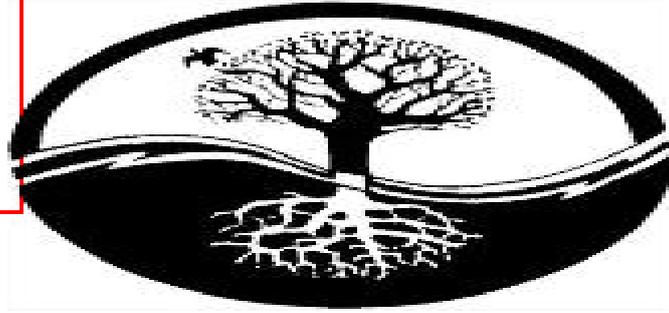


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22/11/2020

# **ARBORICULTURAL ASSESSMENT**

***Jacaranda mimosifolia***

**11/485 Liverpool Road,  
Strathfield  
N.S.W. 2135**

PREPARED BY  
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# **DISCLOSURE STATEMENT**

This report is not a full assessment of any trees structural safety.

The assessment was carried out from the ground, and covers what was reasonably able to be assessed and available to the assessor at the time of inspection. The inspection was limited to visual examination of the subject trees without an aerial inspection, dissection, excavation, probing or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future or that structural weaknesses don't exist within roots, trunk or branches. Information contained in this report covers only the trees that were examined and reflects the condition of the trees at the time of inspection only.

An arborist is not able to make assurances that a tree will be safe under all circumstances, nor make predictions of the time when a tree will fail. Trees involve some degree of risk and this evaluation does not preclude all the possibilities of failure. All care has been taken to assess potential hazards but trees are living organisms and can be inherently dangerous and unpredictable. Timely inspections and reports are necessary to monitor a trees condition.

## **Limitations on the use of this report**

This report is to be utilised in its entirety only. Any written or verbal submission, report or presentation that includes statements taken from the findings, discussions or conclusions made in this report, may only be used where the whole of the original report (or a copy) is referenced in, and directly attached to that submission, report or presentation.

Care has been taken to obtain all information from reliable sources. All data has been verified as far as possible; however, the author can neither guarantee nor be responsible for the accuracy of information provided by others.



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## **SYNOPSIS**

This report has been prepared by Aaron Erbacher of Sydney Arbor Consultancy and was commissioned by Jenny Yang on behalf of her mother the property owner of unit 11/485 Liverpool Rd, Strathfield.

This report is to accompany a tree removal application to Strathfield Council.

This report has been written following an extensive assessment on Saturday the 14<sup>th</sup> of November 2020 of the site and the subject tree.

The recommendations made by the author of this report following an extensive assessment of the subject site and the trees are as follows;

**Tree no. 1** is recommended for removal and replacement on the basis, its numerous previous branch failures, the likely hood of further failures putting at risk the owner of the property and any neighbouring residents should the tree or further branch failures again fall into neighbouring properties. The risk of further failures also puts at risk property damage for the owner and neighbours.

It is recommended that the removal of tree no. 1 is granted by council, that the trees be replaced with a tree of a more appropriate species and planted in a more appropriate position within the property. Thus ensuring both adherences to the Strathfield Council tree management policy's and also ensuring no future interference with property, services or neighbouring fences as the replacement trees grow.

**Note 1:** Reference should be made to any relevant legislation including Tree Preservation Orders.

**Note 2:** It should be acknowledged that a comprehensive hazard assessment and management plan is beyond the scope of this report. Advice should be sought from appropriately qualified consultants regarding design/construction methods.

**Note 3:** Information contained in this report covers only the trees that were examined and reflects the condition of the trees at the time of inspection.

**Note 4:** There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future.

**Note 5:** All recommendations contained within this report are subject to approval from the relevant consenting authorities.



## **METHODOLOGY**

This assessment was undertaken on the site using standard tree assessment criteria based upon those guidelines laid down by the International Society of Arboriculture and is implemented as a result of at least one comprehensive site inspection, the assessment is based on the material and information available at the time of inspection only.

The process involved in compiling information for this assessment consisted of an above ground inspection only. The assessment was limited to the parts of the trees that are visible, that is, existing from the ground level to the crown.

To record the health and condition of the tree, a Visual Tree Assessment (VTA) was undertaken on all trees. This method of tree evaluation is recognised by The International Society of Arboriculture (ISA) and The Institute of Australian Consulting Arboriculturists (IACA) where all observations are taken from the ground to determine the crown condition, class & general defects.

- A detailed explanation of VTA can be found in appendix A.
- The trees have all been assessed for a Sustainable Retention Index Value (SRIV) rating, a Useful Life Expectancy (ULE) rating and a Significance of a Tree, Assessment Rating System (STARS) rating. A detailed explanation of the SRIV, ULE and STARS rating systems can be found in Appendix B
- All measurements in this report are expressed in meters.
- Diameter at breast height (DBH) was measured at a height of 1.4m.
- Tree heights, crown spreads and age of trees were estimated.
- Crown spreads are expressed as North /East/South and West.

## **INTRODUCTION**

This report has been prepared by Aaron Erbacher of Sydney Arbor Consultancy and was commissioned by Jenny Yang on behalf of her mother the property owner of unit 11/485 Liverpool Rd, Strathfield.

Aaron Erbacher was contacted by the Jenny Yang, who expressed concerns about the health and structural integrity of a *Jacaranda mimosifolia* located in the rear of her mother's property.

She stated it had had numerous branch failures causing damage to the fences and infrastructure in the neighbouring properties over the last few years and stated her elderly mother was afraid the tree would lose more branches possibly causing injury or further property damage.

This report is to accompany a tree removal application to Strathfield Council.

