

# ARBORICULTURAL IMPACT REPORT AND TREE RETENTION PLAN

SIRIUS SITE  
2-60 CUMBERLAND STREET  
THE ROCKS SYDNEY NSW

16<sup>TH</sup> AUGUST 2021

PREPARED FOR SIRIUS DEVELOPMENTS PTY LTD



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## **1. BACKGROUND**

Landscape Matrix Pty Ltd has been engaged by Sirius Developments Pty Ltd to prepare an Arboricultural Impact Report and Tree Retention Plan in respect to 52 trees on or adjacent to 2-60 Cumberland Street The Rocks. This report has been prepared by Guy Paroissien a Director of Landscape Matrix Pty Ltd.

The site was inspected on 9<sup>th</sup> March 2020 to collect data for trees at and adjacent to the site. The trees located in inaccessible locations were assessed from the nearest access point.

The assessment of the trees was based upon a visual inspection of the trees from ground level using the Visual Tree Assessment (VTA) approach developed by Mattheck & Breloer (1994). The visual inspection included examination of the trees' dimensions, foliage density and foliage health, form, structure, structural condition, overall health and vigour and landscape significance.

The inspection was limited to visual inspection of the trees without dissection, probing or coring. No aerial inspection of the trees was carried out and the assessment did not include any woody tissue testing or root investigation.

The tree heights and canopy spreads were estimated and expressed in metres and the tree diameters at breast height (DBH) were measured with a standard metal tape at approximately 1.4 metres above ground level and expressed in millimetres. The DBH for trees on adjoining properties were estimated from the nearest property boundary where visible.

## **2. PROPOSED DEVELOPMENT**

The proposed development is for the restoration and refurbishment of the existing Sirius building, including alterations and additions. The existing building is proposed to be substantially retained and restored with integrity. New residential additions are proposed to be added to the existing structure in appropriate locations to maintain the legibility of the original architectural form, and new structures for commercial uses are proposed to be added at the Cumberland Street and Gloucester Walk frontages of the site.

The existing Sirius building has a varied height profile due to its modular form and due to the fall across the site when observed from Cumberland Street and from Gloucester Walk. The existing building rises from the north and south towards a central tower with a maximum height of 34.6m above ground level at Cumberland Street (equivalent to an 11-storey building). Due to the existing split-level apartments, the building is conveyed as having a greater number of levels (25 storeys).

The proposed alterations and additions to the existing building will increase the overall building height by 5.4m to a maximum building height of 40.9m above ground level at Cumberland Street. On the Cumberland Street entry side of the site, the building presents as thirteen (13) levels at the

highest occupied level. When observed from Gloucester Walk, and due to the fall across the site, the building presents as fourteen (14) occupied levels.

The building incorporates two levels of basement car parking.

The proposed works include:

- Alterations and additions to the existing building to provide for:
  - Residential accommodation (a total of **76** apartments);
  - Commercial premises, including retail floorspace; and
  - Basement car parking.
- Provision of a through-site link between Cumberland Street and Gloucester Walk.
- Upgrades to Gloucester Walk including landscaping and pedestrian access.
- Improvements to Cumberland Street including landscaping and improved carpark entry.
- Associated works, including:
  - Minor demolition works;
  - Earthworks;
  - Structural upgrades;
  - Services upgrades; and
  - Landscaping works.

### **3. TREES ON SITE**

52 trees on the site, nature strip frontage and adjoining properties have been assessed in preparing this report.

A summary of these trees, their dimensions, condition, Useful Life Expectancy (ULE) and landscape significance is attached in Appendix B.

The tree numbers in Appendix B correspond with the tree numbers marked on the attached Survey Plans prepared by LTS Lockley Surveyors dated 20/10/2020 and identified as Plan Reference 50025DT 001, Sheets 1, 2 and 3, Issue F.

The trees that have been assessed on the site and adjoining properties are summarised in table 1 as follows:

**Table 1: Summary of species present, number and height range.**

<b>SPECIES</b>	<b>COMMON NAME</b>	<b>NUMBER PRESENT</b>	<b>HEIGHT RANGE (metres)</b>
<i>Araucaria columnaris</i>	Cook's Pine	1	10
<i>Archontophoenix alexandrae</i>	Alexandra Palm x 2 specimens	1	4.5 to 6
<i>Callistemon viminalis</i>	Weeping Bottlebrush	27	3.5 to 8
<i>Celtis sinensis</i>	Chinese Hackberry	1	4 to 6
<i>Corymbia eximia</i>	Yellow Bloodwood	2	6 to 8
<i>Eriobotrya japonica</i>	Loquat Tree	2	5 to 6
<i>Ficus microcarpa var Hillii</i>	Hills Weeping Fig	3	16 to 17
<i>Harpephyllum caffrum</i>	Kaffir Plum	2	14 to 16
<i>Howea fosteriana</i>	Kentia Palm	1	5
<i>Melia azedarach</i>	White Cedar	3	5 to 6
<i>Murraya paniculata</i>	Murraya, Orange Jessamine	1	4
<i>Platanus x hybrida</i>	Plane Tree	3	8 to 18
<i>Schefflera actinophylla</i>	Umbrella Tree	3	6.5 to 12
<i>Syagrus romanzoffiana</i>	Cocos Palm, Queen Palm	2	12
<b>Total number of trees</b>		<b>52</b>	<b>3.5 to 18 metres</b>

None of the trees assessed for this report is listed individually as a threatened species on the Schedules of the NSW *Biodiversity Conservation Act 2016* or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

#### 4. TREES IDENTIFIED AS A PRIORITY FOR RETENTION/PROTECTION.

The identification of trees as priorities for retention is based upon a number of factors including; species, dimensions, health, maturity, Useful Life Expectancy (ULE) and landscape significance.

Following assessment of the trees it is considered that 6 of the trees assessed are considered to be of high landscape significance and medium to long life expectancy and should be considered as priorities for retention/protection, if possible:

**Table 2: Trees identified as a priority for retention/protection.**

TREE NO.	SCIENTIFIC AND COMMON NAME	TPZ	SRZ	COMMENTS
46	<i>Ficus microcarpa var Hillii</i> (Hills Weeping Fig)	7.2 metres	2.7 metres	A mature, twin trunked specimen approximately 16 metres in height with a canopy spread of 15 metres and diameters at breast height (DBH) of 390 and 470mm. In good health and of high landscape significance. The tree displays fair to poor branch attachment with evidence of a recent branch failure on the east side of the lower crown (possibly could be the result of trunk/vehicle impact). Recent mechanical damage to lower trunk and leader over road from vehicle impact. Conflict with pathway/kerb.
47	<i>Ficus microcarpa var Hillii</i> (Hills Weeping Fig)	6.8 metres	2.7 metres	A mature, single trunked specimen approximately 17 metres in height with a canopy spread of 14 metres and a DBH of 570mm. In good health and of high landscape significance. Conflict with pathway/kerb.
48	<i>Harpephyllum caffrum</i> (Kaffir Plum)	8.5 metres	3.1 metres	A mature, single trunked specimen approximately 14 metres in height with a canopy spread of 11 x 14 metres and a DBH of 710mm. In good health and of high landscape significance.
49	<i>Harpephyllum caffrum</i> (Kaffir Plum)	13.8 metres	4 metres	A mature, single trunked specimen approximately 16 metres in height with a canopy spread of 12 x 17 metres and a DBH of 1150mm. In good health and of high landscape significance. Some reaction wood in lower trunk - considered likely to be from crown/branch loading rather than internal structural issues but monitoring is recommended.

50	<i>Platanus x hybrida</i> (Plane Tree)	7.1 metres	2.9 metres	A mature, single trunked specimen approximately 18 metres in height with a canopy spread of 16 metres and a DBH of 590mm. In good health and of high landscape significance. The tree displays fair branch attachment with multiple leaders from 3 metres - not considered at risk of failure. Limited TPZ area due to adjacent infrastructure, level changes etc. Pathway adjacent to the tree is lifted and cracked consistent with displacement by roots. Some foliage damage likely due to Sycamore Lace Bug
51	<i>Platanus x hybrida</i> (Plane Tree)	6.8 metres	2.9 metres	A mature, single trunked specimen approximately 18 metres in height with a canopy spread of 16 metres and a DBH of 570mm. In good health and of high landscape significance. Limited TPZ area due to adjacent infrastructure, level changes etc. Pathway adjacent to the tree is lifted and cracked consistent with displacement by roots. Some foliage damage likely due to Sycamore Lace Bug

A number of methods to determine the likely extent of root zones and appropriate setbacks for tree root protection zones for trees on development sites have been developed in the past. The key criteria used in determining setbacks is the tree's trunk diameter at breast height (DBH) in conjunction with other factors including the sensitivity of the species in question to environmental disturbance/change, the age of the tree and the tree's health and vigour at the time.

