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- Australian Institute of Horticulture
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Arborist Report

PROJECT: 164 – 194 WILLIAM STREET
WOOLLOOMOOLOO NSW 2031
Ref: 2025 – 1362
Job 68053

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EXECUTIVE SUMMARY

This Arboricultural Impact Assessment has been prepared by Sir William D Home of Dr Treegood to accompany the proposed State Significant Development Application (**SSDA**) for a mixed-use infill affordable housing development at 164-172 and 174-194 William Street Woolloomooloo. The site is made up of two (2) lots. The legal description of the site is outlined in Table 1.

Table 1 - Legal Description

Property Address	Title Description
164-172 William Street, Woolloomooloo	Lot 52 in DP1049805
174-194 William Street, Woolloomooloo	Lot 1 in DP816050

This report has been prepared to address the Secretary's Environmental Assessment Requirements (**SEARs**) issued for the project (SSD-80211463).

This report concludes that the proposed development is suitable and warrants approval subject to the implementation of the mitigation measures outlined throughout this report.

Following the implementation of the recommended mitigation measures, the remaining impacts are appropriate.

INTRODUCTION AND BACKGROUND

Dr Treegood has been commissioned by William Street Residential Pty Ltd to prepare this report in accordance with the technical requirements of the Secretary's Environmental Assessment Requirements (SEARs), and in support of the State Significant Development Application (SSD-80211463) for the proposed mixed-use infill affordable housing development at 164-172 and 174-194 William Street Woolloomooloo.

Following the Design Excellence Competition, the scheme has been revised to include In-fill Affordable Housing (**IAH**) in line with the NSW Government's policy under the *State Environmental Planning Policy (Housing) 2021 (Housing SEPP)*. This policy allows for a 30% increase in Floor Space Ratio (**FSR**) and building height when 15% of the total FSR is provided as affordable housing for 15 years. The proposed development meets these criteria and is eligible for the bonus uplift.

Given the residential component's Capital Investment Value (**CIV**) exceeds \$75 million, an SSDA pathway can be taken. The proposal retains key design principles recommended by the Design Excellence Panel and aims to provide additional residential dwellings with a 30% increase in GFA and building height, in accordance with the Housing SEPP.

The purpose of the project is to facilitate the delivery of a high-quality mixed-use development containing residential and retail uses as well as a centrally located park, public domain improvements and improved through-site connectivity at a strategically located site. The proposal seeks to deliver a built form outcome that responds appropriately to its location on William Street in Woolloomooloo and in close proximity to Kings Cross Station and the Sydney CBD. Furthermore, the proposed scheme seeks to deliver an outcome that is consistent with the desired and evolving character of the Woolloomooloo and Potts Point area.

Specifically, this SSDA seeks consent for:

- 227 apartments (167 market housing, 60 affordable housing units)
- Ground floor retail and commercial uses with 7 – 18 storeys of residential tower across four buildings being:
 - FJC - William Street (West)
 - FJC - William Street (East)
 - Studio Bright – Forbes Street
 - Tribe Studio – Dowling Street
- A publicly accessible central park
- Public domain works and improved through-site links
- Four basement levels for parking, services and storage
- Vehicular and loading access from Forbes Street

This report has been prepared in response to the requirements contained within SEARs dated 21 February 2025 and issued for SSD-80211463. Specifically, this report has been prepared to respond to the SEARs requirement issued below.

Table 1 - SEARs Requirements (Example, amend as required by discipline)

Item	Description of Requirement	Section Reference (this Report)
Arboricultural Impact Assessment	<ul style="list-style-type: none"> ▪ If the proposal involves impacts to trees, provide an Arboricultural Impact assessment that assesses the number, location, condition and significance of trees to be removed and retained including: <ul style="list-style-type: none"> – any existing canopy coverage to be retained on-site. – tree root mapping. if the proposal involves significant impacts to tree-protection zones of retained trees identified as being significant 	Arborist Report

THE SITE

The site is located at 164-172 and 174-194 William Street Woolloomooloo within the City of Sydney LGA. The site is comprised of multiple allotments and is legally described as:

- 164-172 William Street, Woolloomooloo
 - Lot 52 in DP1049805
- 174-194 William Street, Woolloomooloo
 - Lot 1 in DP816050

The land size totals 6,398m² and consists of a southern frontage to William Street, an eastern frontage to Dowling Street, a western frontage to Forbes Street and northern frontage to Judge Lane.

SURROUNDING CONTEXT

The immediate urban context surrounding the site is characterised by a mix of medium density residential, commercial, and retail uses. The site is in close proximity to Hyde Park, The Domain, and Rushcutters Bay Reserve. There are a number of educational and health services in proximity to the site, providing ample infrastructure support for the community.

William Street, to which the site fronts, is a classified road providing connection between the Eastern Suburbs of Sydney and the CBD. Vehicle access is currently provided from six points on the site from Judge Lane, Forbes Street, and Dowling Street. Pedestrian access to the site is currently available from all frontages.

The site is highly accessible to both bus and rail services, being approximately 300m away from Kings Cross Railway Station and having direct access to bus services on William Street that provide connections through the Metropolitan Transport Network.

At the time of lodgement, the site is improved by a warehouse style structure and glass office building to the site's frontage and an at-grade private carpark to the northwestern portion of the site.

Figure 1 – Local Context

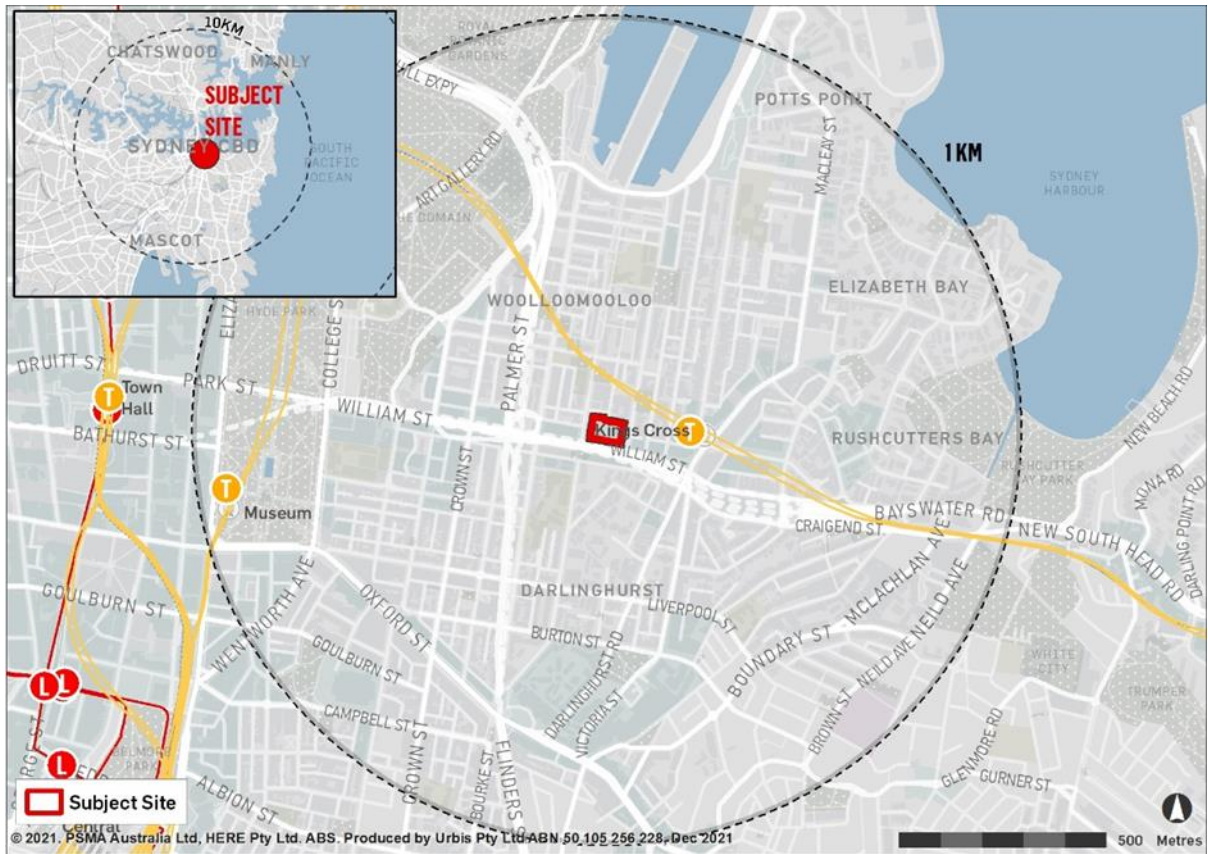


Figure 2 -The Site



1 Summary

- 1.1 An assessment was carried out on 15 trees. All these trees are growing on council land and most of these trees have been planted at a much later time after the construction of the existing buildings.
- 1.2 Trees 1-4 are growing in Forbes Street. The location of Tree 4 is not on the survey and its location needs to be updated. Tree 1 – *Platanus x hybrida* has a large cavity at the base of the tree which extends up the trunk.
- 1.3 Tree 3 *platanus x hybrida* is growing next to existing driveway. This driveway is to be expanded to allow access to proposed loading dock. Tree 3 falls in the footprint of driveway. Tree 3 requires to be removed. The proposal is to replant new tree on the high side of new driveway.
- 1.4 Trees 1,2,4 are being retained. There will be no canopy loss from proposed building works or root loss.
- 1.5 Trees 5-10 – *Platanus x hybrida* are growing on William Street. The existing building has sections extending below ground level. The proposal is to remove the existing building and rebuild in the same footprint. The canopy from tree 5-10 has a minimal of 1 metre clearance from existing building. There will be no canopy loss from proposed building. There will be no impact Existing roots as there is no excavation works will be undertaken outside existing building footprint.
- 1.6 Trees 11-15 – *Liriodendron tulipifera* are growing on Dowling Street. They will have no root impact as the proposed building is in the same footprint of existing building. The canopy of these trees is not growing over the existing building. No canopy is required to be pruned for construction of new building.
- 1.7 Trunk protection needs to be installed on all council trees. There will be limitations installing tree protection fencing outside of existing tree pits as footpath cover structural root zones.

