

Moore Trees  
Arboricultural Services

ABN 26009753751

# Arborist development assessment report

Centro Nepean  
Station and Woodriff Streets  
Penrith NSW 2750

22<sup>nd</sup> May 2015  
**Draft 1**



Member 2015



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## Summary

This report has been compiled for CPM (NSW) Pty Ltd, Centro Lavington, Griffith Road, Lavington NSW 2641. The report concerns a proposed Development Application for Centro Nepean, Station and Woodriff Streets, Penrith NSW 2570. This arborist report refers to ten (10) trees.

This report contains the following information:-

- 1) The subject trees were assessed for Safe Useful Life Expectancy (SULE).
- 2) Genus and species identification of each tree.
- 3) Impact of the proposed works on each tree.
- 4) Impact of retaining tree on the proposed development.
- 5) The Tree Protection Zone (TPZ) for each tree to be retained.
- 6) Any root barriers necessary, type and location.
- 7) Any branch or root pruning that may be required for trees.

Tree 5 has failed in recent storms. Trees 1-4 and 6-10 are proposed to be removed to allow kerb and gutter replacement works to occur. The tree retention and removal locations can be seen in Plan 2 (Appendix 1).

Nine (9) trees are proposed for removal to allow the works to proceed. Nine (9) replacement trees have been recommended as compensatory planting along Reserve Road. The recommendations to mitigate root damage should also provide the surrounding surface areas better protection than they currently have.

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<b>Date of Issue</b>	<b>Details</b>
December 2012	Report issued
May 2015	Updated report issued draft 24/5/15

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# 1 INTRODUCTION

- 1.1 This report has been conducted to assess the health and condition of ten (10) trees located at Centro Nepean, Station and Woodriff Streets, Penrith NSW 2570. This report has been prepared for CPM (NSW) Pty Ltd, Centro Lavington, Griffith Road, Lavington NSW 2641 as required for a Development Application with Penrith City Council at this site.
- 1.2 The purpose of this report is to collect the appropriate tree related data on the subject trees and to provide advice and recommendations to tree planting and replacement plantings in the Shopping Centre car park.
- 1.3 The subject trees were assessed for their health and condition, as well as detailing any damage to infrastructure near each tree. Also included in this report are recommendations into replacement plantings.

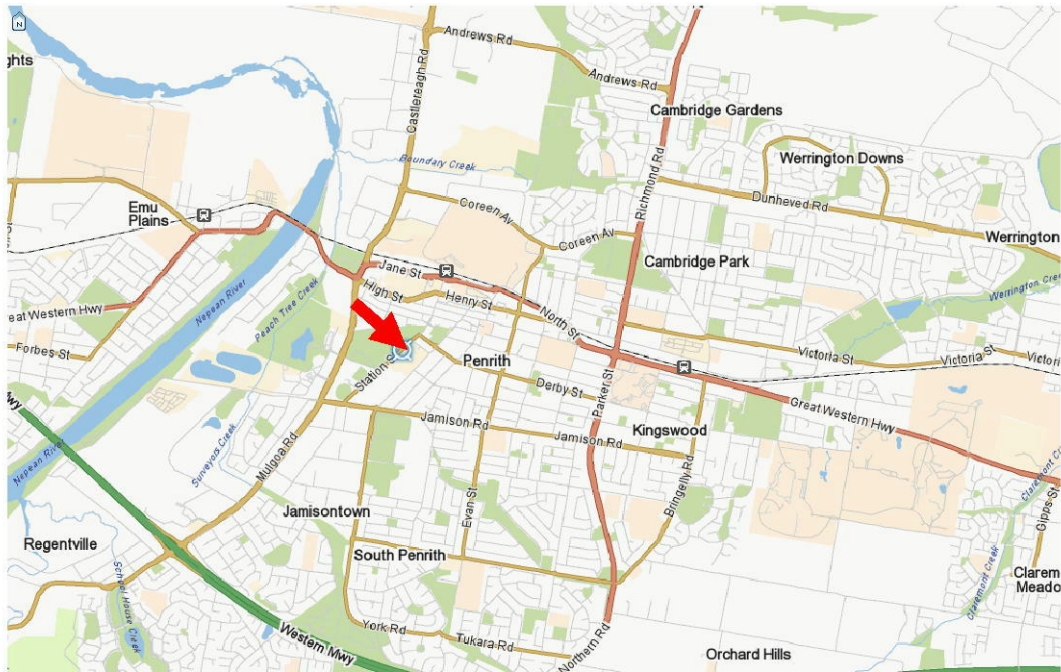
The scope of this report includes the following information, as specified in the Penrith City Council Development Application guidelines:

- 1) A site plan locating all relevant trees over three (3) metres in height.
- 2) All trees were assessed for Safe Useful Life Expectancy (SULE), health and amenity value.
- 3) Genus and species identification of each tree.
- 4) Impact of any works near each tree.
- 5) The Tree Protection Zone (TPZ) calculated for each tree.
- 6) Any branch or root pruning that may be required for trees.