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

The Australian Standard *AS4970-2009 Protection of trees on development sites* also identifies a 'Tree Protection Zone' (TPZ) of 12 times the tree's DBH. AS4970-2009 also provides a formula for calculating the "Structural Root Zone" of trees on development sites. This is the area required for stability. In regard to palms, other monocots, cycads and tree ferns the Standard identifies the Tree Protection Zone should not be less than 1 metre outside the crown projection. (Australian Standards Association 2009)

The tree protection zones identified above have been calculated using the Australian Standard ‘AS4970-2009 Protection of trees on development sites’ and are the identified setback from the trees where disturbance (e.g. soil level changes, compaction, excavation etc) should be minimised to reduce potential impacts on the long term health of the trees.

Preferably, no more than 10% of the tree protection zone should be disturbed with compensation made by extension of other areas of the TPZ to compensate for the area(s) disturbed. Where greater than 10% of the tree protection zone is potentially disturbed the tree’s viability needs to be investigated and demonstrated by the project arborist. The structural root zone is the area required for stability and where disturbance of any sort should be avoided.

## 5. TREES THAT SHOULD BE CONSIDERED FOR RETENTION/PROTECTION

The identification of trees for consideration (but not as a priority) for retention is based upon the same factors as those for priority for retention (species, dimensions, health, maturity, Useful Life Expectancy (ULE) and landscape significance).

Following assessment of the trees it is considered the following 13 trees are of moderate or moderate to high landscape significance and medium to long life expectancy and should be considered for retention/protection, if possible:

**Table 3: Trees identified for consideration for retention/protection.**

TREE NO.	SCIENTIFIC AND COMMON NAME	TPZ	SRZ	COMMENTS
5	<i>Corymbia eximia</i> (Yellow Bloodwood)	2.6 metres	1.9 metres	A semi mature, single trunked specimen approximately 8 metres in height with a canopy spread of 5 metres and a DBH of ca. 220mm. In good health and of moderate landscape significance.
6	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	4.3 metres	2.2 metres	A mature, multi trunked specimen approximately 5 metres in height with a canopy spread of 5 metres and DBH of up to ca. 140mm (ca. 160mm above the root flare). In good health and of moderate landscape significance.
7	<i>Melia azedarach</i> (White Cedar)	3.1 metres	1.9 metres	A mature, twin trunked specimen approximately 5 metres in height with a canopy spread of 5 metres and DBH of 180 and 190mm. In good health and of moderate landscape significance. At the time of inspection the tree was of fair vigour and exhibited moderate levels of dieback. Foliage browsing evidence from White Cedar Moth larvae

22	<i>Araucaria columnaris</i> (Cook's Pine)	2.9 metres	1.9 metres	A semi mature, single trunked specimen approximately 8 metres in height with a canopy spread of 4 x 6 metres and a DBH of ca. 220mm. In good health and of moderate landscape significance.
27	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	3.1 metres	1.9 metres	A mature, multi trunked specimen approximately 4.5 metres in height with a canopy spread of 4 metres and DBH of up to 140mm (260mm above the root flare). In good health and of moderate landscape significance. At the time of inspection the tree was of fair vigour and exhibited reduced foliage density and moderate levels of dieback.
28	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	4 metres	2.1 metres	A mature, multi trunked specimen approximately 5 metres in height with a canopy spread of 3 x 6 metres and DBH of up to 160mm (260 x 400mm above the root flare). In good health and of moderate landscape significance. Evidence of decay in basal trunk on east side. The tree displays fair branch attachment with codominant leaders from ground level and multiple leaders from near ground level - not considered at risk of failure in the short term.
30	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	3.1 metres	2 metres	A mature, twin trunked specimen approximately 5 metres in height with a canopy spread of 4 metres and DBH of ca. 140 and 220mm. In good health and of moderate landscape significance. At the time of inspection the tree was of fair vigour and exhibited low levels of dieback.
31	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	3.6 metres	2 metres	A mature, multi trunked specimen approximately 6 metres in height with a canopy spread of 8 metres and DBH of up to ca. 220mm (ca. 300mm above the root flare). In good health and of moderate landscape significance.
33	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	3.2 metres	1.9 metres	A mature, multi trunked specimen approximately 6 metres in height with a canopy spread of 4 metres and DBH of up to ca. 140mm (ca. 270mm above the root flare). In good health and of moderate landscape significance. At the time of inspection the tree was of fair vigour and exhibited low levels of dieback.
36	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	3 metres	1.8 metres	A mature, multi trunked specimen approximately 5 metres in height with a canopy spread of 6 metres and DBH of up to ca. 140mm (ca. 350mm above the root flare). In good health and of moderate landscape significance.
38	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	3.4 metres	2.4 metres	A mature, twin trunked specimen approximately 8 metres in height with a canopy spread of 8 metres and DBH of ca. 180 and 220mm. In good health and of moderate landscape significance. Continued next page...

				Located in narrow planter area of limited soil volume. At the time of inspection the tree was of fair vigour and exhibited low to moderate levels of dieback.
43	<i>Melia azedarach</i> (White Cedar)	3 metres	2 metres	A mature, twin trunked specimen approximately 6 metres in height with a canopy spread of 7 x 9 metres and DBH of 140 and 210mm. In good health and of moderate landscape significance. The tree's past canopy development has been suppressed. Exempt species.
45	<i>Ficus microcarpa var Hillii</i> (Hills Weeping Fig)	5.3 metres	2.3 metres	A mature, twin trunked specimen approximately 16 metres in height with a canopy spread of 12 metres and DBH of 400 and 480mm. In good health and of moderate to high landscape significance. Conflict with adjacent pathway/kerb. The tree displays fair branch attachment with codominant leaders from 2 metres with some evidence of poor attachment at the junction - not considered at risk of failure in the short term. At the time of inspection the tree was of fair vigour and exhibited low to moderate levels of dieback.

TPZ = Tree Protection Zone under AS4970-2009, SRZ = Structural Root Zone under AS4970-2009

The tree protection zones identified above have been calculated using the Australian Standard 'AS4970-2009 Protection of trees on development sites' and are the optimum setback from the trees where disturbance (e.g. soil level changes, compaction, excavation etc) should be minimised to reduce potential impacts on the long term health of the trees. Preferably, no more than 10% of the tree protection zone should be disturbed with compensation made by extension of other areas of the TPZ to compensate for the area(s) disturbed.

Where greater than 10% of the tree protection zone is potentially disturbed the tree's viability needs to be investigated and demonstrated by the project arborist.

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

## 6. TREES THAT SHOULD BE CONSIDERED FOR REMOVAL

Following assessment of the trees on the site it is considered the following 10 trees of low to moderate landscape significance should be considered for removal from the property due to poor/declining health or condition and/or inappropriate species:

**Table 4: Trees recommended for consideration for removal.**

<b>TREE NO.</b>	<b>SCIENTIFIC AND COMMON NAME</b>	<b>REASON</b>
2	<i>Syagrus romanzoffiana</i> (Cocos Palm, Queen Palm)	Environmental pest species of moderate visual significance.
3	<i>Syagrus romanzoffiana</i> (Cocos Palm, Queen Palm)	Environmental pest species of moderate visual significance.
10	<i>Eriobotrya japonica</i> (Loquat Tree)	At the time of inspection the tree was of fair vigour and exhibited low high levels of dieback. Environmental pest species of low to moderate visual significance.
12	<i>Platanus x hybrida</i> (Plane Tree)	At the time of inspection the tree was of poor health and poor vigour with approx. 90% deadwood - almost dead.
13	<i>Schefflera actinophylla</i> (Umbrella Tree)	Environmental pest species of low to moderate visual significance. Exempt species.
19	<i>Celtis sinensis</i> (Chinese Hackberry)	Environmental pest species of moderate visual significance.
23	<i>Schefflera actinophylla</i> (Umbrella Tree)	The tree displays fair branch attachment with multiple leaders with some evidence of poor attachment at junctions - not considered at risk of failure in the short term. Environmental pest species of low to moderate visual significance.
34	<i>Celtis sinensis</i> (Chinese Hackberry)	Two semi mature specimens growing in close association. Environmental pest species of moderate visual significance.
35	<i>Eriobotrya japonica</i> (Loquat Tree)	Environmental pest species of low to moderate visual significance.
37	<i>Schefflera actinophylla</i> (Umbrella Tree)	The tree displays fair to poor branch attachment with multiple leaders from 0.6 metres with some evidence of poor attachment at the junction - not considered at risk of failure in the short term. Located in narrow planter area of limited soil volume. Environmental pest species of moderate visual significance. Exempt species.

## 7. TREES NOT IDENTIFIED FOR REMOVAL OR RETENTION

The following 23 trees have not been identified as being of high or moderate landscape value as worthy of enforced retention/protection, or as priorities for removal due to low landscape value, condition or suitability to the site (i.e. weed species):

- Tree numbers: 1, 4, 8, 9, 11, 14, 15, 16, 17, 18, 20, 21, 24, 25, 26, 29, 32, 39, 40, 41, 42, 44 and 52.

While a number of these trees are currently in fair to reasonable condition and do perform some landscape function these trees are not considered significant enough to warrant specific design consideration.

## 8. POTENTIAL IMPACTS ON TREES

The extent of impacts to the trees has been assessed using the following plans:

- Consolidated Ground Floor/Public Domain Plan prepared by 360° Landscape Architects dated 4<sup>th</sup> August 2021 and identified as Drawing Number L-DA-012, Issue J 88DA.
- Proposed Street Tree Plan prepared by 360° Landscape Architects dated 4<sup>th</sup> August 2021 and identified as Drawing Number L-DA-034, Issue J 88DA.