2 Aims of the Report

- 2.1 Carry out site inspection on the trees growing in 164-194 William Street and any trees growing within a minimum 5-metre radius from the property alignment.
- 2.2 Health and structure ratings, tree protection zones (TPZ) and structural root zones (SRZ) are to be given.

3 Methodology

- 3.1 In preparation of this report, a ground level visual tree assessment (VTA¹) was undertaken.
- 3.2 No aerial (climbing) inspections, woody tissue testing, or tree root mapping were undertaken as part of the preparation of this report.
- 3.3 Heights, widths were estimated by eye from ground level. By putting a given measurement on the trunk (of two metres with a tape measure) and standing back at an appropriate distance where the top of the tree and based the tree can be seen, and also same measurement was used to determine the width of the tree. diameter tape was used to take measurements of diameter of trunk at 1.4 metres. Where the diameters were estimated due to man-made structures or access to neighbouring property was not available, an A4 piece of paper was used or the clipboard which has 30-centimetre markings, or a tape was placed next the trunk of the tree.
- 3.4 The comments and recommendations contained in this report are based on findings from the site inspection. Common names have been used in site inspections in Section 5 of report. botanical names have been used in site assessment sheets with common names section 12.
- 3.5 This report has been prepared in accordance with AS4970-2009 – Protection of Trees on Development Sites.
- 3.6 SULE categories L=long, tree that appears to be returnable within an acceptable level of risk for more than 40 years. M=medium, a tree that appears to be returnable within acceptable level risk for 15 - 40 years. SH=short, Tree that appears to be returnable within acceptable level risk for 5- 15 years. R= remove, a tree with a high level of risk that would need to be removed within the next five years (listed weed trees will also be given the removal category). SM= young or small trees, U=unstable.
- 3.7 Long SULE (A) structurally sound trees located in positions that can accommodate future growth. (B) storm damage or defects trees that could be made suitable for retention in the long term by remedial tree surgery. (C) Trees all the species significant for historical, commemorative or rarity reasons that would warrant extraordinary efforts to secure their long-term retention.
- 3.8 Medium SULE (A) trees that may only live between 15 and 40 more years. (B) Trees that may live for then 40 years but would be removed to allow the safe development of more suitable individuals. (C) Trees that may live for more than 40 years but would be removed during the course of normal management for safety or nuisance reasons. (B)

¹ VTA-Visual Tree Assessment undertaken by tree professionals is a recognised (International Society of Arboriculture) systematic method of identifying tree characteristics as hazard potential. Journal of Arboriculture, Vol. 22, No. 6, Nov. 1996. VTA is also an assessment method described by Claus Mattheck in the Body Language of Trees – a handbook for failure analysis. The Stationery Office, London (1994).

Storm damage or defect trees maybe made suitable for retention in the medium turn by remedial work.

3.9 Short SULE (A) trees that may only live between 5 and 15 more years. (B) Trees that may live for more than 15 years but would be removed to allow the safe development of more suitable individuals. (C) my live for more than 15 years but would be removed during the course of normal management for safety or nuisance reasons. (D) Storm damaged or defective trace that require substantial media work to make safe and are only suitable for attention in the short term.

3.10 Remove SULE rating. (A) dead tree. (B) Dying or suppressed and declining trees fruit disease or inhospitable conditions. (C) dangerous tree through instability or recent loss of adjacent trees. (D) dangerous tree through structural defects including cavities, decay, including bark, wounds, or poor form. (E) Damage trees that are considered unsafe to retain. (F) Trees that will become dangerous after removal of other trees for the reasons given in points(A) to (E).

3.11 Young or small Trees SULE rating. (A) trees which are less than five metres in height. (B) trees which are over 5 in height but less than 15 years old.

3.12 TABLE 1 – TREE RETENTION VALUES – ASSESSMENT METHODOLOGY

ESTIMATED LIFE EXPECTANCY	LANDSCAPE SIGNIFICANCE RATING						
	1	2	3	4	5	6	7
Long - Greater than 40 years	High Retention Value						
Medium - 15 to 40 years			Moderate Retention Value				
Short - 5 to 15 years				Low Retention Value			
Transient - Less than 5 years			Very -Low Retention Value				
Dead or Potentially Hazardouz							

THE FOLLOWING TABLE DESCRIBES THE IMPLICATIONS OF THE RETENTION VALUES ON SITES LAYOUT AND DESIGN

3.13 TABLE 2 – TREE RETENTION PRIORITIES

RETENTION VALUE	RECOMMENDED ACTION
“HIGH”	<p>These trees considered worthy of preservation as such careful consideration should be given to their retention as a priority.</p> <p>Proposed site design and placement of building and infrastructure should consider the recommended setbacks as discussed in the following section (refer also Appendix 2) to avoid any adverse impact on the trees.</p> <p>In addition to Tree Protection Zones, the extent of the canopy (canopy drip-line) should also considered, particularly in relation to high rise developments. Significant pruning of the trees to accommodate the building envelope or temporary scaffolding is generally not acceptable.</p>
“MODERATE”	<p>The retention of these trees is desirable, but not essential.</p> <p>These trees should be retained as part of any proposed development if possible. However, these trees are considered less critical for retention.</p> <p>If these trees must be removed, replacement planting should be considered in accordance with Council’s Tree Replenishment Policy to compensate for loss of amenity (refer also Section 9).</p>
“LOW”	<p>These trees are not considered to potentially to worthy of any special measures to ensure their preservation, due to current health, condition, or suitability. They do not have any special ecological, heritage or amenity value or these values are substantially diminished due to their SULE.</p> <p>These trees should not be considered as a constraint to the future development of the site.</p>
“VERY LOW”	<p>These trees are considered potentially hazardous or very poor specimens or may be environmental or noxious weeds.</p> <p>The removal of these trees is therefore recommended regardless of the implications of any proposed development.</p>

3.14 Tree Age Classification recorded as one of six (6) categories:

- a) Y - Young. Recently planted or establishing tree that could be transplanted without specialist equipment, ie up to 12-14 cms stem girth.
- b) S/M - Semi-mature. An established tree but one which has not reached its potential ultimate height and has significant growth potential.
- c) M - Mature. A mature specimen with limited potential for any significant increase in size but with a reasonable safe useful life expectancy.
- d) O/M - Over-mature. A senescent or moribund specimen with a limited safe useful life expectancy. Possibly also containing sufficient structural defects with attendant safety and/or duty of care implications.
- e) V - Veteran. An over-mature specimen of high value due to either its age, size and/or ecological significance
- f) D - Dead.

3.15 LANDSCAPE SIGNIFICANCE

(1) *Methodology for Determining Landscape Significance*

- A. The significance of a tree in the landscape is a combination of its environmental, heritage and amenity values. Whilst these values may be fairly subjective and difficult to assess consistently, some measure is necessary to assist in determining the retention value of each tree. To ensure a consistent approach, the assessment criteria shown in Appendix 1 have been used in this assessment.
- B. A rating has been applied to each tree to give an understanding of the relative significance of each tree in the landscape and to assist in determining priorities for retention, in accordance with the following categories:

- 1. Significant**
- 2. Very High**
- 3. High**
- 4. Moderate**
- 5. Low**
- 6. Very Low**
- 7. Insignificant**