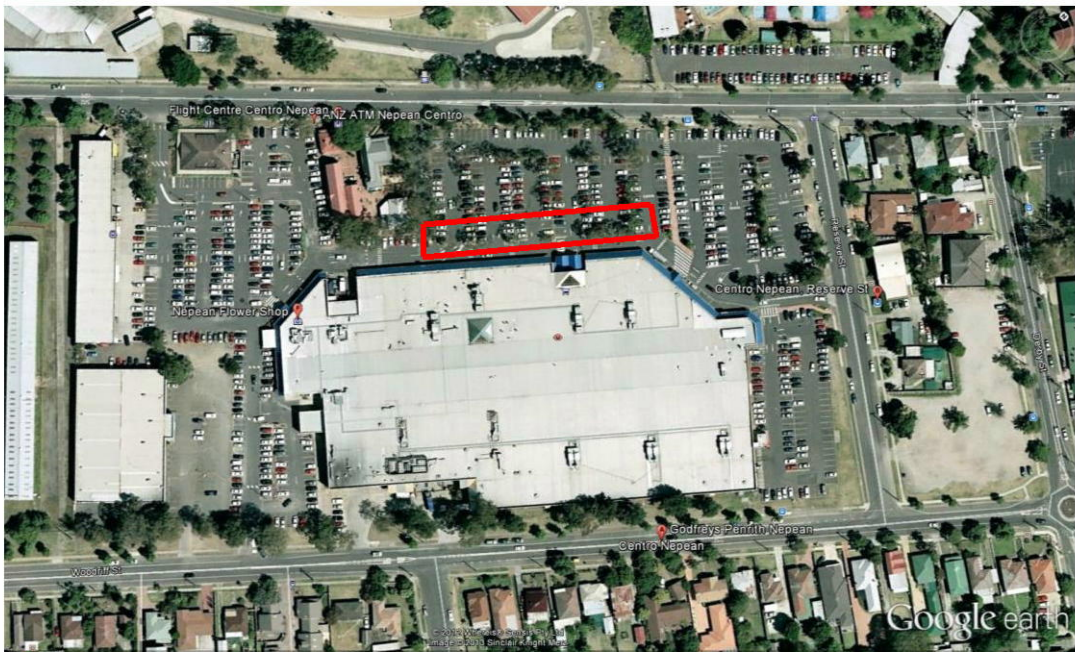
Also part of the scope noted for the purpose of this report is:

- Identification of trees to be retained or removed.
- Assess damage to the surrounding area of the trees assessed.
- Recommend replacement species and potential planting locations.
- Recommend root management solutions.
- Detail ongoing maintenance procedures.
- Detail impacts to the car parking capacity within industry limitations.

**1.4 Location:** The proposed development site is located at Centro Nepean, Station and Woodriff Streets, Penrith NSW 2570 (Diagram 1). The proposed development site from herein will be referred to as "the Site". Individual tree numbers can be seen in the Tree Location Plan (Appendix 1). The study can be seen in Diagram 2.



**Diagram 1:** Location of subject site, Centro Nepean (Red arrow) (whereis.com.au, 2015)



**Diagram 2:** The study area is within the red lines (Google earth, 2015)

## 2 METHODOLOGY

- 2.1 To record the health and condition of the trees, a Visual Tree Assessment (VTA) was undertaken on the subject trees on 29 November 2012. This version of the report has been updated on the 22<sup>nd</sup> May 2015. This method of tree evaluation is adapted from Matheny and Clark, 1994 and is recognised by The International Society of Arboriculture. Individual tree assessments are listed in Appendix 2 of this report. All inspections were undertaken from the ground. No diagnostic devices were used on these trees.
- 2.2 This report is only concerned with trees on the site that come under the Penrith City Council Tree Preservation Order (TPO). It takes no account of any tree or shrub under three (3) metres in height.
- 2.3 **Height:** The heights and distances within this report have been measured with a Bosch DLE 50 laser measure.
- 2.4 **Tree Protection Zones (TPZ):** The Tree Protection Zone (TPZ) is the principal means of protecting trees on development sites. The TPZ is a combination of the root area and crown area requiring protection. It is an area isolated from construction disturbance, so that the tree remains viable. TPZ's have been calculated for each tree to help with assessment. The TPZ calculation is based on the Australian Standard *Protection of trees on development sites*, AS 4970, 2009.
- 2.5 **Structural Root Zone (SRZ):** The SRZ is a specified distance measured from the trunk that is set aside for the protection of tree roots, both structural and fibrous. The woody root growth and soil cohesion in this area are necessary to hold the tree upright. The TPZ and SRZ are measured as a radial measurement from the trunk. No roots should be severed within this area. A detailed methodology on the TPZ and SRZ calculations can be found in Appendix 4.
- 2.6 **SULE:** The subject trees were assessed for a Safe Useful Life Expectancy (SULE). The SULE rating for each tree can be seen the Tree Assessment Schedule (Appendix 2). A detailed explanation of SULE can be found in Appendix 3.

### 3 RELEVANT BACKGROUND INFORMATION

- 3.1 The site forms part of the car park associated with the Nepean Centro Shopping Centre complex. The trees assessed for this report are directly adjacent to the building and follow one of the main access roads. The purpose of this report is to address the impacts of the construction works to the site trees. The plan used to assess these impacts were numbered as Nepean Village SC Specialty Dock Modifications. CG 150062, Cardno dated 15.5.15 Revision D.
- 3.2 The Penrith area, once extensive Cumberland Plain Woodland, was originally the major vegetation type of this area. Vegetation types were mapped soon after European settlement with the earliest map being produced in 1788 '*Natural Vegetation, 1788*' (Benson & Howell, 1990). The Cumberland Plain Woodland was characterised by the dominant Grey Box (*Eucalyptus moluccana*), Forest Red Gum (*Eucalyptus tereticornis*), Narrow-leaved Ironbark (*Eucalyptus crebra*), Broad-leaved Apple (*Angophora subvelutina*), Thin-leaved Stringybark (*Eucalyptus eugenoides*) and Cabbage Gum (*Eucalyptus amplifolia*). There are examples of most of these specimens within the Penrith area with the Grey Box currently in an unstoppable state of decline due to huge infestations of Psyllids causing foliage to brown off. The Narrow-leaved Ironbark favoured the drier hills and terraces, while Cabbage Gum dominated the periodically waterlogged soils of the floodplains. The Kurrajong (*Brachychiton populneum*) and Port Jackson Pine (*Callitris rhomboidea*) were important components, particularly on the drier hill tops of this area.
- 3.3 **Environmental Significance:** A Tree Preservation Order (TPO) applies to the whole of the Penrith Local Government Area to ensure the long-term survival of the landscape character of the area. It promotes the replanting and good management of trees, whilst prohibiting the ring-barking, cutting down, topping, lopping, and removing, injuring or wilful destruction of any trees. This TPO protects all trees greater than three (3) metres in height, with a girth of thirty (30) centimetres, measured forty (40) centimetres above the ground except with the written consent of Council. The Tree Preservation order applies to all trees on private property. As Council is the consent authority regarding the site trees, Council may not agree with the views expressed in this report and condition that certain trees are to be retained. This may entail redesign or minor



alterations of the project. In this instance, the Architect or Draftsperson should refer to the TPZ and SRZ measurements to enable adequate distances to be maintained between the tree and any proposed works.

