



**TREE MANAGEMENT CONSULTING ARBORICULTURISTS**

## **ARBORICULTURAL ASSESSMENT**

**An audit and health and condition  
assessment of existing site trees as a  
preliminary guide to site planning for development.**

for

Royal Rehabilitation Centre Sydney  
C/O Peloton Development Management  
Suite 11, 2-4 Kings Lane  
DARLINGHURST NSW 2010

### **SITE ADDRESS**

ROYAL REHABILITATION CENTRE SYDNEY  
59 CHARLES STREET  
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**OCTOBER 2007**



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# 1 INTRODUCTION

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- 1.1** This Arboricultural Assessment was commissioned by Mr. Julian Frecklington of Peloton Development Management, on behalf of the owners of the subject site. The subject site is identified as Lot 5 in an unregistered plan of subdivision of Lot 1010 in DP 836975, Lot 102 in DP 826426, and Lot D in DP 415046, and is known as the Royal Rehabilitation Centre Sydney, Ryde, New South Wales.
- 1.2** The purpose of this report is to provide information relating to the numbers and species of trees present on the subject site. The report is intended to assist in the planning and design of the proposed development of the subject site.
- 1.3** The report assesses the *health* and *condition* of the existing site trees, and provides guidelines for appropriate setbacks from trees to structures, ground level changes or other site development activities that may affect those trees.
- 1.4** This report also highlights those trees least suitable for retention due to declining health or condition.
- 1.5** Information contained in this Arboricultural Assessment covers only the trees that were examined and reflects the condition of those trees at the time of inspection. Care has been taken to obtain all information from reliable sources. All data has been verified as far as possible; however, I can neither guarantee nor be responsible for the accuracy of information provided by others.
- 1.6** This Arboricultural report is not intended as an assessment of any impacts on the trees by any proposed future development of the site.
- 1.7** This report is not intended to be a comprehensive *hazard* assessment, however the report may make recommendations, where appropriate, for further assessment or testing of trees where potential structural problems have been identified or where below ground investigation may be required.

## 2 METHODOLOGY

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- 2.1** In preparation for this report, a ground level, limited *visual tree assessment* (Mattheck 1994) was undertaken by Urban Forestry Australia on 19<sup>th</sup> and 21<sup>st</sup> October, 2007.
- 2.2** Tree height and crown spread was estimated and expressed in metres. Trunk diameter was estimated at a point approximately 1.4 metres above ground level. Dimensions are expressed in millimeters.
- 2.3** All assessed trees or tree groups were assigned a number, and are identified on marked up copies of the 1- 18 sheets of the site survey. These marked up sheets are collectively called the Tree Location Plan, and are attached as Appendix C.
- 2.4** Field observations were written down for later entry into the Schedule of Assessed Trees. This schedule is attached as Appendix B.
- 2.5** Trees were accorded a 'Condition Rating' of between 0 – 5, with 0 representing a dead tree, and 5 representing a specimen with exceptional health and condition. Trees with a rating less than 3 (e.g. 0, 1 and 2) were generally treated as removable trees due to their declining health or condition, the presence of identifiable defects, or listed as exempt species under Ryde Council's Tree Preservation Order.
- 2.6** No *aerial inspections* or woody tissue testing were undertaken as part of this tree assessment. Information contained in this tree report covers only the trees that were examined and reflects the condition of those trees at the time of inspection.
- 2.7** Plans and documents referenced for the preparation of this report include:
- Details and Levels Survey, Dwg. No. 32130 - 41, Sheets 1 – 18, dated 9<sup>th</sup> September 2007, prepared by Frank M Mason & Co., Pty Ltd.;
  - Ryde City Council Tree Preservation Order.
  - Ryde City Council Significant Tree Register
  - Ryde City Council Local Environment Plan 105 – Heritage.

### 3 PRELIMINARY GUIDELINES FOR PLANNING AND DESIGN

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#### 3.1 Minimising Impacts on Trees to be Retained

3.1.1 Generally, potential impacts from site development can be summarised as follows;

- Incursions (i.e. excavation or filling over existing ground, grading and removing of topsoils) into the root zones of trees resulting in loss of fine feeder roots, or severing of structural woody roots.
- Structural branch loss through close proximity of structures to trees.
- Significant changes to surrounding soil levels which can affect soil hydrology and tree root health.