This report has been written following an extensive assessment on Saturday the 14<sup>th</sup> of November 2020 of the site, the subject trees and the properties in close proximity surrounding the subject tree.

This report will assess the trees and include recommendations relative to the opportunity for retention, Sustainable Retention Index Value and Useful Life Expectancy for each tree.

All tree consultancy including this report shall provide an ethical and unbiased approach, possessing no association with private arborists or further areas or organisations which may reflect a conflict of interest.



# TREE ASSESSMENTS

The inspection was limited to a visual examination of the subject trees from ground level.

This assessment process is used to determine the sustainability of each tree in the landscape.

The assessment of each tree was made using Visual Tree Assessment (VTA).

All trees were assessed from the ground without dissection, probing or coring. No woody tissue testing was undertaken as part of this assessment.

Destructive, resistance testing or aerial inspections have not been undertaken as part of this assessment.

The health of the trees was determined by assessing the following:

- Foliage size and colour.
- Pest and disease infestation noted.
- Extension growth.
- Canopy density and form
- Percentage of deadwood noted/observed.
- Presence of epicormic growth observed.
- Visible evidence of structural defects or instability.
- Evidence of previous pruning or physical damage.
- Condition, using visible evidence of structural defects, instability, evidence of previous pruning and physical damage as indicators.
- Suitability of the trees to the site and their existing location; in consideration of damage or potential damage to services or structures, available space for future development and nuisance issues.

## DATA & RATINGS TABLE

| Tree No. | Botanical Name               | Common Name | Height (M) | D.B.H. (M) | Crown Spread N,E,S,W | Age | ULE Rating | SRIV Rating | STARS Rating |
|----------|------------------------------|-------------|------------|------------|----------------------|-----|------------|-------------|--------------|
| 1        | <i>Jacaranda mimosifolia</i> | Jacaranda   | 10         | 0.35       | 5N6E4S2W             | M   | D3 – A4    | OGVP - 4    | Low          |

## OBSERVATIONS

### Tree no. 1 - *Jacaranda mimosifolia* - Jacaranda

This mature tree located in the small rear yard of the property, it is growing 1.5m from the rear boundary fence of the property and 5.1m from the rear wall of the town house of the property in which is located.

The tree has paving up to 0.4m of the base of the trees stem on both the Southern and Eastern sides and artificial grass on its west side.

The tree was observed to have a wound at 1.8m on the western side of the stem created by the attachment of a clothesline accessory and a further wound at 2.5m with characteristics of a previously torn out branch attachment. The tree is approx. 20 years old and has had many previous branch failures over its relatively short life (in relation to the species life expectancy) including the central dominant stem failing at approx. 5.5m, the aforementioned stem failure occurred in 2015. This failure fell across the fence line into the rear of the neighbouring property 38 Noble St, causing damage to the fence between the properties as well as breaking the neighbouring clothesline. Since then the tree has had at least 3 smaller branch failures from parts of the tree that can easily be observed including a 1st order branch on the east side of the tree's canopy measuring 150mmØ, this branch failed in the severe winds of January 2020 failing into the rear yard of the neighbouring townhouse/unit damaging the fence. Other small branch failure sites were observed within the canopy of the tree measuring up to 60mmØ.



The rear yard backs on to two properties 38 & 40 Noble Avenue, the aforementioned property 40 Noble Ave contains a row of *Cupressus × leylandii* growing along its back fence line presumably grown as a privacy screen. These trees are growing in reasonably close proximity to the subject tree and are likely to have suppressed the tree from sunlight, and forced the tree's canopy to grow in an asymmetric fashion and more in an easterly direction in search of sunlight: this suppression is thought to have also assisted the tree to grow without the height to diameter ratio that would be typical of the tree. The neighbouring trees in close proximity also help to create somewhat of a wind tunnel across the rear yards of the units on the property 485 Liverpool Rd which is likely to have assisted in the subject tree being exposed to severe winds, causing the observed branch failures. The tree was observed to be in good health and vigour with poor condition, the tree has a Low STARS rating.

## PHOTOGRAPHS

The following photographs were taken at the time of assessment. The 3 photographs below show the base of the tree, the wounds observed on its stem, 3 of the branch failures observed and the damaged fences.





## **THE SITE**

The current site of unit 11/ 485 Liverpool Rd, Strathfield is within a residential townhouse complex built in the 1980s containing 14 townhouses.

The property is bordered by 2 other similar townhouses and backs on to 2 properties 38 & 40 Noble Ave.

The image below shows the property from an aerial view (courtesy of SIXMaps) with the approximate tree canopy marked.



## **DISCUSSION**

Trees offer numerous benefits such as aesthetics, shade, UV reflection as well as a food source for local fauna. The associated impacts from tree removal should be considered even when the trees are not assessed as a high retention value, where trees are assessed as a low retention value or as being hazardous, replacement tree planting should be implemented in order to replace canopy cover loss as a direct result of the trees removal. The subject tree was assessed as possessing Low STARS retention value and is assessed as being likely to have further branch failures in the future; the further failures put the owner and neighbouring residents at risk of injury as well as the risk of property damage.

A replacement planting should be sought to regain the numerous benefits tree canopies provide. The trees should be removed; the stump and roots ground, the tree should be replaced if removal is granted by council, preferably with a more appropriate species and in a more appropriate position in the yard so as to not interfere with services and boundary fences as they grow.

## **RECOMMENDATIONS**

The recommendations made by the author of this report following an extensive assessment of the subject site and the trees are as follows;

**Tree no. 1** is recommended for removal and replacement on the basis, its numerous previous branch failures, the likely hood of further failures putting at risk the owner of the property and any neighbouring residents should the tree or further branch failures again fall into neighbouring properties. The risk of further failures also puts at risk property damage for the owner and neighbours.

