

Attachment A12

Arboricultural Assessment Report

Birds Tree Consultancy

Consulting Arborist AQF5 • Expert Witness • Environmental Arboriculture • Resistograph Testing



ARBORICULTURAL DEVELOPMENT IMPACT ASSESSMENT REPORT and PRUNING SPECIFICATION

Woolworths, 923-935 Bourke Street, Waterloo NSW

REVISION B

31st of August 2022

**Prepared for
Woolworths**

Prepared by

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Executive Summary

This Arboricultural Development Impact Assessment Report has been commissioned by Woolworths to report on trees within the site of Woolworths, 923-935 Bourke Street, Waterloo NSW. The subject trees are located within or adjacent to the boundaries of this site. This site is currently commercial properties with existing commercial buildings present. The site is proposed for redevelopment including the demolition of the existing buildings, construction of new commercial buildings, entry roads, and associated landscape works. This report has been commissioned to outline the health, condition, and stability of these trees as well as their viability for retention within the scope of the proposed development. The scope of this report includes all trees within areas that may be impacted by the proposed development.

Lidar surveying has been carried out to determine the intersection of the existing tree crowns and the proposed scaffolding of the proposed building envelopes. This plane of intersection is shown as red in the figures in section 6.0.

The design of the proposed development is to be finalised as part of a design competition subject to planning approval. The scope of this report assesses the impact of the proposed building envelopes (above ground) and the two vehicle access driveways (Young and Bourke Street) on the Tree Protection Zones (TPZ) including the crowns of the existing trees. All other ground level features and basement levels are excluded from the scope of this report as the ground level and below ground elements will be finalized as part of the design competition. The impact of the proposed ground treatments outside of the building envelopes is not assessed within this report however we define the design requirements for ground surface treatments within section 7.

The subject Trees are preserved under Section 3.5.3 of City of Sydney Development Control Plan 2012 with the exception of Trees 20, 21 and 22 which are exempt.

Tree 23 is in poor and declining condition with a short useful life expectancy and consequently has reduced retention value.

Tree 25 has evidence of decay within the trunk which places this tree at increased risk of failure. We recommend an ISA (TRAQ) Level 3 Risk Assessment be conducted including internal diagnostic testing to determine the viability of this tree to be retained.

The crowns of Trees 3, 5, 6, 7, 14, 23, 25, 29, 30 and 33 are impacted by the proposed building envelopes and associated 1500mm wide scaffold. The required crown reduction pruning required to clear this impact will leave the crowns of Trees 3, 6, 14, 25 and 29 balanced with sufficient live canopy for these trees to remain viable to be retained. This crown reduction pruning will remove between 20 to 50% of the crowns of Trees 5, 7, 23, 30 and 33 and leave the canopies of these trees unbalanced. These trees will not be viable to be retained due to the proposed development.

Trees 36, 37, 38, 39 are totally encroached by the proposed scaffolding and will not be viable to be retained.

The Tree Protection Zones (TPZ) of Trees 5, 6, 7, 32 and 34 are encroached by the proposed entry driveways and required earthworks by a total or major encroachment as defined by *AS4970-2009 Protection of Trees on Development Sites*. The Structural Root Zones (SRZ) of these trees are encroached by the proposed excavation required

for vehicular driveways which would impact the stability of these trees. These trees will not be viable to be retained and would be required to be removed due to the proposed development.

The TPZ of Trees 3 and 4 are impacted by the proposed entry driveway at ground level by major encroachments of 21% and 17% respectively as defined by AS4970-2009 however consideration is made under clause 3.3.4 of AS4970-2009 of the existing structures present (existing driveway) restricting root development. Based on the proposed driveway occupying the existing driveway footprint and depth, with no additional excavation within the TPZ, these trees will remain viable to be retained and protected under the proposed development.

Trees 23, 25, 26, 30, 32, 33 are in close proximity to the existing building and it is likely that structural roots are extending under the existing footings and foundations and have grown adaptively. Consideration is required to be made of this in formulating the demolition methodology. Further investigation including root mapping will be required to determine the location and depth of these roots and to determine if the removal of the existing building and slab will compromise the stability of these trees.

All other trees are viable to be retained and are to be protected as defined below.

Recommendations for tree retention or removal are summarised as follows:

| Tree no. | Species | Recommendations | Comments |
|----------|------------------------------|-----------------|---|
| 1. | <i>Eucalyptus microcorys</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 2. | <i>Corymbia citriodora</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 3. | <i>Eucalyptus saligna</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 4. | <i>Eucalyptus saligna</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 5. | <i>Corymbia citriodora</i> | Remove | Not viable to be retained due to impact of proposed entry driveway. |
| 6. | <i>Corymbia citriodora</i> | Remove | Not viable to be retained due to impact of proposed entry driveway. |
| 7. | <i>Corymbia citriodora</i> | Remove | Not viable to be retained due to impact of proposed entry driveway. |
| 8. | <i>Eucalyptus punctata</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 9. | <i>Eucalyptus saligna</i> | Retain | Viable to be retained and protected in accordance with 9.0. |

| | | | |
|-----|--------------------------------|--------|---|
| 10. | <i>Platanus x acerifolia</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 11. | <i>Eucalyptus microcorys</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 12. | <i>Eucalyptus microcorys</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 13. | <i>Eucalyptus microcorys</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 14. | <i>Corymbia citriodora</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 15. | <i>Eucalyptus microcorys</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 16. | <i>Eucalyptus microcorys</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 17. | <i>Corymbia citriodora</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 18. | <i>Corymbia citriodora</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 19. | <i>Lophostemon confertus</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 20. | <i>Syagrus romanzoffiana</i> | Remove | Not viable to be retained due to impact of proposed building envelopes. Exempt from City of Sydney DCP. |
| 21. | <i>Syagrus romanzoffiana</i> | Remove | Not viable to be retained due to impact of proposed building envelopes. Exempt from City of Sydney DCP. |
| 22. | <i>Syagrus romanzoffiana</i> | Remove | Not viable to be retained due to impact of proposed building envelopes. Exempt from City of Sydney DCP. |
| 23. | <i>Eucalyptus nicholii</i> | Remove | Not viable to be retained due to impact of proposed building envelopes. |
| 24. | <i>Liquidambar styraciflua</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 25. | <i>Eucalyptus saligna</i> | Retain | Viable to be retained and protected in accordance with 9.0. |

| | | | |
|-----|----------------------------------|--------|---|
| 26. | <i>Platanus x acerifolia</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 27. | <i>Lophostemon confertus</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 28. | <i>Tristaniopsis laurina</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 29. | <i>Platanus x acerifolia</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 30. | <i>Platanus x acerifolia</i> | Remove | Not viable to be retained due to impact of proposed building envelopes. |
| 31. | <i>Liquidambar styraciflua</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 32. | <i>Lophostemon confertus</i> | Remove | Not viable to be retained due to impact of proposed service driveway. |
| 33. | <i>Platanus x acerifolia</i> | Remove | Not viable to be retained due to impact of proposed building envelopes. |
| 34. | <i>Lophostemon confertus</i> | Remove | Not viable to be retained due to impact of proposed service driveway. |
| 35. | <i>Tristaniopsis laurina</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 36. | <i>Tristaniopsis laurina</i> | Remove | Not viable to be retained due to impact of proposed building envelopes. |
| 37. | <i>Eucalyptus saligna</i> | Remove | Not viable to be retained due to impact of proposed building envelopes. |
| 38. | <i>Casuarina cunninghamiana</i> | Remove | Not viable to be retained due to impact of proposed building envelopes. |
| 39. | <i>Cupaniopsis anacardioides</i> | Remove | Not viable to be retained due to impact of proposed building envelopes. |

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1.0 Scope of Works

This Arboricultural Development Impact Assessment Report has been commissioned by Woolworths to report on trees within the site of Woolworths, 923-935 Bourke Street, Waterloo NSW. It has been commissioned to outline the health, condition, and stability of these trees as well as their viability for retention within the scope of the proposed development. The scope of this report includes all trees within areas that may be impacted by the proposed development.

Lidar surveying has been carried out to determine the intersection of the existing tree crowns and the proposed scaffolding of the proposed building envelopes. This plane of intersection is shown as red in the figures in section 6.0.

The design of the proposed development is to be finalised as part of a design competition subject to planning approval. The scope of this report assesses the impact of the proposed building envelopes (above ground) and the two vehicle access driveways (Young and Bourke Street) on the Tree Protection Zones (TPZ) including the crowns of the existing trees. All other ground level features and basement levels are excluded from the scope of this report as the ground level and below ground elements will be finalized as part of the design competition. The impact of the proposed ground treatments outside of the building envelopes is not assessed within this report however we define the design requirements for ground surface treatments within section 7.

On the 12th of August 2022, Glenn Bird of Birds Tree Consultancy attended site and inspected the subject trees from the ground. There was no aerial inspection carried out. A Visual Tree Assessment was undertaken in accordance with Visual Tree Assessment (VTA) guidelines (Mattheck and Breloer, 1994). Tree heights were measured using a Nikon Forestry 550 Heightmeter.

2.0 Site Analysis

2.1 Site

The subject site is the proposed Woolworths Site at 923-935 Bourke Street, Waterloo NSW. The subject trees are located within or adjacent to the boundaries of this site. This site is currently commercial properties with existing commercial buildings present. The site is proposed for redevelopment including the demolition of the existing buildings, construction of new commercial buildings, entry roads, and associated landscape works.

2.2 Documentation

This Development Impact Assessment Report has been compiled based on the following documentation provided:

1. Bates Smart concept Schematics Revision 1 dated 31/08/2022.
2. LIDAR Survey provided by LTS 29/07/2022.
3. Detailed stormwater and hydraulic plans have not been provided.

2.3 Topography

The site is relatively flat. Trees 1 to 17 are in close proximity to Young Street kerbs and the existing car park. Trees 18, 19 are in close proximity to McEvoy Street kerbs and the existing building. Trees 20, 21, 22 are in close proximity to an existing masonry retaining wall. Trees 24, 27, 28, 29, 31, 34, 35 are street trees in close proximity to the Bourke Street kerb. Trees 23, 25, 26, 30, 32, 33, 36, 37, 38, 39 are immediately adjacent to the existing building. Refer to detailed survey for detailed levels.

2.4 Identification

Trees are as identified in the attached inspection forms in Appendix C and shown in Tree location Plan A01 in Appendix D.

2.5 Soils

Soil material and horizons were not tested for this report.

3.0 Existing Trees

The following trees were inspected from the ground and the following items identified. Please refer also to the attached inspection data in Appendix C.

3.1. Tree 1. *Eucalyptus microcorys*

This semi-mature tree is approximately 3m tall with a canopy spread of 2m. It has a single trunk with a diameter at breast height (DBH) of 50mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 1 - Tree 1

3.2. Tree 2. *Corymbia citriodora*

This mature tree is approximately 18m tall with a canopy spread of 12m. It has a single trunk with a DBH of 400mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 2 - Tree 2

3.3. Tree 3. *Eucalyptus saligna*

This mature tree is approximately 21m tall with a canopy spread of 20m. It has multiple co dominant trunks at 1500mm above the base with a DBH of 950mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 3 - Tree 3

3.4. Tree 4. *Eucalyptus saligna*

This mature tree is approximately 20m tall with a canopy spread of 14m. It has a single trunk with a DBH of 550mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 4 - Tree 4

- 3.5. Tree 5. *Corymbia citriodora***
This semi-mature tree is approximately 9m tall with a canopy spread of 12m. It has a single trunk with a DBH of 450mm. This tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced to the east.
- 3.6. Tree 6. *Corymbia citriodora***
This mature tree is approximately 20m tall with a canopy spread of 14m. It has a single trunk with a DBH of 600mm. This tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced to the east.
- 3.7. Tree 7. *Corymbia citriodora***
This mature tree is approximately 9m tall with a canopy spread of 10m. It has a single trunk with a DBH of 350mm. This tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced to the east.



Figure 5 – Trees 5, 6 & 7

3.8. Tree 8. *Eucalyptus punctata*

This mature tree is approximately 19m tall with a canopy spread of 10m. It has a single trunk with a DBH of 550mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 6 - Tree 8

3.9. Tree 9. *Eucalyptus saligna*

This mature tree is approximately 18m tall with a canopy spread of 14m. It has a single trunk with a DBH of 600mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 7 - Tree 9

3.10. Tree 10. *Platanus x acerifolia*

This mature tree is approximately 16m tall with a canopy spread of 10m. It has a single trunk with a DBH of 400mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



3.11. Tree 11. *Eucalyptus microcorys*

This mature tree is approximately 17m tall with a canopy spread of 19m. It has a single trunk with a DBH of 950mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 8 - Tree 11

3.12. Tree 12. *Eucalyptus microcorys*

This mature tree is approximately 14m tall with a canopy spread of 12m. It has a single trunk with a DBH of 750mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 9 - Tree 12

3.13. Tree 13. *Eucalyptus microcorys*

This mature tree is approximately 17m tall with a canopy spread of 9m. It has a single trunk with a DBH of 700mm. This tree is in fair health and condition with minimal deadwood, epicormic growth and moderate apical dieback.