3.1.2 Where tree retention is desired, the Tree Protection Area (TPA) of an individual tree is estimated as 10 times the stem diameter, or the outer extent of the *canopy dripline* (whichever is the greater).

An additional 1 - 2 metres is added to this setback to ensure construction scaffolding can be accommodated, without excessive removal of foliage and branches from the tree.

Several trees have high crowns; therefore this additional setback may be reduced following further arboricultural assessment of impacts on individual trees near proposed development.

Without any specific root zone assessment the TPA is to be kept entirely free of any development works, e.g. changes to existing ground levels, use of machinery, stockpiling, etc.

3.1.3 To facilitate adequate protection of tree root zones and tree crowns, separate appraisal of each development area (proposed roads, structures bulk earthworks or other ground level changes) should be carried out.

3.1.4 If no root investigations are carried out, TPA setbacks must adhere to those identified for individual trees in Appendix C of this report.

- 3.1.5 Additional setbacks of 2m (to side of tree closest to structure under construction) must be provided to trees near future dwellings to allow for construction scaffolding to be erected without impacting on tree crowns.
- 3.1.6 Wherever possible all major utilities and services are to be located beneath internal roads and driveways to dwellings.
- 3.1.7 Future proposed dwellings and driveways must be reassessed by a competent arboriculturist prior to any finalising of design and/or construction.
- 3.1.8 Any proposed excavation within the specified TPA setbacks of trees must be subject to the outcome of root investigation and/or assessment by a competent arboriculturist. Any approved excavation must be carried out under the direct supervision of a suitably qualified and experienced arboriculturist
- 3.1.9 Container size of proposed plants within the root zones (as defined by minimum setbacks in Section 3.5) of trees to be retained should be determined prior to purchase of plants. This is to determine where and how large plants can be at the time of planting. Otherwise, any proposed landscaping within the specified TPA setbacks must consist of tubestock only. This is required to ensure that damage to the tree's roots is avoided. Mattocks and similar digging instruments must not be used within the minimum setbacks. Planting holes should be dug carefully by hand with a garden trowel, or similar small tool.

## **3.2 Significant Trees or Tree Groups**

- 3.2.1 Trees highlighted in the Schedule of Assessed Trees (Appendix B) are identified as significant. This 'significance' is based on the visual, aesthetic, or natural (i.e. indigenous) quality of the individual tree, or group of trees. It should be noted that my identification of a tree or group of trees as significant is a subjective assignation based on my qualifications and experience with tree and landscape assessment.

3.2.2 There are no trees on the subject site that are listed as significant in Ryde City Council's Significant Tree Register (revised August 2007).

The site is not listed as a heritage item under Ryde City Council's Local Environment Plan 105 – Heritage.

3.2.3 The best candidates for retention as single trees are those identified with condition ratings of 3 to 5.

Where significant trees have a rating of 2, they may be considered for retention, subject to further detailed assessment of identified defects.

Generally, mature to over-mature trees of declining health are not good candidates for retention as they are less able to tolerate construction impacts. Any setbacks to these mature trees must be very generous if successful retention is desired.

3.2.4 Where groups of tree are considered for retention it must be remembered that reducing the size of the group by removing trees around the edges will increase the risk of structural failure and decline of those remaining.

For that reason tree groups should only be retained if the whole group can be kept intact, unless an arboriculturist performs further evaluation of the group and identifies individual trees with good retention potential.

3.2.5 The following trees or tree groups have been identified as significant:

- T1, T2 and T7 – Brush Boxes parallel to Morrison Road. These trees are at the end of a long row of Brush Boxes along the road frontage east of the building 'Weemala'.
- T19 – Specimen, single tree. A mature Sydney Blue Gum which would require further investigation of identified problems if considered for retention.
- T20 – Specimen, single tree. A mature Monterey Pine which would require further investigation of identified problems if considered for retention.
- T32 – Specimen, single tree. A mature Swamp Mahogany.