RATING	HERITAGE VALUE	ECOLOGICAL VALUE	AMENITY VALUE
1. SIGNIFICANT	The subject tree is listed as a Heritage Item under the Local Environment Plan (LEP) with a local, state or national level of significance or is listed on Council's Significant Tree Register	The subject tree is scheduled as a Threatened or Vulnerable Species as defined under the provisions of the <i>Biodiversity Conservation Act 2016</i> (NSW) or the <i>Environment Protection and Biodiversity Conservation Act 1999</i> .	The subject tree has a very large live crown size exceeding 300m ² with normal to dense foliage cover, is located in a visually prominent position in the landscape, exhibits very good form and habit typical of the species
	The subject tree forms part of the curtilage of a Heritage Item (building /structure /artefact as defined under the LEP) and has a known or documented association with that item	The tree is a locally indigenous species, representative of the original vegetation of the area and is known as an important food, shelter or nesting tree for endangered or threatened fauna species	The subject tree makes a significant contribution to the amenity and visual character of the area by creating a sense of place or creating a sense of identity
	The subject tree is a Commemorative Planting having been planted by an important historical person (s) or to commemorate an important historical event	The subject tree is a Remnant Tree, being a tree in existence prior to development of the area	The tree is visually prominent in view from surrounding areas, being a landmark or visible from a considerable distance.
2. VERY HIGH	The tree has a strong historical association with a heritage item (building/structure/artefact/garden etc) within or adjacent the property and/or exemplifies a particular era or style of landscape design associated with the original development of the site.	The tree is a locally-indigenous species, representative of the original vegetation of the area and is a dominant or associated canopy species of an Endangered Ecological Community (EEC) formerly occurring in the area occupied by the site.	The subject tree has a very large live crown size exceeding 200m ² ; a crown density exceeding 70% (normal-dense), is a very good representative of the species in terms of its form and branching habit or is aesthetically distinctive and makes a positive contribution to the visual character and the amenity of the area
3. HIGH	The tree has a suspected historical association with a heritage item or landscape supported by anecdotal or visual evidence	The tree is a locally-indigenous species and representative of the original vegetation of the area and the tree is located within a defined Vegetation Link / Wildlife Corridor or has known wildlife habitat value	The subject tree has a large live crown size exceeding 100m ² ; The tree is a good representative of the species in terms of its form and branching habit with minor deviations from normal (e.g. crown distortion/suppression) with a crown density of at least 70% (normal); The subject tree is visible from the street and surrounding properties and makes a positive contribution to the visual character and the amenity of the area
4. MODERATE	The tree has no known or suspected historical association, but does not detract or diminish the value of the item and is sympathetic to the original era of planting.	The subject tree is a non-local native or exotic species that is protected under the provisions of the local or state planning controls (Development Control Plan etc).	The subject tree has a medium live crown size exceeding 40m ² ; the tree is a fair representative of the species, exhibiting moderate deviations from typical form (distortion/suppression etc) with a crown density of more than 50% (thinning to normal); and The tree is visible from surrounding properties, but is not visually prominent – view may be partially obscured by other vegetation or built forms. The tree makes a fair contribution to the visual character and amenity of the area.
5. LOW	The subject tree detracts from heritage values or diminishes the value of a heritage item	The subject tree is scheduled as exempt (not protected) under the provisions of the local or state planning controls (DCP etc) due to its species, nuisance or position relative to buildings or other structures.	The subject tree has a small live crown size of less than 40m ² and can be replaced within the short term (5-10 years) with new tree planting
6. VERY LOW	The subject tree is causing significant damage to a heritage Item.	The subject tree is listed as an Environment Weed Species in the relevant Local Government Area, being invasive, or is a known nuisance species.	The subject tree is not visible from surrounding properties (visibility obscured) and makes a negligible contribution or has a negative impact on the amenity and visual character of the area. The tree is a poor representative of the species, showing significant deviations from the typical form and branching habit with a crown density of less than 50% (sparse).
7. INSIGNIFICANT	The tree is completely dead and has no known heritage value (or any habitat value)	The tree is scheduled as a potential 'Biosecurity Risk' ('Priority Weed' – formerly 'Noxious Weed') within NSW or within the relevant Local Government Area under the provisions of the <i>Biosecurity Act 2015</i>	The tree is completely dead and represents a potential hazard.

Ref:- Morton, A (2006) **Determining the Retention Value of Trees on Development Sites**

TreeNet - Proceedings of the 7th National Street Tree Symposium 2006 Government of South Australia Department for Transport, Energy and Infrastructure

4 Site Observations

- 4.1 All trees are growing on Council land:
- Trees 1-4 are growing on Forbes Street
 - Trees 5-10 are growing on William Street
 - Trees 11-14 are growing on Dowling Street
 - Trees 1-4 are all different species of varying ages
- 4.2 Tree 1 – *Platanus x hybrida* has a height of 6 metres and a canopy spread of 7 metres. The tree is mature in age and has a tree protection zone (TPZ) of 3.6 metres and a structural root zone (SRZ) of 2.63 metres. The tree has a health rating of 5 out of 5 and a structural rating of 3 out of 5. This tree has a cavity base and trunk wounds on the northwestern side from the ground level to the 1.4 metre mark. The tree has a dominant crown class and 50% canopy cover.
- 4.3 Tree 2 – *Syzygium smithii* has a height of 6 metres and a canopy spread of 5 metres. The tree is mature in age and has a TPZ of 2.4 metres and a SRZ of 1.91 metres. The tree has a health rating and structural rating of 5 out of 5 and has a dominant crown class and 50% canopy cover.
- 4.4 Tree 3 – *Platanus x hybrida* has a height of 8 metres and a canopy spread of 7 metres. The tree is mature in age and has a TPZ of 3.6 metres and a SRZ of 2.13 metres. The tree has a health rating of 5 out of 5 and a structural rating of 3 out of 5. This tree has been lopped at the 4-metre mark where there are 6 trunks/branches growing in one location. The tree has a dominant crown class and 45% canopy cover.
- 4.5 Tree 4 – *Syzygium smithii* has a height of 4 metres and a canopy spread of 3.5 metres. The tree is semi mature in age and has a TPZ of 2 metres and a SRZ of 1.5 metres. The tree has a health rating of 4 out of 5. The foliage has been wind damaged and there's cambium damage to the trunk of the tree. The tree has a dominant crown class and 30% canopy cover.
- 4.6 The trees growing along William Street (Trees 5-10) in my opinion were all planted at the same time.
- 4.7 Tree 5 – *Platanus x hybrida* has a height of 14 metres and a canopy spread of 8 x 10 metres. The tree is mature in age and has a TPZ of 6 metres and a SRZ of 2.67 metres. The tree has a health rating and structural rating of 5 out of 5 and the tree has a dominant crown class and 80% canopy cover.
- 4.8 Tree 6 – *Platanus x hybrida* has a height of 12 metres and a canopy spread of 8 metres. The tree is mature in age and has a TPZ of 4.8 metres and a SRZ of 2.67 metres. The tree has a health rating and structural rating of 5 out of 5 and the tree has a dominant crown class and 75% canopy cover. The tree has a mild inclusion at the 6-metre mark.

- 4.9 Tree 7 – *Platanus x hybrida* has a height of 14 metres and a canopy spread of 8 metres. The tree is mature in age and has a TPZ of 3.6 metres and a SRZ of 2.37 metres. The tree has a health rating and structural rating of 5 out of 5 and the tree has a dominant crown class and 75% canopy cover.
- 4.10 Tree 8 – *Platanus x hybrida* has a height of 14 metres and a canopy spread of 8 metres. The tree is mature in age and has a TPZ of 4.8 metres and a SRZ of 2.47 metres. The tree has a health rating and structural rating of 5 out of 5 and the tree has a dominant crown class and 80% canopy cover.
- 4.11 Tree 9 – *Platanus x hybrida* has a height of 10 metres and a canopy spread of 6 metres. The tree is semi mature in age and has a TPZ of 2.4 metres and a SRZ of 1.85 metres. The tree has a health rating and structural rating of 5 out of 5 and the tree has a dominant crown class and 80% canopy cover.
- 4.12 Tree 10 – *Platanus x hybrida* has a height of 12 metres and a canopy spread of 10 metres. The tree is mature in age and has a TPZ of 2.4 metres and a SRZ of 2.13 metres. The tree has a health rating and structural rating of 5 out of 5 and the tree has a dominant crown class and 80% canopy cover.
- 4.13 The trees growing along Dowling Street (Trees 11-15) are all one species planted at different times.
- 4.14 Tree 11 – *Liriodendron tulipifera* has a height of 11 metres and a canopy spread of 7 metres. The tree is mature in age and has a TPZ of 3.6 metres and a SRZ of 2.47 metres. The tree has a health rating and structural rating of 5 out of 5 and the tree has a dominant crown class and 75% canopy cover.
- 4.15 Tree 12 - *Liriodendron tulipifera* has a height of 8.5 metres and a canopy spread of 6 metres. The tree is mature in age and has a TPZ of 3.6 metres and a SRZ of 2.37 metres. The tree has a health rating and structural rating of 5 out of 5 and the tree has a dominant crown class and 75% canopy cover.
- 4.16 Tree 13 - *Liriodendron tulipifera* has a height of 8.5 metres and a canopy spread of 5 metres. The tree is mature in age and has a TPZ of 3.6 metres and a SRZ of 2.37 metres. The tree has a health rating and structural rating of 5 out of 5 and the tree has a dominant crown class and 70% canopy cover. There are old wounds on the trunk of the tree.
- 4.17 Tree 14 - *Liriodendron tulipifera* has a height of 9 metres and a canopy spread of 5 metres. The tree is mature in age and has a TPZ of 4.8 metres and a SRZ of 2.57 metres. The tree has a health rating and structural rating of 5 out of 5 and the tree has a dominant crown class and 70% canopy cover. There are old flush cuts on the trunk from previous pruning works.

- 4.18 Tree 15 - *Liriodendron tulipifera* has a height of 8 metres and a canopy spread of 3.5 metres. The tree is semi mature in age and has a TPZ of 2 metres and a SRZ of 1.5 metres. The tree has a health rating and structural rating of 5 out of 5 and the tree has a codominant crown class and 55% canopy cover.
- 4.19 The existing building extends to the property line of the boundary along William Street and Dowling Street. Sections of this building are below street level and in my opinion the building was present before the trees were planted.