### **Trees requiring removal or proposed to be removed to facilitate the proposed alterations and additions to the existing Sirius building**

To facilitate the proposed adaptive reuse of the existing Sirius building, including alterations and additions, the following 47 trees are proposed to be removed.

**Table 5: Trees requiring removal to facilitate construction of the proposed residential development**

TREE NO.	SCIENTIFIC AND COMMON NAME	COMMENTS
1	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.
2	<i>Syagrus romanzoffiana</i> (Cocos Palm, Queen Palm)	Within the footprint of proposed works and will require removal.
3	<i>Syagrus romanzoffiana</i> (Cocos Palm, Queen Palm)	Within the footprint of proposed works and will require removal.
4	<i>Archontophoenix alexandrae</i> (Alexandra Palm) x 2 specimens	Within the footprint of proposed works and will require removal.
5	<i>Corymbia eximia</i> (Yellow Bloodwood)	Within the footprint of proposed works and will require removal.
6	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.
7	<i>Melia azedarach</i> (White Cedar)	Within the footprint of proposed works and will require removal.
8	<i>Corymbia eximia</i> (Yellow Bloodwood)	Within the footprint of proposed works and will require removal.

9	<i>Melia azedarach</i> (White Cedar)	Within the footprint of proposed works and will require removal.
10	<i>Eriobotrya japonica</i> (Loquat Tree)	Within the footprint of proposed works and will require removal.
11	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.
12	<i>Platanus x hybrida</i> (Plane Tree)	Within the footprint of proposed works and will require removal.
13	<i>Schefflera actinophylla</i> (Umbrella Tree)	Within the footprint of proposed works and will require removal.
14	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.
15	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.
16	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.
17	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.
18	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.
19	<i>Celtis sinensis</i> (Chinese Hackberry)	Within the footprint of proposed works and will require removal.
20	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.
21	<i>callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.
22	<i>Araucaria columnaris</i> (Cook's Pine)	Within the footprint of proposed works and will require removal.
23	<i>Schefflera actinophylla</i> (Umbrella Tree)	Within the footprint of proposed works and will require removal.
24	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.
25	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.
26	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.
27	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.
28	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.
29	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.
30	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.
31	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.
32	<i>Howea fosteriana</i> (Kentia Palm)	Within the footprint of proposed works and will require removal.
33	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.
34	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.
35	<i>Eriobotrya japonica</i> (Loquat Tree)	Within the footprint of proposed works and will require removal.
36	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.
37	<i>Schefflera actinophylla</i> (Umbrella Tree)	Within the footprint of proposed works and will require removal.
38	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.
39	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.
40	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.

41	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.
42	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.
43	<i>Melia azedarach</i> (White Cedar)	Within the footprint of proposed works and will require removal.
44	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	Within the footprint of proposed works and will require removal.
50	<i>Platanus x hybrida</i> (Plane Tree)	Immediately adjacent to the footprint of basement works and will require removal.
51	<i>Platanus x hybrida</i> (Plane Tree)	Immediately adjacent to the footprint of basement works and will require removal.
52	<i>Murraya paniculata</i> (Murraya, Orange Jessamine)	Proposed to be replaced as part of the public domain landscape works.

The proposed tree removals can be summarised as follows:

Retention value 1 trees (priority for retention) – 2 trees to be removed (4 to be retained)

Retention value 2 trees (moderate landscape value - consider for retention) = 12 trees to be removed (1 to be retained)

Retention value 3 trees (low landscape value or short ULE - not warranting specific design consideration) = 23 trees

Retention value 4 trees (recommended for removal regardless of any development proposal) = 10 trees

### **Trees potentially impacted by the proposed residential development**

A total of 5 trees adjoining the site are in the vicinity of the proposed works and have the potential to be impacted by the proposal. Using the plans referred to in the preceding section of the report an analysis has been undertaken of the potential impacts to these trees.

The extent of impacts to the trees in table 3 has been rated using the following guideline:

0% of root zone impacted – no impact of significance

0 to 10% of TPZ impacted – low level of impact

10 to 15% of TPZ impacted – low to moderate level of impact

15 to 20% of TPZ impacted – moderate level of impact

20 to 25% of TPZ impacted – moderate to high level of impact

25 to 35% of TPZ impacted – high level of impact

>35% of TPZ impacted – significant level of impact

The root zone calculations referred to in this report were made using scale drawings of the trees' identified tree protection zones (TPZ) in a CAD program (TurboCAD®) with potentially affected areas added to the drawing. The area of potential impact was converted to a percentage of TPZ using a spreadsheet (Microsoft Excel®). The potential impacts to these 5 trees are identified in table 6 as follows:

**Table 6: Trees potentially affected by the proposed residential development.**

TREE NO.	SCIENTIFIC AND COMMON NAME	TPZ	SRZ	COMMENTS*
45	<i>Ficus microcarpa var Hillii</i> (Hills Weeping Fig)	5.3 metres	2.3 metres	The proposed public domain works are located 13.2 metres from the tree at the closest point and are outside the tree's identified TPZ – no impact of substance.
46	<i>Ficus microcarpa var Hillii</i> (Hills Weeping Fig)	7.2 metres	2.7 metres	The proposed public domain works are located 13.1 metres from the tree at the closest point and are outside the tree's identified TPZ – no impact of substance.
47	<i>Ficus microcarpa var Hillii</i> (Hills Weeping Fig)	6.8 metres	2.7 metres	The proposed public domain works are located 13.2 metres from the tree at the closest point and are outside the tree's identified TPZ – no impact of substance.
48	<i>Harpephyllum caffrum</i> (Kaffir Plum)	8.5 metres	3.1 metres	The proposed public domain works are located 16.75 metres from the tree at the closest point and are outside the tree's identified TPZ – no impact of substance.
49	<i>Harpephyllum caffrum</i> (Kaffir Plum)	13.8 metres	4 metres	The proposed public domain works are located 17.45 metres from the tree at the closest point and are outside the tree's identified TPZ – no impact of substance.

The potential TPZ encroachments can be summarised as follows:

0% of TPZ impacted – no impact of significance = 5 trees (tree #s 45, 46, 47, 48 and 49)

0 to 10% - low level of impact = 0 trees

10 to 15% - low to moderate level of impact = 0 trees

15 to 20% - moderate level of impact = 0 trees

20 to 25% of TPZ impacted – moderate to high level of impact = 0 trees

25 to 35% of TPZ impacted – high level of impact = 0 trees

In Summary:

- The proposed works are outside the identified tree protection zone for tree numbers 45, 46, 47, 48 and 49 and no impact of substance is anticipated for these trees.

## 9. TREE PROTECTION MEASURES

The following generic tree protection measures are recommended to assist in minimising potential impacts that may arise during construction works.

### **A. Measures to be implemented prior to the commencement of any works on the site.**

1. Tree to be retained are to be clearly identified by signage as protected trees.
2. The tree protection zones (TPZ) of trees to be retained are to be protected by fencing during the entire construction period except for specific areas directly required to achieve construction works.
3. The tree protection fence shall be constructed of galvanised pipe at 2.4 metre spacing and connected by securely attached chain mesh fencing to a minimum height of 1.8 metres and shall be installed prior to work commencing.
4. The tree protection fencing shall be installed as closely as possible to the alignment of the identified TPZ and shall be approved and certified by the site arborist prior to commencement of any construction or demolition works on the site.

### **B. Measures to be implemented and maintained during the life of construction works on the site.**

5. Any excavation within the identified TPZ of trees to be retained shall be carried out by hand to minimize disturbance to tree roots. Roots greater than 25mm are not to be damaged or severed without prior assessment by an arborist to determine likely level of impact and the restorative actions required to minimise the impacts of root damage.
6. Tree roots between 10mm and 25mm diameter, severed during excavation, shall be cut cleanly by hand by an experienced Arborist/Horticulturist with a minimum qualification of the Horticulture Certificate or Tree Surgery Certificate.
7. The following activities/actions are prohibited from the tree protection zones:
  - Soil cut or fill including excavation and trenching
  - Soil cultivation, disturbance or compaction
  - Stockpiling storage or mixing of materials
  - The parking, storing, washing and repairing of tools, equipment and machinery
  - The disposal of liquids and refueling
  - The disposal of building materials
  - The sitting of offices or sheds
  - Any action leading to the impact on tree health or structure
8. Canopy pruning of trees identified for protection which is necessary to accommodate approved building works shall be undertaken in accordance with Australian Standard 4373-2007 'Pruning of Amenity Trees'.

## 10. USE OF TREES BY WILDLIFE

During the inspection 9<sup>th</sup> March 2020 the trees on the site were checked for signs of use by wildlife during the inspection. None of the trees showed signs of usage by wildlife such as scratch marks or the presence of scats consistent with usage by Common Brushtail Possum (*Trichosurus vulpecula*) or Common Ringtail Possum (*Pseudocheirus peregrinus*).

It is probable that a number of the trees would be used by native fauna at various times for food, shelter and roosting purposes and the retention and replacement of trees on the site will retain this opportunity.