- 3.4 Illegal tree removal:** Damaging or removing trees can result in heavy fines. Local Government does have the authority to issue on the spot fines known as penalty infringement notices (PINS) starting from \$1,500 or can elect to have a potential tree damaging incident addressed in the Local Court. Recent cases, for example, include two (2) mature trees removed for development (Sutherland Shire Council (SSC) v Palamara, 2008) costing \$4,500 in fines and \$5,000 in court costs. SSC v El-Hage, 2010 concerning illegal tree removal of a single tree costing \$31,500 in fines and \$5,000 in costs. Poisoning trees can also incur substantial fines (SSC v Hill) resulted in a single tree fine that totalled \$14,000 plus a \$10,000 bond for a replacement tree. All of the above cases resulted in a criminal conviction for the guilty parties. It is important to follow the Penrith City Council planning guidelines that involve tree removal and replacement.
- 3.5 The Site Trees:** The site was inspected on 29 November 2012. This version of the report has been updated on the 22<sup>nd</sup> May 2015. Each tree has been given a unique number for this site and can be viewed on the Tree Location Plan (Appendix 1). All site trees have been numbered from 1-10.
- 3.6** Trees 1- 9 are all native Lemon-scented gum trees (*Corymbia citriodora*) that are in varying conditions of health. Trees 1 and 2 are causing the least amount of problems to the surrounding kerb and gutter (Plates 1 and 2). The other specimens are in poor health or have had repair work occur within the Structural Root Zone (SRZ) of the tree as can be seen in Plates 3 and 4. This species develops long branchless stems that can and do fail either at the branch union or mid-way along the branch. With regards to branch drop from these trees there is no indication that they are in poor health or have faulty branch attachments. The phenomenon that is known as 'Summer branch drop' (Harris, 1983) could also be applied to the recent failures. This term has been used since the early Eighties to define the failure of seemingly healthy branches failing in calm weather conditions. Contrary to opinion, Summer branch drop does not occur to *Eucalyptus* species alone. It has been widely reported in peer reviewed papers that

Summer branch drop occurs in both exotic as well as native tree species. It has also been reported that the phenomenon is not limited to arid regions but has also been extensively reported in England and Europe (Harris, 1983). Either way, the Lemon-scented gum tree is well known within the Sydney metropolitan area to drop an unusually high number of branches in comparison to other tree species.

- 3.7** Tree 10 is a small *Melaleuca* (*Melaleuca bracteata*) in fair condition. The main trunk, first and second order branches are free of any cracks, splits or fruiting bodies. New extension growth was noted. The basal area and woody root zone were free of any ground heaving, or lifting.
  
- 3.8** Tree 5 has failed in recent storms and has been removed. Its previous location is still shown on the Tree Location Plan.
  
- 3.9** The client has a duty of care and responsibility to reduce trip hazards on site and as such will have a difficult, ongoing problem with the planting of the current species. The species planted here, being a large forest tree, will potentially triple in girth and with root growth that will extend far beyond the drip line the seven hundred (700) millimetres wide garden beds will create ongoing management issues.
  
- 3.10** All trees assessed were free of any habitat hollows.

## 4 RECOMMENDATIONS

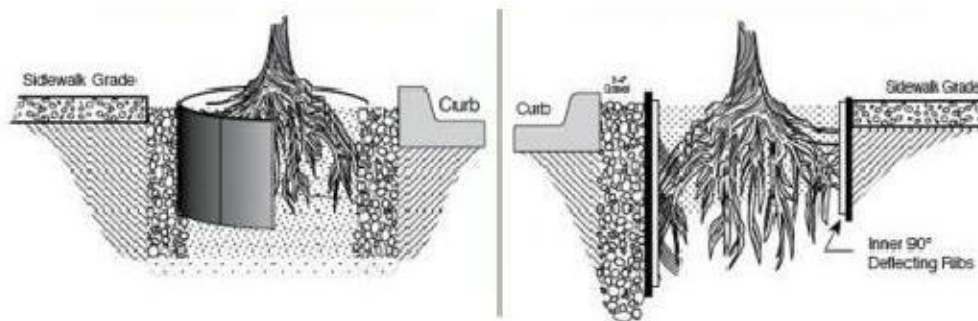
- 4.1 Tree assessment:** Trees 1-4 and 6-10 are proposed to be removed to allow kerb and gutter replacement works to occur. The tree retention and removal locations can be seen in Plan 2 (Appendix 1).
- 4.2** Whilst a number of replacement species are available I have chosen the Kurrajong (*Brachychiton populneus*) as the only replacement species for the trees to be removed. It is prudent to select a local species that can be seen to be performing well based on the site constraints. Based on the Kurrajong trees that are currently growing on site this species will perform well in terms of health and structural condition (Plate 9) and also root damage appears to be minimal even without any root restraining material such as root barriers and root directional planter pots. The examples present have grown dense, fine branched canopies that will provide shade, canopy cover, and visual amenity and not grow into large forest trees like *Eucalyptus sp.*
- 4.3 Replacement species:** *Brachychiton populneus* is present on site and proving to be a good option for a replacement species (Plate 6). *Brachychiton populneus*, commonly called Kurrajong, is a native to eastern Australia with much value in cultivation. Plants are tolerant of dry conditions, easy to propagate and have many interesting features.

