



UNSW Biological Sciences Project

TREE REPORT and ARBORICULTURAL DEVELOPMENT IMPACT ASSESSMENT – Design Review Revision C

27 January 2015

Prepared for Brookfield Multiplex

Prepared by

Birds Tree Consultancy

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Executive Summary

This Tree Assessment Report has been commissioned by Brookfield Multiplex to report on trees within the construction area of the Biological Sciences Project, UNSW accessed from Botany Street.

This report has been commissioned to report on the existing trees that are within the construction footprint of the proposed new building and also on the northern façade works of building D26, and to review the tree species selection for the proposed landscape works.

Trees 1 to 15 are not viable to be retained due to the total encroachment of Tree Protection Zones by the proposed construction works, in particular the class B hoarding and site accommodation that is proposed to be constructed in this area. Trees 1 to 15 will be required to be removed due to the proposed construction works.

Trees 16 to 59 are not viable to be retained due to the total encroachment of Tree Protection Zones and the tree canopies by the proposed construction works, in particular the facade and canopy that is proposed to be constructed in this area. Trees 16 to 59 will be required to be removed due to the proposed construction works.

We have reviewed the tree species selection in Black Beetle Landscape Design as provided in their Landscape drawing dated January 2015. Specifically this review is made for the suitability of the tree species selected and in the context of close proximity to the new proposed stormwater. The proposed species are all suitable for the proposed landscape and in most cases are the same species as trees previously removed. The proposed species are not expected to impact upon the new proposed stormwater works.

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1.0 Scope of Works

This Tree Assessment Report has been commissioned by Brookfield Multiplex to report on trees within the construction area of the Biological Sciences Project, UNSW accessed from Botany Street.

This report has been commissioned to report on the existing trees that are within the construction footprint of the proposed new building and also on the northern façade works of building D26

On 12 November 2014 and 22 January 2015 Glenn Bird of Birds Tree Consultancy attended site and inspected the subject trees from the ground. There was no aerial inspection carried out. We undertook a Visual Tree Assessment (VTA) (Mattheck & Breloer, 1994). Tree heights are measured using a Nikon Forestry 550 Heightmeter.

2.0 Site Analysis

2.1 Site

The subject site is the area in the vicinity of and within the proposed construction footprint of the Biological Sciences Project, UNSW, Botany Street Kensington. The subject trees are located between the existing building and Botany Street. Trees 16 to 59 are located north of Building D26.

2.2 Topography

Trees 1 to 10 are located at the top of a retaining wall on Botany Street. Trees 12 to 15 are street trees located within the footpath of Botany Street. Trees 16-59 are adjacent to the northern façade of building D26

2.3 Identification

Trees as identified in the attached Tree location Plan A01 in Appendix B.

2.4 Associated Documentation

The proposed landscape works are defined by Black Beetle drawing Sketch plan dated 06.11.14 and hoarding location defined by Brookfield Multiplex drawings Materials and Handling Phase 1 and 2.

2.4 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.

3.1 Tree 1-10 *Podocarpus elatus*

Trees 1 to 10 are a grove of *Podocarpus elatus* that are planted as an informal hedge at the top of the existing retaining wall. These trees are between 6.5 and 7m tall with a diameter at breast height (DBH) of

between 120 to 150mm. These are all in good and healthy condition with minimal deadwood or epicormic growth.

- 3.2 Tree 11** *Eucalyptus botryoides*
This tree is a semi-mature *Eucalyptus botryoides* that has been planted approximately 18months ago as part of the Wallace Wurth landscape works. This tree is approximately 4m tall with canopy spread of 2m. The tree is in good health and condition with minimal deadwood and epicormic growth. This tree has a single trunk with a diameter at breast height (DBH) of 75mm.
- 3.3 Tree 12-15** *Lophostemon confertus*
These trees are mature street trees that are located within the footpath on Botany Street. These trees are approximately 7m tall with canopy spread of 6m. These trees are in good health and condition with minimal deadwood and epicormic growth. These trees have single trunks with a DBH of 250mm.
- 3.4 Tree 16** *Schefflera actinophylla*
This tree is a mature *Schefflera actinophylla* and is approximately 10m tall with canopy spread of 6m. The tree is in good health and condition with minimal deadwood and significant epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has twin co-dominant trunks from 800mm above the base with an aggregate diameter at breast height (DBH) of 280mm. This tree has been previously topped.
- 3.5 Tree 17** *Schefflera actinophylla*
This tree is a mature *Schefflera actinophylla* and is approximately 15m tall with canopy spread of 6m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 370mm.
- 3.6 Tree 18** *Schefflera actinophylla*
This tree is a mature *Schefflera actinophylla* and is approximately 15m tall with canopy spread of 6m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 410mm.
- 3.7 Tree 19** *Schefflera actinophylla*
This tree is a mature *Schefflera actinophylla* and is approximately 16m tall with canopy spread of 6m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 320mm.
- 3.8 Tree 20** *Schefflera actinophylla*

This tree is a mature *Schefflera actinophylla* and is approximately 16m tall with canopy spread of 6m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 340mm.