5 Conclusions

- 5.1 The building is in the same footprint on William Street and Dowling Street and there will be no impact to the council street trees. The building on Forbes Street is proposed for the current carpark. There will be no impact to council street trees as proposed works is outside of the structural root zone of tree 1.
- 5.2 Tree 1 – Platanus x hybrida has been given a low suitability for preservation as it has a cavity at the base of the tree in a large trunk wound. The canopy is misshapen from power lines pruning. Consideration should be given for the removal of this tree.
- 5.3 Trees 2,4 on Forbes Street have a moderate suitability for preservation due to their size, these council trees must be retained by means of trunk protection during construction.
- 5.4 Tree 3 platanus x hybrida located in Forbes Street is growing next to existing driveway. It is proposed to extend the driveway for a loading dock. This will require the removal of tree 3. This tree has a height of 8 meters with only 40% canopy cover. The canopy has been mismanaged as it has been lopped at 4 metre mark where there are. Structural Issues. There are six trunks or branches all growing in the same location where the tree was incorrectly pruned. Tree 3 is recommended for removal.
- 5.5 Tree 5-10 platanus x hybrida growing on William Street and trees 11 -15 liriodendron tulipifera growing Dowling Street are been retained.
- 5.6 the area within TPZ of all trees have structural and existing pathways in tree protection zone .the footpaths in the form of asphalt, concrete and paving.
- 5.7 The proposed building on William Street and Dowling Street are in a similar footprint as the existing building and the section of the existing building or below street level. Therefore, I see no root impact to the street trees.
- 5.8 There will be possible canopy pruning from the construction of the mandatory hoarding over council pathways . At this current stage most of the trees have more than a 1-metre clearance from the existing structures.

6 Recommendations

- 6.1 Trunk protection is to be placed around Trees 1,2,4 -15.
- 6.2 Working drawings are to have the locations of Trees 1-15 clearly marked.
- 6.3 The location of Tree 1 is near the proposed driveway which is in a similar location to the existing driveway. Tree 1 has a tree protection zone (TPZ) of 3.6 metres and a structural root zone (SRZ) of 2.63 metres. This tree has a low suitability for preservation due to the cavity at the base of the tree. Consideration should be given for the removal of this tree.
- 6.4 I provided an estimated location of Tree 4 – Syzygium and Tree 13 – Liriodendron tulipifera. The surveys will need to be updated with their true location so they can be applied to the working plans.
- 6.5 Demolition plans must have the location of the trees with the trees to be preserved marked in green and trees to be removed are marked in red.
- 6.6 Hoarding plans will need to be designed so they do not fall within the tree pits of the trees growing on council land and also that adequate clearance has been given to the trunks and the main branches of the trees.
- 6.7 With the removal of tree 3 Platanus x hybrida for loading dock, a replacement tree is required. The landscape plans are preposing to replant one Liriodendron tulipifera, next to new driveway.

7 Tree Assessment Survey Sheets

7.1

1.0 Tree Assessment Survey Sheet

Client: Rebel Property Group

Job: 68053

LOCATION: 164-194 William Street Woolloomooloo

DATE: 29/05/25
WEATHER :

Page number: 1/2
Version: 0.2

Tree #	Species Botanical name Common name	Trunk Diameter @1.4m CM	Trunk Diameter (buttress) CM	Height MT	Width MT	Age	TPZ MT SRZ	Health 1 = Poor 5 = Excel	Structure 1 = Poor 5 = Excel	Canopy Cover % m	Crown Class	SULE Rating Landscape Significance	Tree Surgery	Suitability for Preservation	Comments
1	<i>Platanus x Hybrida</i> London Plane Tree	30	58	6	7	M	3.6 2.83	5	3	50%	D	Short Low	3,6,17	Low	Cavity at the base Trunk wound on the northwestern side from the ground to 1.4 metres
2	<i>Syzygium smithii</i> Lilly pilly	20	27	6	5	M	2.4 1.91	5	5	50%	D	Long Low	17	Moderate	
3	<i>Platanus x Hybrida</i> London Plane Tree	28	35	8	7	M	3.6 2.13	5	3	45%	D	Long Low	7,17	Moderate	Lopped at the 4-metre mark 6 trunk/ branches growing in one
4	<i>Syzygium smithii</i> Lilly pilly	9	12	4	3.5	SM	2 1.5	4	5	30%	D	Long Low	1	Moderate	Wind damage to foliage Cambium damage to tree
5	<i>Platanus x Hybrida</i> London Plane Tree	45	60	14	8 x 10	M	6 2.67	5	5	80%	D	Long Moderate	3,12	Moderate	
6	<i>Platanus x Hybrida</i> London Plane Tree	37	60	12	8	M	4.8 2.67	5	5	75%	D	Long Moderate		Moderate	Mild inclusion at 6 metres
7	<i>Platanus x Hybrida</i> London Plane Tree	30	45	14	8	M	3.6 2.37	5	5	75%	D	Long Moderate	1,12	Moderate	
8	<i>Platanus x Hybrida</i> London Plane Tree	38	50	14	8	M	4.8 2.47	5	5	80%	D	Long Moderate		Moderate	
9	<i>Platanus x Hybrida</i> London Plane Tree	15	25	10	6	SM	2.4 1.85	5	5	80%	D	Long Low		Moderate	
10	<i>Platanus x Hybrida</i> London Plane Tree	20	35	12	10	M	2.4 2.13	5	5	80%	D	Long Moderate		Moderate	

Tree surgery:

1. Deadwood.
2. Reshape Crown.
3. Wound repair.
4. Insect control.
5. Improve soil conditions (mul fertility, aeration etc).
6. Investigate cavities

7. Thin crown, consider installation of cabling/bracing and/or retain and fence off for public safety.
8. Line clearance of structures or service wires.
9. Remove attached plant.
10. Root girdling.
11. Remove.

12. No tree surgery required.
13. Requires tree protection measures.
14. Borer damage.
15. Fungal or bacterial damage.
16. Monitor.
17. has been pruned

Landscape Significance

- 1 - Significant
- 2 - Very High
- 3 - High
- 4 - Moderate
- 5 - Low
- 6 - Very Low
- 7 - Insignificant

Age classification:

- Y - Young
- SM - Semi Mature
- M - Mature
- OM - Overmature
- V - Veteran


Crown class:

- D - Dominant
- C - co-dominant
- I - intermediate
- S - Suppressed

SULE

- L = Long
- M = Medium
- Sh = Short
- R = Remove
- Sm = Small
- U = Unstable

ESTIMATED LIFE EXPECTANCY	LANDSCAPE SIGNIFICANCE RATING						
	1	2	3	4	5	6	7
Long - Greater than 40 years	High Retention Value						
Medium - 15 to 40 years		Moderate Retention Value					
Short - 5 to 15 years			Low Retention Value				
Transient - Less than 5 years				Very -Low Retention Value			
Dead or Potentially Hazardous							



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7.2

1.0 Tree Assessment Survey Sheet

Client: Rebel Property Group

Job: 68053

DATE: 29/05/25
WEATHER :

Page number: 2/2
Version: 0.1

LOCATION: 164-194 William Street Woolloomooloo

Tree #	Species Botanical name Common name	Trunk Diameter @1.4m CM	Trunk Diameter (buttress) CM	Height MT	Width MT	Age	TPZ MT SRZ	Health 1 = Poor 5 = Excel	Structure 1 = Poor 5 = Excel	Canopy Cover % m	Crown Class	SULE Rating Landscape Significance	Tree Surgery	Suitability for Preservation	Comments
11	<i>Liriodendron tulipifera</i> Tulip tree	30	50	11	7	M	3.6 2.47	5	5	75%	D	Long Moderate		Moderate	
12	<i>Liriodendron tulipifera</i> Tulip tree	25	45	8.5	6	M	3.6 2.37	5	5	75%	D	Long Moderate		Moderate	
13	<i>Liriodendron tulipifera</i> Tulip tree	26	38	8.5	5	M	3.6 2.2	5	5	70%	D	Long Moderate		Moderate	Old trunk wounds
14	<i>Liriodendron tulipifera</i> Tulip tree	35	55	9	5	M	4.8 2.57	5	5	70%	D	Long Moderate		Moderate	Old flush cuts on the trunk
15	<i>Liriodendron tulipifera</i> Tulip tree	13	25	8	3.5	SM	2 1.5	5	5	55%	C	Long Low		Moderate	

Tree surgery:
1. Deadwood.
2. Reshape Crown.
3. Wound repair.
4. Insect control.
5. Improve soil conditions (mul fertility, aeration etc).
6. Investigate cavities

7. Thin crown, consider installation of cabling/bracing and/or retain and fence off for public safety.
8. Line clearance of structures or service wires.
9. Remove attached plant.
10. Root girdling.
11. Remove.