Naturally distributed from north-eastern Victoria to Townsville and from the coast through to the semi-arid inland, *B. populneus* inhabits various well-drained soil types, often occurring amongst rocky outcrops of granite or limestone and also thriving on deeper soils in some areas. Flowers are bell-shaped and whitish in colour with the inner flower tube streaked purple-brown. Cultivated hybrids involving *B. populneus* display pink or red flowers. Seeds are borne within woody, boat-shaped fruit 1-7 cm. Juvenile plants, which display attractive lobed leaves and swollen taproots, make good pot-plants tolerant of dry and pot-bound conditions that respond well to pruning. Trees are typically stout with glossy-green foliage and are widely used as street trees in Australia and overseas. Native populations on agricultural land are often retained to provide dense shade and drought fodder. While sapling growth is often very slow, great improvements are possible through soil cultivation, watering and care. Plants have

numerous pests and diseases but show resilience to defoliation. Internal infections are best avoided by application of anti-fungal treatments to open wounds.

**4.4 Replacement locations:** Nine (9) replacement specimens are recommended to be planted along Reserve Street between the nature strip and car park. The proposed replacement locations can be seen in Plan 3 (Appendix 1).

**4.5 Planting techniques:** In order to reduce damage to the surrounding infrastructure there are a variety of products on the market that will reduce root damage. There are also products that will ensure adequate moisture is directed to the root ball of each new tree. Flexible sheet root barrier can be installed in a circular manner or along the edge of each garden bed as seen in Diagram 3



**Diagram 3:** Root barrier installation techniques.

Other products available are one piece container that are planted below ground and help direct the roots down ward rather than radially. One example shown in Diagram 4 is the Root Director®. Use of this product will depend on the sizes available and their ability to be inserted within an existing garden bed. The product dealer should be contacted directly for this information.



**Diagram 4:** The Root Director® available from Arbor Green Pty Ltd.

Watering a new plant can be aided with the use of agricultural pipe inserted into the planting holes vertically or the use of purpose made watering devices like the Root Train shown in Diagram 5.



**Diagram 5:** The Root Train® available from Arbor Green Pty Ltd.

**4.6 Maintenance:** Following being planted, the single most important need of a newly-planted tree is to receive adequate moisture. As a general rule one (1) bucket of water twice a week should suffice. Water must be concentrated on the existing root ball. An important point to remember is that moisture will not flow from wet surrounding soils back into the root ball. So, watering must concentrate on wetting the root ball itself.

Below are some watering quantities specifically for Australian conditions.

<i>Container size</i>	<i>Tree height</i>	<i>Trunk Diameter</i>	<i>Litres</i>	<i>week</i>
15-20 Ltrs	1.5-2metres	30mm	5	1
40-50 Ltrs	2.1-3.0metres	50mm	8	2
75-100 Ltrs	3.1-4metres	75mm	12	3

I would estimate that the root ball for the replacement trees will be around 40-50 litres however the final volume of the root ball will need to be calculated and the above water quantities applied.

A sturdy levy that will retain water must be built (and maintained) around the edge of the root ball of the subject tree. The pond created within the levy should be regularly filled with water.

If the watering basin remains wet between each watering then take a break from watering. It is good for the root ball to dry out between watering.

Do not stop watering in the event of rain. It might wet the ground but, unless heavy and/or prolonged, rain normally will not deliver adequate moisture to the root ball.

If the new growth on your tree is showing signs of wilting then water as soon as possible. If the new growth is wilting and the soil is waterlogged then the problem is below ground level. Further assessment will be required.

- 4.7** Although nine (9) trees are proposed for removal, nine (9) trees are proposed to be replaced in better locations with a species that will have a longer growing potential than the existing tree species. The recommendations to mitigate root damage should also provide the surrounding areas better protection than they currently have. No car parking spaces are required to be lost and Council's request to replace some trees within the car park area has been met with this proposed plan.

If you have any questions in relation to this report please contact me.



**Paul Vezgoff**

Consulting Arborist

Dip Arb (Dist), Arb III, Hort cert, AA, ISA

22 May 2015



[www.mooretrees.com.au](http://www.mooretrees.com.au)