3.9 Tree 21

Schefflera actinophylla

This tree is a mature *Schefflera actinophylla* and is approximately 14m tall with canopy spread of 9m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 260mm.

3.10 Tree 22

Schefflera actinophylla

This tree is a mature *Schefflera actinophylla* and is approximately 13m tall with canopy spread of 9m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 250mm.

3.11 Tree 23

Schefflera actinophylla

This tree is a mature *Schefflera actinophylla* and is approximately 14m tall with canopy spread of 6m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 350mm.

3.12 Tree 24

Schefflera actinophylla

This tree is a mature *Schefflera actinophylla* and is approximately 15m tall with canopy spread of 6m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 230mm.

3.13 Tree 25

Schefflera actinophylla

This tree is a mature *Schefflera actinophylla* and is approximately 15m tall with canopy spread of 6m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 200mm.

3.14 Tree 26

Schefflera actinophylla

This tree is a mature *Schefflera actinophylla* and is approximately 15m tall with canopy spread of 6m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent

building. This tree has multiple (3) co dominant trunks from the base with an aggregate diameter at breast height (DBH) of 480mm. This tree presents evidence of decay.

- 3.15 Tree 27 *Brachychiton acerifolius***
This tree is a mature *Brachychiton acerifolius* and is approximately 14m tall with canopy spread of 6m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 505mm. Due to evidence of bark inclusion this tree is recommended for removal.
- 3.16 Tree 28 *Stenocarpus sinuatus***
This tree is a mature *Stenocarpus sinuatus* and is approximately 20m tall with canopy spread of 9m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 430mm.
- 3.17 Tree 29 *Callicoma serratifolia***
This tree is a mature *Callicoma serratifolia* and is approximately 8m tall with canopy spread of 5m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 100mm.
- 3.18 Tree 30 *Callicoma serratifolia***
This tree is a mature *Callicoma serratifolia* and is approximately 8m tall with canopy spread of 5m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has multiple (3) co dominant trunks from the base with an aggregate diameter at breast height (DBH) of 140mm.
- 3.19 Tree 31 *Flindersia australis***
This tree is a mature *Flindersia australis* and is approximately 8m tall with canopy spread of 3m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 50mm.
- 3.20 Tree 32 *Eriobotrya japonica*.**
This tree is a mature *Eriobotrya japonica*. and is approximately 11m tall with canopy spread of 3m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 115mm.
- 3.21 Tree 33 *Schefflera actinophylla***

This tree is a mature *Schefflera actinophylla* and is approximately 13m tall with canopy spread of 6m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 360mm.

3.22 Tree 34

Schefflera actinophylla

This tree is a mature *Schefflera actinophylla* and is approximately 13m tall with canopy spread of 6m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 370mm.

3.23 Tree 35

Schefflera actinophylla

This tree is a mature *Schefflera actinophylla* and is approximately 14m tall with canopy spread of 7m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 280mm.

3.24 Tree 36

Schefflera actinophylla

This tree is a mature *Schefflera actinophylla* and is approximately 15m tall with canopy spread of 8m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 560mm.

3.25 Tree 37

Schefflera actinophylla

This tree is a mature *Schefflera actinophylla* and is approximately 15m tall with canopy spread of 8m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 240mm.

3.26 Tree 38

Schefflera actinophylla

This tree is a mature *Schefflera actinophylla* and is approximately 12m tall with canopy spread of 6m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 220mm.

3.27 Tree 39

Schefflera actinophylla

This tree is a mature *Schefflera actinophylla* and is approximately 12m tall with canopy spread of 5m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent

building. This tree has a single trunk with a diameter at breast height (DBH) of 200mm.

3.28 Tree 40

Schefflera actinophylla

This tree is a mature *Schefflera actinophylla* and is approximately 15m tall with canopy spread of 10m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 295mm.