12. No tree surgery required.
13. Requires tree protection measures.
14. Borer damage.
15. Fungal or bacterial damage.
16. Monitor.
17. has been pruned

Age classification:
Y - Young
SM - Semi Mature
M - Mature
OM - Overmature
V - Veteran


Crown class:
D - Dominant
C - co-dominant
I - intermediate
S - Suppressed

SULE
L = Long
M = Medium
Sh = Short
R = Remove
Sm = Small
U = Unstable

LANDSCAPE SIGNIFICANCE RATING

ESTIMATED LIFE EXPECTANCY	1	2	3	4	5	6	7
Long - Greater than 40 years	High Retention Value						
Medium - 15 to 40 years		Moderate Retention Value					
Short - 5 to 15 years			Low Retention Value				
Transient - Less than 5 years				Very-Low Retention Value			
Dead or Potentially Hazardous							

Landscape Significance
1 - Significant
2 - Very High
3 - High
4 - Moderate
5 - Low
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8 Survey Tree 3 marked red for removal

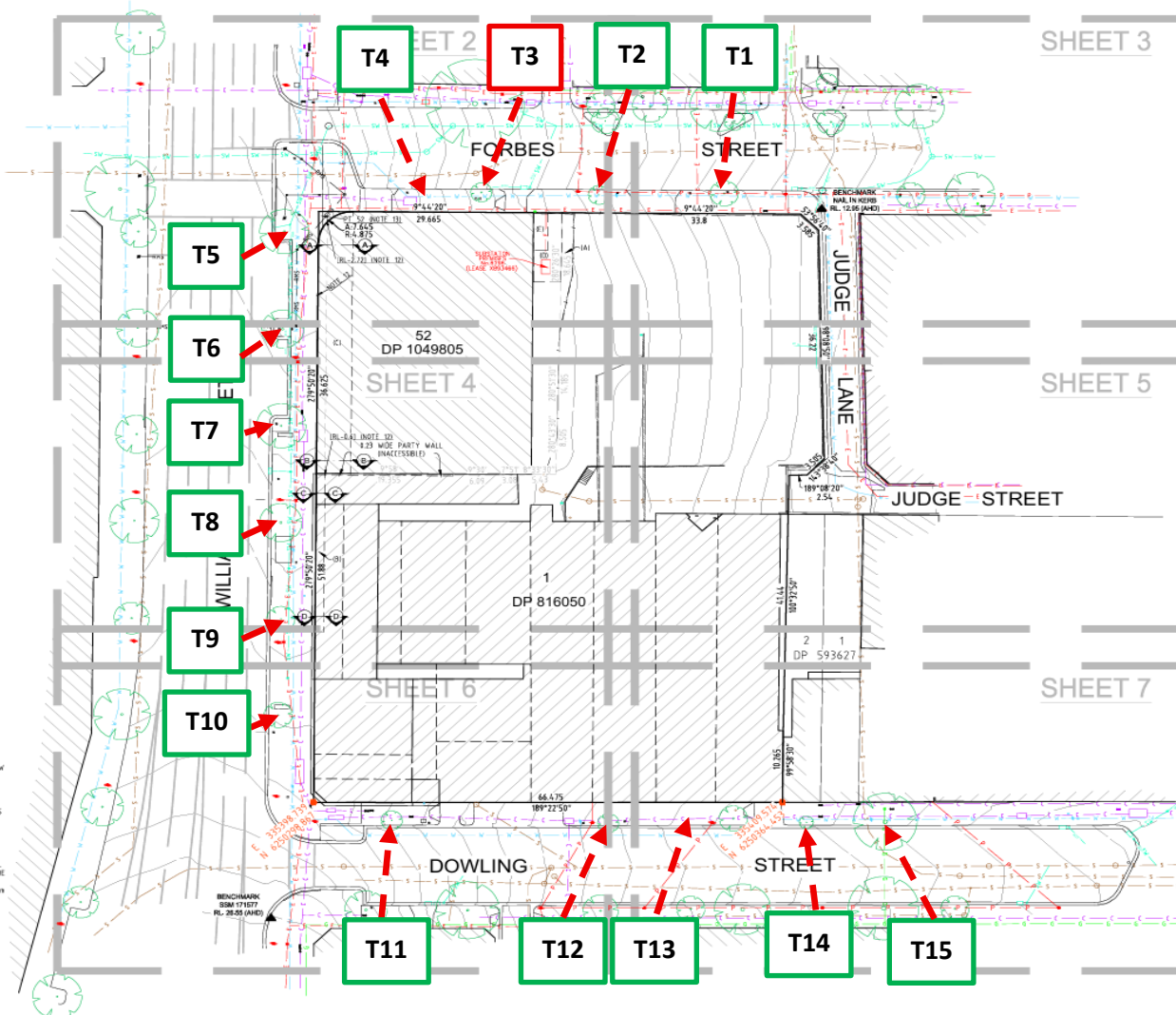
8.1 Figure 1 –

NOTE 12: LOT 5A IN DP 1049805 BETWEEN RL-0.6 TO RL-2.72 AND RL-12.7 TO RL-16.82
NOTE 13: PT LOT 52 ABOVE RL27.76
NOTE 14: SEE SHEET 13 FOR SECTIONS

LEGEND	
BENCH MARK	▲
OPTIS PIT	■ GP
TELSTRA PILLAR	□ TP
COMPS PIT	■ CP
TELSTRA PIT	■ TL
ELECTRIC LIGHT POLE	■ LEP
ELECTROTY PIT	■ EPT
ELECTROTY BOX	■ EL
POWER POLE	■ PP
PIT WITH CONCRETE LID	□ CLC
PIT WITH METAL LID	□ CMB
TRAFFIC LIGHT	■ TL
STREET SIGN	□ SS
PARKING METER	■ PM
ROADS & MARITIME SERVICES	□ RMS
GRATED INLET PIT	■ GP
SEWER INSPECTION POINT	○ SP
SEWER MANHOLE	○ SM
STOP VALVE	□ SV
WYDRANT	■ WD
GAS VALVE	□ GV
VEHICLE CROSSING	■ VC
TRAMP CROSSING	■ TC
GAS (BYD)	— G
COMMUNICATIONS (BYD)	— C
WATER (BYD)	— W
SEWER (BYD)	— S
ROADS & MARITIME (BYD)	— RMS
ELECTRICITY (UNDERGROUND) (BYD)	— E
ELECTRICITY (OVERHEAD) (BYD)	— O
STOPWATER (BYD)	— SW

- NOTES**
- THE BOUNDARIES HAVE NOT BEEN MARKED ON GROUND
 - ALL AREAS AND DIMENSIONS HAVE BEEN COMPILED FROM PLANS MADE AVAILABLE BY NSW LAND INDUSTRY SERVICES AND ARE SUBJECT TO FINAL SURVEY
 - ORDIN OF LEVELS ON A.H.D. IS TAKEN FROM PM 52900 R.L. 12.979 (A.H.D.) IN DOWLING STREET
 - CONTOUR INTERVAL 0.5 M
 - CONTOURS ARE INDICATIVE ONLY. ONLY SPOT LEVELS SHOULD BE USED FOR CALCULATIONS OF QUANTITIES WITH CAUTION
 - KERB LEVELS ARE TO THE TOP OF KERB UNLESS SHOWN OTHERWISE
 - FLOOR LEVELS SHOWN ARE THRESHOLD LEVELS. NO INVESTIGATION OF INTERNAL FLOOR LEVELS HAS BEEN UNDERTAKEN
 - NO INVESTIGATION OF UNDERGROUND SERVICES HAS BEEN MADE. SERVICES HAVE BEEN PLOTTED FROM RELEVANT AUTHORITIES INFORMATION AND HAVE NOT BEEN SURVEYED. ALL RELEVANT AUTHORITIES SHOULD BE NOTIFIED PRIOR TO ANY EXCAVATION OR ON NEAR THE SITE
 - Ø47 DENOTES TREE SPREAD OF 4m, TRUNK DIAMETER OF 0.4m & APPROX HEIGHT OF 7m
 - SHOWS APPROXIMATE POSITION OF ROAD LNE-MARKING AND IS INDICATIVE ONLY
 - BEARINGS SHOWN ARE HMA IPAD COOD OF AUSTRALIAN AOD APPROX. YPD FOR TRUE NORTH

- EASEMENTS**
- RIGHT OF CARRIAGEWAY VARIABLE WIDTH (D81774)
 - EASEMENT FOR ROCK ANCHORS 1.2 M (P997264)
 - LIMITED IN STRAILUM (D817891)
 - EASEMENT FOR ROCK ANCHORS 0.8M WIDE LIMITED IN STRAILUM (P997264)
 - EASEMENT FOR ELECTRICITY AND OTHER PURPOSES (D893466)
 - RIGHT OF WAY (D893466)



Revision	Date	Description	Reference	Revision	Date	Description	Reference
1	00/00/00			1	00/00/00		
2	00/00/00			2	14/01/22	SECTIONS ADDED	002
3	00/00/00			3	24/01/23	LOT 52 WATER SERVICES ADDED	002
4	00/00/00			4	30/08/23	ELEVATIONS ADDED	001

LTS Licensee - 104166
Registered Surveyor NSW

THIS IS THE PLAN REFERRED TO BY ANY LETTER (S)

