

Birds Tree Consultancy

Consulting Arborist AQF5 • Horticultural Consultancy • Project Management • Resistograph Testing



ARBORICULTURAL ASSESSMENT REPORT

PRELIMINARY

Fort Street Public School and National Trust Office NSW

4th of April 2019

**Prepared for
Schools Infrastructure NSW**

Prepared by

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Executive Summary

This Arboricultural Assessment Report has been commissioned by Schools Infrastructure of NSW to report on trees within the site of Fort Street Public School and the National Trust Office NSW. It has been commissioned to outline the health, condition and stability of these trees as well as their viability for retention. The scope of this report includes all trees within Fort Street Public School and trees adjacent to the areas that may be impacted by future proposed development.

Tree 7 has cracked and shrunken bark with dead cambium beneath. These symptoms are potentially indicative of sooty canker which would have an impact on the viability of the tree in the medium term. Further investigation would be required for definitive diagnosis. The health and condition of the tree is declining with a thinning canopy and moderate apical dieback in the branches with canker present.

Tree 17 has significant psyllid infestation and corresponding damaged foliage. There is some chlorotic foliage and a thinning canopy.

Tree 18 is in fair but declining condition with a thinning canopy, moderate deadwood and epicormic growth with significant apical dieback.

Tree 24 is in poor and declining condition.

Tree 28 has a failed leader.

Tree 1A is in good health and condition however there is evidence of decay present within the canopy. There is decay evident within a primary branch on the eastern side of the canopy at a point of high lever arm stress 1.5m from the junction in a long horizontal end weighted branch. There is also decay evident in the junction of secondary branch on the northern side of canopy. This tree is located within the playground of Fort Street Public School. We recommend that further investigation of these points be carried out by means of Resistograph testing to determine the structural integrity of these secondary branches and that a risk assessment be carried out to determine the risk posed by these branches.

All other trees are in good health and condition.

Trees 6, 16, 19 and 31 are listed by the Department of Primary Industries as environmental weed species and are accordingly have low landscape significance and retention value.

Trees 1A, 2 and 3 are listed as Significant Trees by the City of Sydney.

Trees 17, 18, 28, 32 and 33 are local endemic species.

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1.0 Scope of Works

This Arboricultural Assessment Report has been commissioned by Schools Infrastructure of NSW to report on trees within the site of Fort Street Public School and the National Trust Office NSW. It has been commissioned to outline the health, condition and stability of these trees as well as their viability for retention. The scope of this report includes all trees within Fort Street Public School and trees adjacent to the areas that may be impacted by future proposed development.

On the 2nd of April 2019, 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 Fort Street Public School and National Trust Office NSW. The subject trees are located within the boundaries of this site.

2.2 Topography

The site is relatively flat in the vicinity of the subject trees. Trees 5, 6, 7, 12, 13, 14, 15, 16, 17, 18, 30, 31, 32, 33 and 34 are in close proximity to concrete retaining walls. Refer to survey for greater details of levels.

2.3 Identification

Trees are as identified in the attached inspection forms in Appendix C and shown in Tree location Plan A01 in Appendix D. Tree numbering has been retained from previous reporting for consistency and accordingly Trees 1 and 2 as identified within Fort Street Public School have been identified as Trees 1A and Tree 2A. Trees 8, 9, 10, and 11 have been included within this report in order to maintain consistency of numbering however these trees have been removed.

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. Please refer also to the attached inspection data in Appendix C.

3.1 Tree 1/A *Ficus macrophylla*

This mature tree is approximately 21m tall with a canopy spread of 24m. It has a single trunk with a diameter at breast height (DBH) of 1750mm. This tree is in good health and condition with minimal deadwood and epicormic growth. There is evidence of decay in a primary branch on the eastern side of the canopy at a point of high lever arm stress approximately 1.5m from the junction in a long horizontal end weighted branch. There is also decay present in a secondary branch on the northern side of canopy.



Figure 1 - Tree 1A Decay on eastern side of canopy



Figure 2 - Decay in secondary branch north side of Tree 1A

3.2 Tree 2/A *Lophostemon confertus*

This mature tree is located within timber decking and it is approximately 7m tall with a canopy spread of 6m. It has a single trunk with a DBH of 360mm. This tree is in good health and condition with minimal deadwood and epicormic growth.



