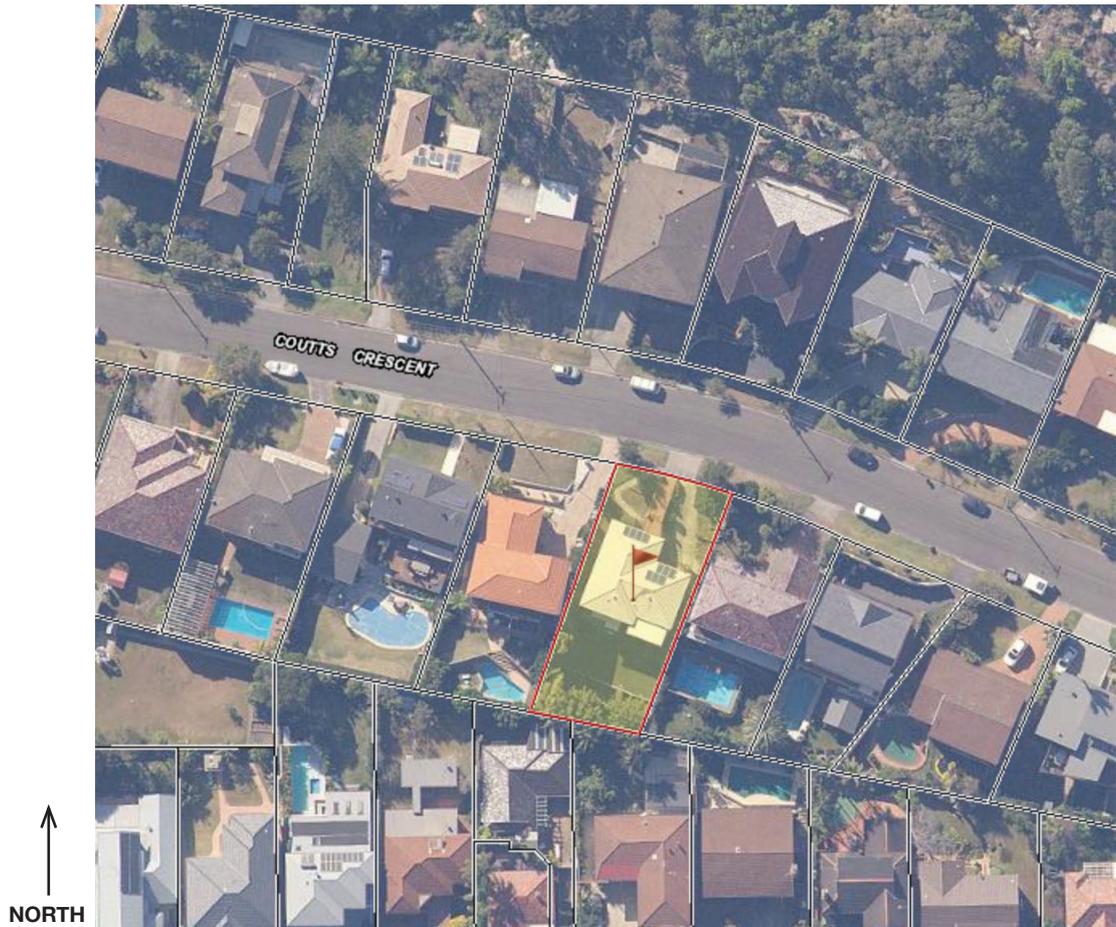


Figure 1: An aerial image of the site with boundary lines highlighted in red (accessed from <http://maps.six.nsw.gov.au/> on 22/9/22).

3.2 The Trees

The information and characteristics of the trees are set out in the Tree Assessment Schedule in **Figure 2**. Each tree has been provided with an identification number for reference purposes which is noted on the Tree Location Plan (in **Figure 3**). The Site Plan prepared by Lifestyle Home Designs has been utilised as a base layer for the Tree Location Plan. The tree numbers on the Tree Location Plan correspond with the tree identification numbers in the Tree Assessment Schedule. Site photos can be found in **Figure 4-10**.