It is recommended that the removal of tree no. 1 is granted by council, that the trees be replaced with a tree of a more appropriate species and planted in a more appropriate position within the property. Thus ensuring both adherences to the Strathfield Council tree management policy's and also ensuring no future interference with property, services or neighbouring fences as the replacement trees grow.

**Note 1:** Reference should be made to any relevant legislation including Tree Preservation Orders.

**Note 2:** It should be acknowledged that a comprehensive hazard assessment and management plan is beyond the scope of this report. Advice should be sought from appropriately qualified consultants regarding design/construction methods.

**Note 3:** Information contained in this report covers only the trees that were examined and reflects the condition of the trees at the time of inspection.

**Note 4:** There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future.

**Note 5:** All recommendations contained within this report are subject to approval from the relevant consenting authorities.



# **APPENDIX**

**A.** The Visual Tree Assessment Procedure (V.T.A.)

**B.** Useful Life Expectancy (U.L.E.)

- Significance of a Tree, Assessment Rating System (S.T.A.R.S.)
- Sustainable Retention Index Value (S.R.I.V.)

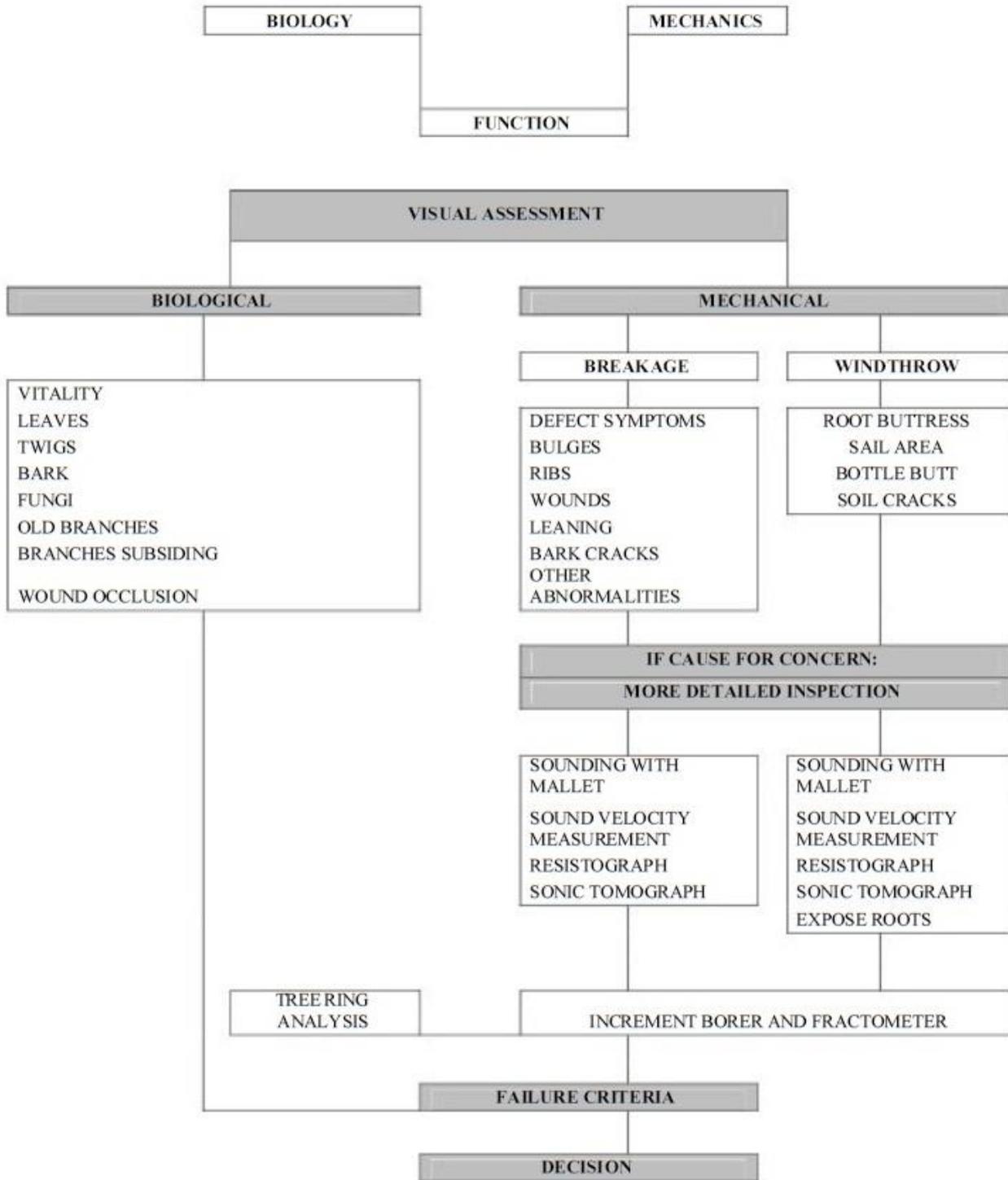
**C.** Terminology Definitions

**E.** Bibliography



# Appendix A.

## The Visual Tree Assessment Procedure (V.T.A.)



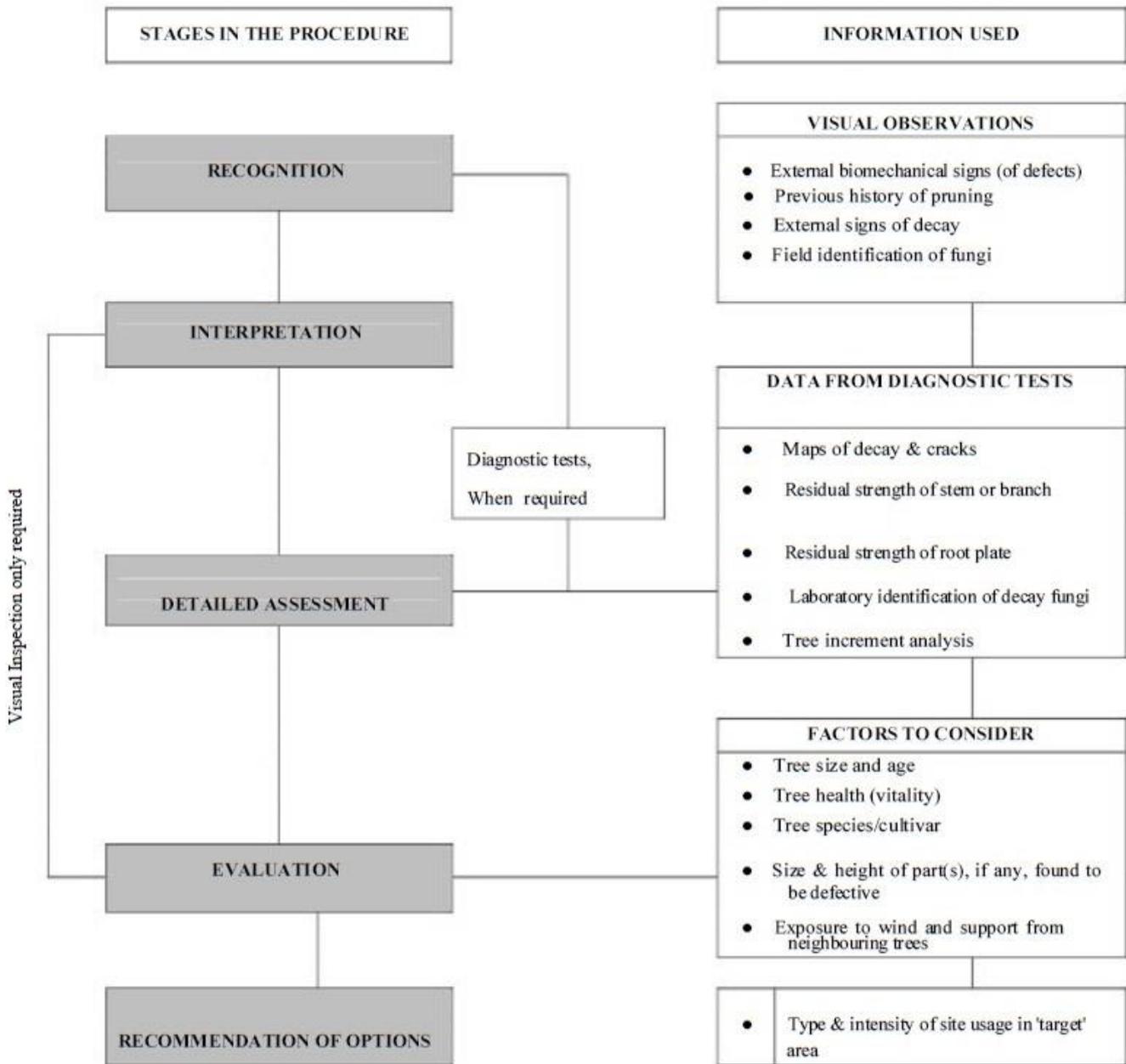
Ref: Mattheck, Claus & Breloer, Helge (1994)

The Body Language of Trees - A handbook for failure analysis - Sixth impression (2001) The Stationery Office, London, U.K.

Fig 120 page 196



## TREE ASSESSMENT STRATEGY



Ref: Lonsdale, Dr. David (1999)

Principles of Tree Hazard Assessment and Management - Second impression 2001  
 Department of Transport, local Government and the Regions, London, U.K.

Figure 5.1, Page 149



# Appendix B.

## Useful Life Expectancy (U.L.E.)

|   | 1.Long U.L.E.   | 2.Medium U.L.E.  | 3.Short U.L.E.  | 4. Removal  | 5.Moved or replaced   |
|---|---|--|---|---|---|