Figure 10 - Tree 13

3.14. Tree 14. *Corymbia citriodora*

This mature tree is approximately 20m tall with a canopy spread of 20m. It has a single trunk with a DBH of 750mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 11 - Tree 14

3.15. Tree 15. *Eucalyptus microcorys*

This mature tree is approximately 19m tall with a canopy spread of 17m. It has a single trunk with a DBH of 950mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 12 - Tree 15

3.16. Tree 16. *Eucalyptus microcorys*

This mature tree is approximately 20m tall with a canopy spread of 16m. It has a single trunk with a DBH of 850mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 13 - Tree 16

3.17. Tree 17. *Corymbia citriodora*

This mature tree is approximately 19m tall with a canopy spread of 14m. It has a single trunk with a DBH of 550mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 14 - Tree 17

3.18. Tree 18. *Corymbia citriodora*

This mature tree is approximately 21m tall with a canopy spread of 16m. It has a single trunk with a DBH of 650mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 15 - Tree 18

3.19. Tree 19. *Lophostemon confertus*

This semi-mature tree is approximately 5m tall with a canopy spread of 2m. It has a single trunk with a DBH of 100mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 16 - Tree 19

3.20. Tree 20. *Syagrus romanzoffiana*

This semi-mature tree is approximately 6m tall with a canopy spread of 4m. It has a single trunk. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 17 - Trees 20 and 21

3.21. Tree 21. *Syagrus romanzoffiana*

This mature tree is approximately 6m tall with a canopy spread of 4m. It has a single trunk. This tree is in good health and condition with minimal deadwood and epicormic growth.

3.22. Tree 22. *Syagrus romanzoffiana*

This mature tree is approximately 7m tall with a canopy spread of 4m. It has a single trunk. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 18 - Tree 22

3.23. Tree 23. *Eucalyptus nicholii*

This mature tree is approximately 13m tall with a canopy spread of 10m. It has a single trunk with a DBH of 650mm. This tree is in poor health and condition with significant deadwood, epicormic growth and significant apical dieback. This tree has a short useful life expectancy.



Figure 19 - Tree 23

3.24. Tree 24. *Liquidambar styraciflua*

This mature tree is approximately 10m tall with a canopy spread of 12m. It has a single trunk with a DBH of 720mm. This tree is in good health and condition with minimal deadwood and epicormic growth. This tree has an open crown due to previous line clearance pruning.



Figure 20 - Tree 24

3.25. Tree 25. *Eucalyptus saligna*

This mature tree is approximately 23m tall with a canopy spread of 14m. It has a single trunk with a DBH of 920mm. This tree is in good health and condition with minimal deadwood and epicormic growth. There is evidence of decay with a fungal fruiting body present at a height of approximately 3m.



Figure 21 - Tree 25



Figure 22 - Tree 25 proximity to existing building

3.26. Tree 26. *Platanus x acerifolia*

This mature tree is approximately 9m tall with a canopy spread of 7m. It has a single trunk with a DBH of 350mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 23 - Tree 26

3.27. Tree 27. *Lophostemon confertus*

This mature tree is approximately 7m tall with a canopy spread of 4m. It has a single trunk with a DBH of 300mm. This tree is in good health and condition with minimal deadwood and epicormic growth. Previous line clearance pruning.



Figure 24 - Tree 27

3.28. Tree 28. *Tristaniopsis laurina*

This mature tree is approximately 6m tall with a canopy spread of 6m. It has multiple co-dominant trunks from the base with an aggregate DBH of 350mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 25 - Tree 28

3.29. Tree 29. *Platanus x acerifolia*

This mature tree is approximately 22m tall with a canopy spread of 14m. It has a single trunk with a DBH of 650mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 26 - Tree 29

3.30. Tree 30. *Platanus x acerifolia*

This mature tree is approximately 18m tall with a canopy spread of 12m. It has a single trunk with a DBH of 480mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 27 - Tree 30

3.31. Tree 31. *Liquidambar styraciflua*

This mature tree is approximately 16m tall with a canopy spread of 14m. It has a single trunk with a DBH of 760mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 28 -Tree 31

3.32. Tree 32. *Lophostemon confertus*

This mature tree is approximately 14m tall with a canopy spread of 9m. It has a single trunk with a DBH of 380mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 29 - Tree 32

3.33. Tree 33. *Platanus x acerifolia*

This mature tree is approximately 16m tall with a canopy spread of 12m. It has a single trunk with a DBH of 450mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 30 - Tree 33

3.34. Tree 34. *Lophostemon confertus*

This mature tree is approximately 15m tall with a canopy spread of 12m. It has a single trunk with a DBH of 500mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 31 - Tree 34

3.35. Tree 35. *Tristaniopsis laurina*

This mature tree is approximately 8m tall with a canopy spread of 5m. It has multiple co-dominant trunks from the base with an aggregate DBH of 260mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 32 - Tree 35

3.36. Tree 36. *Tristaniopsis laurina*

This mature tree is approximately 8m tall with a canopy spread of 4m. It has multiple co-dominant trunks from the base with an aggregate DBH of 200mm. This tree is in good health and condition with minimal deadwood and epicormic growth.

3.37. Tree 37. *Eucalyptus saligna*

This semi-mature tree is approximately 10m tall with a canopy spread of 3m. It has a single trunk with a DBH of 160mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 33 - Trees 37 and 38

- 3.38. Tree 38. *Casuarina cunninghamiana***
This semi-mature tree is approximately 11m tall with a canopy spread of 4m. It has a single trunk with a DBH of 120mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.39. Tree 39. *Cupaniopsis anacardioides***
This semi-mature tree is approximately 8m tall with a canopy spread of 5m. It has a single trunk with a DBH of 170mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 34 - Tree 39

4.0 Landscape Significance of Trees

4.1 Landscape Significance

The significance of a tree within the landscape is a factor of the health and condition of the tree, vitality, the form of the tree, environmental, cultural, amenity and heritage value.

4.2 Methodology of Determining Landscape Significance

For the purpose of this report, the Significance of a Tree, Assessment Rating System (STARS) as developed by the Institute of Australian Consulting Arborists (IACA) has been implemented. Please refer to Appendix A for greater detail of this assessment system. This system defines Landscape Significance for individual trees as High, Medium or Low Significance.

4.3 Landscape Significance of Subject Trees

Based on our assessment of the subject trees and implementation of the IACA Significance of a Tree, Assessment Rating System, the Landscape Significance of the Subject Trees was determined as shown in Table 1.

| Tree no. | Species | Landscape Significance |
|----------|----------------------------------|------------------------|
| 1. | <i>Eucalyptus microcorys</i> | Medium |
| 2. | <i>Corymbia citriodora</i> | Medium |
| 3. | <i>Eucalyptus saligna</i> | High |
| 4. | <i>Eucalyptus saligna</i> | High |
| 5. | <i>Corymbia citriodora</i> | Medium |
| 6. | <i>Corymbia citriodora</i> | High |
| 7. | <i>Corymbia citriodora</i> | Medium |
| 8. | <i>Eucalyptus punctata</i> | High |
| 9. | <i>Eucalyptus saligna</i> | High |
| 10. | <i>Platanus x acerifolia</i> | Medium |
| 11. | <i>Eucalyptus microcorys</i> | High |
| 12. | <i>Eucalyptus microcorys</i> | High |
| 13. | <i>Eucalyptus microcorys</i> | High |
| 14. | <i>Corymbia citriodora</i> | High |
| 15. | <i>Eucalyptus microcorys</i> | High |
| 16. | <i>Eucalyptus microcorys</i> | High |
| 17. | <i>Corymbia citriodora</i> | High |
| 18. | <i>Corymbia citriodora</i> | High |
| 19. | <i>Lophostemon confertus</i> | Medium |
| 20. | <i>Syagrus romanzoffiana</i> | Low |
| 21. | <i>Syagrus romanzoffiana</i> | Low |
| 22. | <i>Syagrus romanzoffiana</i> | Low |
| 23. | <i>Eucalyptus nicholii</i> | Medium |
| 24. | <i>Liquidambar styraciflua</i> | Medium |
| 25. | <i>Eucalyptus saligna</i> | High |
| 26. | <i>Platanus x acerifolia</i> | Medium |
| 27. | <i>Lophostemon confertus</i> | High |
| 28. | <i>Tristaniopsis laurina</i> | High |
| 29. | <i>Platanus x acerifolia</i> | High |
| 30. | <i>Platanus x acerifolia</i> | Medium |
| 31. | <i>Liquidambar styraciflua</i> | High |
| 32. | <i>Lophostemon confertus</i> | Medium |
| 33. | <i>Platanus x acerifolia</i> | Medium |
| 34. | <i>Lophostemon confertus</i> | High |
| 35. | <i>Tristaniopsis laurina</i> | High |
| 36. | <i>Tristaniopsis laurina</i> | Medium |
| 37. | <i>Eucalyptus saligna</i> | High |
| 38. | <i>Casuarina cunninghamiana</i> | Medium |
| 39. | <i>Cupaniopsis anacardioides</i> | Medium |

Table 1 - Landscape Significance

5.0 Subject Tree Retention Value

5.1 Tree Retention Value Methodology

For the purpose of this report, the Tree Retention Values have been assessed by incorporating Landscape Significance Values as determined in 4.0 with the Useful Life Expectancy of the subject trees and assessing the retention values based on the Tree Retention Value Priority Matrix as developed by the Institute of Australian Consulting Arborists (IACA). Please refer to Appendix B for greater detail of this Tree Retention Value Priority Matrix. This matrix defines Landscape Significance for individual trees as High, Medium or Low Retention Value as well as Priority for Removal.

5.2 Retention Value of Subject Trees

Based on our assessment of the subject trees and implementation of the IACA Tree Retention Value Priority Matrix, the Retention Values of the Subject Trees were determined as shown in Table 2.

| Tree no. | Species | Retention Value |
|----------|--------------------------------|-----------------|
| 1. | <i>Eucalyptus microcorys</i> | High |
| 2. | <i>Corymbia citriodora</i> | Medium |
| 3. | <i>Eucalyptus saligna</i> | High |
| 4. | <i>Eucalyptus saligna</i> | High |
| 5. | <i>Corymbia citriodora</i> | Medium |
| 6. | <i>Corymbia citriodora</i> | High |
| 7. | <i>Corymbia citriodora</i> | Medium |
| 8. | <i>Eucalyptus punctata</i> | High |
| 9. | <i>Eucalyptus saligna</i> | High |
| 10. | <i>Platanus x acerifolia</i> | Medium |
| 11. | <i>Eucalyptus microcorys</i> | High |
| 12. | <i>Eucalyptus microcorys</i> | High |
| 13. | <i>Eucalyptus microcorys</i> | High |
| 14. | <i>Corymbia citriodora</i> | High |
| 15. | <i>Eucalyptus microcorys</i> | High |
| 16. | <i>Eucalyptus microcorys</i> | High |
| 17. | <i>Corymbia citriodora</i> | High |
| 18. | <i>Corymbia citriodora</i> | High |
| 19. | <i>Lophostemon confertus</i> | High |
| 20. | <i>Syagrus romanzoffiana</i> | Low |
| 21. | <i>Syagrus romanzoffiana</i> | Low |
| 22. | <i>Syagrus romanzoffiana</i> | Low |
| 23. | <i>Eucalyptus nicholii</i> | Low |
| 24. | <i>Liquidambar styraciflua</i> | Medium |
| 25. | <i>Eucalyptus saligna</i> | High |
| 26. | <i>Platanus x acerifolia</i> | Medium |
| 27. | <i>Lophostemon confertus</i> | High |

| | | |
|-----|----------------------------------|--------|
| 28. | <i>Tristaniopsis laurina</i> | High |
| 29. | <i>Platanus x acerifolia</i> | High |
| 30. | <i>Platanus x acerifolia</i> | Medium |
| 31. | <i>Liquidambar styraciflua</i> | High |
| 32. | <i>Lophostemon confertus</i> | Medium |
| 33. | <i>Platanus x acerifolia</i> | Medium |
| 34. | <i>Lophostemon confertus</i> | High |
| 35. | <i>Tristaniopsis laurina</i> | High |
| 36. | <i>Tristaniopsis laurina</i> | Medium |
| 37. | <i>Eucalyptus saligna</i> | High |
| 38. | <i>Casuarina cunninghamiana</i> | Medium |
| 39. | <i>Cupaniopsis anacardioides</i> | Medium |

Table 2 – Tree Retention Value

6.0 Impact of Development

6.1 Tree Protection Zone

Tree Protection Zones (TPZs) have been defined for the subject trees in order to define the encroachment of the proposed development in accordance with AS4970-2009. The TPZs required have been taken as a circular area with a radius 12 x the diameter at breast height of the tree. This requirement is in line with Australian Standard AS 4970-2009 Protection of Trees on Development Sites. This standard defines a maximum of 10% encroachment to be minimal encroachment. Any encroachment over 10% requires the Project Arborist to give consideration as to the viability of the tree due to the proposed development.