## 5 IMAGES

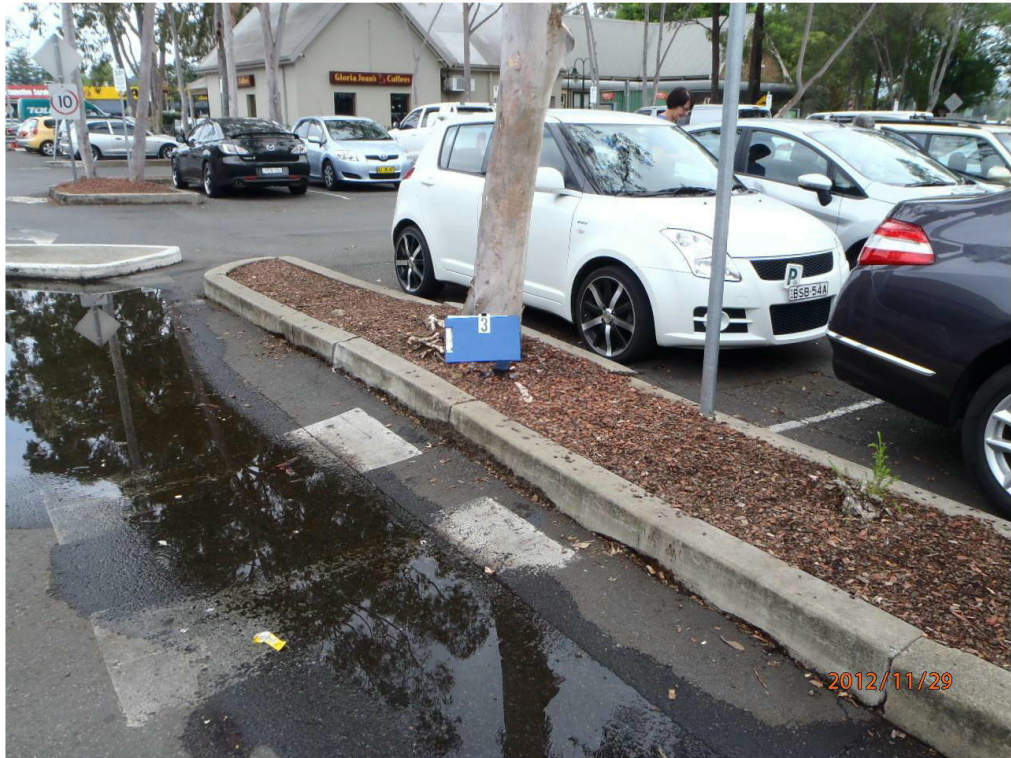


**Plate 1:** Image showing Trees 1 and 2. P. Vezgoff.



**Plate 2:** Image showing the base of Trees 1 and 2. P. Vezgoff.





**Plate 3:** Image showing the base of Tree 3 with previous saw cuts within the SRZ distance. P. Vezgoff.



**Plate 4:** Another example of repairs within the SRZ distance on Tree 6. P. Vezgoff.



**Plate 5:** Tree 1-10 adjacent to the building. P. Vezgoff.



**Plate 6:** Kurrajong (*Brachychiton populneus*) examples in the car park. P. Vezgoff.



**Plate 7:** Image showing the base of one of the Kurrajong trees. Minimal damage is apparent at the base of these trees compared with the other native species present on site. P. Vezgoff.

**Appendix 1**

**Plan 1**

**Tree Location Plan**



**Plan 1: Tree Location Plan**

**Plans 2 and 3**

**Proposed Tree Replacement Locations**



**Plan 2: Proposed removals (Red)**



**Plan 3:** Proposed replacement areas in orange totaling 9 new trees.



**Appendix 2**

**Tree health & condition**  
**assessment schedule**

TREE HEALTH AND CONDITION ASSESSMENT SCHEDULE –

Tree	Species	Height (m)	Spread (m)	DBH (mm)	Live canopy %	Defects	SULE	Condition	Age	Comments	TPZ Radius (m)	SRZ Radius (m)
1	Lemon-scented gum tree (Corymbia citriodora)	13	5	200	70	No Value	2a May only live for 15-40 years	Fair	Mature	Lifting surface.	2m	1.7m
2	Lemon-scented gum tree (Corymbia citriodora)	13	5	200	70	No Value	2a May only live for 15-40 years	Fair	Mature	Lifting surface.	2m	1.7m
3	Lemon-scented gum tree (Corymbia citriodora)	10	5	250	90	No visual defects	2a May only live for 15-40 years	Good	Mature	Cut roots within SRZ. Lifting surface. Kerb and gutter.	3m	1.7m
4	Lemon-scented gum tree (Corymbia citriodora)	9	3	150x110	80	No Value	2a May only live for 15-40 years	Fair	Mature	Lifting kerb edge	2m	1.7m
5	Lemon-scented gum tree (Corymbia citriodora)	13	4	250	10	Foliar pest	2a May only live for 15-40 years	Poor	Mature	Cut roots within SRZ. Lifting surface. Almost dead	3m	1.9m
6	Lemon-scented gum tree (Corymbia citriodora)	13	4	250	90	No visual defects	2a May only live for 15-40 years	Good	Mature	Cut roots within SRZ. Lifting surface.	3m	1.9m

7	Lemon-scented gum tree (Corymbia citriodora)	13	4	180	90	No visual defects	2a May only live for 15-40 years	Good	Mature	2m	1.5m
8	Lemon-scented gum tree (Corymbia citriodora)	13	4	180	90	No visual defects	2a May only live for 15-40 years	Good	Mature	2m	1.5m
9	Lemon-scented gum tree (Corymbia citriodora)	11	4	180	90	No visual defects	2a May only live for 15-40 years	Good	Mature	2m	1.5m
10	Melaleuca bracteata	4	1	110	70	No visual defects	2a May only live for 15-40 years	Good	Mature	1m	1m

## KEY

**Tree No:** Relates to the number allocated to each tree for the Tree Location Plan.

**Height:** Height of the tree to the nearest metre.

**Spread:** The average spread of the canopy measured from the trunk.

**DBH:** Diameter at breast height. An industry standard for measuring trees at 1.4 metres above ground level, this measurement is used to help calculate Tree Protection Zones.

**Live Crown Ratio:** Percentage of foliage cover for a particular species.

<b>Age Class:</b> Young:	Recently planted tree	Semi-mature: < 20% of life expectancy
Mature:	20-90% of life expectancy	Over-mature: >90% of life expectancy

**SULE:** See SULE methodology in the Appendix 3

**Tree Protection Zone (TPZ):** The minimum area set aside for the protection of the trees trunk, canopy and root system throughout the construction process.

**Structural Root Zone (SRZ):** The SRZ is a specified distance measured from the trunk that is set aside for the protection of the trees roots both structural and fibrous.