Tree No.	Plant Name (Species/Common Name)	Age	Tree Height (m)	Average Canopy spread (m)	DBH (m)	DGL (m)	Crown Class	Vigour	Condition	Useful Life Expectancy (yrs)	Landscape Significance	Tree Retention Value	Observations/ comments	Tree Protection Zone (TPZ) radius in metres	Structural Root Zone (SRZ) radius in metres	Remove or retain?	Impact / Incursion
1	<i>Callistemon viminalis</i> * (Weeping Bottlebrush)	mature	6.5	5.5	multi-trunked (0.15, 2 x 0.13, 3 x 0.10)	0.36	dominant	normal	good	medium (15-40yrs)	low	low	Located on Council verge at front of the site. Multi-trunked specimen with main branch junction at 50cm above ground level. Minor twig dieback. Fused second order branches.	3.5	2.2	remove	Line of driveway extension is positioned approx. 700mm from base of tree. New driveway represents a major encroachment of approx. 31% and extends through the SRZ. Above ground encroachment is estimated to result in canopy pruning of approx. 40%.
2	<i>Grevillea johnsonii</i> * (Johnson's Grevillea)	mature	4.5	6.0	0.15 0.25	0.30	dominant	low	fair	short (5-15yrs)	low	low	Located on Council verge at front of site. Dieback in canopy. Twisted branches and low spreading somewhat distorted form.	3.5	2.0	retain	Proposed works located outside TPZ of tree.
3	<i>Juniperus x pfitzeriana</i> (Pfitzera Juniper)	mature	2.5	4.0	multi-trunked	0.25	dominant	normal	fair	short (5-15yrs)	very low	very low	Less than the prescribed size under Council's tree policy (exempt).	est. 2.4	1.8	remove (exempt)	Located within footprint of new driveway extension.
4	<i>Archontophoenix cunninghamiana</i> * (Bangalow Palm)	mature	10.0	4.0	0.16 0.16	0.30	dominant	normal	good	medium (15-40yrs)	very low	low	Exempt palm species in accordance with Council's exempt tree species list. Fair specimen located on neighbouring property at No. 9 Coultts Crescent.	3.0	n/a	retain	Existing retaining walls located within TPZ should remain unchanged.
5	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	over-mature	5.0	9.0 (canopy bias to N)	0.08 0.14 0.15	0.22	suppressed	low	fair	short (5-15yrs)	low	low	Located between eastern side boundary and dwelling. Strong canopy bias to north - asymmetric crown with leaning second order limbs. Crown is in conflict with building.	2.6	1.8	retain	Proposed works located outside TPZ of tree.
6	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	mature	4.5	4.0 (canopy bias to S)	0.14	0.16	suppressed	low	fair	short (5-15yrs)	very low	low	Less than the prescribed size under Council's tree policy (exempt). Fair to specimen. Canopy bias to south	1.8	1.5	retain	Proposed works located outside TPZ of tree.

* These trees located on adjoining land

Figure 2: Tree Assessment Schedule



Figure 4 (left): Photograph viewing south from Coutts Crescent at the property. The Weeping Bottlebrush (Tree No. 1) is visible to the left, and the Johnson's Grevillea (Tree No. 2) is visible to the right. (Photo: J Willis)



Figure 5 (left): Photograph south from Coutts Crescent at the Weeping Bottlebrush (Tree No. 1) located on the council verge at the front of the site. (Photo: J Willis)



Figure 6 (left): Photograph viewing west at the Johnson's Grevillea (Tree No. 2) located on the council verge at the front of the site. (Photo: J Willis)



Figure 7 (above): Photograph viewing north along the existing concrete driveway with Tree No. 3 (Pfitzera Juniper) visible to the right. (Photo: J Willis)



Figure 8 (above): Photograph viewing east at the neighbouring Bangalow Palm (Tree No. 4) located on the adjoining property at No. 9 Coutts Crescent. (Photo: J Willis)



Figure 9 (above): Photograph viewing north at the Weeping Bottlebrush (Tree No. 5-6) located to the eastern side of the dwelling (Photo: J Willis)

4. DISCUSSION | IMPACT ASSESSMENT

4.1 The intention of this assessment is to determine the level of incursion by the proposed works to the root zones and canopies of the trees located on the site and on adjoining land. Furthermore this assessment shall evaluate the likely impact resulting from the proposed works on the existing trees. The Tree Location Plan shown in **Figure 3** indicates the tree locations. The trees identified as exempt (ie. non protected) are also indicated. Any encroachment of the proposed works (if any) in the Tree Protection Zone is also indicated as blue hatching. The calculated Tree Protection Zone (TPZ) and Structural Root Zone (SRZ) are indicated as dashed lines around the retained trees. The following criteria have been examined as part of this assessment:-