- G34 – A small isolated group of two mature River Red Gums.
- T43 – Specimen, single tree. A mature Sydney Blue Gum within a small grassed area near the Morrison Road site entrance. The tree would require further investigation of identified problems if considered for retention.
- G48 – A row of Brush Boxes defining the boundary between the site and adjoining private properties to the southeast.
- G49 – A row of Brush Boxes opposite G48. Both groups form an avenue of tree along the internal road. G48 has higher visual significance as it acts as a visual buffer between adjoining sites.
- T69 – Specimen, single tree. A mature Sydney Blue Gum readily seen from the public road. Growing in large open space.
- T70 – Avenue of semi-mature Tallowoods framing and defining the Charles Street entrance into the site.

3.2.6 All development plans that may affect trees proposed for retention should be reviewed by an arboriculturist, prior to finalising any design. This includes plans for demolition, erosion control, site grading, bulk earthworks, construction, drainage and other utilities, irrigation and landscaping.



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# **APPENDIX A**

## **TERMS AND DEFINITIONS**



## TERMS AND DEFINITIONS

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The following relates to terms or abbreviations that may have been used in this report and provides the reader with a detailed explanation of those terms.

**Aerial inspection** Where the subject tree is climbed by a professional tree worker or arborist specifically to inspect and assess the upper stem and crown of the tree for signs or symptoms of defects, disease, etc.

### Age classes

- I** *Immature* refers to a well-established but juvenile tree
- SM** *Semi-mature* refers to a tree at growth stages between immaturity and full size
- M** *Mature* refers to a full sized tree with some capacity for further growth
- LM** *Late Mature* refers to a full sized tree with little capacity for growth that is not yet about to enter decline
- OM** *Over-mature* refers to a tree about to enter decline or already declining

**Cambium** refers to the layer of cells between the exterior bark and the inner wood which primarily controls cell division, and hence radial expansion of the stem, branches and shoots.

**Co-dominant** refers to stems or branches equal in size and relative importance.

**Compression wood** Type of reaction wood produced by conifers on the underside of branches and leaning trunks.

**Condition** refers to the tree's form and growth habit, as modified by its environment (aspect, suppression by other trees, soils) and the state of the scaffold (i.e. trunk and major branches), including structural defects such as cavities, crooked trunks or weak trunk/branch junctions. These are not directly connected with health and it is possible for a tree to be healthy but in poor condition.

**Dead wood** refers to any whole limb that no longer contains living tissues (e.g. live leaves and/or bark). Some dead wood is common in a number of tree species.

**Decay** Process of degradation of woody tissues by fungi or bacteria through decomposition of cellulose and lignin. There are numerous types of decay that affect different types of tissues, spread at different rates and have different affect on both the tree's health and structural integrity.

**Defect** Any structural weakness or deformity.

**Diameter at Breast Height (DBH)** refers to the tree trunk diameter at breast height (1.4 metres above ground level)

**Dieback** Death of growth tips/shoots and partial limbs, generally from tip to base. Die back is often an indicator of stress and tree health

**Epicormic** Shoots which arise from adventitious or latent buds. These shoots often have a weak point of attachment. They are often a response to stress in the tree. Epicormic growth/shoots are generally a survival mechanism, often indicating the presence of a current, or past stress event such as fire, pruning, drought, etc.

**Hanger** Unattached, cut or broken branches that are caught in the canopy.

**Hazard** refers to anything with the potential to harm health, life or property.

**Health** refers to the tree's vigour as exhibited by the crown density, leaf colour, presence of epicormic shoots, ability to withstand disease invasion, and the degree of dieback.

**Inclusion - stem/bark**, the pattern of development at branch or stem junctions where bark is turned inward rather than pushed out. This fault is located at the point where the stems/branches meet. This is normally a genetic fault and potentially a weak point of attachment as the bark obstructs healthy tissue from joining together to strengthen the joint.

**Resistograph® testing** A Resistograph® is a specialised machine that measures timber density by drilling a 3mm diameter probe through the wood, simultaneously plotting the results on a graph at full scale.

**Rust** A fungal disease, commonly affecting the leaves of trees and shrubs. It is characterised by spots, flecks, pustules or galls, generally to the upper leaf surface. Some rusts are specific to the host plant and will not affect other species nearby.