## Appendix 3

### SULE categories (after Barrell, 2001)<sup>1</sup>

<b>SULE Category</b>	<b>Description</b>
<b>Long</b>	Trees that appeared to be retainable at the time of assessment for more than 40 years with an acceptable level of risk.
1a	Structurally sound trees located in positions that can accommodate for future growth
1b	Trees that could be made suitable for retention in the long term by remedial tree care.
1c	Trees of special significance that would warrant extraordinary efforts to secure their long term retention.
<b>Medium</b>	Trees that appeared to be retainable at the time of assessment for 15-40 years with an acceptable level of risk.
2a	Trees that may only live for 15-40 years
2b	Trees that could live for more than 40 years but may be removed for safety or nuisance reasons
2c	Trees that could live for more than 40 years but may be removed to prevent interference with more suitable individuals or to provide for new planting.
2d	Trees that could be made suitable for retention in the medium term by remedial tree care.
<b>Short</b>	Trees that appeared to be retainable at the time of assessment for 5-15 years with an acceptable level of risk.
3a	Trees that may only live for another 5-15 years
3b	Trees that could live for more than 15 years but may be removed for safety or nuisance reasons.
3c	Trees that could live for more than 15 years but may be removed to prevent interference with more suitable individuals or to provide for a new planting.
3d	Trees that require substantial remedial tree care and are only suitable for retention in the short term.
<b>Remove</b>	Trees that should be removed within the next five years.
4a	Dead, dying, suppressed or declining trees.
4b	Dangerous trees because of instability or loss of adjacent trees
4c	Dangerous trees because of structural defects
4d	Damaged trees not safe to retain.
4e	Trees that could live for more than 5 years but may be removed to prevent interference with more suitable individuals or to provide for a new planting.
4f	Trees that are damaging or may cause damage to existing structures within 5 years.
<b>Small</b>	Small or young trees that can be reliably moved or replaced.
5a	Small trees less than 5m in height.
5b	Young trees less than 15 years old but over 5m in height.

<sup>1</sup> (Barrell, J. (2001) "SULE: Its use and status into the new millennium" in *Management of mature trees*. Proceedings of the 4<sup>th</sup> NAAA Tree Management Seminar, NAAA, Sydney.

## Appendix 4

# TPZ and SRZ methodology

### Determining the Tree Protection Zone (TPZ)

The radius of the TPZ is calculated for each tree by multiplying its DBH x 12.

$$\text{TPZ} = \text{DBH} \times 12$$

Where

DBH = trunk diameter measured at 1.4 metres above ground

Radius is measured from the centre of the stem at ground level.

A TPZ should not be less than 2 metres no greater than 15 metres (except where crown protection is required). Some instances may require variations to the TPZ.

The TPZ of palms, other monocots, cycads and tree ferns should not be less than 1 metre outside the crown projection.

### Determining the Structural Root Zone (SRZ)

The SRZ is the area required for tree stability. A larger area is required to maintain a viable tree.

The SRZ only needs to be calculated when major encroachment into a TPZ is proposed.

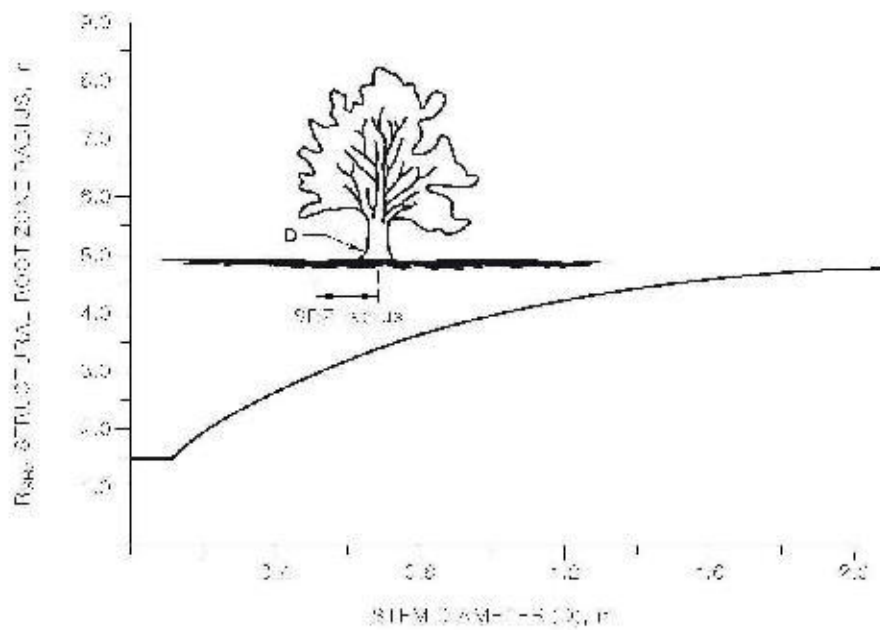
There are many factors that affect the size of the SRZ (e.g. tree height, crown area, soil type, soil moisture). The SRZ may also be influenced by natural or built structures, such as rocks and footings. An indicative SRZ radius can be determined from the trunk diameter measured immediately above the root buttress using the following formula or Figure 1. Root investigation may provide more information on the extent of these roots.

$$\text{SRZ radius} = (D \times 50)^{0.64} \times 0.64$$

Where

$D$  = trunk diameter, in m, measured above the root buttress

NOTE: The SRZ for trees with trunk diameters less than 0.15m will be 1.5m (see Figure 1).