Figure 3 - Tree 2A

3.3 Tree 1. *Ficus macrophylla*

This mature tree is approximately 8m tall with a canopy spread of 9m. It has a single trunk with a DBH of 300mm. This tree is in good health and condition with minimal deadwood and epicormic growth.

3.4 Tree 2. *Ficus macrophylla*

This mature tree is approximately 8m tall with a canopy spread of 11m. It has a single trunk with a DBH of 510mm. This tree is in good health and condition with minimal deadwood and epicormic growth.

3.5 Tree 3. *Ficus macrophylla*

This mature tree is approximately 12m tall with a canopy spread of 11m. It has a single trunk with a DBH of 400mm. This tree is in good health and condition with minimal deadwood and epicormic growth.

- 3.6 Tree 4. *Ficus macrophylla***
This mature tree is approximately 12m tall with a canopy spread of 11m. It has a single trunk with a DBH of 430mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.7 Tree 5. *Olea europaea***
This mature tree is approximately 8m tall with a canopy spread of 5m. It has twin co-dominant trunks from the base with an aggregate DBH of 290mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.8 Tree 6. *Celtis sinensis***
This mature tree is approximately 13m tall with a canopy spread of 9m. It has a single trunk with a slight lean to the northwest and a DBH of 385mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.9 Tree 7. *Ficus macrophylla***
This mature tree is approximately 11m tall with a canopy spread of 11m. It has a single trunk with a DBH of 490mm. This tree is in fair health and condition with a thinning canopy, moderate deadwood and moderate epicormic growth. There is evidence of cracking of bark on two primary branches with dead cambium visible beneath. Moderate apical dieback in these branches.



Figure 4 - Canker in Tree 7

3.10	Tree 8.	<i>Missing</i>
3.11	Tree 9.	<i>Missing</i>
3.12	Tree 10.	<i>Missing</i>
3.13	Tree 11.	<i>Missing</i>
3.14	Tree 12.	<p><i>Olea europaea</i></p> <p>This mature tree is approximately 8m tall with a canopy spread of 6m. It has a single trunk with a prominent lean to the northwest and a DBH of 370mm. This tree is in good health and condition with minimal deadwood and epicormic growth.</p>
3.15	Tree 13.	<p><i>Olea europaea</i></p> <p>This mature tree is approximately 7m tall with a canopy spread of 8m. It has twin co-dominant trunks from the base with an aggregate DBH</p>

of 270mm. This tree is in good health and condition with minimal deadwood and epicormic growth.

- 3.16 Tree 14. *Olea europaea***
This mature tree is approximately 4m tall with a canopy spread of 3m. It has a single trunk with a slight lean to the north and a DBH of 100mm. This tree is in fair health and condition with a thinning canopy, minimal deadwood and epicormic growth.
- 3.17 Tree 15. *Olea europaea***
This mature tree is approximately 4m tall with a canopy spread of 4m. It has twin co-dominant trunks from the base with an aggregate DBH of 130mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.18 Tree 16. *Celtis sinensis***
This mature tree is approximately 8m tall with a canopy spread of 4m. It has a single trunk with a DBH of 160mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.19 Tree 17. *Eucalyptus robusta***
This mature tree is approximately 14m tall with a canopy spread of 7m. It has a single trunk with a DBH of 290mm. This tree is in fair health and condition with a thinning canopy, minimal deadwood and significant epicormic growth. There is evidence of significant lerp infestation.
- 3.20 Tree 18. *Eucalyptus tereticornis***
This mature tree is approximately 16m tall with a canopy spread of 12m. It has a single trunk with a DBH of 190mm. This tree is in fair health and declining condition with a thinning canopy, moderate deadwood, significant epicormic growth and significant apical dieback.



Figure 5 - Tree 18

- 3.21 Tree 19. *Schinus terebinthifolius***
 This mature tree is approximately 7m tall with a canopy spread of 10m. It has multiple (3) co-dominant trunks from the base with an aggregate DBH of 415mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.22 Tree 20. *Murraya paniculata***
 This mature tree is immediately adjacent to a wall and it is approximately 6m tall with a canopy spread of 7m. It has multiple co-dominant trunks from the base with an aggregate DBH of 280mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.23 Tree 21. *Banksia integrifolia***
 This mature tree is approximately 12m tall with a canopy spread of 7m. It has a single trunk with a DBH of 390mm. This tree is in good health and condition with minimal deadwood and epicormic growth.