6.2 Structural Root Zone

Structural Root Zone (SRZs) is defined by AS4970-2009 as the area of root development required for the structural stability of the tree. The SRZ is required to be assessed only when an encroachment greater than 10% is considered.

| Tree no. | Species | TPZ Radius (m) | Ground level Encroachment (%) | Canopy Encroachment (%) | SRZ Radius (m) Encroached/ Not encroached |
|----------|------------------------------|----------------|-------------------------------|-------------------------|--|
| 1. | <i>Eucalyptus microcorys</i> | 2 | 0 | 0 | 0.94 |
| 2. | <i>Corymbia citriodora</i> | 4.32 | 0 | 0 | 2.25 |
| 3. | <i>Eucalyptus saligna</i> | 10.44 | 21 | 15 | 3.24 |
| 4. | <i>Eucalyptus saligna</i> | 5.88 | 17 | 0 | 2.57 |
| 5. | <i>Corymbia citriodora</i> | 4.44 | 100 | 100 | 2.37 |

| | | | | | |
|-----|--------------------------------|-------|-----|-----|------|
| 6. | <i>Corymbia citriodora</i> | 6.36 | 40 | 15 | 2.67 |
| 7. | <i>Corymbia citriodora</i> | 3.24 | 30 | 100 | 2.13 |
| 8. | <i>Eucalyptus punctata</i> | 5.76 | 0 | 0 | 2.57 |
| 9. | <i>Eucalyptus saligna</i> | 6.48 | 0 | 0 | 2.67 |
| 10. | <i>Platanus x acerifolia</i> | 3.84 | 0 | 0 | 2.25 |
| 11. | <i>Eucalyptus microcorys</i> | 9.84 | 0 | 0 | 3.24 |
| 12. | <i>Eucalyptus microcorys</i> | 7.92 | 0 | 0 | 2.93 |
| 13. | <i>Eucalyptus microcorys</i> | 7.08 | 0 | 0 | 2.85 |
| 14. | <i>Corymbia citriodora</i> | 7.92 | 0 | 5 | 2.93 |
| 15. | <i>Eucalyptus microcorys</i> | 10.56 | 0 | 0 | 3.24 |
| 16. | <i>Eucalyptus microcorys</i> | 9.48 | 20 | 0 | 3.09 |
| 17. | <i>Corymbia citriodora</i> | 5.88 | 20 | 0 | 2.57 |
| 18. | <i>Corymbia citriodora</i> | 6.84 | 0 | 0 | 2.76 |
| 19. | <i>Lophostemon confertus</i> | 2 | 0 | 0 | 1.26 |
| 20. | <i>Syagrus romanzoffiana</i> | 2.5 | 100 | 0 | n/a |
| 21. | <i>Syagrus romanzoffiana</i> | 2.5 | 100 | 0 | n/a |
| 22. | <i>Syagrus romanzoffiana</i> | 2.5 | 100 | 0 | n/a |
| 23. | <i>Eucalyptus nicholii</i> | 6.48 | 40 | 40 | 2.76 |
| 24. | <i>Liquidambar styraciflua</i> | 7.2 | 0 | 0 | 2.88 |
| 25. | <i>Eucalyptus saligna</i> | 11.04 | 12 | 17 | 3.31 |
| 26. | <i>Platanus x acerifolia</i> | 3.36 | 0 | 0 | 2.13 |
| 27. | <i>Lophostemon confertus</i> | 2.52 | 0 | 0 | 2 |
| 28. | <i>Tristaniopsis laurina</i> | 3.16 | 0 | 0 | 2.13 |
| 29. | <i>Platanus x acerifolia</i> | 6.36 | 0 | 12 | 2.76 |

| | | | | | |
|----|----------------------------------|------|-----|-----|------|
| 30 | <i>Platanus x acerifolia</i> | 4.8 | 2 | 50 | 2.43 |
| 31 | <i>Liquidambar styraciflua</i> | 7.92 | 0 | 0 | 2.95 |
| 32 | <i>Lophostemon confertus</i> | 3.96 | 100 | 0 | 2.2 |
| 33 | <i>Platanus x acerifolia</i> | 4.68 | 0 | 20 | 2.37 |
| 34 | <i>Lophostemon confertus</i> | 5.28 | 100 | 0 | 2.47 |
| 35 | <i>Tristaniopsis laurina</i> | 2.93 | 0 | 0 | 4.94 |
| 36 | <i>Tristaniopsis laurina</i> | 2 | 0 | 100 | 4.43 |
| 37 | <i>Eucalyptus saligna</i> | 2 | 0 | 100 | 1.53 |
| 38 | <i>Casuarina cunninghamiana</i> | 2 | 0 | 100 | 1.36 |
| 39 | <i>Cupaniopsis anacardioides</i> | 2 | 0 | 100 | 1.57 |

6.3 Development Impact

Lidar surveying has been carried out to determine the intersection of the existing tree crowns and the proposed scaffolding of the proposed building envelopes. The alignment of the proposed scaffolding is shown as a red line in Figure 35 below. Please note that adjacent to Trees 9, 10 and 11 the scaffold alignment will return along the face of the building and not in a straight line as shown on this drawing and the impact assessment in this report is made on this basis. This plane of intersection is shown as red in the figures in this section. Crown reduction percentages are based on these Lidar images.



Figure 35 - Line of Scaffolding - Bates Smart image

6.3.1. Tree 1. *Eucalyptus microcorys*

The TPZ and crown of this tree will not be impacted by the proposed building envelope and required 1500mm scaffolding. This tree will remain viable to be retained and protected under the proposed development based on the assessment of the impact of the proposed building envelopes.

6.3.2. Tree 2. *Corymbia citriodora*

The TPZ and crown of this tree will not be impacted by the proposed building envelope and required 1500mm scaffolding. This tree will remain viable to be retained and protected under the proposed development based on the assessment of the impact of the proposed building envelopes.

6.3.3. Tree 3. *Eucalyptus saligna*

Lidar surveying shows that the crown of this tree will be impacted by the proposed building envelope and required 1500mm scaffolding (Figure 36, 37, 38). The required pruning will leave the crown balanced and will reduce the crown by 15%. The TPZ is impacted by the proposed entry driveway at ground level by a major encroachment as defined by AS4970-2009 however consideration is made under clause 3.3.4 of AS4970-2009 of the existing structures present (existing driveway) restricting root development. Based on the proposed driveway occupying the existing driveway footprint and depth, with no additional excavation within the TPZ, this tree will remain viable to be retained and protected under the proposed development based on the assessment of the impact of the proposed building envelopes.

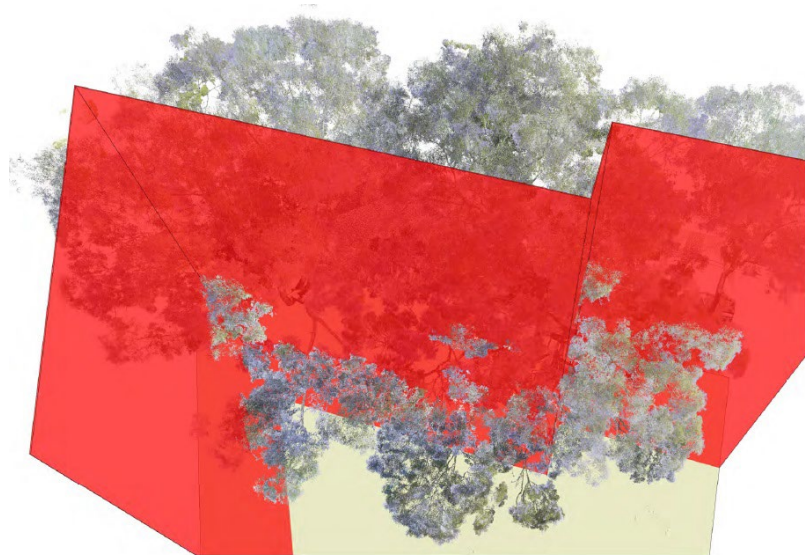


Figure 36 - Trees 3, 5, 6, 7 Impact (oblique) – Image Bates Smart

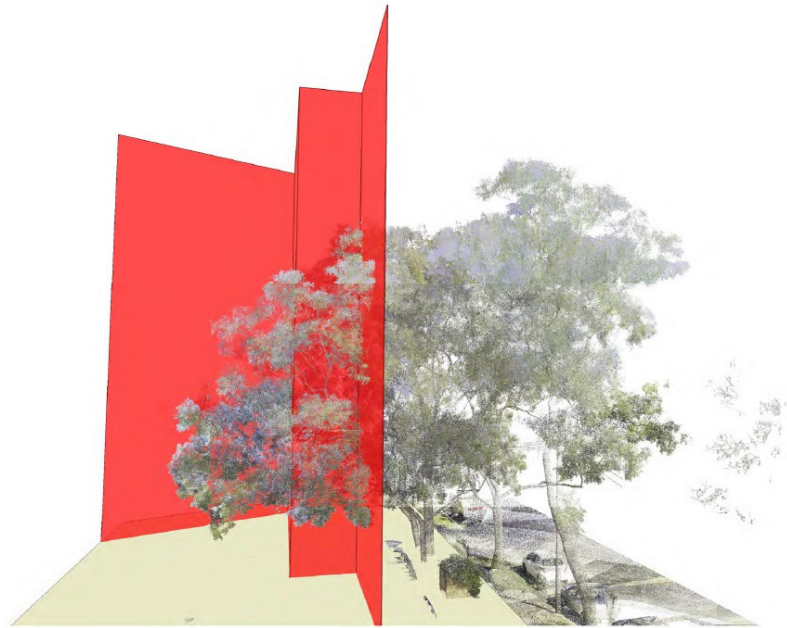


Figure 37 - Trees 3, 5, 6, 7 Close

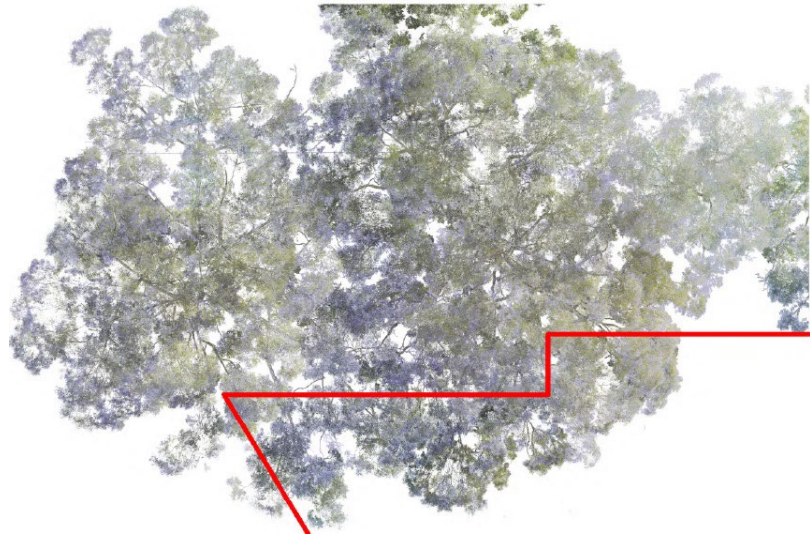


Figure 38 - Trees 3, 5, 6, 7 Plan view

6.3.4. Tree 4. *Eucalyptus saligna*

The TPZ of this tree will be encroached by the proposed entry driveway at ground level by 31% which is a major encroachment as defined by *AS4970-2009*. Additionally, the proposed driveway excavation will encroach within the Structural Root Zone (SRZ) of this tree, impacting the stability of this tree. This tree will not be viable to be retained due to the encroachment of the proposed driveway.

6.3.5. Tree 5. *Corymbia citriodora*

Lidar surveying shows that the crown of this tree will be impacted by the proposed building envelope and required 1500mm scaffolding (Figure 35). The entire live crown of this tree will be required to be removed and the tree is not viable to be retained under the proposed development. The TPZ of this tree is completely encroached by the proposed driveway.

- 6.3.6. Tree 6. *Corymbia citriodora***
Lidar surveying shows that the crown of this tree will be impacted by the proposed building envelope and required 1500mm scaffolding (Figure 35). The required pruning will leave the crown balanced and will reduce the crown by 15%. The TPZ of this tree will be encroached by the proposed entry driveway at ground level by 40% which is a major encroachment as defined by AS4970-2009. Additionally, the proposed driveway excavation will encroach within the Structural Root Zone (SRZ) of this tree, impacting the stability of this tree. This tree will not be viable to be retained due to the encroachment of the proposed driveway.
- 6.3.7. Tree 7. *Corymbia citriodora***
Lidar surveying shows that the crown of this tree will be impacted by the proposed building envelope and required 1500mm scaffolding (Figure 35). The entire live crown of this tree will be required to be removed and the tree is not viable to be retained under the proposed development. The TPZ of this tree will be encroached by the proposed entry driveway at ground level by 30% which is a major encroachment as defined by AS4970-2009. Additionally, the proposed driveway excavation will encroach within the Structural Root Zone (SRZ) of this tree, impacting the stability of this tree. This tree will not be viable to be retained due to the encroachment of the proposed driveway.
- 6.3.8. Tree 8. *Eucalyptus punctata***
The TPZ and crown of this tree will not be impacted by the proposed building envelope and required 1500mm scaffolding. This tree will remain viable to be retained and protected under the proposed development based on the assessment of the impact of the proposed building envelopes.
- 6.3.9. Tree 9. *Eucalyptus saligna***
The TPZ and crown of this tree will not be impacted by the proposed building envelope and required 1500mm scaffolding. This tree will remain viable to be retained and protected under the proposed development based on the assessment of the impact of the proposed building envelopes.
- 6.3.10. Tree 10. *Platanus x acerifolia***
The TPZ and crown of this tree will not be impacted by the proposed building envelope and required 1500mm scaffolding. This tree will remain viable to be retained and protected under the proposed development based on the assessment of the impact of the proposed building envelopes.
- 6.3.11. Tree 11. *Eucalyptus microcorys***
The TPZ and crown of this tree will not be impacted by the proposed building envelope and required 1500mm scaffolding. This tree will remain viable to be retained and protected under the proposed

development based on the assessment of the impact of the proposed building envelopes.

6.3.12. Tree 12. *Eucalyptus microcorys*

The TPZ and crown of this tree will not be impacted by the proposed building envelope and required 1500mm scaffolding. This tree will remain viable to be retained and protected under the proposed development based on the assessment of the impact of the proposed building envelopes.

6.3.13. Tree 13. *Eucalyptus microcorys*

The TPZ and crown of this tree will not be impacted by the proposed building envelope and required 1500mm scaffolding. This tree will remain viable to be retained and protected under the proposed development based on the assessment of the impact of the proposed building envelopes.