**Scaffold branch/root** A primary structural branch of the crown or primary structural root of the tree.

**Suppressed** In crown class, trees which have been overtopped and whose crown development is restricted from above.

**Visual Tree Assessment (VTA)** a procedure of defect analysis developed by Mattheck and Breloer (1994), that uses the growth response and form of trees to detect defects.

## **APPENDIX B**

### **SCHEDULE OF ASSESSED TREES**



## SCHEDULE OF TREE INVENTORY

### Ryde Rehabilitation Centre Sydney Redevelopment– October, 2007.

Tree No.	Species and Common Name	Height (m)	Crown spread (m)	*DBH (mm)	Age	Health	Condition	Comments	*TPA (m)	Condition Rating
<b>T1</b>	<i>Lophostemon confertus</i> Brush Box	14	10	600	M	Fair	Good	Upper crown thinning, small leaves. <i>Deadwood</i> to lower crown to 100mmØ.	6	3
<b>T2</b>	<i>Lophostemon confertus</i> Brush Box	8	6	420	SM	Fair to Poor	Fair	Significant branch <i>dieback</i> . <i>Deadwood</i> >30% crown cover.	4	2
<b>T3</b>	<i>Eucalyptus punctata</i> Grey Gum	10	7	210	SM	Good	Good	Small branch <i>inclusion</i> .	3	3
<b>T4</b>	<i>Eucalyptus punctata</i> Grey Gum	10	7	200	SM	Good	Good	Small branch inclusion.	3	3
<b>G5</b>	<i>Eucalyptus punctata</i> Grey Gum  <i>Eucalyptus saligna</i> Sydney Blue Gum	11– 13	4 – 5	200	SM	Good	Good	No special problems visibly apparent at time of inspection.	3	4
<b>G6</b>	Various native tree species.	< 10	< 5	< 200	I - SM	Good	Good	Dozens of young trees of mostly forest form. Predominantly <i>Acacia decurrens</i> , <i>Allocasuarina littoralis</i> , <i>Eucalyptus punctata</i> , <i>E. saligna</i> , <i>Corymbia maculata</i> , <i>Lophostemon confertus</i> . All planted on bank. Planting probably less than 15 years old.	3	3

## URBAN FORESTRY AUSTRALIA - TREE MANAGEMENT &amp; CONSULTING ARBORICULTURISTS

Tree No.	Species and Common Name	Height (m)	Crown spread (m)	*DBH (mm)	Age	Health	Condition	Comments	*TPA (m)	Condition Rating
<b>T7</b>	<i>Lophostemon confertus</i> Brush Box	10	9	550	SM	Fair	Good	Small, twiggy branch dieback. Deadwood < 70mmØ.	6	3
<b>T8</b>	<i>Eucalyptus punctata</i> Grey Gum	12	6	250	SM	Good	Good	Minor small branch inclusion. Growth splits up stem.	3	3
<b>T9</b>	<i>Melaleuca quinquenervia</i> Broad-leaved Paperbark	6	6	350	SM	Fair	Fair	Typical inclusions. Some dieback of smaller branches.	4	3
<b>G10</b>	<i>Sapium sebiferum</i> x 4 Chinese Tallow	4 – 5	3 – 5	< 200	SM	Fair	Fair	Some twiggy dieback of small branches. Pavement to tow sides of root zone.	3	3
<b>G11</b>	<i>Callistemon viminalis</i> x 2 Weeping Bottlebrush	6	8	200 – 300	M	Good	Fair	Typical height and spread of mature specimen. Stem inclusions noted.	5	3
<b>G12</b>	Various.	< 8	< 8	< 200	I – M	Good	Good	Several young trees and weeds on bank. Species include <i>Grevillea robusta</i> Silky Oak (Exempt from protection under Tree Preservation and Management Order), Weeping Bottlebrush, Cotoneaster, Jacaranda and mature <i>Exocarpus cupressiformis</i> Cherry Ballart (approx 6m high) @ southern end of bank.	3	3
<b>G13</b>	<i>Sapium sebiferum</i> x 2 Chinese Tallow	6	5	200	SM	Good	Fair to Good	Co-dominant stem w/ inclusion on larger specimen.	3	3
<b>G14</b>	<i>Jacaranda mimosifolia</i> x 2 Jacaranda	5- 6	4 – 6	110 – 180	SM	Good	Fair to Good	Base of stems regularly damaged by trimmers.	4	4