- 3.24 Tree 22. *Callistemon viminalis***
This mature tree is approximately 5m tall with a canopy spread of 3m. It has multiple co-dominant trunks from the base with an aggregate DBH of 240mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.25 Tree 23. *Callistemon viminalis***
This mature tree is approximately 5m tall with a canopy spread of 4m. It has multiple co-dominant trunks from the base with an aggregate DBH of 220mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.26 Tree 24. *Hakea salicifolia***
This mature tree is approximately 7m tall with a canopy spread of 4m. It has a single trunk with a DBH of 230mm. This tree is in poor health and declining condition with a sparse canopy, minimal deadwood and epicormic growth.
- 3.27 Tree 25. *Callistemon viminalis***
This mature tree is approximately 7.5m tall with a canopy spread of 6m. It has multiple (3) 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.
- 3.28 Tree 26. *Citharexylum spinosum***
This mature tree is approximately 10m tall with a canopy spread of 4m. It has a single trunk with a DBH of 130mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.29 Tree 27. *Callistemon viminalis***
This mature tree is approximately 8m 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.
- 3.30 Tree 28. *Angophora floribunda***
This mature tree is approximately 9m tall with a canopy spread of 6m. It has a single trunk with a DBH of 190mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.31 Tree 29. *Acmena smithii***
This mature tree is approximately 9m tall with a canopy spread of 4m. It has a single trunk with a DBH of 105mm. This tree is in fair health and condition with a thinning canopy, minimal deadwood and epicormic growth.
- 3.32 Tree 30. *Jacaranda mimosifolia***
This mature tree is approximately 9m tall with a canopy spread of 7m. It has a single trunk with a slight lean to the north and a DBH of 390mm. This tree is in good health and condition with minimal deadwood and epicormic growth.

- 3.33 Tree 31. *Celtis sinensis***
This mature tree is approximately 13m tall with a canopy spread of 11m. It has twin co-dominant trunks from the base with an aggregate DBH of 520mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.34 Tree 32. *Eucalyptus piperita***
This mature tree is approximately 7m 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.
- 3.35 Tree 33. *Eucalyptus saligna***
This mature tree is approximately 16m tall with a canopy spread of 12m. It has a single trunk with a DBH of 390mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.36 Tree 34. *Ulmus parvifolia***
This mature tree is immediately adjacent to retaining wall and it is approximately 12m tall with a canopy spread of 13m. It has twin co-dominant trunks from 1m above the base with an aggregate DBH of 450mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.37 Tree 35. *Acmena smithii***
This mature tree is immediately adjacent to existing building and it is approximately 10m tall with a canopy spread of 4m. It has a single trunk with a DBH of 150mm. This tree is in good health and condition with minimal deadwood and epicormic growth.
- 3.38 Tree 36. *Acmena smithii***
This mature tree is immediately adjacent to existing building and it is approximately 10m tall with a canopy spread of 5m. It has twin co-dominant trunks from the base with an aggregate DBH of 280mm. This tree is in good health and condition with minimal deadwood and epicormic growth.

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	Significance Notes
1/A	<i>Ficus macrophylla</i>	High	Large mature tree providing shade within the school playground. This tree is listed as a Significant Tree by the City of Sydney.
2/A	<i>Lophostemon confertus</i>	High	Semi mature tree within the playground. Will provide shade within playground.
1.	<i>Ficus macrophylla</i>	High	Species is culturally significant and typical of planting in the National Trust and Observatory Park
2.	<i>Ficus macrophylla</i>	High	This tree is listed as a Significant Tree by the City of Sydney.
3.	<i>Ficus macrophylla</i>	High	This tree is listed as a Significant Tree by the City of Sydney.
4.	<i>Ficus macrophylla</i>	High	Species is culturally significant and typical of planting in the National