3.29 Tree 41

Schefflera actinophylla

This tree is a mature *Schefflera actinophylla* and is approximately 15m tall with canopy spread of 9m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 280mm.

3.30 Tree 42

Schefflera actinophylla

This tree is a mature *Schefflera actinophylla* and is approximately 17m tall with canopy spread of 8m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 385mm.

3.31 Tree 43

Schefflera actinophylla

This tree is a mature *Schefflera actinophylla* and is approximately 18m tall with canopy spread of 8m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 400mm.

3.32 Tree 44

Schefflera actinophylla

This tree is a mature *Schefflera actinophylla* and is approximately 15m tall with canopy spread of 6m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 280mm.

3.33 Tree 45

Schefflera actinophylla

This tree is a mature *Schefflera actinophylla* and is approximately 15m tall with canopy spread of 6m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 250mm.

3.34 Tree 46

Schefflera actinophylla

This tree is a mature *Schefflera actinophylla* and is approximately 15m tall with canopy spread of 6m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 220mm.

- 3.35 Tree 47 *Cyathea cooperi***
 This tree is a mature *Cyathea cooperi* and is approximately 4m tall with canopy spread of 4m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 100mm.
- 3.36 Tree 48 *Cyathea cooperi***
 This tree is a mature *Cyathea cooperi* and is approximately 3m tall with canopy spread of 3m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 100mm.
- 3.37 Tree 49 *Cordyline spp.***
 This tree is a mature *Cordyline spp.* and is approximately 3m tall with canopy spread of 2m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 60mm.
- 3.38 Tree 50 *Cyathea cooperi***
 This tree is a mature *Cyathea cooperi* and is approximately 4m tall with canopy spread of 4m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 120mm.
- 3.39 Tree 51 *Cyathea cooperi***
 This tree is a mature *Cyathea cooperi* and is approximately 7m tall with canopy spread of 4m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 120mm.
- 3.40 Tree 52 *Cyathea cooperi***
 This tree is a mature *Cyathea cooperi* and is approximately 8m tall with canopy spread of 4m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 180mm.
- 3.41 Tree 53 *Glochidion ferdinandii***
 This tree is a mature *Glochidion ferdinandii* and is approximately 24m tall with canopy spread of 10m. The tree is in fair health and condition

with a thinning canopy, moderate deadwood and minimal epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has twin co-dominant trunks from the base with an aggregate diameter at breast height (DBH) of 360mm.

- 3.42 Tree 54** ***Cyathea cooperi***
This tree is a mature *Cyathea cooperi* and is approximately 6m tall with canopy spread of 5m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 180mm.
- 3.43 Tree 55** ***Waterhousia floribunda***
This tree is a mature *Waterhousia floribunda* and is approximately 12m tall with canopy spread of 11m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 380mm.
- 3.44 Tree 56** ***Cyathea cooperi***
This tree is a mature *Cyathea cooperi* and is approximately 4m tall with canopy spread of 3m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 120mm.
- 3.45 Tree 57** ***Cyathea cooperi***
This tree is a mature *Cyathea cooperi* and is approximately 4m tall with canopy spread of 3m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 100mm.
- 3.46 Tree 58** ***Cyathea cooperi***
This tree is a mature *Cyathea cooperi* and is approximately 4m tall with canopy spread of 3m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 100mm.
- 3.47 Tree 59** ***Schefflera actinophylla***
This tree is a mature *Schefflera actinophylla* and is approximately 4m tall with canopy spread of 3m. The tree is in good health and condition with minimal deadwood and epicormic growth. The canopy is unbalanced and skewed to the north due to crowding by the adjacent building. This tree has a single trunk with a diameter at breast height (DBH) of 100mm.

4.0 Impact of Development

4.1 Development Impact

Trees 1 to 10 have their Tree Protection Zones, as defined by AS4970-2009 *Protection of Trees on Development Sites*, completely encroached by the proposed construction works. The removal of the existing retaining wall, construction of new retaining walls will completely encroach the TPZ of these trees. Additionally these trees are completely encroached by the proposed Class B Hoarding that is to be constructed in this location adjacent to Botany Street. These trees will not be viable to be retained.

The TPZ of Tree 11 is completely encroached by the proposed construction works. The construction of new retaining walls will provide a major encroachment of the TPZ of this tree. Additionally this tree is completely encroached by the proposed Class B Hoarding that is to be constructed in this location adjacent to Botany Street. This tree will not be viable to be retained.