The following bird species were noted on site (or heard in the immediate vicinity of the site) during the inspection 9<sup>th</sup> March 2020: Noisy Miner (*Manorina melanocephala*) and Rainbow Lorikeet (*Trichoglossus haematodus*).

## 11. CONCLUSIONS/RECOMMENDATIONS

Of the 52 trees on or adjacent to 2-60 Cumberland Street The Rocks that have been assessed 6 trees have been identified as having high landscape significance and as priorities for retention. An additional 13 trees have been identified as worthy of specific consideration for retention/protection if possible.

In addition to the trees identified for retention and protection there are 10 trees that have been identified as recommended for removal regardless of any development proposal.

The remaining 23 trees are identified in section 8 of the report as not requiring specific design consideration.

To facilitate construction of the proposed residential development the following 47 trees will require removal or are proposed to be removed as part of the works:

- Tree # 1 *Callistemon viminalis* (Weeping Bottlebrush)
- Tree # 2 *Syagrus romanzoffiana* (Cocos Palm, Queen Palm)
- Tree # 3 *Syagrus romanzoffiana* (Cocos Palm, Queen Palm)
- Tree # 4 *Archontophoenix alexandrae* (Alexandra Palm) x 2 specimens
- Tree # 5 *Corymbia eximia* (Yellow Bloodwood)
- Tree # 6 *Callistemon viminalis* (Weeping Bottlebrush)
- Tree # 7 *Melia azedarach* (White Cedar)
- Tree # 8 *Corymbia eximia* (Yellow Bloodwood)
- Tree # 9 *Melia azedaraches* (White Cedar)
- Tree # 10 *Eriobotrya japonica* (Loquat Tree)
- Tree # 11 *Callistemon viminalis* (Weeping Bottlebrush)
- Tree # 12 *Platanus x hybrida* (Plane Tree)
- Tree # 13 *Schefflera actinophylla* (Umbrella Tree)
- Tree # 14 *Callistemon viminalis* (Weeping Bottlebrush)

Tree # 15 *Callistemon viminalis* (Weeping Bottlebrush)  
Tree # 16 *Callistemon viminalis* (Weeping Bottlebrush)  
Tree # 17 *Callistemon viminalis* (Weeping Bottlebrush)  
Tree # 18 *Callistemon viminalis* (Weeping Bottlebrush)  
Tree # 19 *Celtis sinensis* (Chinese Hackberry)  
Tree # 20 *Callistemon viminalis* (Weeping Bottlebrush)  
Tree # 21 *Callistemon viminalis* (Weeping Bottlebrush)  
Tree # 22 *Araucaria columnaris* (Cook's Pine)  
Tree # 23 *Schefflera actinophylla* (Umbrella Tree)  
Tree # 24 *Callistemon viminalis* (Weeping Bottlebrush)  
Tree # 25 *Callistemon viminalis* (Weeping Bottlebrush)  
Tree # 26 *Callistemon viminalis* (Weeping Bottlebrush)  
Tree # 27 *Callistemon viminalis* (Weeping Bottlebrush)  
Tree # 28 *Callistemon viminalis* (Weeping Bottlebrush)  
Tree # 29 *Callistemon viminalis* (Weeping Bottlebrush)  
Tree # 30 *Callistemon viminalis* (Weeping Bottlebrush)  
Tree # 31 *Callistemon viminalis* (Weeping Bottlebrush)  
Tree # 32 *Howea fosteriana* (Kentia Palm)  
Tree # 33 *Callistemon viminalis* (Weeping Bottlebrush)  
Tree # 34 *Callistemon viminalis* (Weeping Bottlebrush)  
Tree # 35 *Eriobotrya japonica* (Loquat Tree)  
Tree # 36 *Callistemon viminalis* (Weeping Bottlebrush)  
Tree # 37 *Schefflera actinophylla* (Umbrella Tree)  
Tree # 38 *Callistemon viminalis* (Weeping Bottlebrush)  
Tree # 39 *Callistemon viminalis* (Weeping Bottlebrush)  
Tree # 40 *Callistemon viminalis* (Weeping Bottlebrush)  
Tree # 41 *Callistemon viminalis* (Weeping Bottlebrush)  
Tree # 42 *Callistemon viminalis* (Weeping Bottlebrush)  
Tree # 43 *Melia azedarach* (White Cedar)  
Tree # 44 *Callistemon viminalis* (Weeping Bottlebrush)  
Tree # 50 *Platanus x hybrida* (Plane Tree)  
Tree # 51 *Platanus x hybrida* (Plane Tree)  
Tree # 52 *Murraya paniculata* (Murraya, Orange Jessamine)

The proposed tree removals can be summarised as follows:

Retention value 1 trees (priority for retention) – 2 trees to be removed (4 to be retained)  
Retention value 2 trees (moderate landscape value - consider for retention) = 12 trees to be removed (1 to be retained)  
Retention value 3 trees (low landscape value or short ULE - not warranting specific design consideration) = 23 trees  
Retention value 4 trees (recommended for removal regardless of any development proposal) = 10 trees

To facilitate construction of the proposed residential development the following 5 trees will be potentially affected:

Tree # 45 *Ficus microcarpa var Hillii* (Hills Weeping Fig)

Tree # 46 *Ficus microcarpa var Hillii* (Hills Weeping Fig)  
Tree # 47 *Ficus microcarpa var Hillii* (Hills Weeping Fig)  
Tree # 48 *Harpephyllum caffrum* (Kaffir Plum)  
Tree # 49 *Harpephyllum caffrum* (Kaffir Plum)

The potential TPZ encroachments can be summarised as follows:

0% of TPZ impacted – no impact of significance = 5 trees (tree #s 45, 46, 47, 48 and 49)  
0 to 10% - low level of impact = 0 trees  
10 to 15% - low to moderate level of impact = 0 trees  
15 to 20% - moderate level of impact = 0 trees  
20 to 25% of TPZ impacted – moderate to high level of impact = 0 trees  
25 to 35% of TPZ impacted – high level of impact = 0 trees

In Summary:

- The proposed works are outside the identified tree protection zone for tree numbers 45, 46, 47, 48 and 49 and no impact of substance is anticipated for these trees.

It is noted that the proposed basement works will have a significant impact on the structural root zone (SRZ) of tree numbers 50 and 51 and will almost certainly render these trees unstable and at risk of failure in the short term. Given the high levels of target (human) activity in the immediate vicinity of the trees the removal of these trees is proposed prior to commencement of works.

In this regard it is noted the Consolidated Ground Floor/Public Domain Plan prepared by 360° Landscape Architects dated 4<sup>th</sup> August 2021 and identified as Drawing Number L-DA-012, Issue J 88DA identifies tree 50 will be replaced with a specimen of *Nyssa sylvatica* (Nyssa, Tupelo).

Given the site constraints (above and below ground) where the trees are located it is concluded that the removal of tree 50 and its replacement with a Nyssa is an improved long term landscape solution (NB: the pathway adjacent to the tree is lifted and cracked consistent with displacement by roots from the tree). It is recommended that tree 51 also be replaced with a *Nyssa sylvatica* (Nyssa, Tupelo).

Generic tree protection measures are identified in section 8 of this report to minimise potential impacts to the trees to be retained.



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16<sup>th</sup> August 2021

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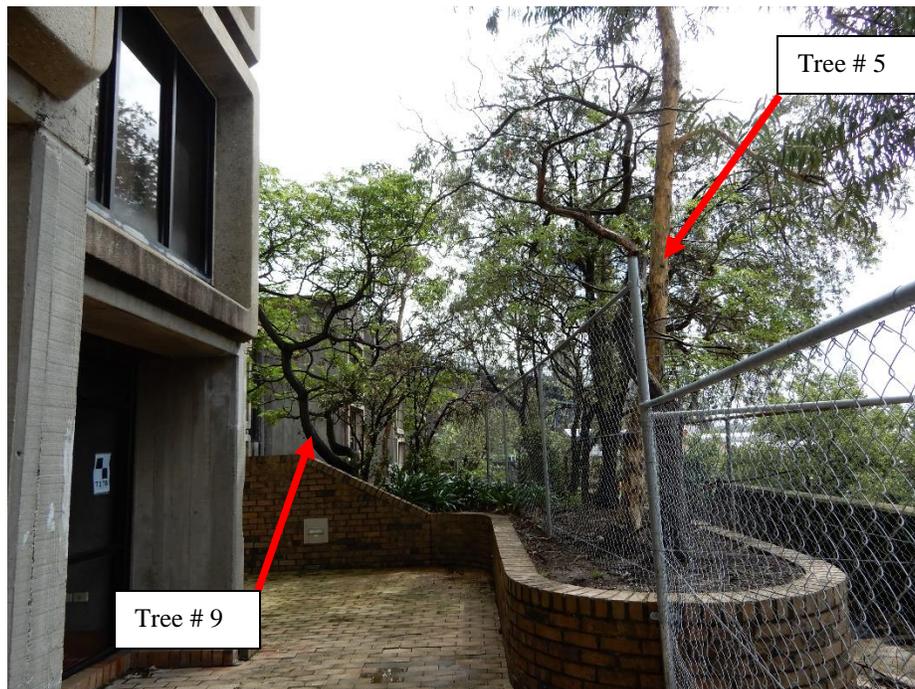
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## APPENDIX A