			Trust and Observatory Park
5.	<i>Olea europaea</i>	Low	Species is low retention value.
6.	<i>Celtis sinensis</i>	Low	Species is listed by Department of Primary Industries as an Environmental Weed.
7.	<i>Ficus macrophylla</i>	High	Species is culturally significant and typical of planting in the National Trust and Observatory Park
8.	Missing	N/A	
9.	Missing	N/A	
10.	Missing	N/A	
11.	Missing	N/A	
12.	<i>Olea europaea</i>	Low	Species is low retention value.
13.	<i>Olea europaea</i>	Low	Species is low retention value.
14.	<i>Olea europaea</i>	Low	Species is low retention value.
15.	<i>Olea europaea</i>	Low	Species is low retention value.
16.	<i>Celtis sinensis</i>	Low	Species is listed by Department of Primary Industries as an Environmental Weed.
17.	<i>Eucalyptus robusta</i>	Medium	Tree provides shade and potential habitat.
18.	<i>Eucalyptus tereticornis</i>	High	Local endemic species providing shade and potential habitat.
19.	<i>Schinus terebinthifolius</i>	Low	Species is listed by Department of Primary Industries as an Environmental Weed and invasive species.
20.	<i>Murraya paniculata</i>	Low	Large shrub.
21.	<i>Banksia integrifolia</i>	High	Local native species providing habitat and food for fauna.

22.	<i>Callistemon viminalis</i>	Medium	Native species providing habitat and food for fauna.
23.	<i>Callistemon viminalis</i>	Medium	Native species providing habitat and food for fauna.
24.	<i>Hakea salicifolia</i>	Medium	Native species providing habitat and food for fauna.
25.	<i>Callistemon viminalis</i>	Medium	Native species providing habitat and food for fauna.
26.	<i>Citharexylum spinosum</i>	Medium	
27.	<i>Callistemon viminalis</i>	Medium	Native species providing habitat and food for fauna.
28.	<i>Angophora floribunda</i>	Low	Native species providing habitat and food for fauna.
29.	<i>Acmena smithii</i>	High	Native species providing habitat and food for fauna.
30.	<i>Jacaranda mimosifolia</i>	High	Shade tree
31.	<i>Celtis sinensis</i>	Low	Species is listed by Department of Primary Industries as an Environmental Weed.
32.	<i>Eucalyptus piperita</i>	High	Local endemic species. Shade tree, potential habitat for fauna.
33.	<i>Eucalyptus saligna</i>	High	Local endemic species. Shade tree, potential habitat for fauna.
34.	<i>Ulmus parvifolia</i>	Medium	Shade tree.
35.	<i>Acmena smithii</i>	Medium	Native species providing habitat and food for fauna. Immediately adjacent existing building.
36.	<i>Acmena smithii</i>	Medium	Native species providing habitat and food for fauna. Immediately adjacent existing building.

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/A	<i>Ficus macrophylla</i>	High
2/A	<i>Lophostemon confertus</i>	High
1.	<i>Ficus macrophylla</i>	High
2.	<i>Ficus macrophylla</i>	High
3.	<i>Ficus macrophylla</i>	High
4.	<i>Ficus macrophylla</i>	High
5.	<i>Olea europaea</i>	Low
6.	<i>Celtis sinensis</i>	Low
7.	<i>Ficus macrophylla</i>	Medium
8.	Missing	N/A
9.	Missing	N/A
10.	Missing	N/A
11.	Missing	N/A
12.	<i>Olea europaea</i>	Low
13.	<i>Olea europaea</i>	Low
14.	<i>Olea europaea</i>	Low
15.	<i>Olea europaea</i>	Low
16.	<i>Celtis sinensis</i>	Low
17.	<i>Eucalyptus robusta</i>	Medium
18.	<i>Eucalyptus tereticornis</i>	Medium
19.	<i>Schinus terebinthifolius</i>	Medium
20.	<i>Murraya paniculata</i>	Low
21.	<i>Banksia integrifolia</i>	High
22.	<i>Callistemon viminalis</i>	Medium
23.	<i>Callistemon viminalis</i>	Medium
24.	<i>Hakea salicifolia</i>	Medium
25.	<i>Callistemon viminalis</i>	Medium

26.	<i>Citharexylum spinosum</i>	Medium
27.	<i>Callistemon viminalis</i>	Medium
28.	<i>Angophora floribunda</i>	Low
29.	<i>Acmena smithii</i>	High
30.	<i>Jacaranda mimosifolia</i>	High
31.	<i>Celtis sinensis</i>	Low
32.	<i>Eucalyptus piperita</i>	Medium
33.	<i>Eucalyptus saligna</i>	High
34.	<i>Ulmus parvifolia</i>	Medium
35.	<i>Acmena smithii</i>	Medium
36.	<i>Acmena smithii</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 site arborist to give consideration as to the viability of the tree due to the proposed development.