## URBAN FORESTRY AUSTRALIA - TREE MANAGEMENT &amp; CONSULTING ARBORICULTURISTS

Tree No.	Species and Common Name	Height (m)	Crown spread (m)	*DBH (mm)	Age	Health	Condition	Comments	*TPA (m)	Condition Rating
T15	<i>Lophostemon confertus</i> Brush Box	9	9	200 + 250	SM	Good	Good	Some dieback of twiggy branches. Trimmer damage to base.	5	4
G16	<i>Melaleuca armillaris</i> x 2 Bracelet Honeymyrtle <i>Melaleuca</i> x 1 (horticultural cultivar)	7 – 9	3 – 8	180 – 200	SM	Good	Fair	Small, typical branch inclusions. Some small branch failures. Twiggy deadwood. Trimmer damage to bases.	4	3
T17	<i>Melaleuca linariifolia</i> Snow-in-summer	6	6	200 + 300	M	Fair	Fair	Typical inclusions. Tip dieback to west. Cavity in stem @500mm.	4	2
T18	<i>Jacaranda mimosifolia</i> Jacaranda	7.5	4	120	SM	Good	Good	Trimmer damage to base of stem.	3	4
T19	<i>Eucalyptus saligna</i> Sydney Blue Gum	13	14	600	M	Good	Fair to Poor	Some significant branch inclusions. Large <i>scaffold</i> branch to north, loaded under <i>compression</i> .	8	2
T20	<i>Pinus radiata</i> Monterey Pine	16	12	650	M	Good	Fair	Co-dominant, included stems w/ partial fusing. Poorly pruned, large dead stubs remain.	7	2
G21	<i>Lophostemon confertus</i> x 3 Brush Box <i>Angophora costata</i> x 1 Smooth-barked Apple	6	6					Isolated group, but likely to be extension of G36. No special problems visibly apparent at time of inspection.		
G22	<i>Angophora costata</i> x 2 Smooth-barked Apple	8	5 – 10	250 – 600	SM – M	Good	Fair	Large specimen w/co-dominant, included stems near base. Branch inclusions. Several smaller trees nearby, including Brush Box, <i>Acacia</i> and <i>Angophora costata</i> – all < 8m.	6	2

## URBAN FORESTRY AUSTRALIA - TREE MANAGEMENT &amp; CONSULTING ARBORICULTURISTS

Tree No.	Species and Common Name	Height (m)	Crown spread (m)	*DBH (mm)	Age	Health	Condition	Comments	*TPA (m)	Condition Rating
G23	<i>Callistemon viminalis</i> x 5 Weeping Bottlebrush	6	6	300 – 400	M	Fair	Fair	Some tip dieback. Typical stem inclusions. Poorly pruned over paths, lawns.	4	3
G24	<i>Photinia glabra</i> x 2 Photinia	4 – 5	4 – 5	200 – 300	SM	Fair	Good	Some twiggy dieback.	3	3
G25	<i>Lagerstroemia indica</i> x 3 Crape Myrtle	4 – 6	4 – 6	110 – 200	SM	Good	Good	Minor branch failure to larger specimen. Stem inclusion.	4	4
G26	<i>Melaleuca quinquenervia</i> x 2 Broad-leaved Paperbark	6 – 7	5 – 6	250	SM	Fair	Fair	Typical stem and branch inclusions noted. Bottlebrush with included, co-dominant stems. Poorly pruned.	4	3
	<i>Callistemon viminalis</i> x 2 Weeping Bottlebrush	4 – 5	4	2 x 120	SM	Fair	Fair			
T27	<i>Alnus jorullensis</i> Evergreen Alder	11	9	400	M	Fair	Poor	Access limited. Significant crown decline. Decay pockets in branches. Poorly pruned. Dieback. 50% root zone covered with pavement.	5	1
T28	<i>Lophostemon confertus</i> Brush Box	6	6	180	SM	Good	Good	Stem sweep to north – partial failure of root plate when young?	4	4
T29	<i>Lophostemon confertus</i> Brush Box	10	10	400	M	Fair	Good	Large area of root zone covered with pavement. Branch failure noted.	6	3
T30	<i>Eucalyptus sideroxylon</i> Red Ironbark	17	12	400	M	Fair	Fair to Poor	Major branch failure. Remaining large branches with poor attachment area. Epicormic shoots forming along stem.	7	2