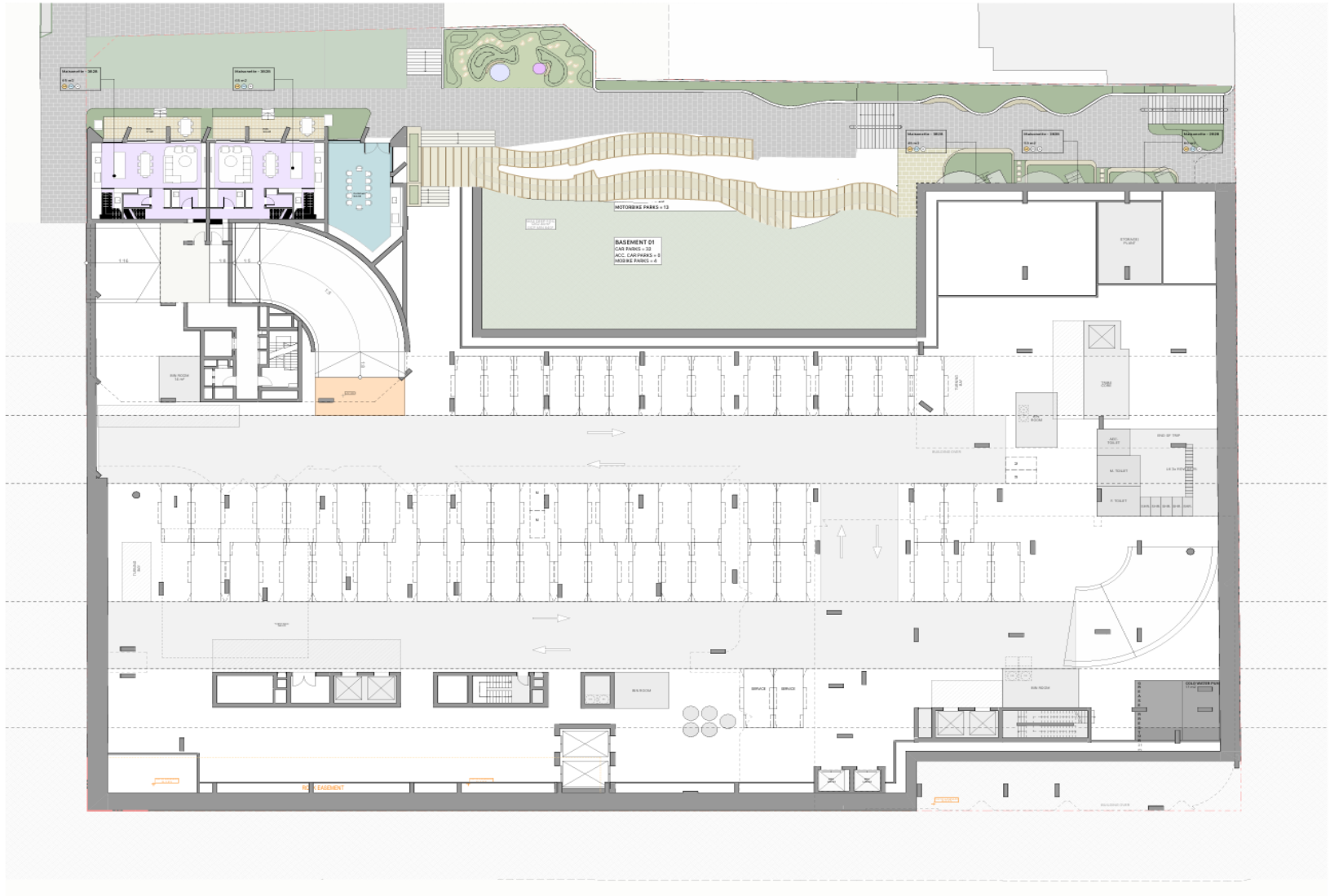
Client: WILLIAM STREET NOMINEE PTY LTD
Drawing the PLAN OF DETAIL AND LEVELS OVER LOT 1 IN DP 814050 AND LOT 52 IN DP 1049805, KNOWN AS No.166-194 WILLIAM STREET, WOOLLOOMOOLOO

Scale: 1:300 @ A1
Date of Survey: 14/08/2022
Sheet: 11 of 15

9 Site Plans

9.1 Figure 1 – Basement 01 Plan

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General notes

- All dimensions and existing conditions shall be checked and verified by the contractor before proceeding with the work.
- All levels relative to Australian Height Datum.
- Do not scale drawings.
- Use figured dimensions only.

Legend

Unit Type

- 1 Bedroom
- 2 Bedroom
- 3 Bedroom
- Motorbike
- Nonhouse
- Commercial
- Retail

Cross Ventilation

- Compliant
- Non-Compliant
- Not Counted

Slab

- Compliant
- Non-Compliant
- 0 Hours

Window Types

- Operable Window
- Fixed Window

--- SITE BOUNDARY
--- ENVELOPE OUTLINE

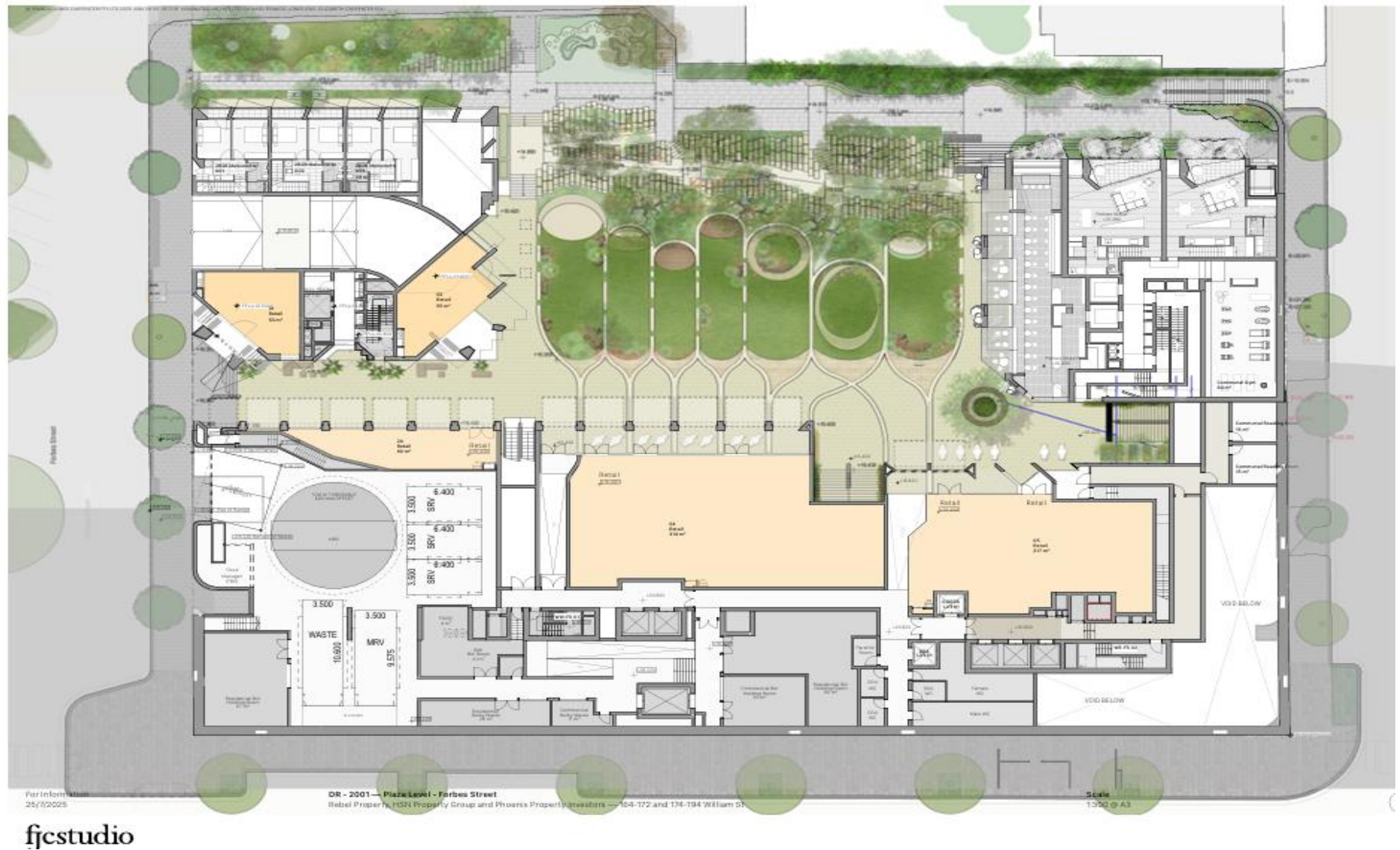
Room No.

- UNIT NUMBER OF THE FLOOR
- DESIGNATED INDIVIDUAL APARTMENT
- APARTMENT TRADING AREA
- ADAPTABLE UNIT
- CROSS VENTILATION
- SOLAR COMPLIANCE
- ACOUSTIC FLOOR

Rev	Date	Description	By
		164-172 and 174-194 William St	
		Asst. title	
		164-172 and 174-194 William St	
		Woolloomooloo NSW 2011	
		General Arrangement Plans	Scale
		Basement 01	1:150 @ A1
		Project Code	First Issued
		F1150W	27/06/2024
		Sheet No.	Rev
		2000	01

For Information

9.2 Figure 2 – Plaza Level – Forbes Street



9.3 Figure 3 – Retail Laneway

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- General notes**
- All dimensions and existing conditions shall be checked and verified by the contractor before proceeding with the work.
 - All levels relative to 'Australian Height Datum'.
 - Do not scale drawings.
 - Use figured dimensions only.