Structural Root Zone

The Structural Root Zone (SRZ) 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 considered when a major encroachment (greater than 10%) of the TPZ is proposed.

Tree no.	Species	TPZ Radius (m)	SRZ Radius (m)
1/A	<i>Ficus macrophylla</i>	15	4.4
2/A	<i>Lophostemon confertus</i>	4.32	2.3
1.	<i>Ficus macrophylla</i>	3.6	2.1
2.	<i>Ficus macrophylla</i>	6.12	2.6
3.	<i>Ficus macrophylla</i>	4.8	2.4
4.	<i>Ficus macrophylla</i>	5.16	2.5
5.	<i>Olea europaea</i>	3.48	2.1
6.	<i>Celtis sinensis</i>	4.62	2.3
7.	<i>Ficus macrophylla</i>	5.88	2.6
8.	Missing	N/A	N/A

9.	<i>Missing</i>	N/A	N/A
10.	<i>Missing</i>	N/A	N/A
11.	<i>Missing</i>	N/A	N/A
12.	<i>Olea europaea</i>	4.44	2.3
13.	<i>Olea europaea</i>	3.24	2.1
14.	<i>Olea europaea</i>	2	1.4
15.	<i>Olea europaea</i>	2	1.5
16.	<i>Celtis sinensis</i>	2	1.6
17.	<i>Eucalyptus robusta</i>	3.48	2.1
18.	<i>Eucalyptus tereticornis</i>	22.8	3.3
19.	<i>Schinus terebinthifolius</i>	4.98	2.5
20.	<i>Murraya paniculata</i>	3.36	2.0
21.	<i>Banksia integrifolia</i>	4.68	2.3
22.	<i>Callistemon viminalis</i>	2.88	1.9
23.	<i>Callistemon viminalis</i>	2.64	1.9
24.	<i>Hakea salicifolia</i>	2.76	2.0
25.	<i>Callistemon viminalis</i>	2.4	1.8
26.	<i>Citharexylum spinosum</i>	2	1.5
27.	<i>Callistemon viminalis</i>	2	1.6
28.	<i>Angophora floribunda</i>	2.28	1.8
29.	<i>Acmena smithii</i>	2	1.4
30.	<i>Jacaranda mimosifolia</i>	4.68	2.3
31.	<i>Celtis sinensis</i>	6.24	2.6
32.	<i>Eucalyptus piperita</i>	2	1.6
33.	<i>Eucalyptus saligna</i>	4.68	2.3
34.	<i>Ulmus parvifolia</i>	5.4	2.5
35.	<i>Acmena smithii</i>	2	1.6
36.	<i>Acmena smithii</i>	3.36	2.1

7.0 Discussion of Findings

Tree 7 has cracked and shrunken bark with dead cambium beneath. These symptoms are potentially indicative of sooty canker which would have an impact on the viability of the tree in the medium term. Further investigation would be required for definitive diagnosis. The health and condition of the tree is declining with a thinning canopy and moderate apical dieback in the branches with canker present.

Tree 17 has significant psyllid infestation and corresponding damaged foliage. There is some chlorotic foliage and a thinning canopy.

Tree 18 is in fair but declining condition with a thinning canopy, moderate deadwood and epicormic growth with significant apical dieback.

Tree 24 is in poor and declining condition.

Tree 28 has a failed leader.

Tree 1A is in good health and condition however there is evidence of decay present within the canopy. There is decay evident within a primary branch on the eastern side of the canopy at a point of high lever arm stress 1.5m from the junction in a long horizontal end weighted branch. There is also decay evident in the junction of secondary branch on the northern side of canopy. This tree is located within the playground of Fort Street Public School. We recommend that further investigation of these points be carried out by means of Resistograph testing to determine the structural integrity of these secondary branches and that a risk assessment be carried out to determine the risk posed by these branches.

All other trees are in good health and condition.

Trees 6, 16, 19 and 31 are listed by the Department of Primary Industries as environmental weed species and are accordingly have low landscape significance and retention value.