- Existing Relative Levels (RL)
- Tree Protection Zone (TPZ)
- Structural Root Zone (SRZ)
- Footprint of the proposed development and any temporary structures (such as scaffolding)
- Incursions to the TPZ & SRZ, including excavation, filling, and potential above ground impacts to tree canopy;
- Existing structures located in the TPZ of the retained trees; and
- Assessment of the likely impact of the works on the existing trees.

4.2 Summary of existing trees

The trees included in this assessment are generally considered to be small growing trees or large shrubs. Some of the trees assessed are exempt (ie. non-protected) and as such, may be removed without requiring permission from Council. Note: The neighbouring palm (identified as Tree No. 4) shall be retained as part of the future works. The exempt trees are identified on the Tree Location Plan in **Figure 3** and also noted on the tree assessment schedule in **Figure 2**. Overall, the trees located within the site boundaries are considered to hold a low or very low retention value and as such, are not considered worthy of posing a constraint to the future development of the site.

Two council owned street trees area located on the grass verge at the front of the site, identified as Tree No. 1 (Weeping Bottlebrush) and No. 2 (Johnson's Grevillea). Both trees are good to fair specimens and overall are considered to hold a low retention value on the basis of crown volume and estimated life expectancy.

4.3 Summary of proposed works

- ~ It is proposed to construct a double carport, bin storage and new driveway at the front of the site. The line of the existing driveway shall be extended to the east. The carport shall connect with the existing tiled pedestrian path that leads to the entry area of the dwelling on the first floor.
- ~ It is proposed to undertake alterations to the existing dwelling including adjustments to the rear balcony and new steps.
- ~ It is also proposed to construct an in-ground swimming pool at the rear of the dwelling.

4.4 Proposed tree removal

It is proposed to remove two (2) trees are part of the future works, as outlined below:

a) Tree No. 3 (Pfitzera Juniper)

The proposed double carport will necessitate the removal of Tree No. 3. The tree is a very low retention value tree that is less than the prescribed size described by Council and therefore is an exempt tree. Therefore the tree may be removed without requiring permission from Council.

b) Tree No. 1 (Weeping Bottlebrush street tree)

The architectural drawings indicate the proposed removal of Tree No. 1 to accommodate the driveway extension. The edge of the driveway is positioned approximately 700mm from the base of the tree. The driveway and carport represent an encroachment in the TPZ and SRZ of approximately 31% which is consider to be major and may potentially result in a high level of impact upon the street tree (refer to extent of encroachment on Tree Location Plan in **Figure 3**). Should any large woody roots be severed (particularly in the SRZ) during excavation works for the new structures, the health and stability of the tree may be compromised and render the tree unviable. Additionally, the above ground impacts from the proposed works are considered excessive. The author envisages canopy pruning would be

necessary, resulting in removal of approximately 30-40% of the tree's live crown volume to allow for vehicular access.

The tree is a mature specimen which exhibits normal vigour and good condition. The tree is a native species, however with consideration to crown size and estimated life expectancy the tree is considered to hold a low retention value. If the design is approved in its current form, it is the author's opinion the tree should be removed as part of the works and a replacement tree is planted on the council verge to compensate for loss of canopy coverage.

4.5 **Trenching for underground services**

Should any trenching be required for underground services (new or existing) it is recommended the services are located to the western side of the property to avoid the TPZ of the Bottlebrush located to the eastern side of the dwelling (identified as Tree No. 5 and 6).

- 4.6 The remaining trees included in this assessment are located away from the proposed works and as such, the proposed works should not result in any impact upon Tree No. 2, 4-6.