6.3.14. Tree 14. *Corymbia citriodora*

Lidar surveying shows that the crown of this tree will be impacted by the proposed building envelope and required 1500mm scaffolding (Figures 39 and 40). The required pruning will leave the crown balanced and will reduce the crown by approximately 5%. The TPZ is not impacted by the building envelopes at ground level. This tree will remain viable to be retained and protected under the proposed development based on the assessment of the impact of the proposed building envelopes.

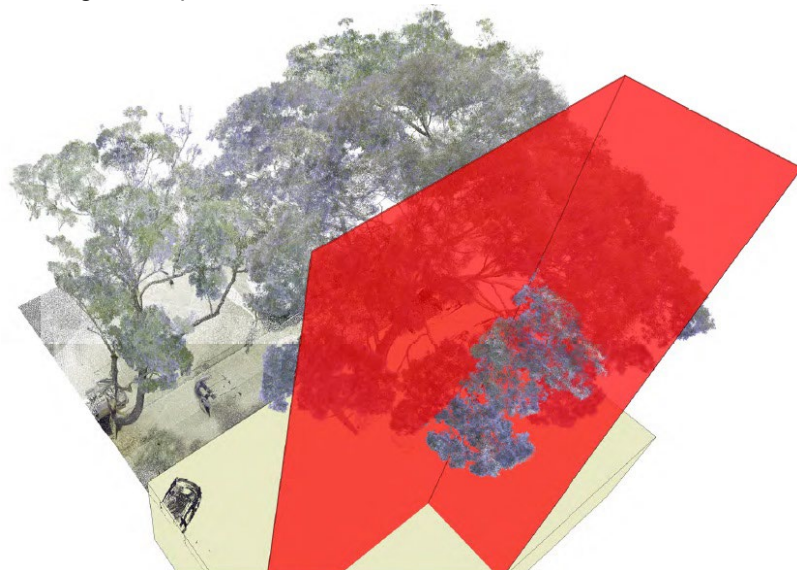


Figure 39 - Tree 14 impact oblique view– Image Bates Smart

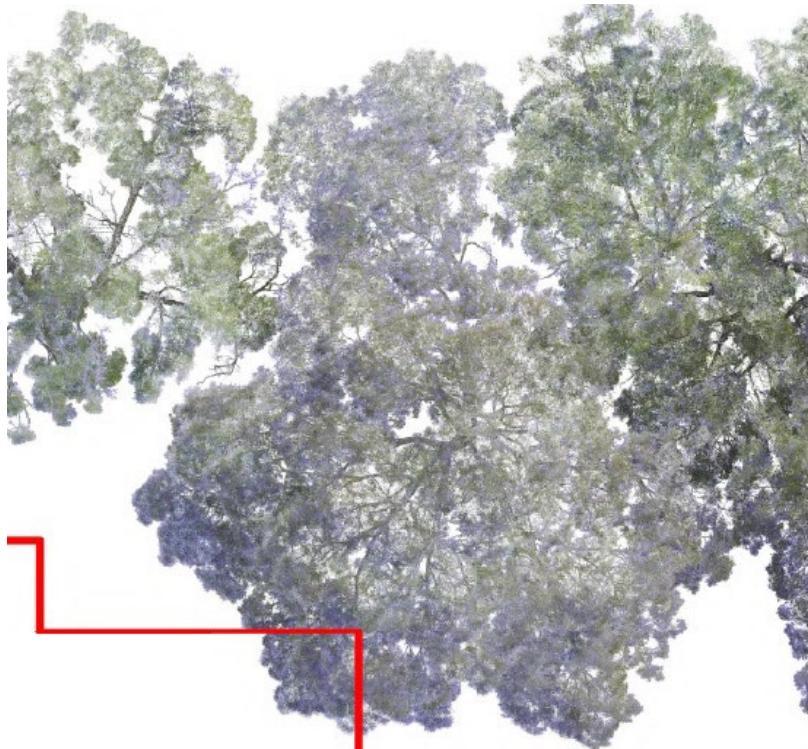


Figure 40 - Tree 14 plan view– Image Bates Smart

6.3.15. Tree 15. *Eucalyptus microcorys*

The TPZ and crown of this tree will not be impacted by the proposed building envelope and required 1500mm scaffolding. This tree will remain viable to be retained and protected under the proposed development based on the assessment of the impact of the proposed building envelopes.

6.3.16. Tree 16. *Eucalyptus microcorys*

The crown of this tree will not be impacted by the proposed building envelope and required 1500mm scaffolding. The TPZ is impacted by the building envelope at ground level by a minor encroachment as defined by *AS4970-2009*. This tree will remain viable to be retained and protected under the proposed development based on the assessment of the impact of the proposed building envelopes.

6.3.17. Tree 17. *Corymbia citriodora*

The TPZ and crown of this tree will not be impacted by the proposed building envelope and required 1500mm scaffolding. This tree will remain viable to be retained and protected under the proposed development based on the assessment of the impact of the proposed building envelopes.

6.3.18. Tree 18. *Corymbia citriodora*

The TPZ and crown of this tree will not be impacted by the proposed building envelope and required 1500mm scaffolding. This tree will remain viable to be retained and protected under the proposed development based on the assessment of the impact of the proposed building envelopes.

- 6.3.19. Tree 19. *Lophostemon confertus***
The TPZ and crown of this tree will not be impacted by the proposed building envelope and required 1500mm scaffolding. This tree will remain viable to be retained and protected under the proposed development based on the assessment of the impact of the proposed building envelopes.
- 6.3.20. Tree 20. *Syagrus romanzoffiana***
This tree will be totally encroached by the proposed level changes and public domain paving works and will not be viable to be retained. This tree is not impacted by the building envelopes.
- 6.3.21. Tree 21. *Syagrus romanzoffiana***
This tree will be totally encroached by the proposed level changes and public domain paving works and will not be viable to be retained. This tree is not impacted by the building envelopes.
- 6.3.22. Tree 22. *Syagrus romanzoffiana***
This tree will be totally encroached by the proposed level changes and public domain paving works and will not be viable to be retained. This tree is not impacted by the building envelopes.
- 6.3.23. Tree 23. *Eucalyptus nicholii***
The crown of this tree will be impacted by the proposed building envelope and required 1500mm scaffolding. This tree is in poor condition with significant deadwood and apical dieback. The required pruning will remove almost all of the live crown. This tree will not be viable to be retained under the proposed development based on the assessment of the impact of the proposed building envelopes.
- 6.3.24. Tree 24. *Liquidambar styraciflua***
The TPZ and crown of this tree will not be impacted by the proposed building envelope and required 1500mm scaffolding. This tree will remain viable to be retained and protected under the proposed development based on the assessment of the impact of the proposed building envelopes.
- 6.3.25. Tree 25. *Eucalyptus saligna***
Lidar surveying shows that the crown of this tree will be impacted by the proposed building envelope and required 1500mm scaffolding (Figures 41, 42, 43). The required pruning will leave the crown balanced and will reduce the crown by 17%. The TPZ is impacted by the building envelopes at ground level by slightly greater than 10% minor encroachment however consideration is made under clause 3.3.4 of AS4970-2009 of the existing structures present (existing building) restricting root development. This tree will remain viable to be retained and protected under the proposed development based on the assessment of the impact of the proposed building envelopes. Further investigation and consideration is to be made of the proposed demolition methodology to ensure that the stability of this tree is not impacted during the proposed demolition of the existing building.



Figure 41 - Tree 25 impact oblique north– Image Bates Smart

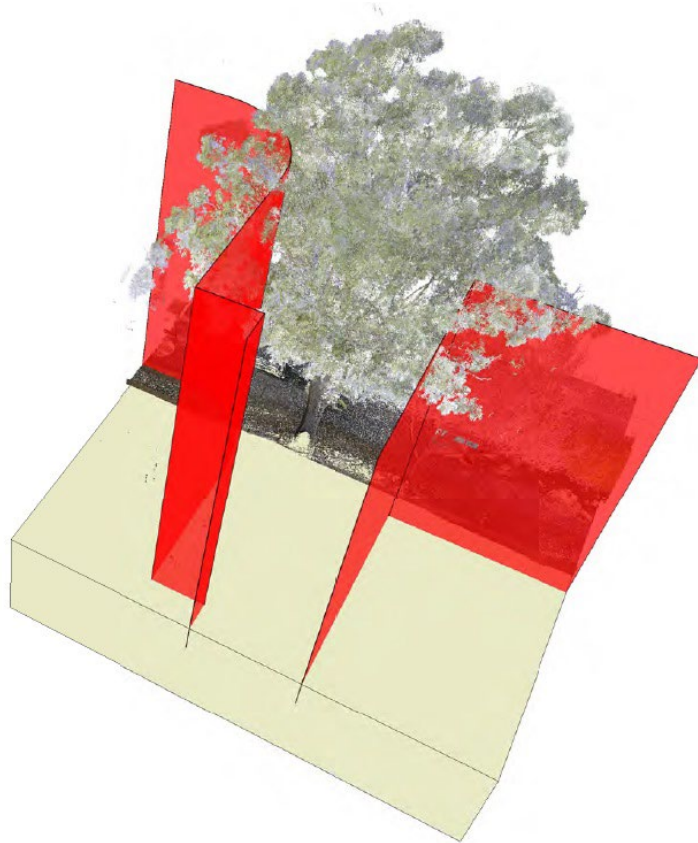


Figure 42 - Tree 25 impact oblique west– Image Bates Smart

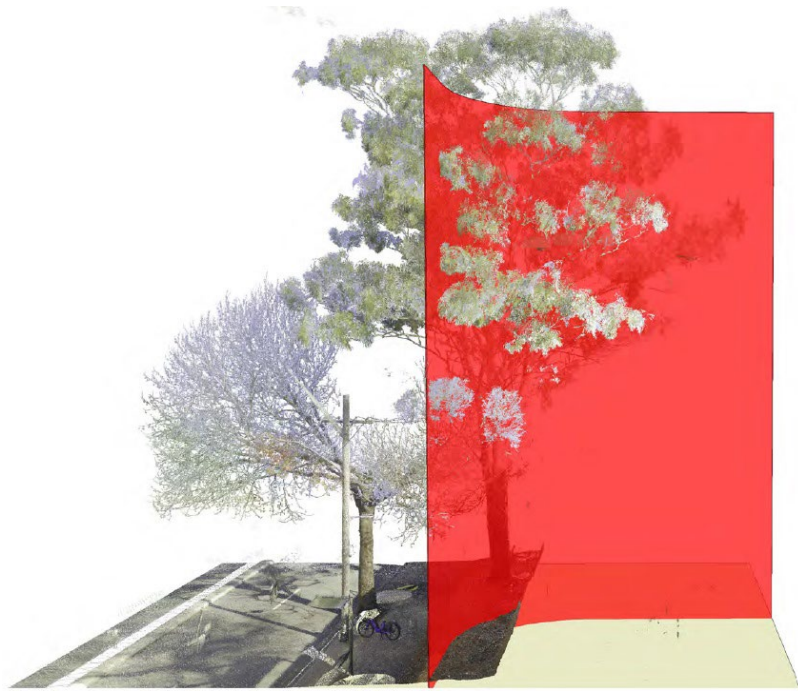


Figure 43 - Tree 25 close view north

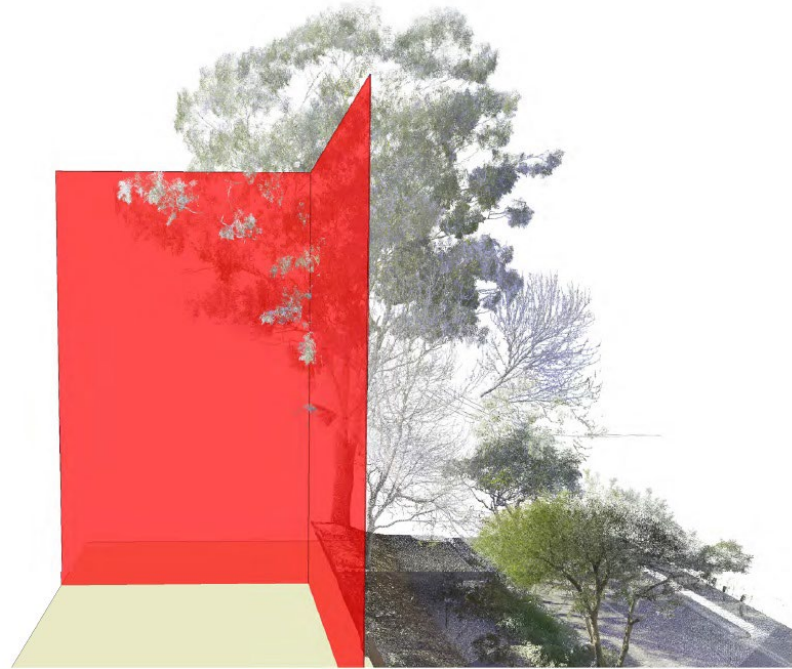


Figure 44 - Tree 25 close view south

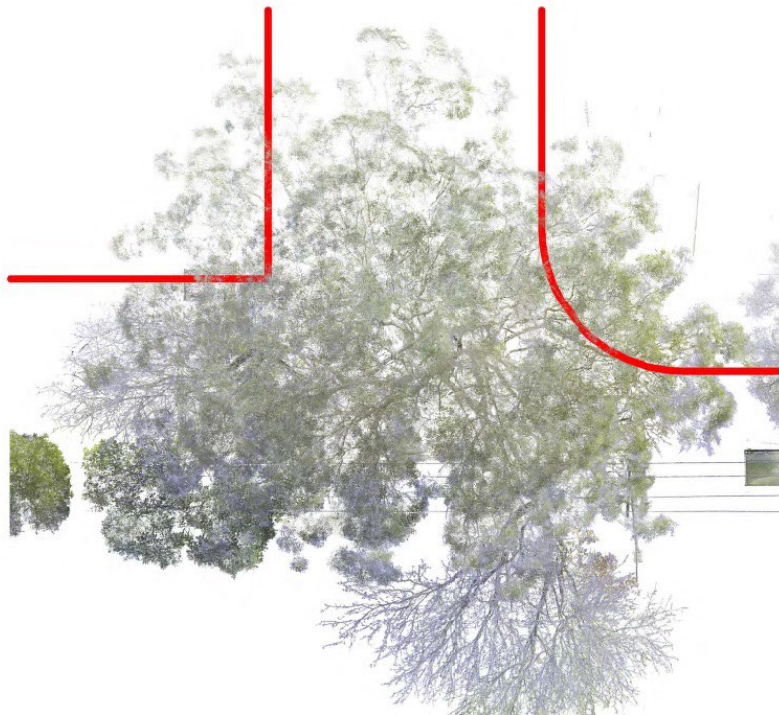


Figure 45 - Tree 25 plan view– Image Bates Smart

6.3.26. Tree 26. *Platanus x acerifolia*

The TPZ and crown of this tree will not be impacted by the proposed building envelope and required 1500mm scaffolding. This tree will remain viable to be retained and protected under the proposed development based on the assessment of the impact of the proposed building envelopes. Further investigation and consideration is to be made of the proposed demolition methodology to ensure that the stability of this tree is not impacted during the proposed demolition of the existing building.