Trees 12 to 15 have their Tree Protection Zones, as defined by AS4970-2009 *Protection of Trees on Development Sites*, completely encroached by the proposed Class B Hoarding that is to be constructed in this location adjacent to Botany Street. These trees will not be viable to be retained.

Trees 16 to 59 are completely encroached by the proposed façade and canopy installation which are to be completed as part of the Stage 2 Works. These trees will not be viable to be retained.

Tree no.	Species	TPZ Radius (m)	Encroachment (%)
16.	<i>Schefflera actinophylla</i>	3.36	100
17.	<i>Schefflera actinophylla</i>	4.44	100
18.	<i>Schefflera actinophylla</i>	4.92	100
19.	<i>Schefflera actinophylla</i>	3.84	100
20.	<i>Schefflera actinophylla</i>	4.08	100
21.	<i>Schefflera actinophylla</i>	3.12	100
22.	<i>Schefflera actinophylla</i>	3	100
23.	<i>Schefflera actinophylla</i>	4.2	100
24.	<i>Schefflera actinophylla</i>	2.76	100
25.	<i>Schefflera actinophylla</i>	2.4	100
26.	<i>Schefflera actinophylla</i>	5.76	100
27.	<i>Brachychiton acerifolius</i>	6.06	100
28.	<i>Stenocarpus sinuatus</i>	5.16	100
29.	<i>Callicoma serratifolia</i>	2	100
30.	<i>Callicoma serratifolia</i>	2	100
31.	<i>Flindersia australis</i>	2	100
32.	<i>Eriobotrya japonica</i>	2	100
33.	<i>Schefflera actinophylla</i>	4.32	100
34.	<i>Schefflera actinophylla</i>	4.44	100
35.	<i>Schefflera actinophylla</i>	3.36	100
36.	<i>Schefflera actinophylla</i>	6.72	100
37.	<i>Schefflera actinophylla</i>	2.88	100

38.	<i>Schefflera actinophylla</i>	2.64	100
39.	<i>Schefflera actinophylla</i>	2.4	100
40.	<i>Schefflera actinophylla</i>	3.54	100
41.	<i>Schefflera actinophylla</i>	3.36	100
42.	<i>Schefflera actinophylla</i>	4.62	100
43.	<i>Schefflera actinophylla</i>	4.8	100
44.	<i>Schefflera actinophylla</i>	3.36	100
45.	<i>Schefflera actinophylla</i>	3	100
46.	<i>Schefflera actinophylla</i>	2.64	100
47.	<i>Cyathea cooperi</i>	2	100
48.	<i>Cyathea cooperi</i>	2	100
49.	<i>Cordyline spp</i>	2	100
50.	<i>Cyathea cooperi</i>	2	100
51.	<i>Cyathea cooperi</i>	2	100
52.	<i>Cyathea cooperi</i>	2.16	100
53.	<i>Glochidion ferdinandii</i>	4.32	100
54.	<i>Cyathea cooperi</i>	2.16	100
55.	<i>Waterhousia floribunda</i>	4.56	100
56.	<i>Cyathea cooperi</i>	2	100
57.	<i>Cyathea cooperi</i>	2	100
58.	<i>Cyathea cooperi</i>	2	100
59.	<i>Schefflera actinophylla</i>	2	100

5.0 Recommendations

Trees 1 to 15 are not viable to be retained due to the total encroachment of Tree Protection Zones by the proposed construction works, in particularly the Class B Hoarding and site accommodation that is proposed to be constructed in this area. Trees 1 to 15 will be required to be removed due to the proposed construction works.

Trees 16 to 59 are not viable to be retained due to the total encroachment of Tree Protection Zones and the tree canopies by the proposed construction works, in particularly the facade and canopy that is proposed to be constructed in this area as part of the Stage 2 Works. Trees 16 to 59 will be required to be removed due to the proposed construction works. Trees 47, 48, 50, 51, 52, 54, 56, 57, 58 are suitable to be transplanted.

6.0 Landscape Design Review

6.1 Design Review

We have reviewed the tree species selection in Black Beetle Landscape Design as provided in their Landscape drawing dated January 2015. Specifically this review is made for the suitability of the tree species selected and in the context of close proximity to the new proposed stormwater. The proposed species include:

- *Caesalpinia ferrea*,
- *Elaeocarpus reticulatus*,
- *Lophostemon confertus*,
- *Corymbia maculata*,

- *Livistona australis*

The proposed species are all suitable for the proposed landscape and in most cases are the same species as trees previously removed. The proposed species are not expected to impact upon the new proposed stormwater works.