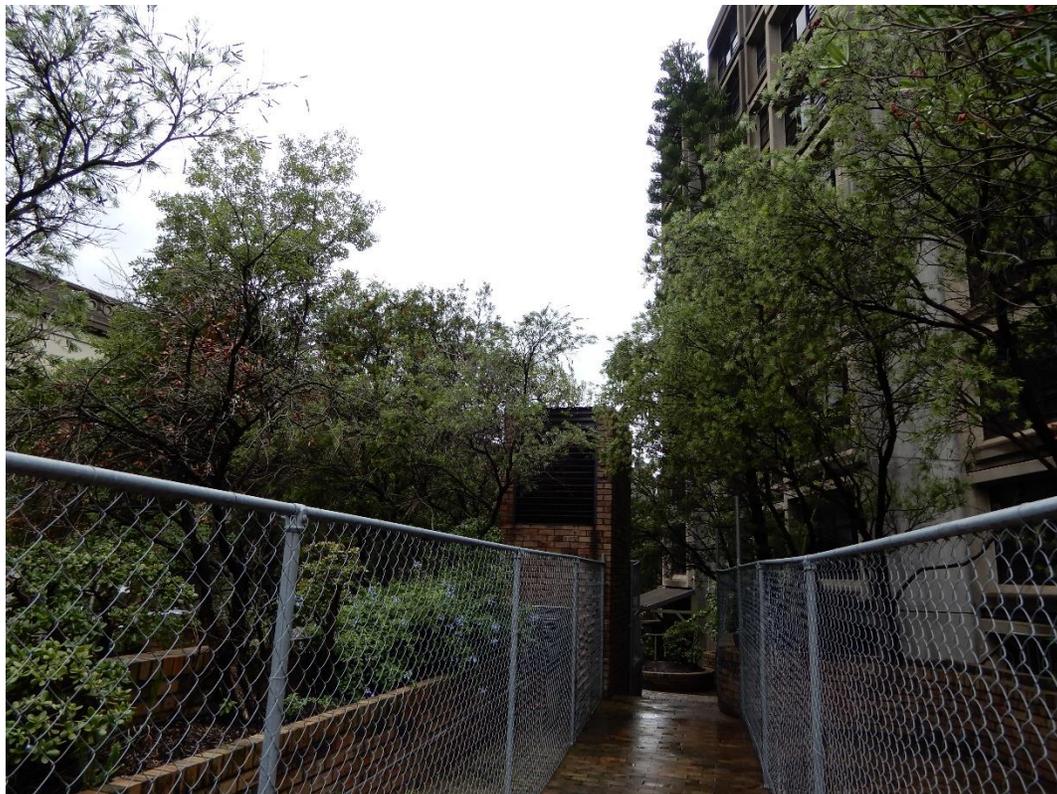
Photograph 1: Illustrating tree #s 1 to 4 and T51 on LHS (looking south).



Photograph 2: Illustrating tree #s 5 to 9 (looking north).



Photograph 3: Illustrating the area where trees 16 to 19 are located (looking south).



Photograph 4: Illustrating the area where trees 20 to 26 are located (looking north).



Photograph 5: Illustrating the group of trees identified as T25.



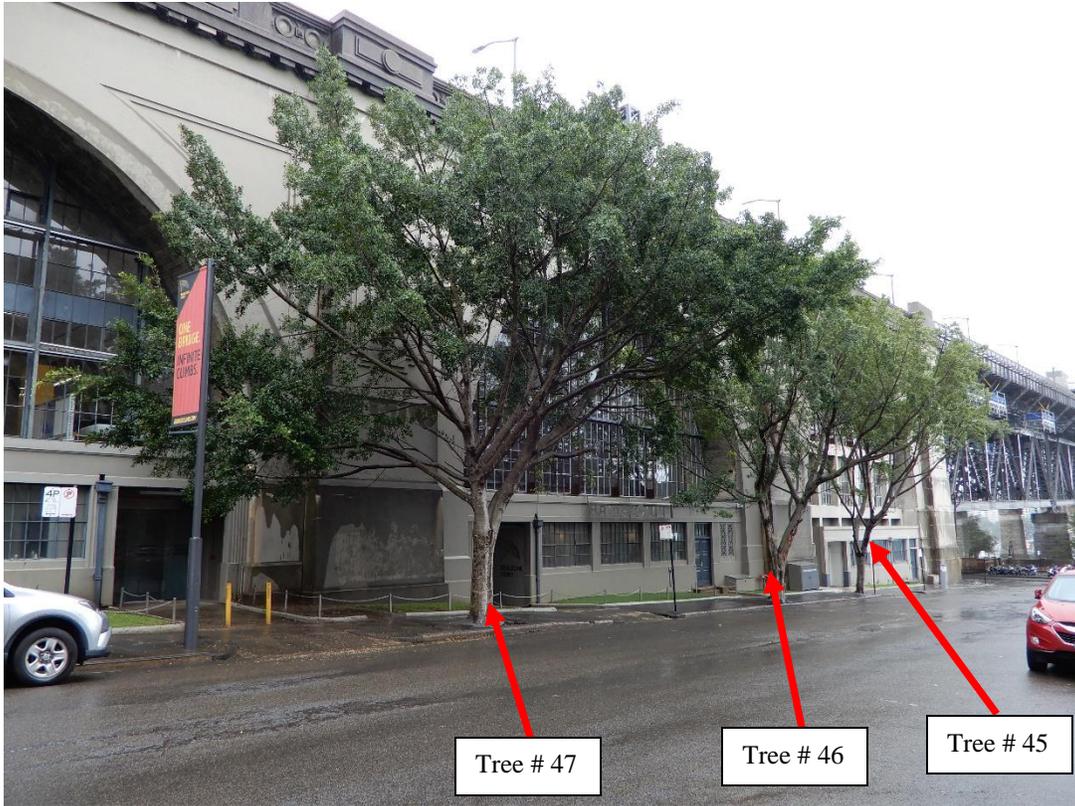
Photograph 6: Illustrating Tree # 26 – location and context.



Photograph 7: Tree # 45 - Illustrating the footpath conflict.



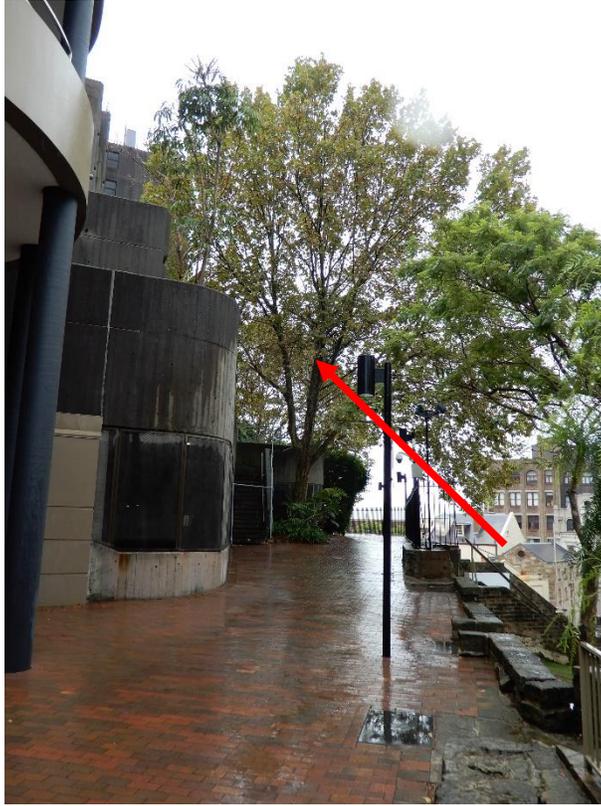
Photograph 8: Tree # 46 - Illustrating the recent branch failure and past and recent mechanical damage to lower leaders.



Photograph 7: Tree #s 45, 46 and 47 - Illustrating their location and context.



Photograph 8: Tree #s 48 and 49 - Illustrating their location and context.



Photograph 7: Illustrating the location and context of Tree # 50.



Photograph 8: Illustrating the location and context of Tree # 51.