## URBAN FORESTRY AUSTRALIA - TREE MANAGEMENT &amp; CONSULTING ARBORICULTURISTS

Tree No.	Species and Common Name	Height (m)	Crown spread (m)	*DBH (mm)	Age	Health	Condition	Comments	*TPA (m)	Condition Rating
T31	Not present.									
T32	<i>Eucalyptus robusta</i> Swamp Mahogany	14	12	660	M	Fair to Good	Fair to Good	Typical habit for species. Some epicormics in crown.	7	3
G33	<i>Casuarina glauca</i> x 8 Swamp She-oak	10 – 12	6	330 Av	SM	Good	Fair to Good	No significant defects noted, although some branch inclusions noted.	4	3
G34	<i>Eucalyptus camaldulensis</i> x 2 River Red Gum	15 – 18	9 - 16	450 – 600	M	Good	Fair	Some large branch failures noted. Larger tree significant size and spread.	9	3
G35	<i>Eucalyptus sideroxylon</i> x 4 Red Ironbark	7	5	230	SM	Fair to Good	Fair to Good	No special problems visibly apparent at time of inspection.	3	3
G36	<i>Lophostemon confertus</i> x 11 Brush Box	6	4	260 Av	SM	Good	Fair to Good	Row of young Brush Boxes. Some small branch /stem inclusions noted. These could be addressed by formative pruning before the trees mature. No significant landscape amenity at this time.	3	4
G37	<i>Lophostemon confertus</i> x 3 Brush Box	5 – 6	3 – 4	150 Av	I	Good	Good	No special problems visibly apparent at time of inspection.	3	4
T38	<i>Syncarpia glomulifera</i> Turpentine	8	6	2 x 200	SM	Good	Fair	Co-dominant, included stems @ base. Typical branch inclusions.	4	3
T39	<i>Eucalyptus nicholii</i> Small leaved Peppermint	8	12	200 + 420	M	Fair	Fair	Co-dominant, included stems @ 1m. Epicormics forming near base of stem.	7	2

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Tree No.	Species and Common Name	Height (m)	Crown spread (m)	*DBH (mm)	Age	Health	Condition	Comments	*TPA (m)	Condition Rating
G40	<i>Eucalyptus camaldulensis</i> x 2 River Red Gum <i>Eucalyptus saligna</i> x 2 Sydney Blue Gum	11 – 16	6 – 8	300 – 500	SM	Fair	Fair	Co-dominant, included stems. Borer damage noted.	5	2
G41	<i>Melaleuca quinquenervia</i> x 2 Broad-leaved Paperbark	7	5	440	SM	Fair	Fair	Low foliage vigour and volume. Typical stem/branch inclusions noted.	4	3
T42	<i>Callistemon salignus</i> Willow Bottlebrush	8	7	500	M	Good	Fair to Poor	Major failure at top of crown. <i>Hanger</i> . Inclusions noted.	4	1
T43	<i>Eucalyptus saligna</i> Sydney Blue Gum	16	15	980	M	Good	Fair	Basal damage. Large Ø deadwood. Inclusion @ 3m. Aerial inspection and/or, possible Resistograph test if retained.	10	2
T44	<i>Lophostemon confertus</i> Brush Box	5	6	200	SM	Fair to Good	Good	Variegated cultivar. No special problems visibly apparent at time of inspection.	4	4
T45	<i>Albizia julibrissen</i> Silk Floss Tree	4	6	500	M	Fair	Fair to Poor	Declining crown.	4	2
T46	<i>Eucalyptus saligna</i> Sydney Blue Gum	15	14	900	M	Good	Fair to Good	Slight basal damage – need closer investigation if considered for retention.	9	2
G47	<i>Podocarpus elatus</i> x 2 Brown Pine <i>Pyrus ?calleryana</i> x 1 Callery Pear <i>Sapium sebiferum</i> x 1 Chinese tallow	8	7	350 Av	SM - M	Good	Fair to Good	Some stem/branch defects noted – not immediately problematic. Further inspection required if considered for retention.	5	3