|   | Trees that appeared to be retainable at the time of assessment for more than 40 years with an acceptable level of risk.                                     | Trees that appeared to be retainable at the time of assessment for 15 - 40 years with an acceptable level of risk.   | Trees that appeared to be retainable at the time of assessment for 5 - 15 years with an acceptable level of risk.   | Trees that should be removed within the next 5 years.   | Trees which can be reliably moved or replaced.              |
| A | Structurally sound trees located in positions that can accommodate future growth.   | Trees that may only live between 15 and 40 years.  | Trees that may only live between 5 and 15 more years.   | Dead, dying, suppressed or declining trees through disease or inhospitable conditions.  | Small trees less than 5m in height.                         |
| B | Trees that could be made suitable for retention in the long term by remedial tree care.   | Trees that may live for more than 40 years but would be removed for safety or nuisance reasons.  | Trees that may live for more than 15 years but would be removed for safety or nuisance reasons.   | Dangerous trees through instability or recent loss of adjacent trees.   | Young trees less than 15 years old but over 5m in height.   |
| C | Trees of special significance for historical, commemorative or rarity reasons that would warrant extraordinary efforts to secure their long term retention. | Trees that may live for more than 40 years but would be removed to prevent interference with more suitable individuals or to provide space for new planting. | Trees that may live for more than 15 years but should be removed to prevent interference with more suitable individuals or to provide space for new planting. | Damaged trees through structural defects including cavities, decay, included bark, wounds or poor form.   | Trees that have been pruned to artificially control growth. |
| D |   | Trees that could be made suitable for retention in the medium term by remedial tree care.  | Trees that require substantial remedial tree care and are only suitable for retention in the short term.  | Damaged trees that are clearly not safe to retain.  |   |
| E |   |  |   | Trees that may live for more than 5 years but should be removed to prevent interference with more suitable individuals or to provide space for new plantings. |   |
| F |   |  |   | Trees that are damaging or may cause damage to existing structures within 5 years.  |   |
| G |   |  |   | Trees that will become dangerous after removal of other trees for reasons given in A) to F).  |   |