**APPENDIX B - TREE DATA SUMMARY - SIRIUS BUILDING THE ROCKS SYDNEY**

Tree No.	Genus, Species (Common Name)	Height (m)	Canopy (m)	DBH (mm)	DBH for TPZ	DGL for SRZ	Foliage Condition	Age Class	Trunk	Trunk Lean	Crown balance	Past Pruning	Stability	Branch Attachment	Health	Vigour	Dead Wood	Pest or disease	ULE	Landscape Significance	Retention Value*	Comments
1	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	6	3 x 4	ca. 100, 130	160	230	Fair foliage condition	Semi Mature	Twin trunked	Upright trunk	Majority of canopy to the SW	No evidence of significant past pruning	Appears stable	Fair branch attachment	Moderate health	Poor vigour	15 to 20%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree's past canopy development has been suppressed. The tree displays fair branch attachment with codominant leaders from near ground level - not considered at risk of failure. At the time of inspection the tree was of moderate health and poor vigour and exhibited reduced foliage size and density and moderate to high levels of dieback.
2	<i>Syagrus romanzoffiana</i> (Cocos Palm, Queen Palm)	12	6	ca. 280	N/A	N/A	Good foliage condition	Mature	Single trunk	Upright trunk	Balanced canopy area	No evidence of significant past pruning	Appears stable	N/A	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	1 Long (> 40 years)	Environmental pest species of moderate visual significance.	4	Environmental pest species of moderate visual significance.
3	<i>Syagrus romanzoffiana</i> (Cocos Palm, Queen Palm)	12	6	ca. 300	N/A	N/A	Good foliage condition	Mature	Single trunk	Upright trunk	Balanced canopy area	No evidence of significant past pruning	Appears stable	N/A	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	1 Long (> 40 years)	Environmental pest species of moderate visual significance.	4	Environmental pest species of moderate visual significance.
4	<i>Archontophoenix alexandrae</i> (Alexandra Palm) x 2 specimens	4.5 to 6	3	ca. 70, 140	N/A	N/A	Good foliage condition	Semi Mature	Single trunk	Upright trunk	Balanced canopy area	No evidence of significant past pruning	Appears stable	N/A	Moderate health	Fair vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low landscape significance	3	At the time of inspection the tree was of moderate health and fair vigour and exhibited browning fronds (possibly due to water stress).
5	<i>Corymbia eximia</i> (Yellow Bloodwood)	8	5	ca. 220	220	280	Good foliage condition	Semi Mature	Single trunk	Upright trunk	Balanced canopy area	No evidence of significant past pruning	Appears stable	Sound branch attachment	Good health	Fair vigour	5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	
6	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	5	5	Up to ca. 140 (ca. 360 above the root flare)	360	360	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 1 metre	Appears stable	Sound branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	
7	<i>Melia azedarach</i> (White Cedar)	5	4 x 6	180, 190	260	280	Good foliage condition	Mature	Twin trunked	Upright trunk	Majority of canopy to the west	No evidence of significant past pruning	Appears stable	Sound branch attachment	Good health	Fair vigour	10%	Foliage browsing - White Cedar Moth larvae	2 Medium (15 to 40 years)	Moderate landscape significance	2	At the time of inspection the tree was of fair vigour and exhibited moderate levels of dieback. Foliage browsing evidence from White Cedar Moth larvae
8	<i>Corymbia eximia</i> (Yellow Bloodwood)	6	4	110, 180	210	320	Good foliage condition	Semi Mature	Twin trunked	Slight trunk lean to the north	Majority of canopy to the north	No evidence of significant past pruning	Appears stable	Fair branch attachment	Good health	Fair vigour	5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree's past canopy development has been suppressed. The tree displays fair branch attachment with codominant leaders from ground level - not considered at risk of failure. At the time of inspection the tree was of fair vigour and exhibited low high levels of dieback.
9	<i>Melia azedarach</i> (White Cedar)	5	6	70, 90	110	150	Good foliage condition	Semi Mature	Twin trunked	Upright trunk	Majority of canopy to the NW	No evidence of significant past pruning	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree's past canopy development has been suppressed. The tree displays fair branch attachment with codominant leaders from 1 metre - not considered at risk of failure in the short term.
10	<i>Eriobotrya japonica</i> (Loquat Tree)	6	5 x 6	ca. 160	160	230	Good foliage condition	Semi Mature	Single trunk	Upright trunk	Majority of canopy to the east	Lower limbs pruned in past to 2 metres	Appears stable	Sound branch attachment	Good health	Fair vigour	5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Environmental pest species of low to moderate visual significance.	4	At the time of inspection the tree was of fair vigour and exhibited low high levels of dieback. Environmental pest species of low to moderate visual significance.
11	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	4.5	4	Up to ca. 150 (est 280 above the root flare)	280	280	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 2 metres	Appears stable	Fair branch attachment	Good health	Fair vigour	5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low landscape significance	3	

Tree No.	Genus, Species (Common Name)	Height (m)	Canopy (m)	DBH (mm)	DBH for TPZ	DGL for SRZ	Foliage Condition	Age Class	Trunk	Trunk Lean	Crown balance	Past Pruning	Stability	Branch Attachment	Health	Vigour	Dead Wood	Pest or disease	ULE	Landscape Significance	Retention Value*	Comments
12	<i>Platanus x hybrida</i> (Plane Tree)	8	6	170	170	220	Poor foliage condition	Semi Mature	Single trunk	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 3 metres	Appears stable	Sound branch attachment	Poor health	Poor vigour	90%	No visual evidence of significant pest or disease	4 (< 5 years)	Low landscape significance	4	At the time of inspection the tree was of poor health and poor vigour with approx. 90% deadwood - almost dead.
13	<i>Schefflera actinophylla</i> (Umbrella Tree)	7	2.5	180	180	240	Good foliage condition	Semi Mature	Single trunk	Upright trunk	Balanced canopy area	No evidence of significant past pruning	Appears stable	Sound branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	1 Long (> 40 years)	Environmental pest species of low to moderate visual significance.	4	Environmental pest species of low to moderate visual significance.
14	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	4.4	4	Up to 80 (220 above the root flare)	220	220	Good foliage condition	Semi Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 1.6 metres	Appears stable	Fair branch attachment	Good health	Fair vigour	5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low landscape significance	3	
15	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	4.5	3 x 5	Up to 75 (80 above the root flare)	180	180	Good foliage condition	Semi Mature	Multi trunked	Slight trunk lean to the west	Majority of canopy to the west	Lower limbs pruned in past to 1 metre	Appears stable	Fair branch attachment	Good health	Fair vigour	5 to 10%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low landscape significance	3	The tree's past canopy development has been suppressed. The tree displays fair branch attachment with multiple leaders from near ground level - not considered at risk of failure. At the time of inspection the tree was of fair vigour and exhibited reduced foliage size and density and low levels of dieback.
16	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	5.5	3	90, 90	130	170	Fair foliage condition	Semi Mature	Twin trunked	Upright trunk	Majority of canopy to the west	Lower limbs pruned in past to 1 metre	Appears stable	Fair branch attachment	Moderate health	Fair vigour	15%	No visual evidence of significant pest or disease	3 Short (5 to 15 years)	Low landscape significance	3	The tree's past canopy development has been suppressed. At the time of inspection the tree was of moderate health and fair vigour and exhibited reduced foliage size and density and moderate levels of dieback.
17	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	4.5	5	Up to 80 (180 and 180 above the root flare)	250	250	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the NW	Lower limbs pruned in past to 1 metre	Appears stable	Fair branch attachment	Good health	Fair vigour	5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	
18	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	5	4	90, 100	130	170	Fair foliage condition	Semi Mature	Twin trunked	Slight trunk lean to the north	Majority of canopy to the north	No evidence of significant past pruning	Appears stable	Fair branch attachment	Moderate health	Fair vigour	1000%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low landscape significance	3	The tree's past canopy development has been suppressed. At the time of inspection the tree was of moderate health and fair vigour and exhibited reduced foliage density and low to moderate levels of dieback.
19	<i>Celtis sinensis</i> (Chinese Hackberry)	6	5	ca. 130	130	180	Good foliage condition	Semi Mature	Single trunk	Upright trunk	Balanced canopy area	No evidence of significant past pruning	Appears stable	Sound branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Environmental pest species of moderate visual significance.	4	Environmental pest species of moderate visual significance.
20	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	5	4 x 6	Up to 110 (280 above the root flare)	280	280	Good foliage condition	Mature	Multi trunked	Slight trunk lean to the west	Majority of canopy to the west	Lower limbs pruned in past to 1.5 metres	Appears stable	Fair branch attachment	Good health	Fair vigour	5 to 10%	No visual evidence of significant pest or disease	3 Short (5 to 15 years)	Low to moderate landscape significance	3	The tree's past canopy development has been suppressed by the building. The tree displays fair branch attachment with multiple leaders from near ground level - not considered at risk of failure. At the time of inspection the tree was of fair vigour and exhibited low to moderate levels of dieback.
21	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	5	4	Up to 130 (220 above the root flare)	220	220	Good foliage condition	Semi Mature	Multi trunked	Upright trunk	Majority of canopy to the south	Lower limbs pruned in past to 1.5 metres	Appears stable	Fair branch attachment	Good health	Fair vigour	5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Two specimens growing in close association.
22	<i>Araucaria columnaris</i> (Cook's Pine)	10	2	240	240	280	Good foliage condition	Semi Mature	Single trunk	Slight trunk lean to the west	Balanced canopy area	Lower limbs pruned in past to 2.5 metres	Appears stable	Sound branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	
23	<i>Schefflera actinophylla</i> (Umbrella Tree)	6.5	4	Up to 140 (180 x 260 above the root flare)	220	220	Good foliage condition	Semi Mature	Multi trunked	Upright trunk	Majority of canopy to the west	No evidence of significant past pruning	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Environmental pest species of low to moderate visual significance.	4	The tree displays fair branch attachment with multiple leaders with some evidence of poor attachment at junctions - not considered at risk of failure in the short term. Environmental pest species of low to moderate visual significance.