Trees 1A, 2 and 3 are listed as Significant Trees by the City of Sydney.

Trees 17, 18, 28, 32 and 33 are local endemic species.

8.0 Environmental / Heritage/ Legislative Considerations

None of the subject trees are identified as threatened species or elements of endangered ecological communities within the Threatened Species Conservation Act 1995. Trees 1A, 2 and 3 are listed as Significant Trees by the City of Sydney.

9.0 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
Benson, D. Howell, J. 1990, Taken for Granted : The Bushland of Sydney and its Suburbs. The Royal Botanic Gardens Sydney.
City of Sydney Significant Trees Register

10.0 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					
<u>Legend for Matrix Assessment</u>						
		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.				
		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.				
		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.				
		Priority for Removal - These trees are considered hazardous, or in irreversible decline, or weeds and should be removed irrespective of development.				

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

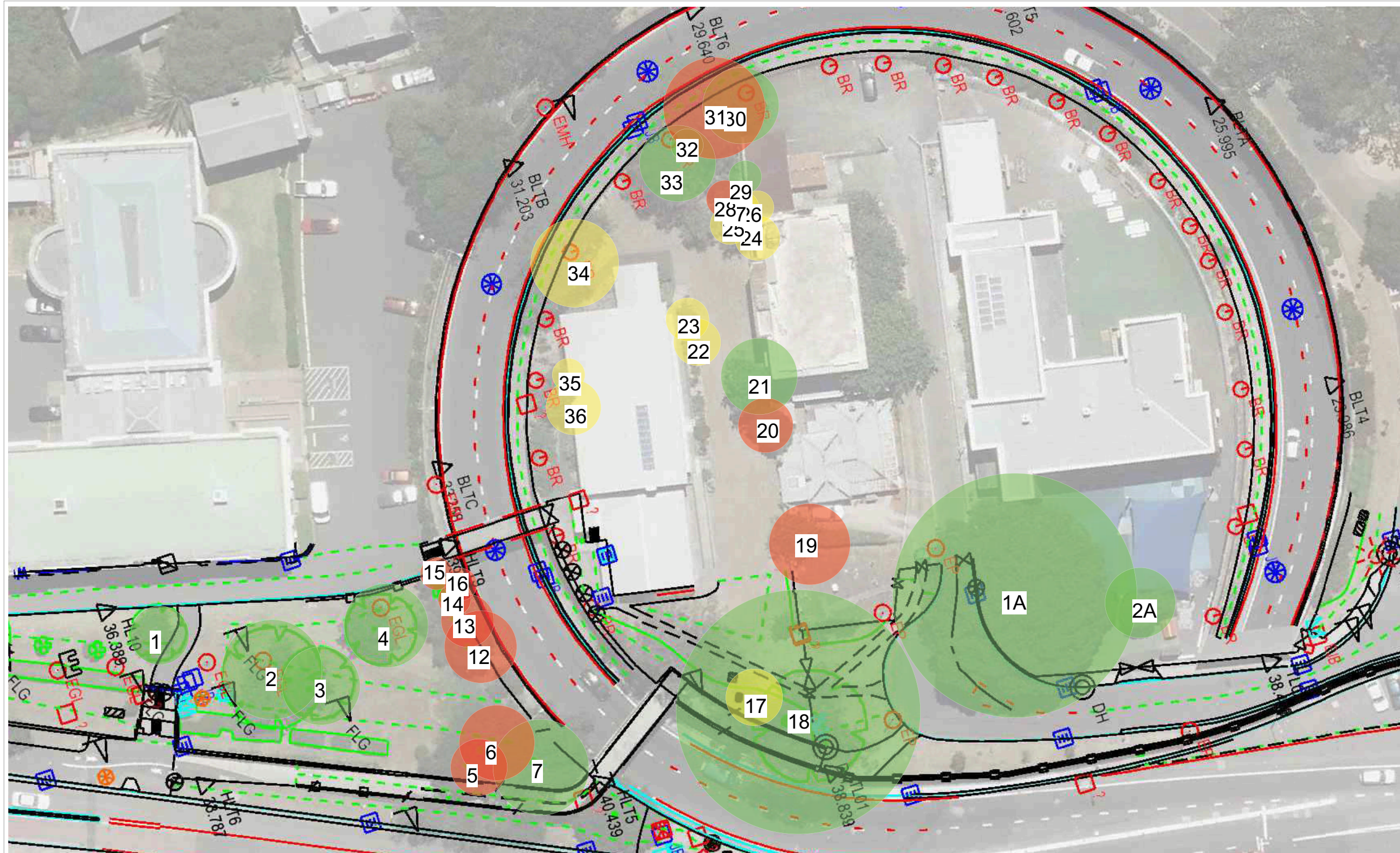
Inspection Data
Fort Street Public School