7.0 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

8.0 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.

Appendix A – Tree Inspection Data

Inspection Data

Building D26

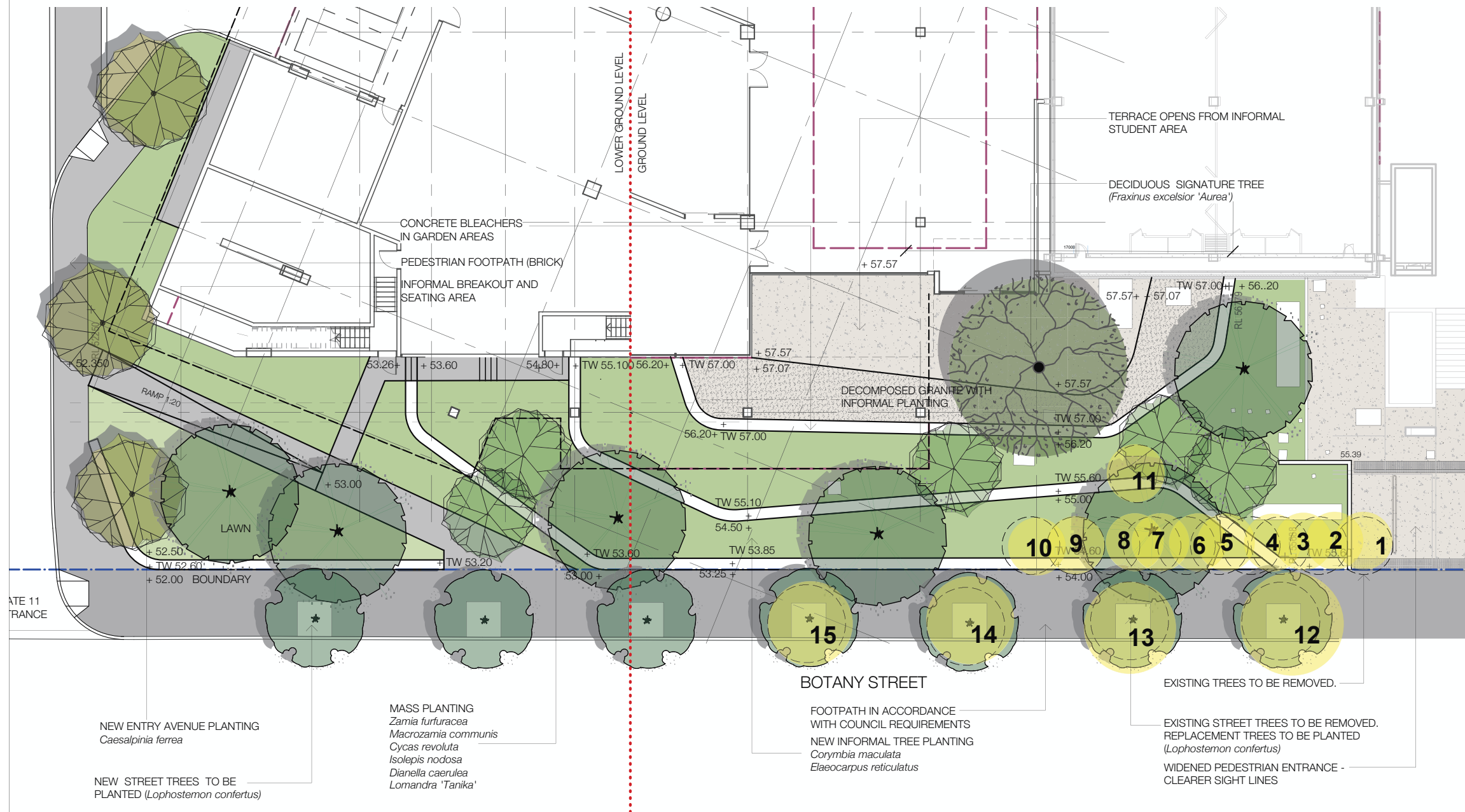
22-Jan-15

Tree no.	Species	Height (m)	Spread (m)	DBH (mm)	TPZ Radius (m)	Maturity	Trunk (single, twin, multiple @)	Trunk lean	Form/Crown shape	Branching Habit	Crown Distribution	Distortion Due	Stability	Branching Structure	Pruning History	Defects	Damage	Overall Health & Vigour	Canopy Density	Foliage	Deadwood	Epicormic Growth	Pest infestation	Disease	Life expectancy	Env. & Landcape significance	Retention Value	Notes/Comments
16	Schefflera actinophylla	10	6	280	3.36	Mature	Twin @ 800	NIL	Normal	Normal	N	Building	Stable	Stable	Topped	Elite epicormic sprouts	Nil	Good	Normal	Normal	<5%	80%	No evidence	No evidence	15-40y	Moderate	Moderate	
17	Schefflera actinophylla	15	6	370	4.44	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
18	Schefflera actinophylla	15	6	410	4.92	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
19	Schefflera actinophylla	16	6	320	3.84	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
20	Schefflera actinophylla	16	6	340	4.08	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
21	Schefflera actinophylla	14	9	260	3.12	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
22	Schefflera actinophylla	13	9	250	3	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
23	Schefflera actinophylla	14	6	350	4.2	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
24	Schefflera actinophylla	15	6	230	2.76	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
25	Schefflera actinophylla	15	6	200	2.4	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
26	Schefflera actinophylla	15	6	480	5.76	Mature	Multiple (3) @ base	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Evidence of decay	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
27	Brachychiton acerifolius	14	6	505	6.06	Mature	Twin @ base	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Bark inclusion	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Low	Bark inclusion. Remove
28	Stenocarpus sinuatus	20	9	430	5.16	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
29	Callicoma serratifolia	8	5	100	2	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
30	Callicoma serratifolia	8	5	140	2	Mature	Multiple (3) @ base	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
31	Flindersia australis	8	3	50	2	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
32	Loquat spp.	11	3	115	2	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
33	Schefflera actinophylla	13	6	360	4.32	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
34	Schefflera actinophylla	13	6	370	4.44	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
35	Schefflera actinophylla	14	7	280	3.36	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
36	Schefflera actinophylla	15	8	560	6.72	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
37	Schefflera actinophylla	15	8	240	2.88	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