Tree No.	Genus, Species (Common Name)	Height (m)	Canopy (m)	DBH (mm)	DBH for TPZ	DGL for SRZ	Foliage Condition	Age Class	Trunk	Trunk Lean	Crown balance	Past Pruning	Stability	Branch Attachment	Health	Vigour	Dead Wood	Pest or disease	ULE	Landscape Significance	Retention Value*	Comments
24	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	6	4 x 6	Up to 110 (260 above the root flare)	260	260	Good foliage condition	Semi Mature	Multi trunked	Distinct trunk lean to the west	All canopy to the west	Lower limbs pruned in past to 1.8 metres	Appears stable	Sound branch attachment	Good health	Good vigour	5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree's past canopy development has been significantly suppressed.
25	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	5	up to 4	Up to 140 (u to 360 above the root flare)	360	360	Fair foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 1.6 metres	Appears stable	Fair branch attachment	Moderate health	Poor vigour	10%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Three specimens growing in association with composite canopy. The tree displays fair branch attachment with multiple leaders with some evidence of poor attachment at junctions - not considered at risk of failure. NB Limited view.
26	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	5	4 x 5	Up to ca. 180 (est 280 above root flare)	280	280	Good foliage condition	Semi Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 1.2 metres	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Two specimens growing in close association with composite canopy.
27	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	4.5	4	Up to 140 (260 above the root flare)	260	260	Fair foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 1 metre	Appears stable	Fair branch attachment	Good health	Fair vigour	10%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	At the time of inspection the tree was of fair vigour and exhibited reduced foliage density and moderate levels of dieback.
28	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	5	3 x 4	Up to 160 (260 x 400 above the root flare)	330	330	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy on an E x W axis	Lower limbs pruned in past to 1 metre	Appears stable	Fair branch attachment	Good health	Fair vigour	10%	Evidence of decay in basal trunk on east side.	2 Medium (15 to 40 years)	Moderate landscape significance	2	Evidence of decay in basal trunk on east side. The tree displays fair branch attachment with codominant leaders from ground level and multiple leaders from near ground level - not considered at risk of failure in the short term.
29	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	6	4	120, 120	170	250	Good foliage condition	Semi Mature	Twin trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 1.7 metres	Appears stable	Fair branch attachment	Good health	Fair vigour	5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	At the time of inspection the tree was of fair vigour and exhibited low levels of dieback.
30	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	5	4	ca. 140, 220	260	300	Good foliage condition	Mature	Twin trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 3 metres	Appears stable	Fair branch attachment	Good health	Fair vigour	5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	At the time of inspection the tree was of fair vigour and exhibited low levels of dieback.
31	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	6	8	Up to ca. 220 (ca. 300 above the root flare)	300	300	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 3 metres	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	
32	<i>Howea fosteriana</i> (Kentia Palm)	5	3	ca. 130	N/A	N/A	Good foliage condition	Mature	Single trunk	Upright trunk	Balanced canopy area	No evidence of significant past pruning	Appears stable	N/A	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	1 Long (> 40 years)	Low to moderate landscape significance	3	
33	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	6	4	Up to ca. 140 (ca. 270 above the root flare)	270	270	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the west	Lower limbs pruned in past to 2.5 metres	Appears stable	Fair branch attachment	Good health	Fair vigour	5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	At the time of inspection the tree was of fair vigour and exhibited low levels of dieback.
34	<i>Celtis sinensis</i> (Chinese Hackberry)	7	4 and 4	ca 160 at 1.8 metres	200	240	Good foliage condition	Semi Mature	Single trunk	Upright trunk	Balanced canopy area	No evidence of significant past pruning	Appears stable	Sound branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Environmental pest species of moderate visual significance.	4	Two semi mature specimens growing in close association. Environmental pest species of moderate visual significance.
35	<i>Eriobotrya japonica</i> (Loquat Tree)	5	4	ca 100 at 1.8 metres	150	200	Good foliage condition	Semi Mature	Single trunk	Upright trunk	Majority of canopy to the NW	Lower limbs pruned in past to 1.8 metres	Appears stable	Fair branch attachment	Good health	Fair vigour	5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Environmental pest species of low to moderate visual significance.	4	Environmental pest species of low to moderate visual significance.

Tree No.	Genus, Species (Common Name)	Height (m)	Canopy (m)	DBH (mm)	DBH for TPZ	DGL for SRZ	Foliage Condition	Age Class	Trunk	Trunk Lean	Crown balance	Past Pruning	Stability	Branch Attachment	Health	Vigour	Dead Wood	Pest or disease	ULE	Landscape Significance	Retention Value*	Comments
36	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	5	6	Up to ca. 140 (ca 250 above the root flare)	250	250	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	No evidence of significant past pruning	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	
37	<i>Schefflera actinophylla</i> (Umbrella Tree)	12	6	Up to ca 230 (ca 500 above the root flare)	500	500	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Upper branches pruned for OH wires on west	Appears stable	Fair to poor branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	3 Short (5 to 15 years)	Environmental pest species of moderate visual significance.	4	The tree displays fair to poor branch attachment with multiple leaders from 0.6 metres with some evidence of poor attachment at the junction - not considered at risk of failure in the short term. Located in narrow planter area of limited soil volume. Exempt species.
38	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	8	8	ca. 180 and 220	280	450	Fair foliage condition	Mature	Twin trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 2.5 metres, upper branches pruned for OH wires on west	Appears stable	Fair branch attachment	Good health	Fair vigour	5 to 10%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	Located in narrow planter area of limited soil volume. At the time of inspection the tree was of fair vigour and exhibited low to moderate levels of dieback.
39	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	4.5	4	ca 150	150	200	Good foliage condition	Semi Mature	Single trunk	Upright trunk	Balanced canopy area	No evidence of significant past pruning	Appears stable	Sound branch attachment	Good health	Fair vigour	5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	At the time of inspection the tree was of fair vigour and exhibited low to moderate levels of dieback.
40	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	5	4	ca. 140, 140	200	230	Good foliage condition	Semi Mature	Twin trunked	Upright trunk	Majority of canopy to the south	No evidence of significant past pruning	Appears stable	Fair branch attachment	Good health	Fair vigour	5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	At the time of inspection the tree was of fair vigour and exhibited low to moderate levels of dieback.
41	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	5	4	ca. 140, 140	200	230	Good foliage condition	Semi Mature	Twin trunked	Upright trunk	Balanced canopy area	No evidence of significant past pruning	Appears stable	Fair branch attachment	Good health	Fair vigour	10%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	At the time of inspection the tree was of fair vigour and exhibited low to moderate levels of dieback.
42	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	5	3	Up to 120 (230 above the root flare)	230	230	Fair foliage condition	Semi Mature	Multi trunked	Slight trunk lean to the west	All canopy to the west	Lower limbs pruned in past to 2.5 metres	Appears stable	Fair branch attachment	Good health	Fair vigour	5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree's past canopy development has been suppressed.
43	<i>Melia azedarach</i> (White Cedar)	6	7 x 9	140, 210	250	290	Good foliage condition	Mature	Twin trunked	Upright trunk	All canopy to the north	No evidence of significant past pruning	Appears stable	Sound branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	The tree's past canopy development has been suppressed. Exempt species.
44	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	3.5	4	Up to 120 (290 above the root flare)	290	290	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the south	Lower limbs pruned in past to 0.6 metres	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree displays fair branch attachment with multiple leaders from near ground level - not considered at risk of failure.
45	<i>Ficus microcarpa var Hillii</i> (Hills Weeping Fig)	16	12	400 x 480	440	430	Good foliage condition	Mature	Single trunk	Upright trunk	Majority of canopy to the east	Lower limbs pruned in past to 4 metres	Appears stable	Fair branch attachment	Good health	Fair vigour	10%	No visual evidence of significant pest or disease	1 Long (> 40 years)	Moderate to high landscape significance	2	Conflict with adjacent pathway/kerb. The tree displays fair branch attachment with codominant leaders from 2 metres with some evidence of poor attachment at the junction - not considered at risk of failure in the short term. At the time of inspection the tree was of fair vigour and exhibited low to moderate levels of dieback.
46	<i>Ficus microcarpa var Hillii</i> (Hills Weeping Fig)	16	15	380, 470	600	600	Good foliage condition	Mature	Twin trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 4 metres	Appears stable	Fair to poor branch attachment	Good health	Good vigour	5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	High landscape significance	1	The tree displays fair to poor branch attachment with evidence of a recent branch failure on the east side of the lower crown (possibly could be the result of trunk/vehicle impact). Recent mechanical damage to lower trunk and leader over road from vehicle impact. Conflict with pathway/kerb.
47	<i>Ficus microcarpa var Hillii</i> (Hills Weeping Fig)	17	14	570	570	600	Good foliage condition	Mature	Single trunk	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 4 metres	Appears stable	Sound branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	1 Long (> 40 years)	High landscape significance	1	Conflict with pathway/kerb.
48	<i>Harpephyllum caffrum</i> (Kaffir Plum)	14	11 x 14	710	710	860	Good foliage condition	Mature	Single trunk	Upright trunk	Majority of canopy to the east	Lower limbs pruned in past to 4 metres	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	1 Long (> 40 years)	High landscape significance	1	