5. CONCLUSION | RECOMMENDATIONS

- 5.1 A total of six (6) trees are included in this assessment including three (3) trees located within the site boundaries and three (3) trees located on the council verge at the front of the site or on a neighbouring property. All of the trees identified in this report are considered to hold a low or very low retention value.
- 5.2 It is proposed to remove two (2) trees as part of the future works, including one (1) exempt tree (identified as Tree No. 3) and one (1) council owned street tree (identified as Tree No. 1). The applicant is seeking permission from Council to remove the street tree to accommodate the driveway extension. Whilst the tree is a good representation for the species it holds no particular significance and overall is considered to be low retention value tree. Should Council consent to the removal of the street tree, it is recommended replacement tree planting is undertaken to compensate for loss of canopy.
- 5.3 To ensure the long term preservation of the trees being retained, it is recommended the following tree protection measures are adopted as part of the future works:
- i) Installation of tree protection fencing:** Prior to commencement of any works it is recommended tree protection fencing is installed around the TPZ of the street tree (No. 2). The tree protection fencing shall provide a physical barrier between tree and the works zone. As a minimum the fence should consist of temporary chain wire panels 1.8 metres in height, supported by steel stakes as required and fastened together and supported to prevent sideways movement (refer to **Appendix 3**). The fence shall be erected prior to the commencement of any works on site and shall be maintained in good condition for the duration of construction. Signage is to be attached to the fencing and displayed in a prominent location. Each sign shall note "Tree Protection Zone - access is restricted" plus the name, address and contact number of the builder.
 - ii) Installation of trunk protection:** Prior to commencement of any works it is recommended trunk protection is installed around Tree No. No. 5 (Bottlebrush). Trunk protection shall be installed in accordance with the Australian Standard AS4970 "*Protection of trees on development sites*" and as detailed in **Appendix 3**. As a minimum, the trunk protection shall consist of 1.8 metre lengths of pine board timbers (90 x 45mm) spaced at 100-150mm centres secured together with perforated metal straps. These shall be strapped around the trunk (not fixed in any way) to avoid mechanical injury or damage. Trunk protection should be installed prior to any site works and maintained in good condition for the duration of the construction period. Trunk protection will help to protect the trees from any inadvertent damage that may result from activities during the course of the works.
 - iii) Trenching for underground services:** Should any new underground services be required on to the site, the line of trenching must be located outside the TPZ of the identified trees. It would be preferable to position any new trench to the western side of the property. If the TPZ of the trees cannot be avoided, the builder must seek further advice from a qualified arborist.
- 5.4 Written approval from Council will be required to undertake tree removal of protected trees. Tree removal and pruning works is only to be undertaken by a qualified arborist (ISAAC member under the supervision of a person with AQF Level 3 or above).

If you have any questions regarding this report please do not hesitate to contact the undersigned.



Joanne Willis
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Member of I.S.A (International Society of Arboriculture)

Assumptions

Care has been taken to obtain all information from reliable sources. All data has been verified as far as possible. However Joanne Leigh – 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 tree that was examined and reflects the condition of the tree at the time of inspection: and
- The inspection was limited to visual examination of the subject tree without dissection, excavation, probing or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject tree may not arise in the future.

6. REFERENCES

- Draper, Danny B. and Richards, Peter A (2009) "Dictionary for Managing Trees in Urban Environments". CSIRO Publishing, Collingwood, VIC Australia
- Harris, R.W; Clark, J.R; & Matheny, N.P (2004) Arboriculture; Integrated Management of Landscape Trees, Shrubs & Vines 4th Edition, Prentice Hall, New Jersey.
- Mattheck, Claus (2007) "Updated Field Guide for Visual Tree Assessment". Karlsruhe Research Centre, Germany.
- Standards Australia (2009) AS2970-2009 "Protection of Trees on Development Sites", Sydney.
- Council's relevant tree planning documents.

APPENDIX 1: TREE INSPECTION INVENTORY NOTES

The values for terminology provided below are sourced from SRIV© Sustainable Retention Index Value © From Draper BD and Richards PA 2009, Dictionary for Managing Trees in Urban Environments, Institute of Australian Consulting Arboriculturists (IACA), CSIRO Publishing, Collingwood, Victoria, Australia.

Age: Most trees have a stable biomass for the major proportion of their life. The estimation of the age of a tree is based on the knowledge of the expected lifespan of the taxa in situ divided into three distinct stages of measurable biomass, when the exact age of the tree from its date of cultivation or planting is unknown and can be categorized as Young, Mature and Over-mature.