38	Schefflera actinophylla	12	6	220	2.64	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
39	Schefflera actinophylla	12	5	200	2.4	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
40	Schefflera actinophylla	15	10	295	3.54	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
41	Schefflera actinophylla	15	9	280	3.36	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
42	Schefflera actinophylla	17	8	385	4.62	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
43	Schefflera actinophylla	18	8	400	4.8	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
44	Schefflera actinophylla	15	6	280	3.36	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
45	Schefflera actinophylla	15	6	250	3	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
46	Schefflera actinophylla	15	6	220	2.64	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
47	Cyathea cooperi	4	4	100	2	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
48	Cyathea cooperi	3	3	100	2	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
49	Cordyline spp	3	2	60	2	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
50	Cyathea cooperi	4	4	120	2	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
51	Cyathea cooperi	7	4	120	2	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
52	Cyathea cooperi	8	4	180	2.16	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
53	Glochidion ferdinadii	24	10	360	4.32	Mature	Single @ base	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Fair	Thinning	Normal	15%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
54	Cyathea cooperi	6	5	180	2.16	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
55	Waterhouisia floribunda	12	11	380	4.56	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
56	Cyathea cooperi	4	3	120	2	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
57	Cyathea cooperi	4	3	100	2	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
58	Cyathea cooperi	4	3	100	2	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	
59	Schefflera actinophylla	4	3	100	2	Mature	Single	NIL	Normal	Normal	N	Building	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Moderate	Moderate	

Appendix B – A01 - Tree Location Plan – Botany Street

A02 – Tree Location Plan 2 – D26

EASTERN COURTYARD / BOTANY ROAD ENTRANCE - CP01



LEGEND



Tree to be retained



Tree to be removed

Tree Not Viable To Be Retained Due to Proposed Development

Birds Tree Consultancy

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glenn@birdstrees.com.au
www.birdstrees.com.au

Project: UNSW Biosciences Building
Client: BROOKFIELD MULTIPLEX
DWG: A01
Plan: Tree Location Plan 1
Date: 27 January 2015
Scale : Not to Scale



LEGEND

- Tree to be retained
- Tree to be Removed
- Tree not viable to be retained due to proposed development

Birds Tree Consultancy

0438 892 634
 glenn@birdstrees.com.au
www.birdstrees.com.au

Project: UNSW Biological Sciences Project
 Client: Brookfield Multiplex
 DWG: A02
 Plan: Tree Location Plan 2 D26
 Date: 27 January 2015
 Scale : Not to Scale