Legend

Unit Type

- 1 Bedroom
- 2 Bedroom
- 3 Bedroom
- Maisonette
- Penthouse
- Commercial
- Retail

Cross Ventilation

- Compliant
- Non-Compliant
- Not Detailed

Solar

- Compliant
- Non-Compliant
- 0 hours

Window Types

- Operable Window
- Fixed Window

--- SITE BOUNDARY

--- DEVELOPER OUTLINE

- Room No.**
- AIR SPACES OF THE FLOOR
 - MECHANICAL REFERENCE TO A FURNITURE AREA
 - MECHANICAL REFERENCE TO A FURNITURE AREA
 - ADAPTABLE UNIT
 - CROSS VENTILATION
 - SOLAR COMPLIANCE
 - ACOUSTIC FLOORING

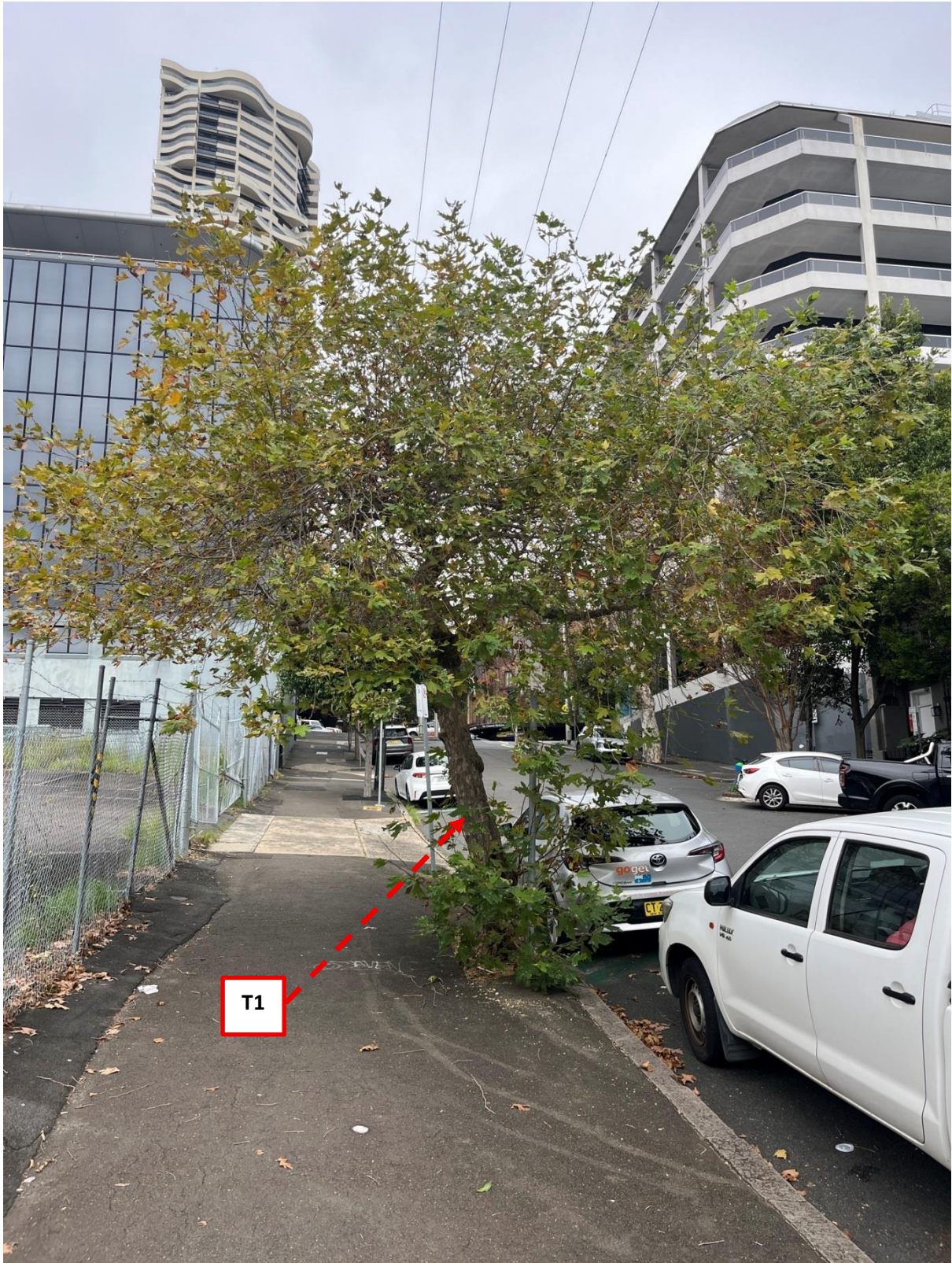
No.	Date	Description	By
164-172 and 174-194 William St			
Australia			
164-172 and 174-194 William St			
Woolloomooloo NSW 2011			
General Arrangement Plans			Scale
Retail Laneway - Dowling Street			1:150 @ A1
Project Code		First Issued	
H180W		27/9/2024	
Sheet No.			Rev
2002			01

Figure 4 – Upper Ground Floor (Tree locations not to sale)



10 Photographs

PHOTO 1



Tree 1 – *Platanus x hybrida* – London Plane Tree

PHOTO 2



Tree 1 – *Platanus x hybrida* – London Plane Tree - Cavity at the base of the tree and cambium damage is present

PHOTO 3



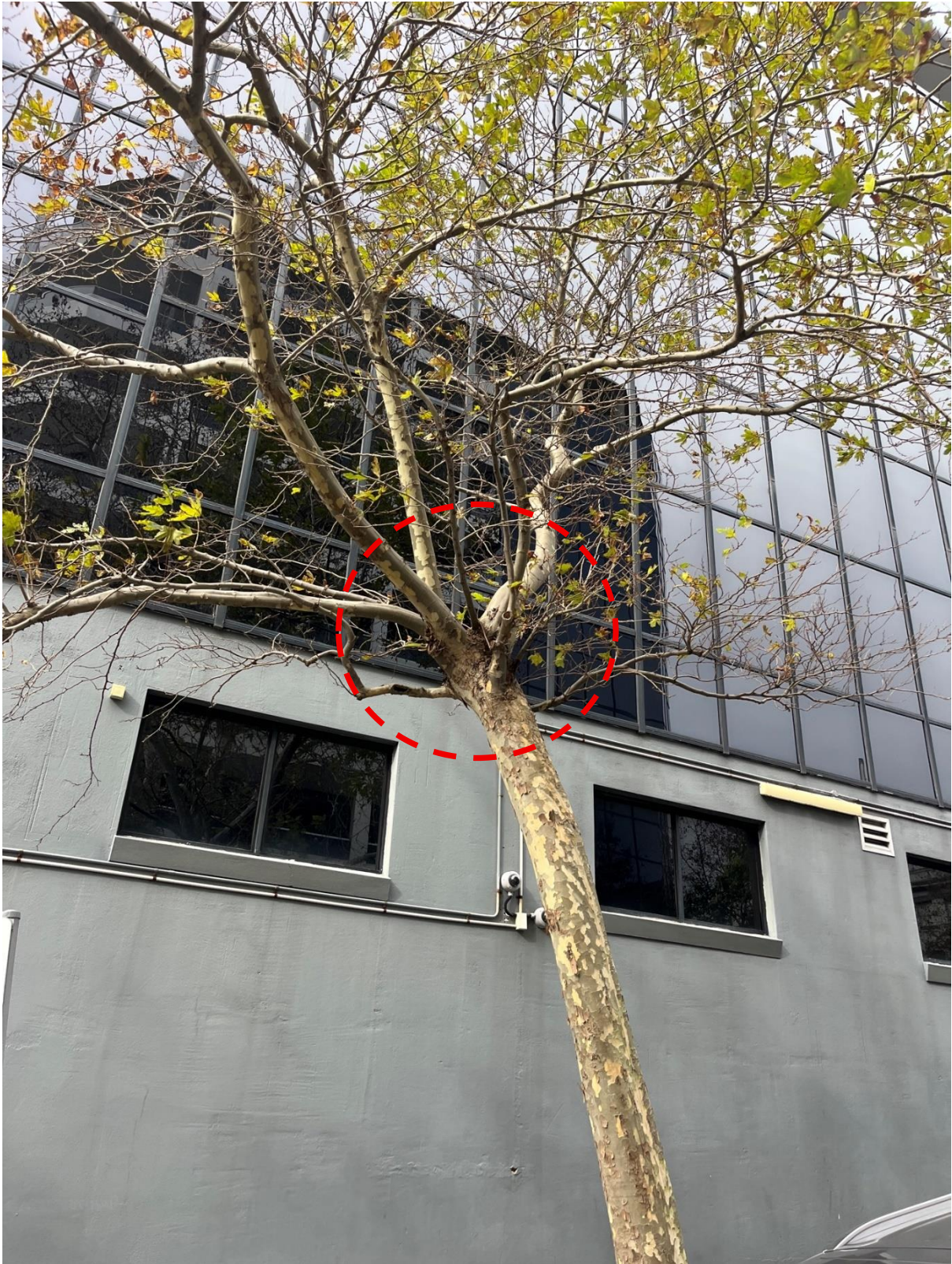
Tree 2 - Syzygium

PHOTO 4



Tree 3 – *Platanus x hybrida* (London Plane Tree)