6.3.27. Tree 27. *Lophostemon confertus*

The TPZ and crown of this tree will not be impacted by the proposed building envelope and required 1500mm scaffolding. This tree will remain viable to be retained and protected under the proposed development based on the assessment of the impact of the proposed building envelopes.

6.3.28. Tree 28. *Tristaniopsis laurina*

The TPZ and crown of this tree will not be impacted by the proposed building envelope and required 1500mm scaffolding. This tree will remain viable to be retained and protected under the proposed development based on the assessment of the impact of the proposed building envelopes.

6.3.29. Tree 29. *Platanus x acerifolia*

Lidar surveying shows that the crown of this tree will be impacted by the proposed building envelope and required 1500mm scaffolding (Figures 46, 47). The crown will be reduced by 12%. This tree will

remain viable to be retained and protected under the proposed development based on the assessment of the impact of the proposed building envelopes.

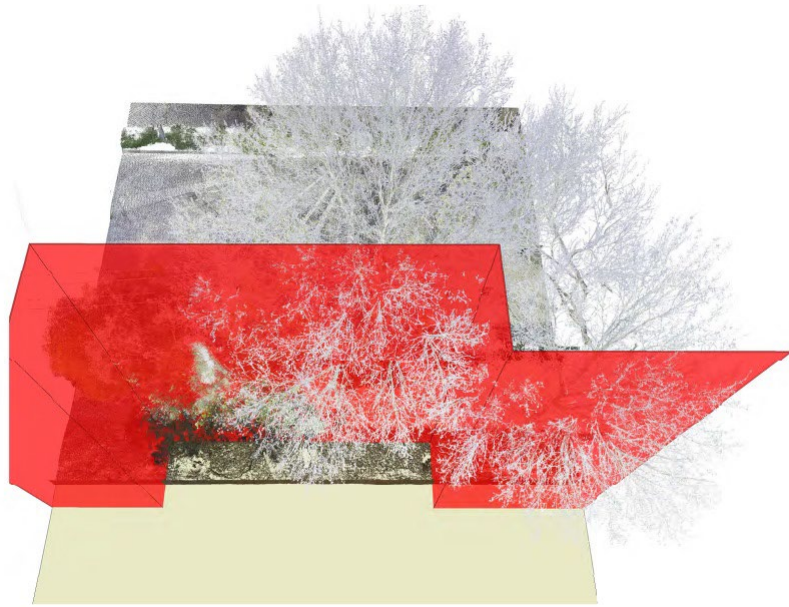


Figure 46 - Tree 29 impact oblique view– Image Bates Smart

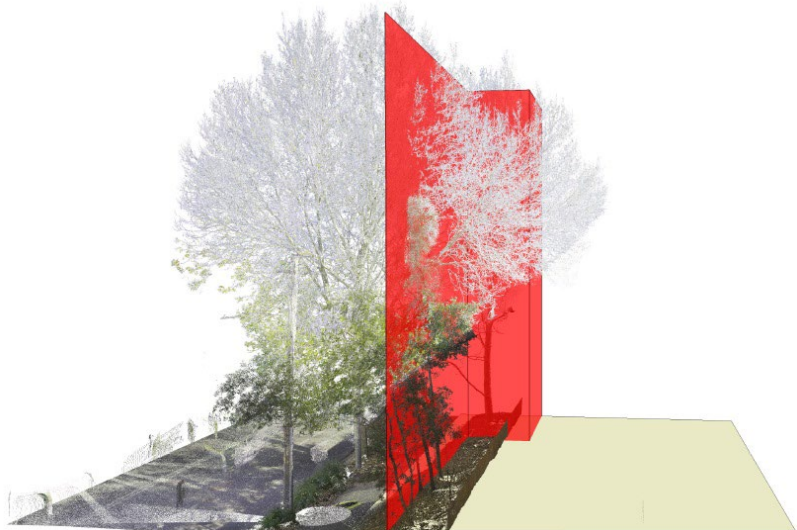


Figure 47 - Tree 29 Impact close up north view– Image Bates Smart



Figure 48 - Trees 29, 30, 31, 32, 33 Plan View

6.3.30. Tree 30. *Platanus x acerifolia*

Lidar surveying shows that the crown of this tree will be impacted by the proposed building envelope and required 1500mm scaffolding (Figure 48). The required pruning will reduce the volume of the crown by greater than 50%. Based on this extensive crown reduction pruning required, this tree will not be viable to be retained under the proposed development based on the assessment of the impact of the proposed building envelopes.

6.3.31. Tree 31. *Liquidambar styraciflua*

The TPZ and crown of this tree will not be impacted by the proposed building envelope and required 1500mm scaffolding. This tree will remain viable to be retained and protected under the proposed development based on the assessment of the impact of the proposed building envelopes.

6.3.32. Tree 32. *Lophostemon confertus*

The TPZ of this tree is completely encroached by the proposed driveway. This tree will not be viable to be retained due to the proposed service entry driveway.

6.3.33. Tree 33. *Platanus x acerifolia*

Lidar surveying shows that the crown of this tree will be impacted by the proposed building envelope and required 1500mm scaffolding (Figures 48 and 49). The required pruning will reduce the volume of the crown by greater than 20% and leave the crown unbalanced. Based on this extensive crown reduction pruning required, this tree will not be viable to be retained under the proposed development based on the assessment of the impact of the proposed building envelopes.

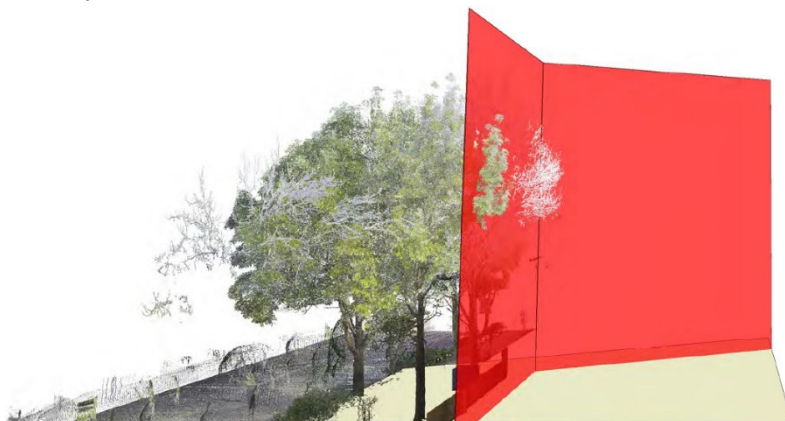


Figure 49 - Tree 33 close view

6.3.34. Tree 34. *Lophostemon confertus*

The TPZ of this tree is completely encroached by the proposed driveway. This tree will not be viable to be retained due to the proposed service entry driveway.

6.3.35. Tree 35. *Tristaniopsis laurina*

The TPZ and crown of this tree will not be impacted by the proposed building envelope and required 1500mm scaffolding. This tree will remain viable to be retained and protected under the proposed development based on the assessment of the impact of the proposed building envelopes.

6.3.36. Tree 36. *Tristaniopsis laurina*

The TPZ and crown of this tree will be totally impacted by the proposed building envelope and required 1500mm scaffolding. This tree will not be viable to be retained and protected under the proposed development based on the assessment of the impact of the proposed building envelopes.

6.3.37. Tree 37. *Eucalyptus saligna*

The TPZ and crown of this tree will be totally impacted by the proposed building envelope and required 1500mm scaffolding. This tree will not be viable to be retained and protected under the proposed development based on the assessment of the impact of the proposed building envelopes.

6.3.38. Tree 38. *Casuarina cunninghamiana*

The TPZ and crown of this tree will be totally impacted by the proposed building envelope and required 1500mm scaffolding. This tree will not be viable to be retained and protected under the proposed development based on the assessment of the impact of the proposed building envelopes.

6.3.39. Tree 39. *Cupaniopsis anacardioides*

The TPZ and crown of this tree will be totally impacted by the proposed building envelope and required 1500mm scaffolding. This tree will not be viable to be retained and protected under the proposed development based on the assessment of the impact of the proposed building envelopes.

7.0 Recommendations

The subject Trees are preserved under Section 3.5.3 of City of Sydney Development Control Plan 2012 with the exception of Trees 20, 21 and 22 which are exempt.

Tree 23 is in poor and declining condition with a short useful life expectancy and consequently has reduced retention value.

Tree 25 has evidence of decay within the trunk which places this tree at increased risk of failure. We recommend an ISA (TRAQ) Level 3 Risk Assessment be conducted including internal diagnostic testing to determine the viability of this tree to be retained.

The crowns of Trees 3, 5, 6, 7, 14, 23, 25, 29, 30 and 33 are impacted by the proposed building envelopes and associated 1500mm wide scaffold. The required crown reduction pruning required to clear this impact will leave the crowns of Trees 3, 6, 14, 25 and 29 balanced with sufficient live canopy for these trees to remain viable to be retained. This crown reduction pruning will remove between 20 to 50% of the crowns of Trees 5, 7, 23, 30 and 33 and leave the canopies of these trees unbalanced. These trees will not be viable to be retained due to the proposed development.

Trees 36, 37, 38, 39 are totally encroached by the proposed scaffolding and will not be viable to be retained.

The Tree Protection Zones (TPZ) of Trees 5, 6, 7, 32 and 34 are encroached by the proposed construction and required earthworks by a total or major encroachment as defined by *AS4970-2009 Protection of Trees on Development Sites*. The Structural Root Zones (SRZ) of these trees are encroached by the proposed excavation required for vehicular driveways which would impact the stability of these trees. These trees will not be viable to be retained and would be required to be removed due to the proposed development.

The TPZ of Trees 3 and 4 are impacted by the proposed entry driveway at ground level by a major encroachment of 21% and 17% as defined by AS4970-2009 however consideration is made under clause 3.3.4 of AS4970-2009 of the existing structures present (existing driveway) restricting root development. Based on the proposed driveway occupying the existing driveway footprint and depth, with no additional excavation within the TPZ, these trees will remain viable to be retained and protected under the proposed development.

Trees 23, 25, 26, 30, 32, 33 are in close proximity to the existing building and it is likely that structural roots are extending under the existing footings and foundations and have grown adaptively. Consideration is required to be made of this in formulating the demolition methodology. Further investigation including root mapping will be required to determine the location and depth of these roots and to determine if the removal of the existing building and slab will compromise the stability of these trees.

All other trees are viable to be retained and are to be protected as defined below.