Young - Tree aged less 20% of life expectancy, in situ.

Mature - Tree aged 20-80% of life expectancy, in situ.

Over-mature - Tree aged greater than >80% of life expectancy, in situ, or senescent with or without reduced vigour, and declining gradually or rapidly but irreversibly to death.

Height: In metres (estimated)

Spread: Average diameter of canopy in metres (estimated)

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)

Vigour: Ability of a tree to sustain its life processes. This is independent of the condition of a tree but may impact upon it. Vigour can appear to alter rapidly with change of seasons (seasonality) e.g. dormant, deciduous or semi-deciduous trees. Vigour can be categorized as:

Normal Vigour Ability of a tree to maintain and sustain its life processes. This may be evident by the typical growth of leaves, crown cover and crown density, branches, roots and trunk and resistance to predation. This is independent of the condition of a tree but may impact upon it, and especially the ability of a tree to sustain itself against predation.

High Vigour Accelerated growth of a tree due to incidental or deliberate artificial changes to its growing environment that are seemingly beneficial, but may result in premature aging or failure if the favourable conditions cease, or promote prolonged senescence if the favourable conditions remain, e.g. water from a leaking pipe; water and nutrients from a leaking or disrupted sewer pipe; nutrients from animal waste, a tree growing next to a chicken coop, or a stock feed lot, or a regularly used stockyard; a tree subject to a stringent watering and fertilising program; or some trees may achieve an extended lifespan from continuous pollarding practices over the life of the tree.

Low Vigour Reduced ability of a tree to sustain its life processes. This may be evident by the atypical growth of leaves, reduced crown cover and reduced crown density, branches, roots and trunk, and a deterioration of their functions with reduced resistance to predation. This is independent of the condition of a tree but may impact upon it, and especially the ability of a tree to sustain itself against predation.

Dormant Tree Vigour Determined by existing turgidity in lowest order branches in the outer extremity of the crown, with good bud set and formation, and where the last extension growth is distinct from those most recently preceding it, evident by bud scale scars. Normal vigour during dormancy is achieved when such growth is evident on a majority of branches throughout the crown.

Useful Life Expectancy: The life span of a tree in the urban environment may often be reduced by the influences of encroachment and the dynamics of the environment and can be categorized as Immediate, Short Term, Medium Term and Long Term.

Short Term - Period of time less than 15 years.

Medium Term - Period of time 15 - 40 years.

Long Term - Period of time greater than >40 years.

Condition: A tree's crown form and growth habit, as modified by its environment (aspect, suppression by other trees, soils), the stability and viability of the root plate, trunk and structural branches (first (1st) and possibly second (2nd) order branches), including structural defects such as wounds, cavities or hollows, crooked trunk or weak trunk/branch junctions and the effects of predation by pests and diseases. These may not be directly connected with vigour and it is possible for a tree to be of normal vigour but in poor condition. Condition can be categorized as:

Good Condition - Tree is of good habit, with crown form not severely restricted for space and light, physically free from the adverse effects of predation by pests and diseases, obvious instability or structural weaknesses, fungal, bacterial or insect infestation and is expected to continue to live in much the same condition as at the time of inspection provided conditions around it for its basic survival do not alter greatly. This may be independent from, or contributed to by vigour.

Fair Condition - Tree is of good habit or misshapen, a form not severely restricted for space and light, has some physical indication of decline due to the early effects of predation by pests and diseases, fungal, bacterial, or insect infestation, or has suffered physical injury to itself that may be contributing to instability or structural weaknesses, or is faltering due to the modification of the environment essential for its basic survival. Such a tree may recover with remedial works where appropriate, or without intervention may stabilise or improve over time, or in response to the implementation of beneficial changes to its local environment. This may be independent from, or contributed to by vigour.

Poor Condition - Tree is of good habit or misshapen, a form that may be severely restricted for space and light, exhibits symptoms of advanced and irreversible decline such as fungal, or bacterial infestation, major die-back in the branch and foliage crown, structural deterioration from insect damage e.g. termite infestation, or storm damage or lightning strike, ring barking from borer activity in the trunk, root damage or instability of the tree, or damage from physical wounding impacts or abrasion, or from altered local environmental conditions and has been unable to adapt to such changes and may decline further to death regardless of remedial works or other modifications to the local environment that would normally be sufficient to provide for its basic survival if in good to fair condition. Deterioration physically, often characterised by a gradual and continuous reduction in vigour but may be independent of a change in vigour, but characterised by a proportionate increase in susceptibility to, and predation by pests and diseases against which the tree cannot be sustained. Such conditions may also be evident in trees of advanced senescence due to normal phenological processes, without modifications to the growing environment or physical damage having been inflicted upon the tree. This may be independent from, or contributed to by vigour.