(Ref – J Barrell 1996)



## USEFUL LIFE EXPECTANCY (ULE) ASSESSMENT PROCEDURE

|  |
|--|
| 1. Estimate the age of the tree  |
| 2. Establish the average life span of the species  |
| 3. Determine whether the average life span needs to be modified due to the local environmental situation |
| 4. Estimate remaining life expectancy  |
| Life expectancy = average modified life span of species minus the age of tree                            |
| 5. Consider how health may affect safety (and longevity)   |
| 6. Consider how tree structure may affect safety   |
| 7. Consider how location will affect safety  |
| 8. Determine life expectancy   |
| Useful Life Expectancy = life expectancy modified by health, structure and location                      |
| 9. Consider economics of management (cost versus benefit of retention)                                   |
| 10. Consider adverse impacts on better trees   |

Ref: Barrell, Jeremy (1996)

### **Pre-development Tree Assessment**

Proceedings of the International Conference on Trees and Building Sites (Chicago)



## SUSTAINABLE RETENTION INDEX VALUE

(SRIV) © 2010 Version 4

**A visual method of objectively rating the viability of urban trees  
for development sites and management,  
based on general tree and landscape assessment criteria.**

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| Use of this document and referencing                      | 4 |
| Glossary of terminology to be used with SRIV©             | 5 |

### **Sustainable Retention Index Value (SRIV) ©**

SRIV © provides a dual method of objectively rating the viability of urban trees for development sites based on general tree and landscape assessment criteria, and a numeric index for each tree as a tree management tool. SRIV © is designed as an objective system based on set criteria to replace previous subjective systems. SRIV © is based on the principle of sustaining trees in the urban environment including remnant forest trees, but does not cover social aspects of trees, or hedges. Dead trees and environmental or noxious weed species are not considered as removal of these trees is generally encouraged.

SRIV© benefits the arboriculturist by defining each variable providing certainty and clarity to their meaning and by issuing a definite index value to each category. This enables the professional manager of urban trees with an assumed knowledge of the taxa and its growing environment to consider the tree in situ and is based on the physical attributes of the tree and its response to its environment. SRIV© considers its age class, condition class, vigour class and its sustainable retention with regard to the safety of people or damage to property. The ability to retain the tree with remedial work or beneficial modifications to its growing environment or removal and replacement is also considered.

To promote tree retention, remediation works to improve the growing environment should always be attempted where ever possible. Successive assessments may document improvements in a tree where it responded favourably to remediation, or where conditions in its growing environment improved naturally, or conversely a decline, or a static rating if the tree deteriorated, or no change was observed, respectively.

SRIV© is designed to achieve a quick and readily understood value for a tree but does not replace the need for a comprehensive assessment of a tree and as a tool is intended to be used in conjunction with or complementary to a detailed tree assessment. As a management tool the ongoing SRIV© assessment of a tree may indicate its response to remedial works or other modifications to its growing environment over time.

SRIV© is a realistic approach to managing trees but recognises from the outset that as tree taxa are a vast and varied array of organisms, not all will fit easily into the system e.g. tree species with a lifespan shorter than twenty years, most Acacia species. Field trials have revealed that it is suitable for the majority of trees.

An example of a SRIV© for a Mature tree with Good Vigour and Poor Condition is an assessment value of MGVP - 6, with 6 as the index value, see page 4. The matrix provides indices as a tree management decision making tool and the Age / Vigour / Condition classes as a tree assessment system.

The Glossary details the definitions for terms to be used with the SRIV© system and are taken from the Institute of Australian Consulting Arboriculturists (IACA)© Dictionary for Managing Trees in Urban Environments<sup>1</sup>.