4-Apr-19

Tree no.	Species	Height (m)	Spread(m)	DBH (mm)	TPZ radius (m)	Dia at base	SRZ Radius (m)	Maturity	Trunk (single, twin, multiple @)	Trunk lean	Form/Crown shape	Branching Habit	Crown Distribution	Stability	Branching Structure	Pruning History	Defects	Damage	Overall Health & Vigour	Canopy Density	Foliage	Deadwood	Epicormic Growth	Pest Infestation	Disease	Life expectancy	Env. & Landscape significance	Retention Value	Notes/Comments
1a	Ficus macrophylla	21	24	1750	15	2000	4.4	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Evidence of decay	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	High	High	Decay in primary branch on eastern side at point of high lever arm stress 1.5m from junction in long horizontal end weighted branch. Decay in secondary branch on northern side of canopy
2a	Lophostemon confertus	7	6	360	4.32	400	2.3	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	High	High	Located within timber decking
1	Ficus macrophylla	8	9	300	3.6	350	2.1	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	High	High	
2	Ficus macrophylla	8	11	510	6.12	560	2.6	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	High	High	
3	Ficus macrophylla	12	11	400	4.8	480	2.4	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	High	High	
4	Ficus macrophylla	12	11	430	5.16	490	2.5	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	High	High	
5	Olea europaea	8	5	290	3.48	340	2.1	Mature	Twin @ base	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Low	Low	
6	Celtis sinensis	13	9	385	4.62	420	2.3	Mature	Single	Slight NW	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Low	Low	
7	Ficus macrophylla	11	11	490	5.88	560	2.6	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Crack	Nil	Fair	Thinning	Normal	15%	20%	No evidence	No evidence	5-15y	High	Moderate	Cracking of bark on two primary branches with dead cambium visible beneath. Moderate apical dieback in these branches
8	Missing						0.0																				N/A	N/A	
9	Missing						0.0																				N/A	N/A	
10	Missing						0.0																				N/A	N/A	
11	Missing						0.0																				N/A	N/A	
12	Olea europaea	8	6	370	4.44	420	2.3	Mature	Single	Prominent NW	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Low	Low	
13	Olea europaea	7	8	270	3.24	320	2.1	Mature	Twin @ base	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Low	Low	
14	Olea europaea	4	3	100	2	140	1.4	Mature	Single	Slight N	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Fair	Thinning	Normal	<5%	<5%	No evidence	No evidence	15-40y	Low	Low	
15	Olea europaea	4	4	130	2	160	1.5	Mature	Twin @ base	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Low	Low	
16	Celtis sinensis	8	4	160	2	180	1.6	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Low	Low	
17	Eucalyptus robusta	14	7	290	3.48	340	2.1	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Fair	Thinning	Chlorotic	10%	40%	Lerps	No evidence	15-40y	Moderate	Moderate	Significant lerp infestation
18	Eucalyptus tereticornis	16	12	900	10.8	1000	3.3	Mature	Single	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Fair	Thinning	Normal	20%	40%	No evidence	No evidence	5-15y	High	Moderate	Significant apical dieback. Declining
19	Schinus terebinthifolius	7	10	415	4.98	490	2.5	Mature	Multiple (3) @ base	NIL	Normal	Normal	Balanced	Stable	Stable	No evidence	Nil	Nil	Good	Normal	Normal	<5%	<5%	No evidence	No evidence	15-40y	Low	Low	

Appendix D Tree Location Plans

Tree Protection Plans



Legend

- High Landscape Significance
- Medium Landscape Significance
- Low Landscape Significance
- Tree Protection Zone (TPZ) in accordance with AS4970-2009