APPENDIX 2: CRITERIA FOR ASSESSMENT OF LANDSCAPE SIGNIFICANCE

The level of landscape significance has been determined using the following key criteria as a guide:

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
- The subject tree forms part of the curtilage of a Heritage Item (building /structure /artifact as defined under the LEP) and has a known or documented association with that item; or
- 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 scheduled as a Threatened Species or is a key indicator species of an Endangered Ecological Community as defined under the Threatened Species Conservation Act 1995 (NSW) or the Environmental Protection and Biodiversity Conservation Act 1999; or
- 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; or
- The subject tree is a Remnant Tree, being a tree in existence prior to development of the area; or
- The subject tree has a very large live crown size exceeding 300m² with normal to dense foliage cover, is located in a visually prominent in the landscape, exhibits very good form and habit typical of the species and 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; or
- 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/artifact/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; or
- The subject tree is listed on Council's Significant Tree Register; or
- 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 very large live crown size exceeding 200m²; a crown density exceeding 70% Crown Cover (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; or
- The tree is a locally-indigenous species and representative of the original vegetation of the area; or
- The subject tree has a large live crown size exceeding 100m²; and
- The tree is a good representative of the species in terms of its form and branching habit with minor deviations from normal (eg crown distortion/suppression) with a crown density of at least 70% Crown Cover (normal); and
- 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 subject tree has a medium live crown size exceeding 40m²; and
- 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% Crown Cover (thinning to normal); and
- The tree makes a fair contribution to the visual character and amenity of the area; 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 has no known or suspected historical association

5. LOW

- The subject tree has a small live crown size of less than 40m² and can be replaced within the short term with new tree planting; or
- 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% Crown Cover (sparse); and
- 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.

6. VERY LOW

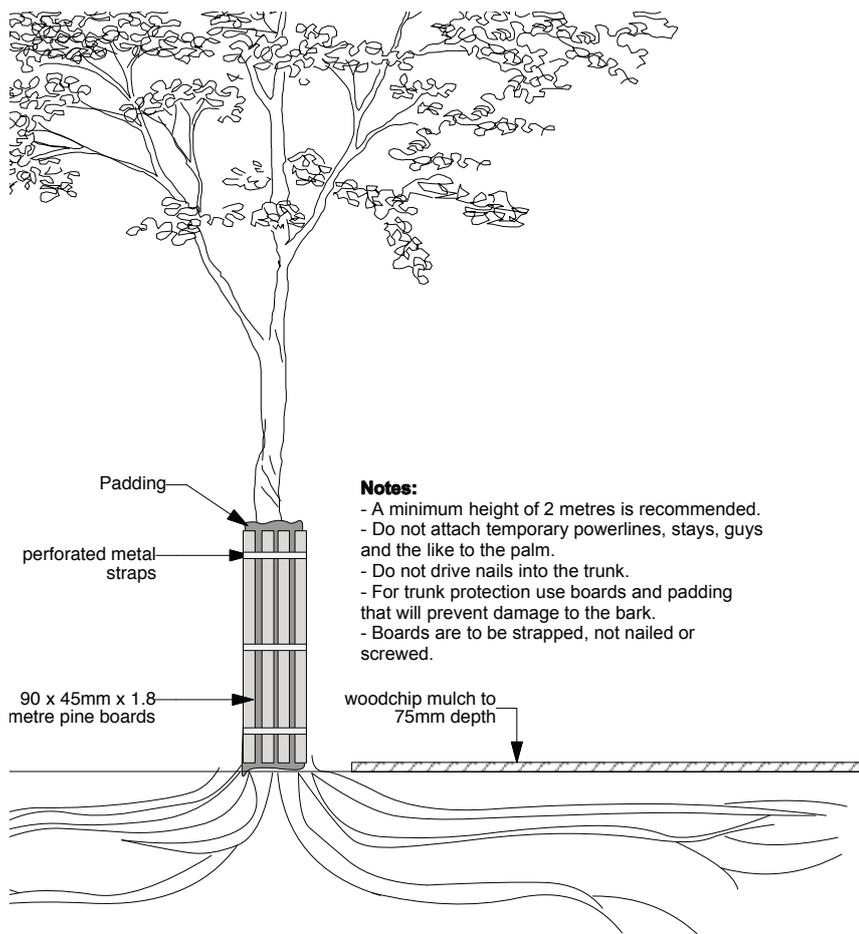
- The subject tree is listed as an Environment Weed Species in the relevant Local Government Area, being invasive, or a nuisance species.
- The subject tree is scheduled as exempt (not protected) under the provisions of the local Council's Tree Preservation Order due to its species, nuisance or position relative to buildings or other structures.