Recommendations for tree retention or removal are summarised as follows:

| Tree no. | Species | Recommendations | Comments |
|----------|---------|-----------------|----------|
| | | | |

| | | | |
|-----|------------------------------|--------|---|
| 1. | <i>Eucalyptus microcorys</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 2. | <i>Corymbia citriodora</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 3. | <i>Eucalyptus saligna</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 4. | <i>Eucalyptus saligna</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 5. | <i>Corymbia citriodora</i> | Remove | Not viable to be retained due to impact of proposed entry driveway. |
| 6. | <i>Corymbia citriodora</i> | Remove | Not viable to be retained due to impact of proposed entry driveway. |
| 7. | <i>Corymbia citriodora</i> | Remove | Not viable to be retained due to impact of proposed entry driveway. |
| 8. | <i>Eucalyptus punctata</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 9. | <i>Eucalyptus saligna</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 10. | <i>Platanus x acerifolia</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 11. | <i>Eucalyptus microcorys</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 12. | <i>Eucalyptus microcorys</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 13. | <i>Eucalyptus microcorys</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 14. | <i>Corymbia citriodora</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 15. | <i>Eucalyptus microcorys</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 16. | <i>Eucalyptus microcorys</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 17. | <i>Corymbia citriodora</i> | Retain | Viable to be retained and protected in accordance with 9.0. |

| | | | |
|-----|--------------------------------|--------|---|
| 18. | <i>Corymbia citriodora</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 19. | <i>Lophostemon confertus</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 20. | <i>Syagrus romanzoffiana</i> | Remove | Not viable to be retained due to impact of proposed building envelopes. Exempt from City of Sydney DCP. |
| 21. | <i>Syagrus romanzoffiana</i> | Remove | Not viable to be retained due to impact of proposed building envelopes. Exempt from City of Sydney DCP. |
| 22. | <i>Syagrus romanzoffiana</i> | Remove | Not viable to be retained due to impact of proposed building envelopes. Exempt from City of Sydney DCP. |
| 23. | <i>Eucalyptus nicholii</i> | Remove | Not viable to be retained due to impact of proposed building envelopes. |
| 24. | <i>Liquidambar styraciflua</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 25. | <i>Eucalyptus saligna</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 26. | <i>Platanus x acerifolia</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 27. | <i>Lophostemon confertus</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 28. | <i>Tristaniopsis laurina</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 29. | <i>Platanus x acerifolia</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 30. | <i>Platanus x acerifolia</i> | Remove | Not viable to be retained due to impact of proposed building envelopes. |
| 31. | <i>Liquidambar styraciflua</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 32. | <i>Lophostemon confertus</i> | Remove | Not viable to be retained due to impact of proposed service driveway. |
| 33. | <i>Platanus x acerifolia</i> | Remove | Not viable to be retained due to impact of proposed building envelopes. |

| | | | |
|-----|----------------------------------|--------|---|
| 34. | <i>Lophostemon confertus</i> | Remove | Not viable to be retained due to impact of proposed service driveway. |
| 35. | <i>Tristaniopsis laurina</i> | Retain | Viable to be retained and protected in accordance with 9.0. |
| 36. | <i>Tristaniopsis laurina</i> | Remove | Not viable to be retained due to impact of proposed building envelopes. |
| 37. | <i>Eucalyptus saligna</i> | Remove | Not viable to be retained due to impact of proposed building envelopes. |
| 38. | <i>Casuarina cunninghamiana</i> | Remove | Not viable to be retained due to impact of proposed building envelopes. |
| 39. | <i>Cupaniopsis anacardioides</i> | Remove | Not viable to be retained due to impact of proposed building envelopes. |

8.0 Pruning Specification / Requirements

8.1 General

All pruning is to be carried out under the supervision of the Project Arborist (AQF Level 5) by an arborist with qualifications of AQF Level 3 or higher. All pruning is to be in accordance with *AS4373-2007 Pruning of Amenity Trees*. Pruning locations shown below are indicative only and all pruning is to be carried out at the branch collar at the branch junction in accordance with 5.1, 5.2, 5.3, 5.4 of *AS4373-2007*.

Pruning locations have been selected in order to minimise the amount of canopy removed to provide clearance and leave the remaining canopy balanced with even weight distribution and to maintain the natural habit for these species. Pruning locations shown within the figures of this specification are indicative only and final pruning locations are to be in accordance with *AS4373-2007*.

8.1 Tree 3

Crown reduction pruning is required to provide crown clearance between the canopy of Tree 3 and the scaffolding of the proposed building envelope. One first order branch is required to be removed as shown in Figure 50. This crown reduction pruning will reduce the crown of this tree 20% and leave the canopy balanced.

Pruning Location A is a first order branch with a diameter at the pruning location of approximately 250mm. This branch extends in a northeasterly direction. This branch is required to be pruned at the lower order branch junction in accordance with *AS4373-2007* at the location shown in figure 48.



Figure 50 - Tree 3 Pruning Requirements

8.2 Tree 5

Crown reduction pruning is required to provide crown clearance between the canopy of Tree 5 and the scaffolding of the proposed building envelope. Due to the leaning trunk, this crown reduction pruning will remove the entire live crown of this tree and this tree will not be viable to be retained under the proposed development.

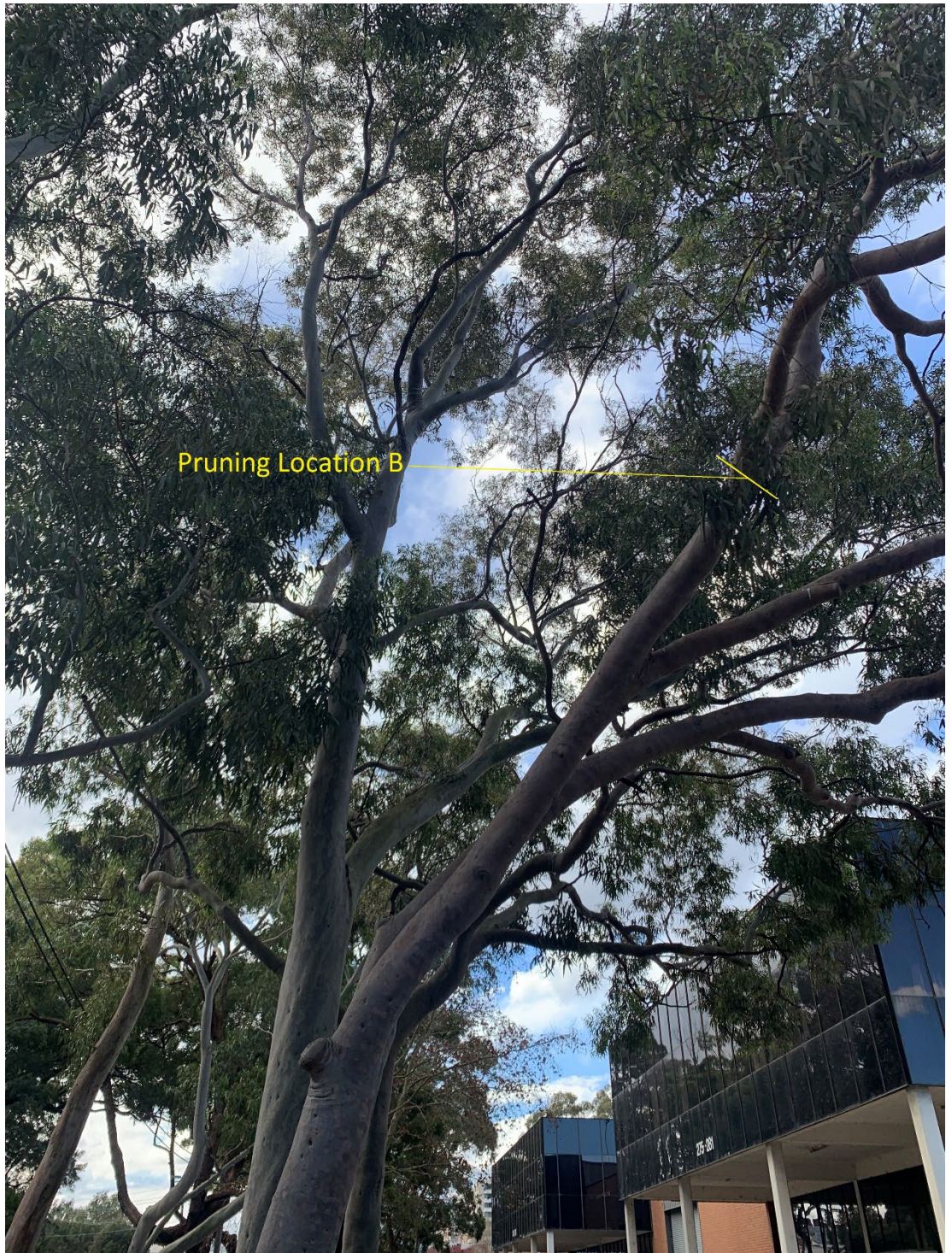


Figure 51 - Tree 5 Pruning Location B

8.3 Tree 6

Crown reduction pruning is required to provide crown clearance between the canopy of Tree 6 and the scaffolding of the proposed building envelope. Two second order branches and one third order branch are required to be removed as shown in Figure 50. This crown reduction pruning will reduce the crown of this tree by approximately 25% and leave the canopy balanced.

Pruning Location C is a second order branch with a diameter at the pruning location of approximately 200mm. This branch extends in an easterly direction.

Pruning Location D is a second order branch with a diameter at the pruning location of approximately 120mm. This branch extends in an easterly direction.

Pruning Location E is a third order branch with a diameter at the pruning location of approximately 100mm. This branch extends in an easterly direction.

These branches required to be pruned at the lower order branch junction in accordance with AS4373-2007 at the location shown in figure 52.



Figure 52 - Pruning Requirements Tree 6

8.4 Tree 7

Crown reduction pruning is required to provide crown clearance between the canopy of Tree 7 and the scaffolding of the proposed building envelope. Due to the leaning trunk, this crown reduction pruning will remove the entire live crown of this tree and this tree will not be viable to be retained under the proposed development.

8.5 Tree 14

Crown reduction pruning is required to provide crown clearance between the canopy of Tree 14 and the scaffolding of the proposed building envelope. Two third order branches are required to be removed as shown in Figure 54. This crown reduction pruning will reduce the crown of this tree by 5% and leave the canopy balanced.

Pruning Location G is a third order branch with a diameter at the pruning location of approximately 200mm. This branch extends in an easterly direction.

Pruning Location H is a third order branch with a diameter at the pruning location of approximately 100mm. This branch extends in an easterly direction.

These branches are required to be pruned at the lower order branch junction in accordance with AS4373-2007 at the location shown in figure 53.

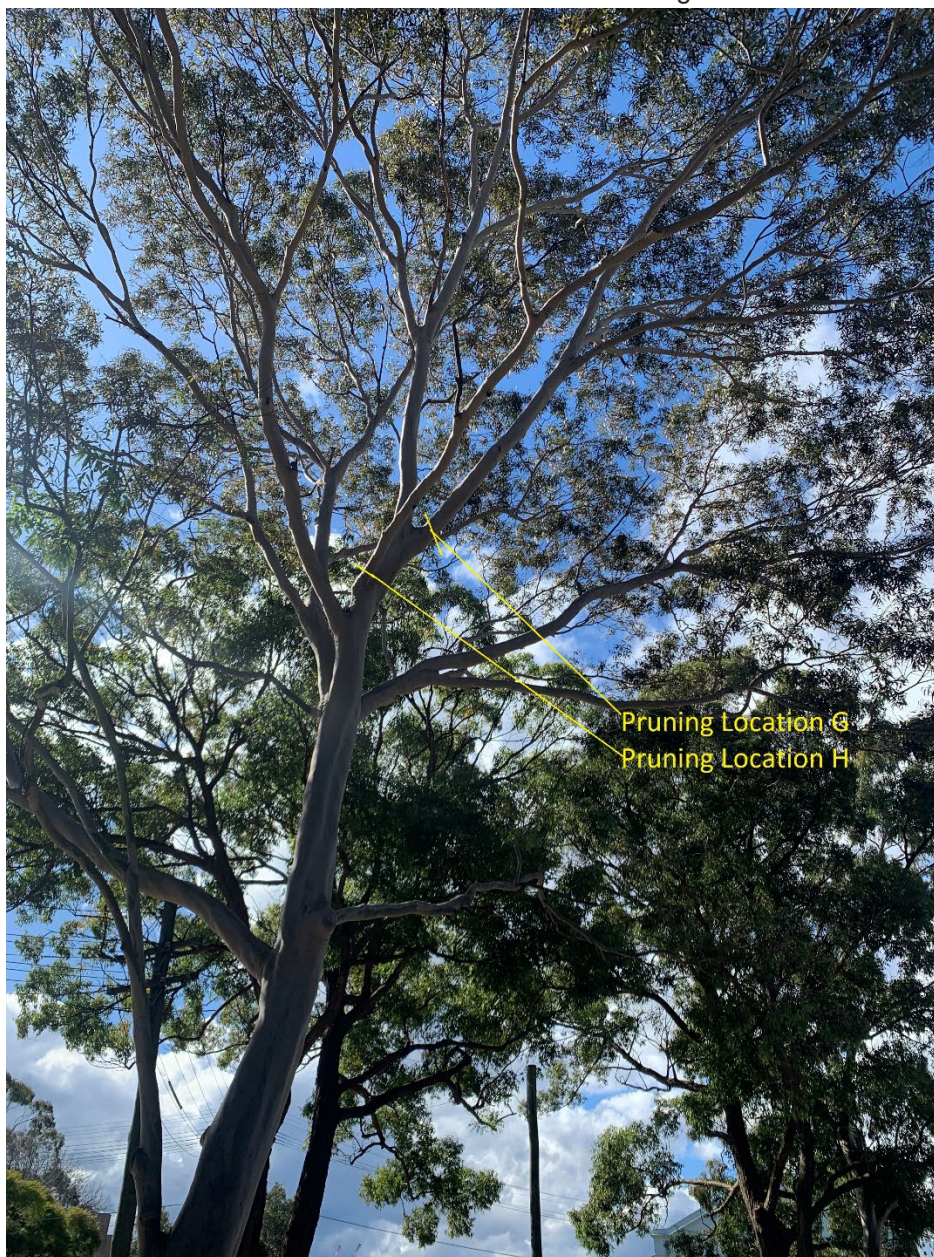


Figure 53 - Tree 14 Pruning Requirements

8.6 Tree 23

Crown reduction pruning is required to provide crown clearance between the canopy of Tree 23 and the scaffolding of the proposed building envelope. This tree is in poor condition with significant deadwood and apical dieback. Consequently, this crown reduction pruning will remove the majority of the entire live crown of this tree and this tree will not be viable to be retained under the proposed development.



Figure 54 - Extent of Pruning requirements Tree 23

8.7 Tree 25

Crown reduction pruning is required to provide crown clearance between the canopy of Tree 25 and the scaffolding of the proposed building envelope. Two second order and one third order branch is required to be removed as shown in Figure 56 and 57. This crown reduction pruning will reduce the crown of this tree by approximately 17% and leave the canopy balanced.