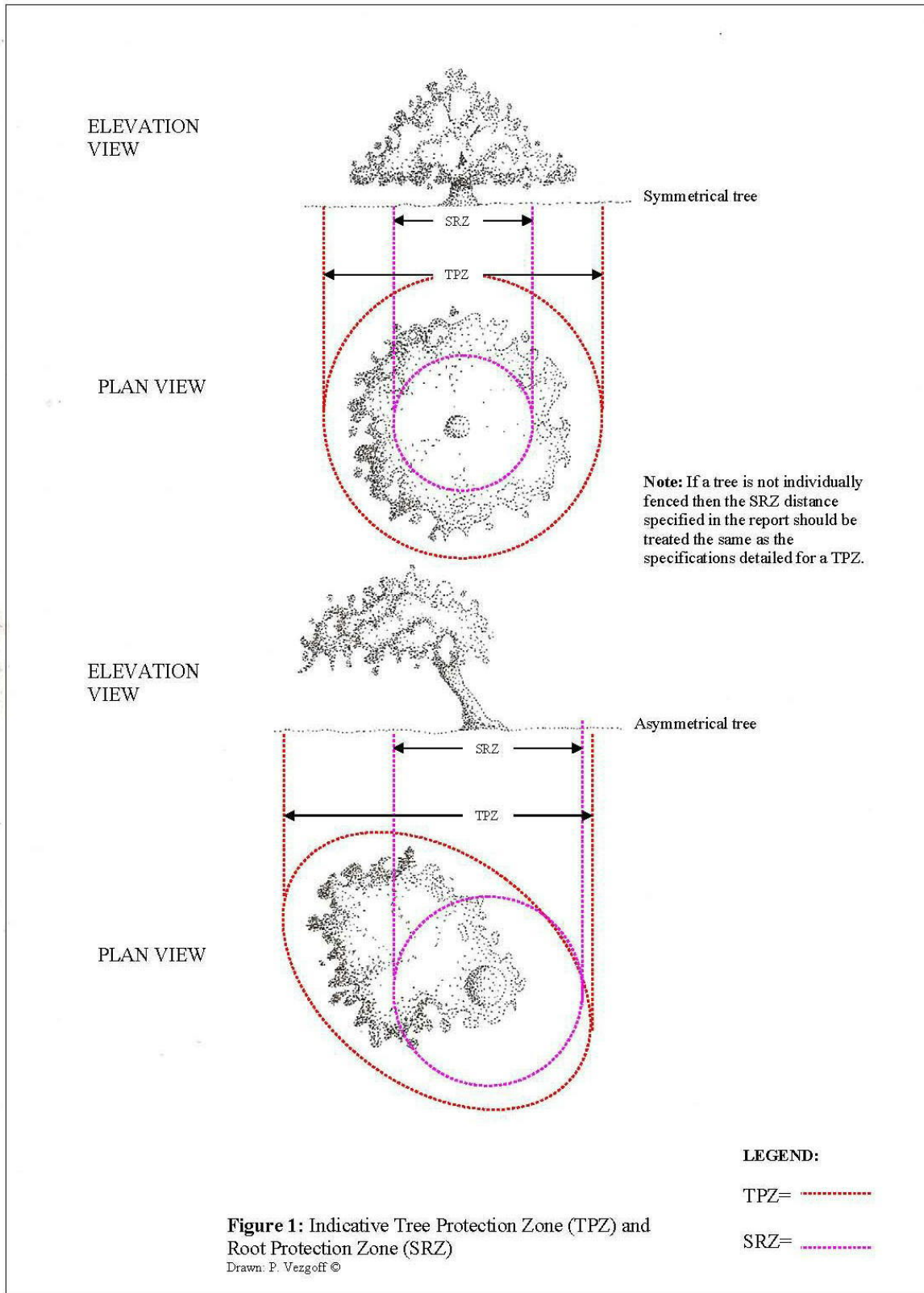
The curve can be measured by the following formula:  
 $R_{SRZ} = (D \times 50)^{0.42} \times 0.94$

FIGURE 1 - STRUCTURAL ROOT ZONE

*Notes:*

- 1  $R_{SRZ}$  is the structural root zone radius.
- 2  $D$  is the stem diameter measured immediately above root buttress.
- 3 The SRZ for trees less than 0.15 metres diameter is 1.5 metres.
- 4 The SRZ formula and graph do not apply to palms, other monocots, cycads and tree ferns.
- 5 This does not apply to trees with an asymmetrical root plate.