## URBAN FORESTRY AUSTRALIA - TREE MANAGEMENT &amp; CONSULTING ARBORICULTURISTS

Tree No.	Species and Common Name	Height (m)	Crown spread (m)	*DBH (mm)	Age	Health	Condition	Comments	*TPA (m)	Condition Rating
<b>G48</b>	<i>Lophostemon confertus</i> x 23 Brush Box	14	6	450 Av	SM - M	Fair to Good	Fair to Good	Row of trees along boundary – forms part of avenue with trees on opposite side (G49). Some inclusions noted.	5	3
<b>G49</b>	<i>Lophostemon confertus</i> x 15 Brush Box <i>Eucalyptus racemosa</i> x 2 Scribbly Gum	5 - 14	5 – 7	250 – 450	SM	Good	Good	Tree B has basal damage. Generally all others of typical habit for closely grown trees.	5	3
<b>G50</b>	<i>Corymbia maculata</i> x 8 Spotted Gum	15	7	320 Av	SM	Good	Good	No special problems or significant defects visibly apparent at time of inspection.	5	4
<b>G51</b>	<i>Lophostemon confertus</i> x 6 Brush Box	7 – 12	4 – 6	200 Av	SM	Fair	Fair to Good	Stem/branch inclusions noted. Not detrimental at this time.	4	3
<b>G52</b>	<i>Jacaranda mimosifolia</i> x 3 Jacaranda	8	7	260	SM	Good	Fair to Good	No special problems visibly apparent at time of inspection.	5	4
<b>G53</b>	<i>Lophostemon confertus</i> x 7 Brush Box	12–14	5 - 8	300 – 400	SM	Good	Fair to Good	No special problems visibly apparent at time of inspection.	5	4
<b>T54</b>	<i>Citharexylum spinosum</i> Fiddlewood	11	9	300	M	Good	Poor	Basal damage and cavity. Failed lower section.	6	1
<b>T55</b>	<i>Pittosporum rhombifolium</i> Holly Wood	9	6	200	SM	Fair	Fair	Approximately 15% tip decline in crown.	4	3
<b>T56</b>	<i>Stenocarpus sinuatus</i> Queensland Firewheel Tree	6	5	160	SM	Good	Fair to Good	Suckering @ base.	3	3

## URBAN FORESTRY AUSTRALIA - TREE MANAGEMENT &amp; CONSULTING ARBORICULTURISTS

Tree No.	Species and Common Name	Height (m)	Crown spread (m)	*DBH (mm)	Age	Health	Condition	Comments	*TPA (m)	Condition Rating
G57	<i>Casuarina glauca</i> x 6 Swamp She-oak	8 – 16	6 – 8	300 Av	SM	Good	Fair to Good	Typical branch/stem inclusions noted.	5	3
G58	<i>Salix</i> sp. x 2 Tortured and Weeping Willows	3 – 7	3 – 6	550 Av	OM	Good	Very Poor	Declining structure – many defects and failures.	4	1
G59	<i>Casuarina cunninghamiana</i> x 3 River She-oak	12 – 17	4- 8	550 Av	M	Good	Fair	Typical stem/branch inclusions noted.	6	3
G60	<i>Lophostemon confertus</i> x 4 Brush Box	6 – 8	3 – 4	180 Av	I	Fair	Fair to Good	No special problems visibly apparent at time of inspection.	3	4
G61	<i>Corymbia gummifera</i> x 3 Red Bloodwood	15	8	310 Av	SM	Good	Fair to Good	Branch inclusion noted. One tree with wound @ base. Further investigation.	5	3
T62	<i>Eucalyptus scoparia</i> Wallangarra White Gum	7	7	300	SM	Good	Fair	Slight trunk defects.	5	2
T63	<i>Corymbia gummifera</i> Red Bloodwood	12	8	270	SM	Good	Fair to Poor	Basal defect. Epicormic shoots @ base. Co-dominant, included stems.	5	2
T64	<i>Eucalyptus camaldulensis</i> River Red Gum	11	8	350	SM	Fair	Good	Low volume of foliage in crown.	5	4
T65	<i>Eucalyptus saligna</i> Sydney Blue Gum	14	11	600	M	Good	Poor	Basal wound – possible fungal activity. Borer damage at branch junctions. Requires further investigation if considered for retention.	13	2