Pruning Location K is a second order branch with a diameter at the pruning location of approximately 200mm. This branch extends in a northwesterly direction.

Pruning Location L is a third order branch with a diameter at the pruning location of approximately 150mm. This branch extends in a northwesterly direction.

Pruning Location M is a second order branch with a diameter at the pruning location of approximately 200mm. This branch extends in a southwesterly direction.

These branches are required to be pruned at the lower order branch junction in accordance with AS4373-2007 at the location shown in figures 55 and 56.



Figure 55 - Tree 25 Pruning Locations L, K



Figure 56 - Tree 25 Pruning Location M

8.11 Tree 29

Crown reduction pruning is required to provide crown clearance between the canopy of Tree 18 and the scaffolding of the proposed building envelope. Two second order and one third order branches are required to be removed as shown in Figure 58. This crown reduction pruning will reduce the crown of this tree approximately 12% and leave the canopy balanced.

Pruning Location V is a second order branch with a diameter at the pruning location of approximately 150mm. This branch extends in a westerly direction.

Pruning Location W is a third order branch with a diameter at the pruning location of approximately 100mm. This branch extends in a westerly direction.

Pruning Location X is a second order branch with a diameter at the pruning location of approximately 100mm. This branch extends in a westerly direction.

These branches are required to be pruned at the lower order branch junction in accordance with AS4373-2007 at the location shown in figure 57.



Figure 57 - Tree 29 Locations V, W, X

8.12 Tree 30

Crown reduction pruning is required to provide crown clearance between the canopy of Tree 30 and the scaffolding of the proposed building envelope. Three second order branches are required to be removed as shown in Figure 58. This crown reduction pruning will reduce the crown of this tree by approximately 50% and leave the canopy unbalanced. This tree will not be viable to be retained due to the impact of the proposed development and the extent of crown reduction pruning required.

Pruning Location N is a second order branch with a diameter at the pruning location of approximately 100mm. This branch extends in a northwesterly direction.

Pruning Location O is a second order branch with a diameter at the pruning location of approximately 150mm. This branch extends in a northwesterly direction.

Pruning Location P is a second order branch with a diameter at the pruning location of approximately 150mm. This branch extends in a westerly direction.

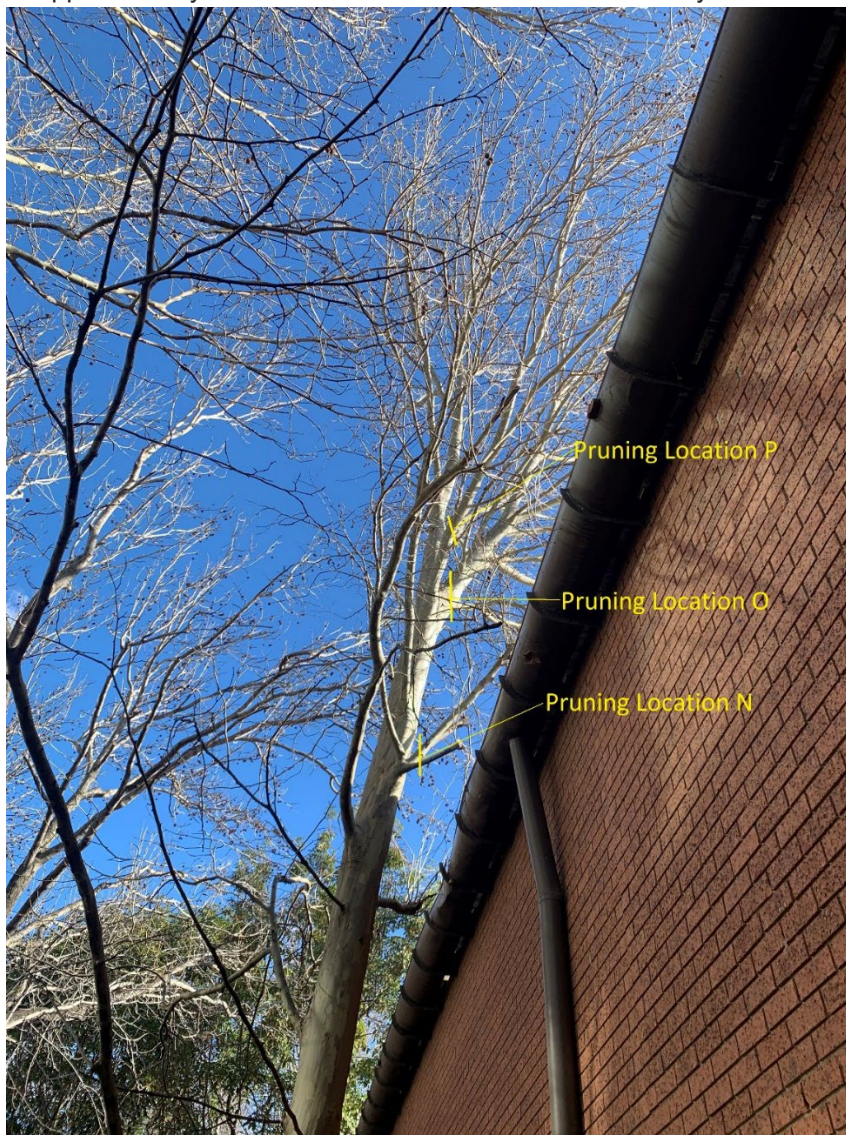


Figure 58 - Tree 30 Pruning Requirements

8.10 Tree 33

Crown reduction pruning is required to provide crown clearance between the canopy of Tree 33 and the scaffolding of the proposed building envelope. Four third order branches are required to be removed as shown in Figure 60. This crown reduction pruning will reduce the crown of this tree by approximately 20% and leave the canopy unbalanced. This tree will not be viable to be retained due to the impact of the proposed development and the extent of crown reduction pruning required.

Pruning Location Q is a third order branch with a diameter at the pruning location of approximately 100mm. This branch extends in a northwesterly direction.

Pruning Location R is a third order branch with a diameter at the pruning location of approximately 100mm. This branch extends in a westerly direction.

Pruning Location S is a third order branch with a diameter at the pruning location of approximately 100mm. This branch extends in a northwesterly direction.

Pruning Location T is a third order branch with a diameter at the pruning location of approximately 100mm. This branch extends in a westerly direction. These branches are required to be pruned at the lower order branch junction in accordance with AS4373-2007 at the location shown in figure 59.

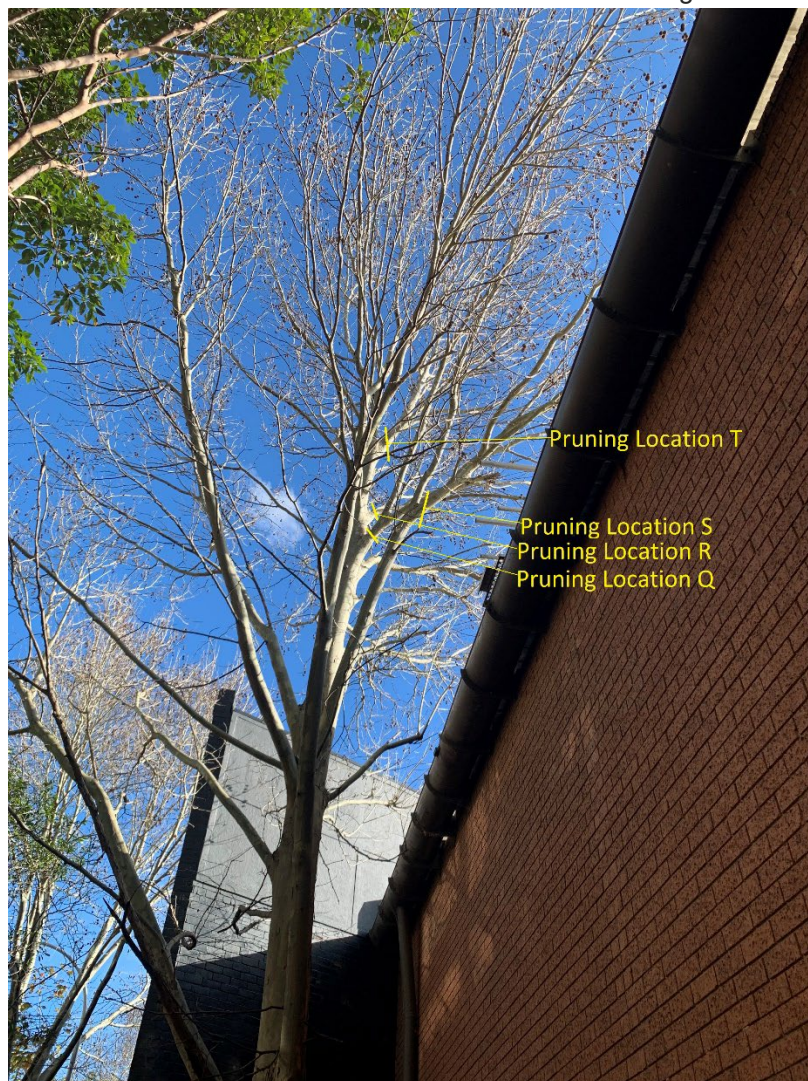


Figure 59 - Tree 33 Pruning Requirements

9.0 Pre-Construction Tree Protection Measures

9.1 General

All tree protection works shall be carried out before excavation, grading and site works commence. Tree protection works shall be inspected and approved by a Consulting Arborist meeting AQF Level 5 prior to construction works commencing.

Storage of materials, mixing of materials, vehicle parking, disposal of liquids, machinery repairs and refueling, site office and sheds, and the lighting of fires, stockpiling of soil, rubble or any debris shall not be carried out within the TPZ of existing trees. No backfilling shall occur within the TPZ of existing trees. Trees shall not be removed or lopped unless specific instruction is given in writing by the Superintendent.

9.2 Identification

All trees to be protected shall be clearly identified and all TPZs surveyed.

9.3 Project Arborist

Prior to all site works commencing, a Project Arborist is to be appointed with the responsibility of implementing all Tree Protection Measures in this report as well as compliance with AS4970-2009 Protection of Trees on Development Sites. The Site Arborist is to hold qualifications equivalent of AQF Level 5.

9.4 Protective Fence

Fencing is to be erected around existing trees to be retained. In addition to this protective fencing within the site, Protective Fencing is to be installed to the full extent of the TPZs within the site. This fencing is to be erected prior to any materials being brought on site or before any site, civil works or construction works commence. The fence shall enclose a sufficient area so as to prevent damage to the TPZ as defined on Appendix D Tree Protection Plan and as defined in 5.1 above. Fence to comprise 1800mm high chain wire mesh fixed to 50mm diameter Galvanised steel posts. Panels should be securely fixed top and bottom to avoid separation. No storage of building materials, tools, paint, fuel or contaminants and the like shall occur within the fenced area.

9.5 Mulching

Install mulch to the extent of all tree protection fencing. Use a leaf mulch conforming to AS 4454 which is free of deleterious and extraneous matter such as soil, weeds, sticks and stones and consisting of a minimum of 90% recycled content compliant with AS 4454 (1999) and AS 4419 (1998). All trees marked as to be removed on the proposed development are to be chipped and reused for this purpose. Place mulch evenly and to a depth of 100mm.

9.6 Signage

Prior to works commencing, tree protection signage is to be attached to each tree protection zone, displayed in a prominent position and the sign repeated at 10 metres intervals or closer where the fence changes direction. Each sign shall contain in a clearly legible form, the following information:

Tree protection zone.

- This fence has been installed to prevent damage to the trees and their growing environment both above and below ground and access is restricted.

- No Access within Tree Protection Zone
 - The name, address, and telephone number of the developer.
- The name and telephone number of the Project Arborist.

9.7 Trunk and Branch Protection

Where a tree is to be retained and a Tree Protection Zone cannot be adequately established due to restricted access, the trunk and branches in the lower crown will be protected by wrapping 2 layers of hessian or carpet underfelt around the trunk and branches for a minimum of 2 m or as lower branches permit, then metal strapping secures 38x50 x2000 mm timber battens together around the trunk (do not nail or screw to the trunk or branches). The number of battens to be used is as required to encircle the trunk and the battens are to extend to the base of the tree (AS4970 2009 Protection of trees on development sites, Figure 3 Examples of Trunk, Branch, and ground protection).

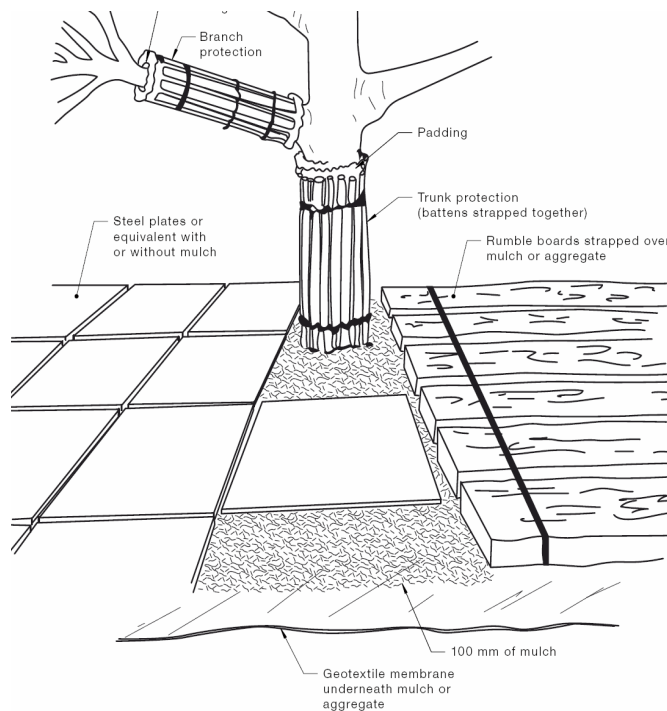


Figure 60 - Trunk Protection

10.0 Site Management Issues

10.1 Soil Compaction

Plant and pedestrian traffic during the construction period will cause significant soil compaction. This will be exacerbated by increased water expected on these soils as result of adjacent construction and weather. Compaction of the soil within the TPZ will reduce the voids between soil peds or particles therefore will reduce the gaseous exchange capacity of the root system which will slow critical metabolic processes. No pedestrian or plant access is permissible to the TPZ.