7. INSIGNIFICANT

- The tree is a declared Noxious Weed under the Noxious Weeds Act (NSW) 1993

Ref:- Morton, Andrew (2003) *Criteria for Assessment of Landscape Significance Earthscape Horticultural Services. Sydney, Australia*

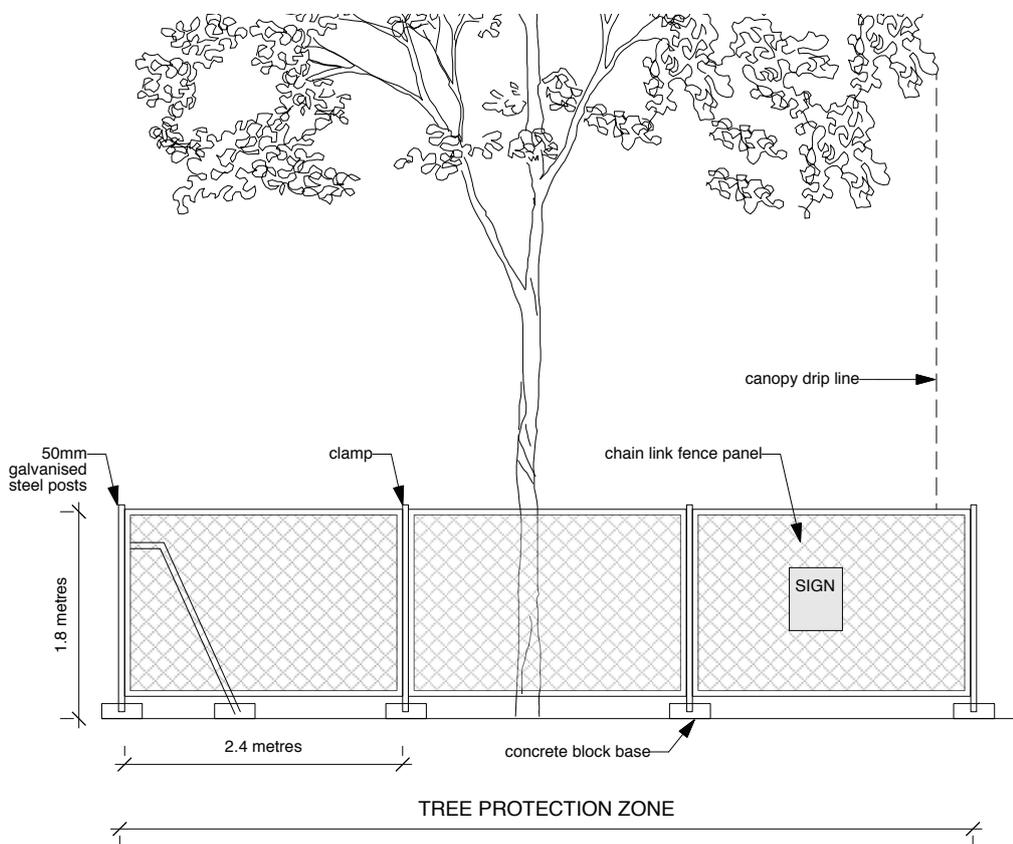
APPENDIX 3: EXAMPLE OF TREE PROTECTION



Above: Illustration of trunk protection



Example of trunk protection installed around a tree



Above: Illustration of tree protection fencing