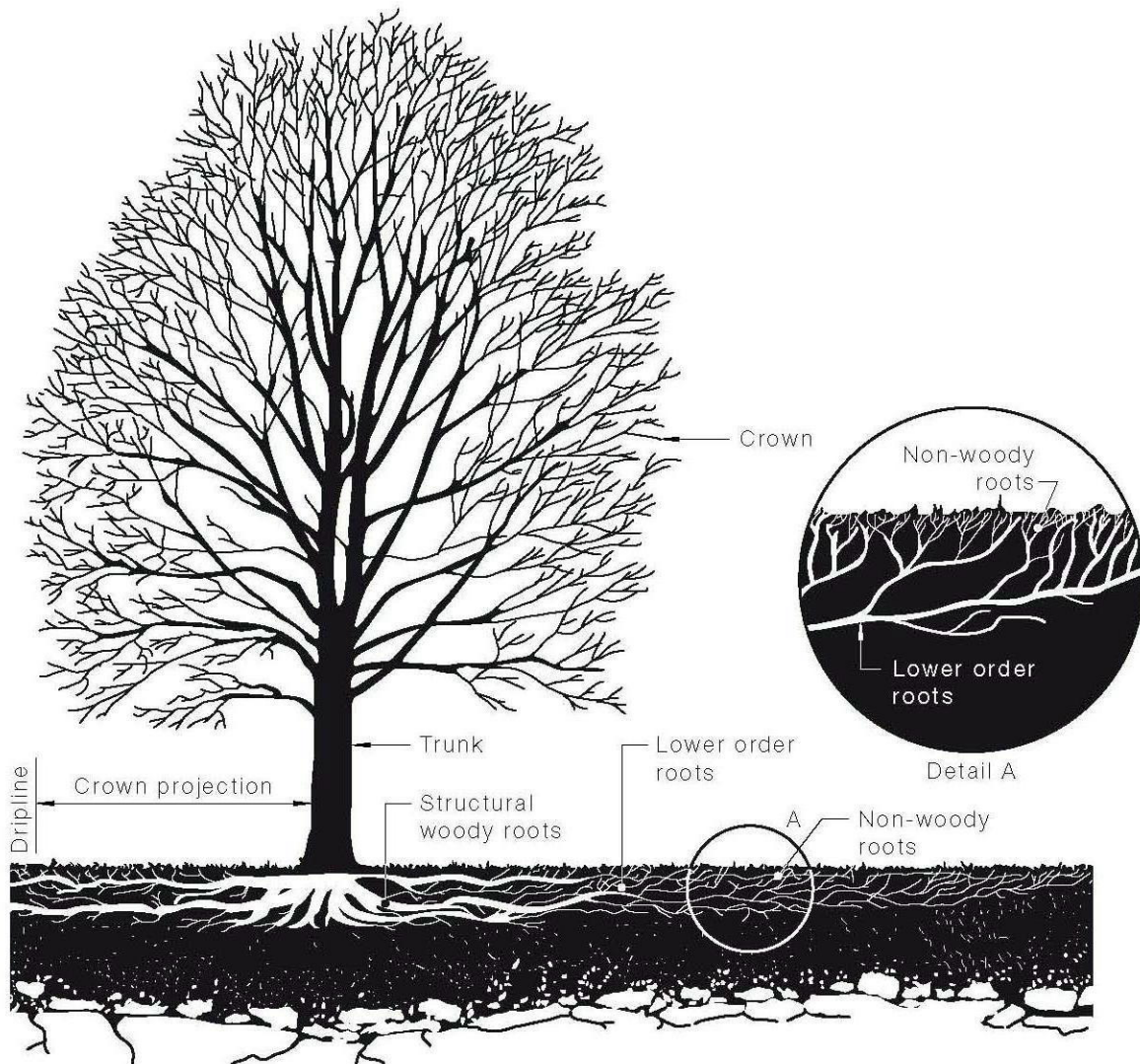
## Appendix 5





## Appendix 6

### Tree structure information diagram



**Figure 2:** Structure of a tree in a normal growing environment (AS 4970, 2009.).

## Appendix 7

### Explanatory Notes

- **Mathematical abbreviations:** > – Greater than; < – Less than.
- **Measurements/estimates:** All dimensions are estimates unless otherwise indicated. Less reliable estimated dimensions are indicated with a "?".
- **Species:** The species identification is based on visual observations and the common English name of what the tree appeared to be is listed first, with the botanical name after in brackets. In some instances, it may be difficult to quickly and accurately identify a particular tree without further detailed investigations. Where there is some doubt of the precise species of tree, it is indicated with a "?" after the name in order to avoid delay in the production of the report. The botanical name is followed by the abbreviation sp if only the genus is known. The species listed for groups and hedges represent the main component and there may be other minor species not listed.
- **Height:** Height is estimated to the nearest metre.
- **Spread:** The maximum crown spread is visually estimated to the nearest metre from the centre of the trunk to the tips of the live lateral branches.
- **Diameter:** These figures relate to 1.4m above ground level and are recorded in centimetres. If appropriate, diameter is measured with a diameter tape. 'M' indicates trees or shrubs with multiple stems.
- **Estimated Age:** Age is estimated from visual indicators and it should only be taken as a provisional guide. Age estimates often need to be modified based on further information such as historical records or local knowledge.
- **Distance to Structures:** This is estimated to the nearest metre and intended as an indication rather than a precise measurement.

## Appendix 8

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## Curriculum Vitae

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### **EDUCATION and QUALIFICATIONS**

- 2007 – Diploma of Arboriculture (AQF Cert V) Ryde TAFE. (Distinction)
- 1997 – Completed Certificate in Crane and Plant Electrical Safety
- 1996 – Attained Tree Surgeon Certificate (AQF Cert II) at Ryde TAFE
- 1990 – Completed two month intensive course on garden design at the Inchbald School of Design, London, United Kingdom
- 1990 – Completed patio, window box and balcony garden design course at Brighton College of Technology, United Kingdom
- 1989 – Awarded the Big Brother Movement Award for Horticulture (a grant by Lady Peggy Pagan to enable horticulture training in the United Kingdom)
- 1989 – Attained Certificate of Horticulture (AQF Cert IV) at Wollongong TAFE

### **INDUSTRY EXPERIENCE**

#### **Moore Trees Arboricultural Services**

**January 2006 to date**

Tree Consultancy and tree ultrasound. Tree hazard and risk assessment, Arborist development application reports  
Tree management plans.

#### **Woollahra Municipal Council**

**Oct 1995 to February 2008**

ARBORICULTURE TECHNICAL OFFICER

August 2005 – February 2008

Tree asset management, programmed inspection, inventory and condition surveys of council trees, hazard and risk appraisal,  
Tree root damage investigation and reporting, assessment of impacts of capital works projects on council trees.

ACTING COORDINATOR OF TREES MAINTENANCE

June – July 2005, 2006

Responsible for all duties concerning park and street trees. Prioritising work duties, delegation of work and staff supervision.

TEAM LEADER

January 2003 – June 2005

TEAM LEADER

September 2000 – January 2003

HORTICULTURALIST

October 1995 – September 2000

#### **Northern Landscape Services**

**July to Oct 1995**

Tradesman for Landscape Construction business

#### **Paul Vezgoff Garden Maintenance (London, UK)**

**Sept 1991 to April 1995**

### **CONFERENCES AND WORKSHOPS ATTENDED**

- International Society of Arboriculture Conference (Brisbane 2008)
- Tree related hazards: recognition and assessment by Dr David Lonsdale (Brisbane 2008)
- Tree risk management: requirements for a defensible system by Dr David Lonsdale (Brisbane 2008)
- Tree dynamics and wind forces by Ken James (Brisbane 2008)
- Wood decay and fungal strategies by Dr F.W.M.R. Schwarze (Brisbane 2008)
- Tree Disputes in the Land & Environment Court – The Law Society (Sydney 2007)
- Barrell Tree Care Workshop- Trees on construction sites (Sydney 2005).
- Tree Logic Seminar- Urban tree risk management (Sydney 2005)
- Tree Pathology and Wood Decay Seminar presented by Dr F.W.M.R. Schwarze (Sydney 2004)
- Inaugural National Arborist Association of Australia (NAAA) tree management workshop- Assessing hazardous trees and their Safe Useful Life Expectancy (SULE) (Sydney 1997).