| Age Class         | Vigour Class and Condition Class  |  |   |   |   |   |
|-------------------|---|--|---|---|---|---|
|                   | Good Vigour & Good Condition<br>(GVG)   | Good Vigour & Fair Condition<br>(GVF)  | Good Vigour & Poor Condition<br>(GVP)   | Low Vigour & Good Condition<br>(LVG)  | Low Vigour & Fair Condition<br>(LVF)  | Low Vigour & Poor Condition<br>(LVP)  |
|                   | <p>Able to be retained if sufficient space available above and below ground for future growth.</p> <p>No remedial work or improvement to growing environment required.</p> <p>May be subject to high vigour.</p> <p>Retention potential - Medium - Long Term.</p> | <p>Able to be retained if sufficient space available above and below ground for future growth.</p> <p>Remedial work may be required or improvement to growing environment may assist.</p> <p>Retention potential - Medium Term.</p> <p>Potential for longer with remediation or favourable environmental conditions.</p>               | <p>Able to be retained if sufficient space available above and below ground for future growth.</p> <p>Remedial work unlikely to assist condition, improvement to growing environment may assist.</p> <p>Retention potential - Short Term.</p> <p>Potential for longer with remediation or favourable environmental conditions.</p>  | <p>May be able to be retained if sufficient space available above and below ground for future growth.</p> <p>No remedial work required, but improvement to growing environment may assist vigour.</p> <p>Retention potential - Short Term.</p> <p>Potential for longer with remediation or favourable environmental conditions.</p> | <p>May be able to be retained if sufficient space available above and below ground for future growth.</p> <p>Remedial work or improvement to growing environment may assist condition and vigour.</p> <p>Retention potential - Short Term.</p> <p>Potential for longer with remediation or favourable environmental conditions</p>  | <p>Unlikely to be able to be retained if sufficient space available above and below ground for future growth.</p> <p>Remedial work or improvement to growing environment unlikely to assist condition or vigour.</p> <p>Retention potential - Likely to be removed immediately or retained for Short Term.</p> <p>Potential for longer with remediation or favourable environmental conditions.</p> |
| <b>Young (Y)</b>  | <p><b>YGVG - 9</b></p> <p>Index Value 9</p> <p>Retention potential - Long Term.</p> <p>Likely to provide minimal contribution to local amenity if height &gt;5m.</p> <p>Retain, move or replace.</p>  | <p><b>YGVF - 8</b></p> <p>Index Value 8</p> <p>Retention potential - Short - Medium Term.</p> <p>Potential for longer with improved growing conditions. Likely to provide minimal contribution to local amenity if height &gt;5m.</p> <p>Medium-high potential for future growth and adaptability.</p> <p>Retain, move or replace.</p> | <p><b>YGVP - 5</b></p> <p>Index Value 5</p> <p>Retention potential - Short Term.</p> <p>Potential for longer with improved growing conditions.</p> <p>Likely to provide minimal contribution to local amenity if height &gt;5m.</p> <p>Low-medium potential for future growth and adaptability.</p> <p>Retain, move or replace.</p> | <p><b>YLVG - 4</b></p> <p>Index Value 4</p> <p>Retention potential - Short Term.</p> <p>Potential for longer with improved growing conditions.</p> <p>Likely to provide minimal contribution to local amenity if height &gt;5m.</p> <p>Medium potential for future growth and adaptability.</p> <p>Retain, move or replace.</p>     | <p><b>YLVF - 3</b></p> <p>Index Value 3</p> <p>Retention potential - Short Term.</p> <p>Potential for longer with improved growing conditions.</p> <p>Likely to provide minimal contribution to local amenity if height &lt;5m.</p> <p>Low-medium potential for future growth and adaptability.</p> <p>Retain, move or replace.</p> | <p><b>YLVP - 1</b></p> <p>Index Value 1</p> <p>Retention potential - Likely to be removed immediately or retained for Short Term.</p> <p>Likely to provide minimal contribution to local amenity if height &gt;5.</p>   |
| <b>Mature (M)</b> | <p><b>MGVG - 10</b></p> <p>Index Value 10</p> <p>Retention</p>  | <p><b>MGVF - 9</b></p> <p>Index Value 9</p> <p>Retention potential -</p>   | <p><b>MGVP - 6</b></p> <p>Index Value 6</p> <p>Retention potential</p>  | <p><b>MLVG - 5</b></p> <p>Index Value 5</p> <p>Retention potential</p>  | <p><b>MLVF - 4</b></p> <p>Index Value 4</p> <p>Retention potential -</p>  | <p><b>MLVP - 2</b></p> <p>Index Value 2</p> <p>Retention potential -</p>  |



|                                     |  |   |   |  |  |  |
|-------------------------------------|--|---|---|--|--|--|
|                                     | potential -<br>Medium - Long<br>Term.  | Medium Term.<br><br>Potential for longer<br>with improved<br>growing conditions.  | - Short Term.<br><br>Potential for longer<br>with improved<br>growing conditions. | - Short Term.<br><br>Potential for longer<br>with improved<br>growing conditions.  | Short Term.<br><br>Potential for longer<br>with improved<br>growing conditions   | Likely to be removed<br>immediately<br><br>or retained for Short<br>Term.  |
| <b>Over<br/>Mature<br/><br/>(0)</b> | <b>OGVG - 6</b><br><br>Index Value 6<br><br>Retention<br>potential -<br>Medium - Long<br>Term. | <b>OGVF - 5</b><br><br>Index Value 5<br><br>Retention potential -<br>Medium Term. | <b>OGVP - 4</b><br><br>Index Value 4<br><br>Retention potential<br>- Short Term.  | <b>OLVG - 3</b><br><br>Index Value 3<br><br>Retention potential<br>- Short Term.<br><br>Potential for longer<br>with improved<br>growing conditions. | <b>OLVF - 2</b><br><br>Index Value 2<br><br>Retention potential -<br>Short Term. | <b>OLVP - 0</b><br><br>Index Value 0<br><br>Retention potential -<br>Likely to be removed<br>immediately or<br>retained for Short<br>Term. |

1 Draper BD and Richards PA 2009, Dictionary for Managing Trees in Urban Environments, Institute of Australian Consulting Arboriculturists (IACA), CSIRO Publishing, Collingwood, Victoria, Australia. Institute of Australian Consulting Arboriculturists (IACA)© 2010





## IACA Significance of a Tree, Assessment Rating System (STARS)©

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

The landscape significance of a tree is an essential criterion to establish the importance that a particular tree may have on a site. However, rating the significance of a tree becomes subjective and difficult to ascertain in a consistent and repetitive fashion due to assessor bias. It is therefore necessary to have a rating system utilising structured qualitative criteria to assist in determining the retention value for a tree. To assist this process all definitions for terms used in the Tree Significance - Assessment Criteria and Tree Retention Value - Priority Matrix, are taken from the IACA Dictionary for Managing Trees in Urban Environments 2009.

This rating system will assist in the planning processes for proposed works, above and below ground where trees are to be retained on or adjacent a development site. The system uses a scale of High, Medium and Low significance in the landscape. Once the landscape significance of an individual tree has been defined, the retention value can be determined. An example of its use in an Arboricultural report is shown as Appendix A.