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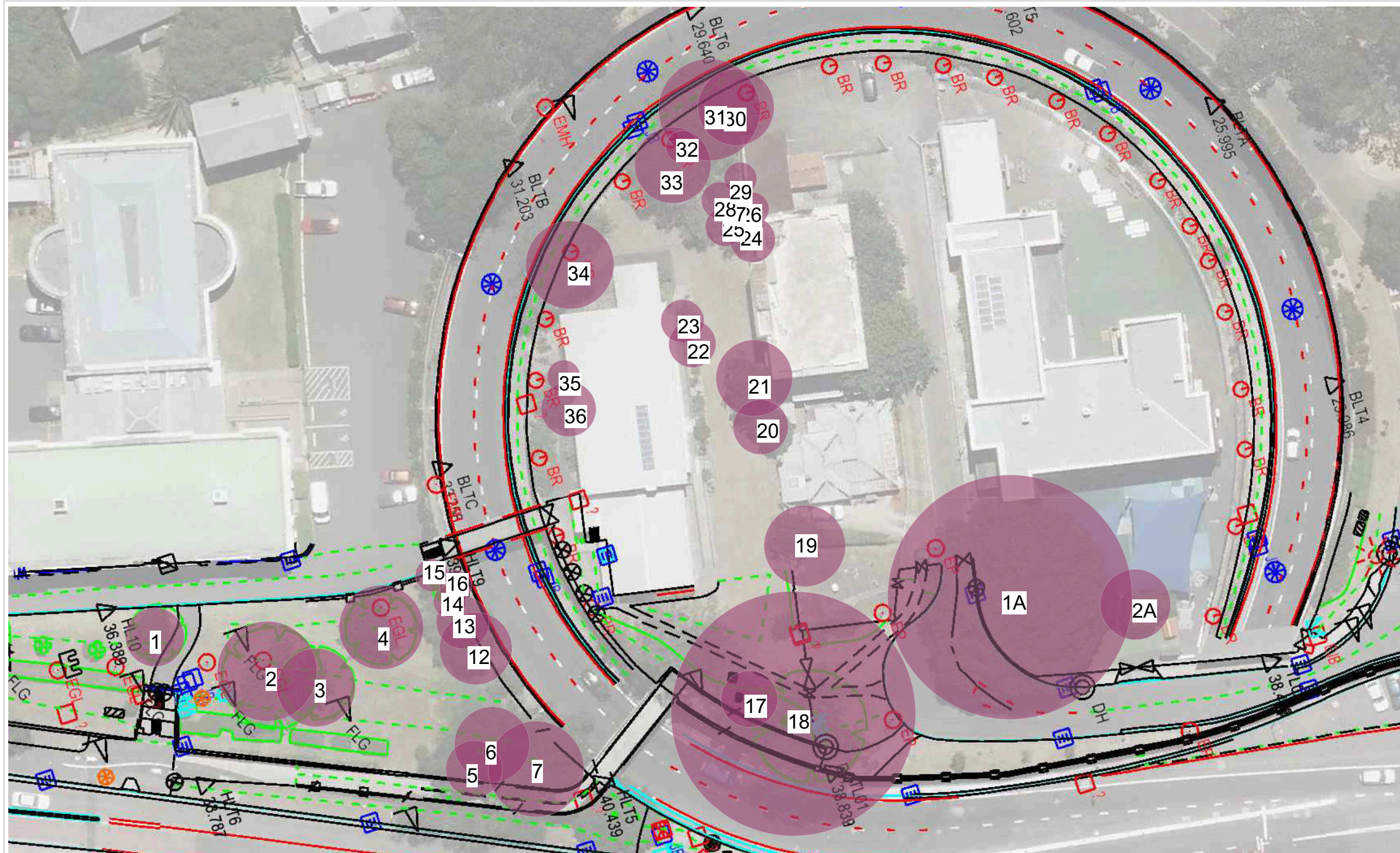
Project: Fort Street Public School

Client: School Infrastructure NSW

DWG: A01

Plan: Tree Location Plan

Date: 11 Apr 2019 Scale : 1:500 @ A3



Legend

- High Landscape Significance
- Medium Landscape Significance
- Low Landscape Significance
- Tree Protection Zone (TPZ) in accordance with AS4970-2009

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Project: Fort Street Public School

Client: School Infrastructure NSW

DWG: A02

Plan: Tree Protection Zone Plan

Date: 11 Apr 2019 Scale : 1:500 @ A3