## URBAN FORESTRY AUSTRALIA - TREE MANAGEMENT &amp; CONSULTING ARBORICULTURISTS

Tree No.	Species and Common Name	Height (m)	Crown spread (m)	*DBH (mm)	Age	Health	Condition	Comments	*TPA (m)	Condition Rating
G66	<i>Acacia decurrens</i> x 4 Black Wattle <i>Angophora costata</i> x 1 Smooth-barked Apple	3 - 8	2 - 8	50 - 250	I - OM	Poor to Good	Poor to Good	Wattles overmature and declining. <i>Angophora</i> is in good health. Several saplings of Lemon-scented Gums and Brush Box.	5	3
T67	<i>Corymbia citriodora</i> Lemon-scented Gum	15	10	600	M	Good	Good	No special problems visibly apparent at time of inspection.	7	4
G68	<i>Eucalyptus pilularis</i> x 2 Blackbutt <i>Lophostemon confertus</i> x 1 Brush Box	16	11	400 - 500	SM	Fair to Good	Fair to Good	Typical for species type. No special problems visibly apparent at time of inspection.	7	4
T69	<i>Eucalyptus saligna</i> Sydney Blue Gum	16	20	2 x 550	M	Good	Fair to Good	15% of crown epicormic. Co-dominant stems.	11	3
G70	<i>Eucalyptus microcorys</i> x 15 Tallowwood <i>Eucalyptus saligna</i> x 1 Sydney Blue Gum	7 - 13	6 - 8	300 Av	SM	Fair to Good	Fair to Good	Most trees generally good. Typical branch inclusions noted. Tree C (Sydney Blue Gum) is defective. Trees D & E are in dead/declining. C, D & E need to be further assessed if considered for retention.	4	3
G71	<i>Eucalyptus saligna</i> x 2 Sydney Blue Gum	10	8	260	SM	Fair	Fair to Poor	Wounds and defects requiring further investigation. North tree forming secondary crown. Dieback noted in both trees.	5	2

## LEGEND

### TREES OR TREE GROUPS IDENTIFIED AS SIGNIFICANT

<b>T#</b> <b>G#</b>	Individual trees may have a low condition rating due to identifiable defects or other problems. However, due to their visual amenity and contribution to the landscape character of the site, these trees or tree groups may warrant design changes to ensure their retention. Some further assessment may be required to determine their longevity and risk potential, before critical design modifications or changes are made to any proposed development of the site.
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### TREES WHICH WOULD BE REMOVED DUE TO POOR CONDITION RATING (Based on Matheny & Clark *Trees and Development* 1998)

<b>0</b>	Trees that are dead, or near dead.
<b>1</b>	Trees that are declining, or obviously hazardous
<b>2</b>	Trees that are stressed or damaged, or have poor form or structure. Includes trees exempt from protection under Tree Preservation and Management Order. This rating incorporates trees that may require further investigation of suspected defects, particularly those trees identified as 'significant'. Trees that require further investigation are those with cavities or other symptoms of internal decay of an extent that cannot be quantified by external examination. Further inspection may be by way of aerial inspection, root crown investigation and/or <i>Resistograph</i> © testing.

### TREES WHICH COULD BE RETAINED DUE TO GOOD CONDITION, SUBJECT TO REASONABLE MAINTENANCE

<b>3</b>	Trees that would benefit from Crown Maintenance pruning as defined in Australian Standard 4373-2007 Pruning of Amenity Trees.
<b>4</b>	Tree that require little or no maintenance at the time of inspection.
<b>5</b>	Trees of good form, structure and condition.

\***TPA** Tree Protection Area -This is the minimum radial offset in metres, measured from the center of the tree trunk. The RPA is estimated at 10 x the DBH, plus an extra 1 - 2m to accommodate construction scaffolding, and/or other potential incursions into or near the tree root or branches/canopy area. Under the advice of an arboriculturist the specified setback for a tree may be increased or reduced subject to the type and height of proposed structures in proximity to the tree.

**APPENDIX C**  
**TREE LOCATION PLANS**