### Tree Significance - Assessment Criteria

#### 1. High Significance in landscape

- The tree is in good condition and good vigour;
- The tree has a form typical for the species;
- The tree is a remnant or is a planted locally indigenous specimen and/or is rare or uncommon in the local area or of botanical interest or of substantial age;
- The tree is listed as a Heritage Item, Threatened Species or part of an endangered ecological community or listed on Councils significant Tree Register;
- The tree is visually prominent and visible from a considerable distance when viewed from most directions within the landscape due to its size and scale and makes a positive contribution to the local amenity;
- The tree supports social and cultural sentiments or spiritual associations, reflected by the broader population or community group or has commemorative values;
- The tree's growth is unrestricted by above and below ground influences, supporting its ability to reach dimensions typical for the taxa in situ
- Tree is appropriate to the site conditions.

#### 2. Medium Significance in landscape

- The tree is in fair-good condition and good or low vigour;
- The tree has form typical or atypical of the species;
- The tree is a planted locally indigenous or a common species with its taxa commonly planted in the local area
- The tree is visible from surrounding properties, although not visually prominent as partially obstructed by other vegetation or buildings when viewed from the street,
- The tree provides a fair contribution to the visual character and amenity of the local area,
- The tree's growth is moderately restricted by above or below ground influences, reducing its ability to reach dimensions typical for the taxa in situ.

#### 3. Low Significance in landscape

- The tree is in fair-poor condition and good or low vigour;
- The tree has form atypical of the species;
- The tree is not visible or is partly visible from surrounding properties as obstructed by other vegetation or buildings,
- The tree provides a minor contribution or has a negative impact on the visual character and amenity of the local area,
- The tree is a young specimen which may or may not have reached dimension to be protected by local Tree Preservation orders or similar protection mechanisms and can easily be replaced with a suitable specimen,
- The tree's growth is severely restricted by above or below ground influences, unlikely to reach dimensions typical for the taxa in situ
- Tree is inappropriate to the site conditions,
- The tree is listed as exempt under the provisions of the local Council Tree Preservation Order or similar protection mechanisms,
- The tree has a wound or defect that has potential to become structurally unsound. Environmental Pest / Noxious Weed Species
- The tree is an Environmental Pest Species due to its invasiveness or poisonous/ allergenic properties,
- The tree is a declared noxious weed by legislation.

#### 4. Hazardous/Irreversible Decline

- The tree is structurally unsound and/or unstable and is considered potentially dangerous,
- The tree is dead, or is in irreversible decline, or has the potential to fail or collapse in full or part in the immediate to short term.

**The tree is to have a minimum of three (3) criteria in a category to be classified in that group.**

Note: The assessment criteria are for individual trees only, however, can be applied to a monocultural stand in its entirety e.g.

### Table 1.0 Tree Retention Value - Priority Matrix



|  |  | Significance              |                           |                           |   |                                  |
|--|--|---------------------------|---------------------------|---------------------------|---|----------------------------------|
|  |  | 1. High                   | 2. Medium                 | 3. Low                    |   |                                  |
|  |  | Significance in Landscape | Significance in Landscape | Significance in Landscape | Environmental Pest / Noxious Weed Species | Hazardous / Irreversible Decline |
| Estimated Life Expectancy  | 1. Long >40 years  |                           |                           |                           |   |                                  |
|  | 2. Medium 15-40 Years  |                           |                           |                           |   |                                  |
|  | 3. Short <1-15 Years   |                           |                           |                           |   |                                  |
|  | Dead   |                           |                           |                           |   |                                  |
| <p><u>Legend for Matrix Assessment</u></p>  |  |                           |                           |                           |   |                                  |
|  | <p><b>Priority for Retention (High)</b> - These trees are considered important for retention and should be retained and protected. Design modification or re-location of building/s should be considered to accommodate the setbacks as prescribed by the Australian Standard AS4970 <i>Protection of trees on development sites</i>. Tree sensitive construction measures must be implemented e.g. pier and beam etc if works are to proceed within the Tree Protection Zone.</p> |                           |                           |                           |   |                                  |
|  | <p><b>Consider for Retention (Medium)</b> - These trees may be retained and protected. These are considered less critical; however their retention should remain priority with removal considered only if adversely affecting the proposed building/works and all other alternatives have been considered and exhausted.</p>   |                           |                           |                           |   |                                  |
|  | <p><b>Consider for Removal (Low)</b> - These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.</p>   |                           |                           |                           |   |                                  |
|  | <p><b>Priority for Removal</b> - These trees are considered hazardous, or in irreversible decline, or weeds and should be removed irrespective of development.</p>   |                           |                           |                           |   |                                  |

## USE OF THIS DOCUMENT AND REFERENCING

The IACA Significance of a Tree, Assessment Rating System (STARS) is free to use, but only in its entirety and must be cited as follows:

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



# Appendix C

## Terminology Definitions

**DBH** - Diameter at Breast Height – being the stem diameter in meters, measured at 1.4m from ground level, including the thickness of the bark.

**Crown Spread** - A two dimension linear measurement (in metres) of the crown plan. The first figure being the north- south span, the second being the east-west measurement.

**Age** - Is the estimate of the specimen's age based upon the expected life span of the species. This is divided into three stages.  
Young (Y) Trees less than 20% of life expectancy.  
Mature (M) Trees aged between 20% to 80% life expectancy.  
Over-mature (O) Trees aged over 80% of life expectancy with probably symptoms of senescence.

**Height** - Is a measure of the vertical distance from the average ground level around the root crown to the top surface of the crown, and on palms - to the apical growth point.

**Crown Spread** - Linear measurements (in metres) of the crown plan. The first figure being the north span, the second being the east, the third being the south span, and last but not least is the west measurement.