10.2 Site Access

Sufficient access is required to enable efficient construction. It is essential to delineate access zones or corridors which will provide suitable access without damaging the existing trees to be retained or causing compaction to the root zone.

10.3 Excavation within Tree Protection Area

No excavation is to be carried out within the TPZs of retained trees without the permission and supervision of the Project Arborist (AQF5)

10.4 Possible Contamination / Storage of Materials

The construction site will require the use of many chemicals and materials that are possible contaminants which if not managed will pose a risk to the existing trees. These possible contaminants include fuels, herbicides, solvents and the like. A site-specific Environmental Management Plan shall be provided, and this specific risk identified and addressed.

11.0 Tree Protection Measures During Construction

11.1 Maintenance of Pre-Construction Tree Protection Measures

The Pre-Construction Tree Protection Measures identified in 5.0 above are to be maintained in good and serviceable condition throughout the construction period.

11.2 Possible Contaminants

Do not store or otherwise place bulk materials and harmful materials under or near trees. Do not place spoil from excavations within the TPZs. Prevent wind-blown materials such as cement from harming trees. All possible contaminants are to be stored in a designated and appropriate area with secure chemical spill measures such as a bund in place.

11.3 Physical Damage

Prevent damage to tree. Do not attach stays, guys and the like to trees. No personnel, plant, machinery, or materials are to be allowed within the tree protection fencing.

11.4 Compaction

No filling or compaction shall occur over tree roots zones within tree protection fenced areas. Where construction occurs close to or the TPZ of trees to be retained it shall be necessary to install protection to avoid compaction of the ground surface. This protection is to be planks supported clear of the ground fixed to scaffolding.

11.5 Trenching

No Trenching should be necessary within the TPZs or within tree protection fencing. No further trenching is to be carried out without the approval of the Project Arborist. Should any further trenching be required within the TPZs identified, this work is to be carried out by hand and under the supervision of a qualified Arborist.

11.6 Irrigation/Watering

Contractor is to ensure that soil moisture levels are adequately maintained. Apply water at an appropriate rate suitable for the species during periods of little or no rainfall.

11.7 Site Sheds / Amenities/ Storage

Site sheds, site amenities, ablutions and site storage shall be in the area clear of all TPZ. Chemicals and potential contaminants are to be stored appropriately and this storage area is to be enclosed by a chemical spill bund to prevent the potential run off of contaminants in the event of a spillage or accident.

12.0 Environmental / Heritage/ Legislative Considerations

None of the subject trees are identified as threatened species or elements of endangered ecological communities within the NSW Biodiversity Conservation Act 2016.

13.0 References

Mattheck, C. Breloer, K. 1993, *The Body Language of Trees: A Handbook for Failure Analysis*, 12th Impression 2010 The Stationery Office.
AS4970-2009 *Protection of Trees on Development Sites: Standards Australia*

14.0 Disclaimer

This Appraisal has been prepared for the exclusive use of the Client and Birds Tree Consultancy.

Birds Tree Consultancy accepts no responsibility for its use by other persons. The Client acknowledges that this Appraisal, and any opinions, advice or recommendations expressed or given in it, are based on the information supplied by the Client and on the data inspections, measurements and analysis carried out or obtained Birds Tree Consultancy and referred to in the Appraisal. The Client should rely on the Appraisal, and on its contents, only to that extent.

Every effort has been made in this report to include, assess, and address all defects, structural weaknesses, instabilities, and the like of the subject trees. All inspections were made from ground level using only visual means and no intrusive or destructive means of inspection were used. For many structural defects such as decay and inclusions, internal inspection is required by means of Resistograph or similar. No such investigation has been made in this case. Trees are living organisms and are subject to failure through a variety of causes not able to be identified by means of this inspection and report.

IACA Significance of a Tree, Assessment Rating System (STARS) © (IACA 2010) ©

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.

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.
- 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. hedge.

Appendix B Tree Retention Values

| | | 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>Priority for Retention (High) - 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>Consider for Retention (Medium) - 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>Consider for Removal (Low) - These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.</p> | | | | | |
| | <p>Priority for Removal - These trees are considered hazardous, or in irreversible decline, or weeds and should be removed irrespective of development.</p> | | | | | |

REFERENCES

Australia ICOMOS Inc. 1999, *The Burra Charter – The Australian ICOMOS Charter for Places of Cultural Significance*, International Council of Monuments and Sites, www.icomos.org/australia

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

Footprint Green Pty Ltd 2001, *Footprint Green Tree Significance & Retention Value Matrix*, Avalon, NSW Australia, www.footprintgreen.com.au

Appendix C - Tree Inspection Data

Birds Tree Consultancy

Consulting Arborist • Project Management • Horticultural Consultancy • Landscape Management

Inspection Data

12-Aug-22

Woolworth Waterloo

| Tree Id | Botanical Name | Tree Height (Estimated) [m] | Canopy Width [m] | Number of Stems (Multi Calc) | DBH [mm] | Tree Protection Zone (TPZ) [m] | Diameter at Root Flare (DRF) [mm] | Structural Root Zone (SRZ) [m] | Tree Age | Condition | Canopy Shape | Structure | Observation s-Characteristics | Useful Life Expectancy | Landscape & Env Significance | Retention Value | Notes |
|---------|-----------------------|-----------------------------|------------------|------------------------------|----------|--------------------------------|-----------------------------------|--------------------------------|-------------|--------------|----------------|-----------|-------------------------------|------------------------|------------------------------|-----------------|--------------------------|
| 1 | Eucalyptus microcorys | 3 | 2 | 1 | 30 | 2 | 50 | 0.94 | Semi Mature | Good (70-79) | Symmetrical | Good | | 40+ years | Medium | High | |
| 2 | Corymbia citriodora | 18 | 12 | 1 | 360 | 4.32 | 400 | 2.25 | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | Medium | Medium | |
| 3 | Eucalyptus saligna | 21 | 20 | 1 | 870 | 10.44 | 950 | 3.24 | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | High | High | |
| 4 | Eucalyptus saligna | 20 | 14 | 1 | 490 | 5.88 | 550 | 2.57 | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | High | High | |
| 5 | Corymbia citriodora | 9 | 12 | 1 | 370 | 4.44 | 450 | 2.37 | Semi Mature | Good (70-79) | Asymmetrical E | Good | | 21-40 years | Medium | Medium | |
| 6 | Corymbia citriodora | 20 | 14 | 1 | 530 | 6.36 | 600 | 2.67 | Mature | Good (70-79) | Asymmetrical E | Good | | 21-40 years | High | High | |
| 7 | Corymbia citriodora | 9 | 10 | 1 | 270 | 3.24 | 350 | 2.13 | Mature | Good (70-79) | Asymmetrical E | Good | | 21-40 years | Medium | Medium | |
| 8 | Eucalyptus punctata | 19 | 10 | 1 | 480 | 5.76 | 550 | 2.57 | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | High | High | |
| 9 | Eucalyptus saligna | 18 | 14 | 1 | 540 | 6.48 | 600 | 2.67 | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | High | High | |
| 10 | Platanus x acerifolia | 16 | 10 | 1 | 320 | 3.84 | 400 | 2.25 | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | Medium | Medium | |
| 11 | Eucalyptus microcorys | 17 | 19 | 1 | 820 | 9.84 | 950 | 3.24 | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | High | High | |
| 12 | Eucalyptus microcorys | 14 | 12 | 1 | 660 | 7.92 | 750 | 2.93 | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | High | High | |
| 13 | Eucalyptus microcorys | 17 | 9 | 1 | 590 | 7.08 | 700 | 2.85 | Mature | Fair (60-69) | Symmetrical | Good | Deadwood | 11-20 years | High | High | Moderate apical dieback. |
| 14 | Corymbia citriodora | 20 | 20 | 1 | 660 | 7.92 | 750 | 2.93 | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | High | High | |
| 15 | Eucalyptus microcorys | 19 | 17 | 1 | 880 | 10.56 | 950 | 3.24 | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | High | High | |
| 16 | Eucalyptus microcorys | 20 | 16 | 1 | 790 | 9.48 | 850 | 3.09 | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | High | High | |
| 17 | Corymbia citriodora | 19 | 14 | | 490 | 5.88 | 550 | 2.57 | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | High | High | |
| 18 | Corymbia citriodora | 21 | 16 | 1 | 570 | 6.84 | 650 | 2.76 | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | High | High | |
| 19 | Lophostemon confertus | 5 | 2 | 1 | 50 | 2 | 100 | 1.26 | Semi Mature | Good (70-79) | Symmetrical | Good | | 40+ years | Medium | High | |
| 20 | Syagrus romanzoffiana | 6 | 4 | 1 | | 2.5 | | N/A | Semi Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | Low | Low | |

| Tree Id | Botanical Name | Tree Height (Estimated) [m] | Canopy Width [m] | Number of Stems (Multi Calc) | DBH [mm] | Tree Protection Zone (TPZ) [m] | Diameter at Root Flare (DRF) [mm] | Structural Root Zone (SRZ) [m] | Tree Age | Condition | Canopy Shape | Structure | Observations-Characteristics | Useful Life Expectancy | Landscape & Env Significance | Retention Value | Notes |
|---------|---------------------------|-----------------------------|------------------|------------------------------|----------|--------------------------------|-----------------------------------|--------------------------------|-------------|--------------|--------------|-----------|------------------------------|------------------------|------------------------------|-----------------|---|
| 21 | Syagrus romanzoffiana | 6 | 4 | 1 | | 2.5 | | N/A | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | Low | Low | |
| 22 | Syagrus romanzoffiana | 7 | 4 | 1 | | 2.5 | | N/A | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | Low | Low | |
| 23 | Eucalyptus nicholii | 13 | 10 | 1 | 540 | 6.48 | 650 | 2.76 | Mature | Poor | Symmetrical | Good | Deadwood | 6-10 years | Medium | Low | Significant deadwood and significant apical dieback |
| 24 | Liquidambar styraciflua | 10 | 12 | 1 | 600 | 7.2 | 720 | 2.88 | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | Medium | Medium | Line clearance pruning |
| 25 | Eucalyptus saligna | 23 | 14 | 1 | 920 | 11.04 | 1000 | 3.31 | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | High | High | |
| 26 | Platanus x acerifolia | 9 | 7 | 1 | 280 | 3.36 | 350 | | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | Medium | Medium | |
| 27 | Lophostemon confertus | 7 | 4 | 1 | 210 | 2.52 | 300 | 2 | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | High | High | Pruning line clearance |
| 28 | Tristaniopsis laurina | 6 | 6 | Multiple Stems | 263.2 | 3.16 | 350 | 2.13 | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | High | High | |
| 29 | Platanus x acerifolia | 22 | 14 | 1 | 530 | 6.36 | 650 | 2.76 | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | High | High | |
| 30 | Platanus x acerifolia | 18 | 12 | 1 | 400 | 4.8 | 480 | 2.43 | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | Medium | Medium | |
| 31 | Liquidamber styraciflua | 16 | 14 | 1 | 660 | 7.92 | 760 | 2.95 | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | High | High | |
| 32 | Lophostemon confertus | 14 | 9 | 1 | 330 | 3.96 | 380 | 2.2 | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | Medium | Medium | |
| 33 | Platanus x acerifolia | 16 | 12 | 1 | 390 | 4.68 | 450 | 2.37 | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | Medium | Medium | |
| 34 | Lophostemon confertus | 15 | 12 | 1 | 440 | 5.28 | 500 | 2.47 | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | High | High | |
| 35 | Tristaniopsis laurina | 8 | 5 | Multiple Stems | 244.1 | 2.93 | 2600 | 4.94 | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | High | High | |
| 36 | Tristaniopsis laurina | 8 | 4 | Multiple Stems | 156.2 | 2 | 2000 | 4.43 | Mature | Good (70-79) | Symmetrical | Good | | 21-40 years | Medium | Medium | |
| 37 | Eucalyptus saligna | 10 | 3 | 1 | 130 | 2 | 160 | 1.53 | Semi Mature | Good (70-79) | Symmetrical | Good | | 40+ years | High | High | |
| 38 | Casuarina cunninghamiana | 11 | 4 | 1 | 100 | 2 | 120 | 1.36 | Semi Mature | Good (70-79) | Symmetrical | Good | | 40+ years | Medium | Medium | |
| 39 | Cupaniopsis anacardioides | 8 | 5 | 1 | 130 | 2 | 170 | 1.57 | Semi Mature | Good (70-79) | Symmetrical | Good | | 40+ years | Medium | Medium | |

Appendix D - Tree Location Plan



- Legend**
- Tree to be Retained and Protected
 - Tree Exempt from City of Sydney DCP
 - Tree Not Viable to be Retained due to Proposed Development
 - Tree Protection Zone (TPZ) in accordance with AS4970-2009
 - Structural Root Zone (SRZ) in accordance with AS4970-2009

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Project: 923-935 Bourke Street, Waterloo
 Client: Woolworths
 DWG: A01 REV B
 Plan: Tree Location Plan
 Date: 31 August 2022 Scale : 1:500 @ A3