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49	<i>Harpephyllum caffrum</i> (Kaffir Plum)	16	12 x 17	1100 x 1200	1150	1600	Good foliage condition	Mature	Single trunk	Upright trunk	Majority of canopy to the east	Lower limbs pruned in past to 4 metres	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	1 Long (> 40 years)	High landscape significance	1	Some reaction wood in lower trunk - considered likely to be from crown/branch loading rather than internal structural issues but monitoring is recommended.
50	<i>Platanus x hybrida</i> (Plane Tree)	18	16	540 x 640	590	720	Good foliage condition	Mature	Single trunk	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 4 metres	Appears stable	Fair branch attachment	Good health	Good vigour	5%	Some foliage damage likely due to Sycamore Lace Bug	1 Long (> 40 years)	High landscape significance	1	The tree displays fair branch attachment with multiple leaders from 3 metres - not considered at risk of failure. Limited TPZ area due to adjacent infrastructure, level changes etc. Pathway adjacent to tree lifted and cracked consistent with displacement by roots. Some foliage damage likely due to Sycamore Lace Bug
51	<i>Platanus x hybrida</i> (Plane Tree)	18	16	520 x 620	570	730	Good foliage condition	Mature	Single trunk	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 4 metres	Appears stable	Fair branch attachment	Good health	Good vigour	5%	Some foliage damage likely due to Sycamore Lace Bug	1 Long (> 40 years)	High landscape significance	1	Limited TPZ area due to adjacent infrastructure, level changes etc. Pathway adjacent to tree lifted and cracked consistent with displacement by roots. Some foliage damage likely due to Sycamore Lace Bug
52	<i>Murraya paniculata</i> (Murraya, Orange Jessamine)	Up to 4	Up to 3	Up to 90 (Up to ca. 320 above the root flare)	320	320	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the east	Hedged in past	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	1 Long (> 40 years)	Low to moderate landscape significance	3	A row of 8 specimens. Canopy bias to east due to adjacent structures. The trees display fair branch attachment with multiple leaders from near ground level - not considered at risk of failure.

ca = approximate diameter at breast height (DBH) estimated from nearest property boundary or fence where trees were located on adjoining properties

\* Retention Values: 1 - High (Priority for retention); 2 - Moderate (Consider for retention); 3 - Low or short ULE (Not warranting specific design consideration) and 4 - Remove (very short ULE, structurally unsound, weed species etc.)



BRADFIELD HIGHWAY

STREET

ATHERDEN STREET

STREET

CUMBERLAND

GLoucester WALK

PLAYFAIR

"SIRIUS" No.36-50 MULTI STOREY CONCRETE APARTMENT BUILDING

DP 264104

DP 258607

DP 246098

DP 264104



Revision	Date	Description	Reference
E	19/05/20	DETAIL & LEVELS ADDED IN ATHERDEN STREET (SHEET 2)	50025 007

Revision	Date	Description	Reference
D	07/04/20	FURTHER ELEVATIONS ADDED	50025 004
C	31/03/20	BIM & LASER DETAIL ADDED	50025 004
B	18/03/20	ADDITIONAL DETAIL & LEVEL ADDED	50025 004
A	12/01/18	DETAILS FOR LOT 101 DP264104 ADDED	50025 001

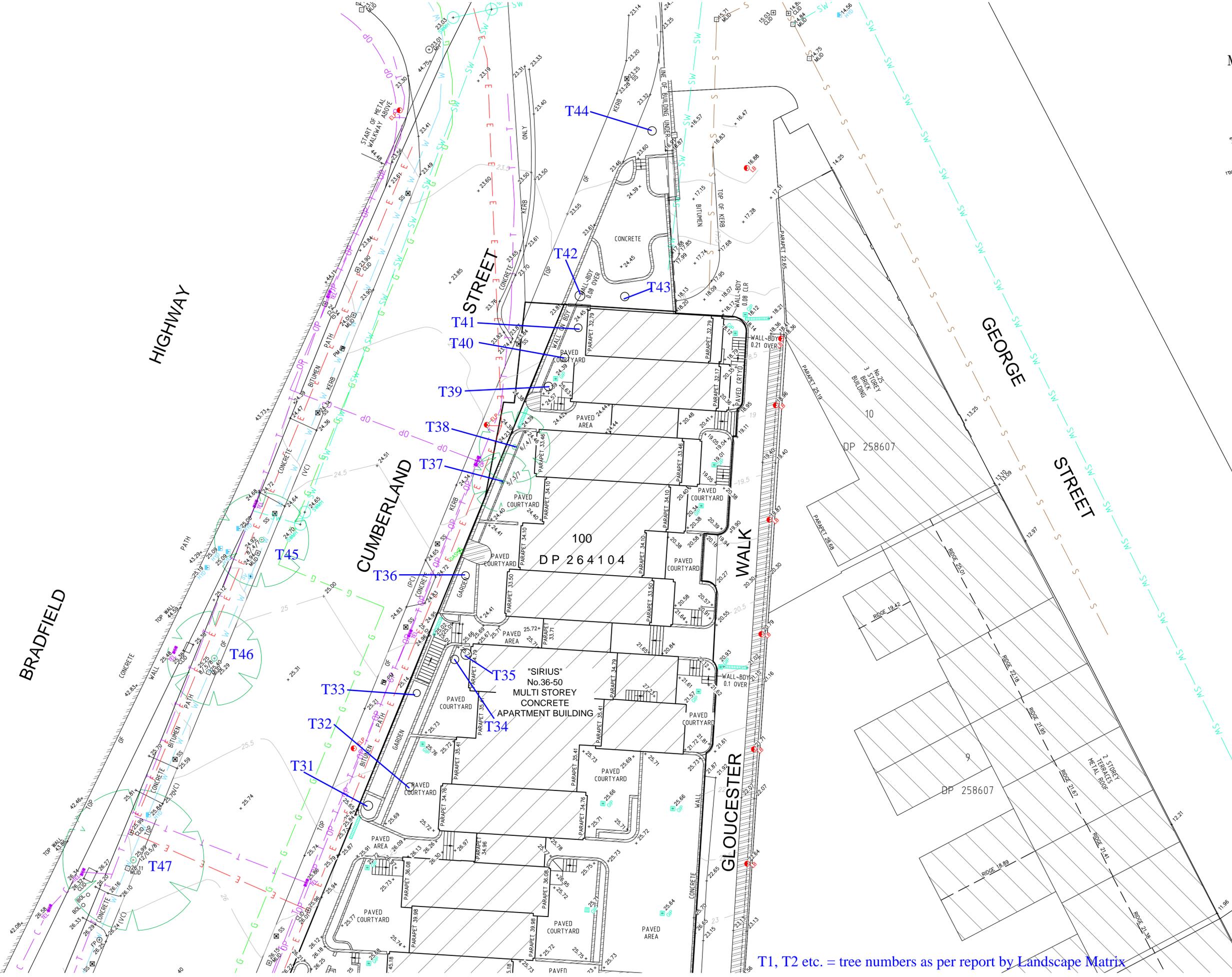
THIS IS THE PLAN REFERRED TO IN MY LETTER DATED:  
 Registered Surveyor NSW  
 www.lts.com.au



Client DEDICO DEVELOPMENT SERVICES  
 Drawing title  
 PLAN OF DETAIL AND LEVELS OVER LOTS 100 & 101 IN DP 264104 KNOWN AS "SIRIUS" No36-55 CUMBERLAND STREET, THE ROCKS

datum AHD  
 site Area 3664.5m<sup>2</sup>  
 IGA SYDNEY  
 reference number 50025 DT 004  
 scale 1:150 @A1  
 date of survey 06/07/17  
 SHEET 2 OF 9

T1, T2 etc. = tree numbers as per report by Landscape Matrix



T1, T2 etc. = tree numbers as per report by Landscape Matrix



REFER TO NOTES AND LEGEND



Revision	Date	Description	Reference
E	19/05/20	DETAIL & LEVELS ADDED IN ATHERDEN STREET (SHEET 2)	50025 007
A	12/01/18	DETAILS FOR LOT 101 DP264104 ADDED	50025 001

Revision	Date	Description	Reference
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C	31/03/20	BIM & LASER DETAIL ADDED	50025 004
B	18/03/20	ADDITIONAL DETAIL & LEVEL ADDED	50025 004

THIS IS THE PLAN REFERRED TO IN MY LETTER DATED:  
 Registered Surveyor NSW  
**LTS**  
 LOCKLEY  
 Registered Surveyors NSW  
 www.lts.com.au

Client **DEDICO DEVELOPMENT SERVICES**  
 Drawing title  
**PLAN OF DETAIL AND LEVELS OVER LOTS 100 & 101 IN DP 264104 KNOWN AS "SIRIUS" No36-55 CUMBERLAND STREET, THE ROCKS**

datum **AHD**  
 site Area **3664.5m<sup>2</sup>**  
 IGA **SYDNEY**  
 reference number **50025 DT 004**  
 scale **1:150 @A1**  
 date of survey **06/07/17**  
 SHEET **9**