## ARBORICULTURAL IMPACT REPORT

#### 101 WOODLAND STREET BALGOWLAH HEIGHTS NSW

#### PREPARED FOR BEECRAFT PTY LTD

16<sup>TH</sup> JUNE 2020





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#### **1. BACKGROUND**

Landscape Matrix Pty Ltd has been engaged by Beecraft Pty Ltd to prepare an Arboricultural Impact Report in respect to a tree at 101 Woodland Street Balgowlah Heights (the site). The tree is proposed to be removed and replaced as part of a proposed new garage and additions to the dwelling.

The tree is located adjacent to the southern boundary in the front garden of the site. The location and context of the tree in the front garden is illustrated in the photograph on the cover page of this report.

This report has been prepared by Guy Paroissien a Director of Landscape Matrix Pty Ltd.

The site was inspected on 11<sup>th</sup> June 2020. The assessment of the tree is based upon a visual inspection of the tree from ground level using elements of the Visual Tree Assessment (VTA) method described by Mattheck & Breloer (1994). The Useful Life Expectancy (ULE) category identified in the report follows Barrell (1996).

The visual inspection included examination of the tree's dimensions, foliage density and foliage health, form, structure, structural condition, overall health and vigour and landscape significance. The inspection was limited to visual inspection of the tree without dissection, probing or coring.

No aerial inspection of the tree was carried out and the assessment did not include any woody tissue testing or subterranean root investigation (aside from examination of roots exposed in excavations adjacent to the house to clear blocked stormwater pipelines).

The tree height and canopy spread were estimated and are expressed in metres and the tree diameters at breast height (DBH) were measured with a standard metal tape measure at approximately 1.4 metres above ground level and are expressed in millimetres.

Measurements from the tree referred to in this report are to be taken as if measured from the centre of the tree's trunk.

### 2. TREE ASSESSED FOR THIS REPORT

One Sydney Red Gum has been assessed in preparing this report. The tree is located adjacent to the southern boundary in the front garden of the site.

### 2.1 Observations regarding the tree

The tree is a mature, twin trunked *Angophora costata* (Smooth Barked Apple, Sydney Red Gum) approx. 16 metres in height with a canopy spread of 14 x 16 metres and diameters at breast height (DBH) of 480mm and 520mm. The trunk diameters above the root flare are 520mm and 570mm.

The tree has an upright trunk and the majority of its canopy is on a north x south axis due to past pruning to provide clearance from the dwelling to the west and overhead electricity lines to the east.

At the time of inspection the tree was of good health and of fair vigour with low to moderate levels of dieback in the mid to upper crown. There was no visual evidence of significant pest or disease.

Low to mid canopy branches have been pruned in the past to approximately 5 metres above ground level on the west side for clearance from the dwelling and on the east side for clearance from OH electricity wires.

There is evidence of minor cracking in the sapwood of the lower trunk of the SW leader but this is not considered significant. The tree currently appears stable with no visual evidence of instability. The tree exhibits sound branch attachment with no visual evidence of significant past branch failures.

The tree is of moderate to high landscape significance with a medium Useful Life Expectancy (ULE), i.e. 15 to 40 years.

### 2.2 Observations regarding the site conditions in the vicinity of the tree

The tree is located adjacent to the southern boundary in the front garden of the site. There is a combination of the following within the tree's identified tree protection zone (TPZ):

- The front wall of the dwelling;
- The cut for the existing driveway;
- Exposed sandstone outcrops; and
- The landscape areas in the front garden of the site and adjoining property to the south.

Observations regarding the tree and site conditions are illustrated in photographs 1, 2, 3, 4, 5 and 6 in Appendix A.

### 3. IDENTIFICATION OF SETBACKS FOR THE TREE (TPZ/SRZ)

A number of methods to determine the likely extent of root zones and appropriate setbacks for tree root protection zones for trees on development sites have been developed in the past.

The key criteria used in determining setbacks is the tree's trunk diameter at breast height (DBH) in conjunction with other factors including the sensitivity of the species in question to environmental disturbance/change, the age of the tree and the tree's health and vigour at the time.

Harris et al (2004) provide formulae for calculating tree protection zones based on the above criteria and modified from the 1991 British Standard for protection of trees on construction sites (BS 5837:1991). The 2005 version of the British Standard (BS 5837:2005) recommends a radius of 12 times the tree's DBH. For multi trunked trees BS 5837:2005 recommends a setback of 10 times the basal trunk diameter.

The Australian Standard AS4970-2009 Protection of Trees on development Sites also identifies a 'Tree Protection Zone' (TPZ) of 12 times the tree's DBH. The Australian Standard also provides a formula for calculating the "Structural Root Zone' of trees on development sites.

Using the formulae provided in *AS4970-2009* the tree protection zone for the tree is calculated as 8.5 metres and its structural root zone is calculated as 3 metres.

The tree protection zone identified above is the identified setback from the tree where disturbance (e.g. soil level changes, compaction, excavation etc.) should be minimised to reduce potential impacts on the long-term health of the tree.

Preferably, no more than 10% of the tree protection zone should be disturbed with compensation made by extension of other areas of the TPZ to compensate for the area(s) disturbed. Where greater than 10% of the tree protection zone is potentially disturbed the tree's viability needs to be investigated and demonstrated by the project arborist.

The structural root zone is the area required for stability and where disturbance of any sort should be avoided.

### 4. POTENTIAL IMPACTS TO THE TREE

The potential impacts are based on the Ground Floor Plan prepared by Beecraft Pty Ltd dated April 2020 and identified as Drawing Number 04-20-WOO, Sheet 1, Issue DA.

The tree is located within the footprint of the proposed garage and is proposed to be removed and replaced as part of the works.

### **5. CONCLUSION**

The tree assessed for this report is mature, twin trunked *Angophora costata* (Smooth Barked Apple, Sydney Red Gum) approx. 16 metres in height with a canopy spread of 14 x 16 metres and DBH of 480mm and 520mm. The tree is located adjacent to the southern boundary in the front garden of the site.

At the time of inspection the tree was of good health and of fair vigour with low to moderate levels of dieback in the mid to upper crown. There was no visual evidence of significant pest or disease.

The tree is of moderate to high landscape significance with a medium Useful Life Expectancy (ULE), i.e. 15 to 40 years.

The tree is located within the footprint of the proposed garage and is proposed to be removed and replaced as part of the works.

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# **BIBLIOGRAPHY/REFERENCES**

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Beecraft Pty Ltd (2020) - Ground Floor Plan prepared by Beecraft Pty Ltd dated April 2020 and identified as Drawing Number 04-20-WOO, Sheet 1, Issue DA.

Harris et al (2004). Harris RW, Clark JR, Matheny NP: Arboriculture – Integrated Management of Landscape Trees Shrubs and Vines 4<sup>TH</sup> Edition. Prentice Hall, New Jersey 07458.

Mattheck & Breloer (1994) – The Body Language of Trees – a handbook for failure analysis - Research for Amenity Trees No. 4. Published by TSO (The Stationary Office) Norwich UK.

# **APPENDIX A**



Photograph 1: Illustrating the location and context of the tree.



Photograph 2: Illustrating the tree and existing driveway.

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Photograph 3: Illustrating a closer view of tree location and context.



Photograph 4: Illustrating minor cracks in the lower tissue of the SW leader.

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Photograph 5: Illustrating the north-south orientation of the crown due to past pruning to provide clearance from the dwelling to the west and overhead electricity lines to the east.



Photograph 6: Illustrating the past cut for the existing driveway.