**Symmetry** - Balance within a crown, or root plate, above or below the axis of the trunk of branch and foliage, and root distribution respectively and can be categorized as Asymmetrical and Symmetrical.

- 1) **Asymmetrical** Imbalance within a crown, where there is an uneven distribution of branches and the foliage crown or root plate around the vertical axis of the trunk. This may be due to Crown Form Codominant or Crown Form Suppressed as a result of natural restrictions e.g. from buildings, or from competition for space and light with other trees, or from exposure to wind, or artificially caused by pruning for clearance of roads, buildings or power lines. An example of an expression of this may be, crown asymmetrical, bias to west.
- 2) **Symmetrical** Balance within a crown, where there is an even distribution of branches and the foliage crown around the vertical axis of the trunk. This usually applies to trees of Crown Form Dominant or Crown Form Forest. An example of an expression of this may be crown symmetrical.

**Significant Tree** - A tree considered important, weighty or more than ordinary. Example: due to prominence of location, or in situ, or contribution as a component of the overall landscape for amenity or aesthetic qualities, or curtilage to structures, or importance due to uniqueness of taxa for species, subspecies, variety, crown form, or as an historical or cultural planting, or for age, or substantial dimensions, or habit, or as remnant vegetation, or habitat potential, or a rare or threatened species, or uncommon in cultivation, or of aboriginal cultural importance, or is a commemorative planting.

**Deadwood** - Dead branches within a tree's crown and considered quantitatively as separate to crown cover and can be categorised as Small Deadwood and Large Deadwood according to diameter, length and subsequent risk potential. The amount of dead branches on a tree can be categorized as Low Volume Deadwood, Medium Volume Deadwood and High Volume Deadwood.

- 1) **Small Deadwood** A dead branch up to 10mm diameter and usually <2 metres long, generally considered of low risk potential.
- 2) **Large Deadwood** A dead branch >10mm diameter and usually >2 metres long, generally considered of high risk potential.
- 3) **Low Volume Deadwood** Where <5 dead branches occur that may require removal.
- 4) **Medium Volume Deadwood** Where 5-10 dead branches occur that may require removal.
- 5) **High Volume Deadwood High Volume Deadwood** Where >10 dead branches occur that may require removal.

### Crown Class

The differing crown habits as influenced by the external variables within the surrounding environment? They are:  
**D** – *Dominant* Crown is receiving uninterrupted light from above and sides, also known as emergent.

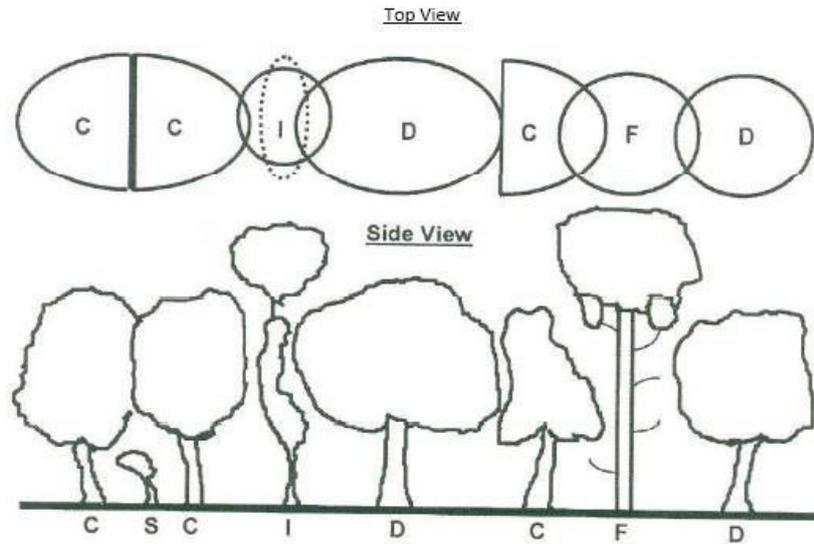


**C** – *Codominant Crown* is receiving light from above and one side of the crown.

**I** – *Intermediate Crown* is receiving light from above but not the sides of the crown.

**S** – *Suppressed Crown* has been shadowed by the surrounding elements and receives no light from above or sides.

**F** – *Forest* Characterised by an erect, straight stem (usually excurrent) with little stem taper and virtually no branching over the majority of the stem except for the top of the tree which has a small concentrated branch structure making up the crown.



(Matheny, N. & Clark, J. R.) 1998

### Tree Protection Zone (TPZ)

Tree Protection Zone or (TPZ) is based on AS 4970-2009 Protection of trees on development sites and defines the soil volume that is likely to be required to encompass enough of the trees absorbing root system to ensure the long term survival of the tree. The radius specified as the TPZ is an estimate of the minimum distance from the tree that excavation or other activities that might result in root damage should occur to avoid negative impacts on the health and longevity of the tree. AS 4970 states that a 10% intrusion into the TPZ may occur without further assessment or analysis.

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

D = trunk diameter, in meters, measured at 1.4 meters from ground level.

### Structural Root Zone (SRZ)

Structural Root Zone or (SRZ) is based on AS 4970-2009 (Protection of trees on development sites) and defines the likely spread of the trees scaffold root system. These roots are the primary anchoring roots for the tree and damage to these roots may render the tree liable to uprooting.

SRZ is based on measurement of the trunk above the root flare (AS 4970) However in this report SRZ is based on the measured or estimated DBH and there should be taken as an estimate only.

Additional measurement may be required if construction near the SRZ is expected to occur.

$$\text{SRZ radius} = (D \times 50)^{0.42} \times 0.64$$

D = trunk diameter, in meters, measured above the root buttress.

NOTE: The SRZ for trees with trunk diameters less than 0.15m will be 1.5m.



# APPENDIX G

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