PHOTO 5



Tree 3 – *Platanus x hybrida* (London Plane Tree) – 6 branches growing from one location

PHOTO 6



Tree 4 – Syzygium – Wind damage to the foliage

PHOTO 7



Tree 5 – Platanus

PHOTO 8



Tree 6 – Platanus – Mild inclusion at 6 metres

PHOTO 9



Tree 7 – Platanus – Hanging dead branches

PHOTO 10



Tree 8 – Platanus

PHOTO 11



Tree 9 – Platanus

PHOTO 12



Tree 10 - Platanus

PHOTO 13



Tree 11 – *Liriodendron tulipifera* (Tulip tree)

PHOTO 14



Tree 11 – Liriodendron tulipifera (Tulip tree)

PHOTO 15



Tree 12 - Liriodendron tulipifera (Tulip tree)

PHOTO 16



Tree 13 and Tree 14 - *Liriodendron tulipifera* (Tulip tree)

PHOTO 17



Tree 13 - *Liriodendron tulipifera* (Tulip tree) – Old trunk wound

PHOTO 18



Tree 14 - *Liriodendron tulipifera* (Tulip tree) – Old flush cuts

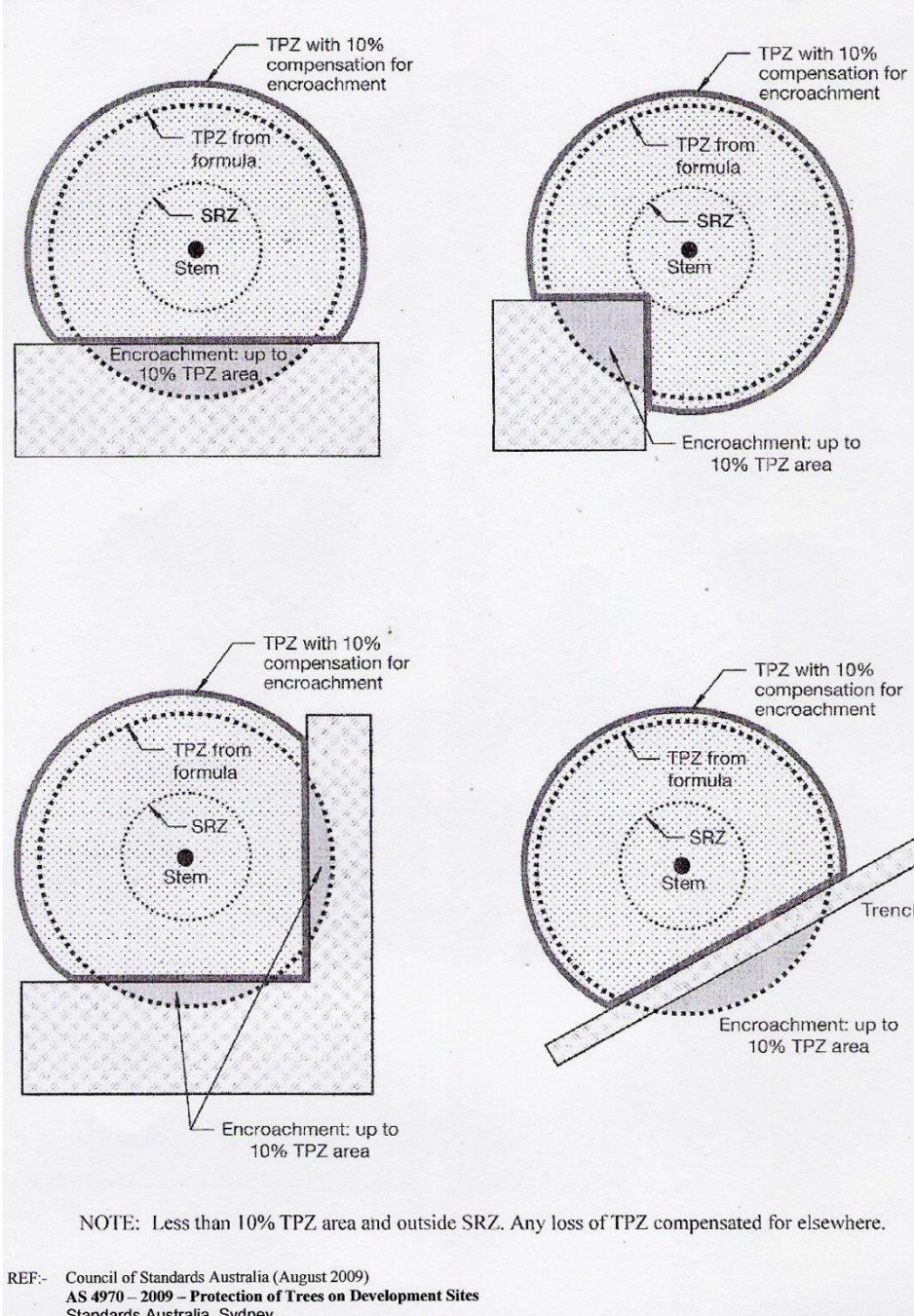
PHOTO 19



Tree 15 - *Liriodendron tulipifera* (Tulip tree)

11 (TPZ)Acceptable Incursions to the Tree Protection Zone (TPZ)

APPENDIX 2 – ACCEPTABLE INCURSIONS TO THE TREE PROTECTION ZONE (TPZ)



12 Tree and Trunk Protection Methodology

12.1 Tree Protection Fencing

- a) The trees to be retained should be protected by means of fencing prior to commencement of demolition (including tree removal) or bulk earthworks.
- b) The protection fencing should be immovable. It should be constructed from 1.8-metre-high chain link suspended on 2.4m x 45mm galvanised steel pipe.
- c) The area within should be kept free of all building materials, contaminants and other debris. It should not be used for storage of any building materials.

12.2 Mulching

- a) The area within the protective fencing should be mulched to a depth greater than 75mm and not exceeding 100millimetre using a leaf mulch or 25-millimetre eucalypt chip. The mulch should be free of weed seeds and other contaminants. If construction access is required within the tree's dripline, outside the protective fencing, heavier mulch should be spread to a depth no greater than 100 millimetres to reduce soil compaction.

12.3 Trunk Protection

- a) Trunk protection of hardwood timbers should be used to protect the tree's trunk where construction is proposed. This should be fastened around the trunk with hoop iron strapping or similar, and padded with carpet underlay or equivalent

12.4 Mulching within Tree Protection Zone



13 Tree Protection Photograph



14 Guidelines for Excavating near Trees to be preserved

- 14.1 Monitor the excavation work within a five plus metre radius of the tree. Excavation in this zone is to be done using hand tools, not an excavator.
- An arborist must monitor all excavation works within the TPZ.
 - Use hand tools to carry out any work within the drip zone of the tree.
 - Excavation work can be also done with Air Knit or Air Spade.
- 14.2 An arborist must cut any roots to be removed with a clean sharp handsaw.
- Cut all roots with clean equipment that is specifically designed to cut roots not with impacted tool.
 - Do not cut large roots (>30mm diameter) closer than halfway from drip line to the trunk.
 - Severance of structural roots of 25mm or more in diameter is not permitted without prior permission of the arborist.
- 14.3 Wrap any roots found in damp cloth.
- Protect roots that are exposed during excavation from drying out – wrap etc.
 - Immediately wrap all tree roots uncovered in dampened jute matting or equivalent sacking made or natural fibre cloth, until backfilling takes place. Hessian fibre or Hessian sack. Tree roots must not remain exposed.
 - Clumps of fibrous roots must not be severed/cut and need to be retained as per wrapping instructions in 'b'. Arborist must inspect to give guidelines.
- 14.4 Any area within five metres of the tree trunk (limited) should not be used to storage or mixing of building materials as this could change the microorganisms in the soil.
- Do not store equipment, materials, or chemical based solutions in the TPZ.
 - Do not use heavy machinery within the protection zone.
 - No vehicle access without the agreement of the arborist.
 - If vehicle access require measure must be put in place to prevent compaction.
- 14.5 Any footing in the zone of the roots is to be built with a pier and beam construction with the aim to give 100mm clearance of the roots.
- Keep the original soil level – RL – where possible – with no disturbance of the soil, including level changes or compaction, within the TPZ without prior consultation with the arborist.
 - Make no changes that will alter the amount of water infiltration surrounding or within the TPZ without the consent of the arborist.
- 14.6 Any paving installed must allow air and water penetration to the root zone. The pavers must have sand placed between them and not cement as cement would prevent air flow to the root location.

- 14.7 If any roots are found in this zone, the pavers are to be raised by the placement of washed sand over the roots. This RL should be determined at an early stage of the construction so that the pavers do not go above the damp course of the house.

15 Tree Root Protection.

15.1 Timber placed over root system to prevent compaction



15.2 Ground protection for tree roots in Tree Protection Zone – temporary driveway placed within TPZ to prevent compaction



15.3 Root protection by placing timbers on top of existing soil levels and held together with iron strapping

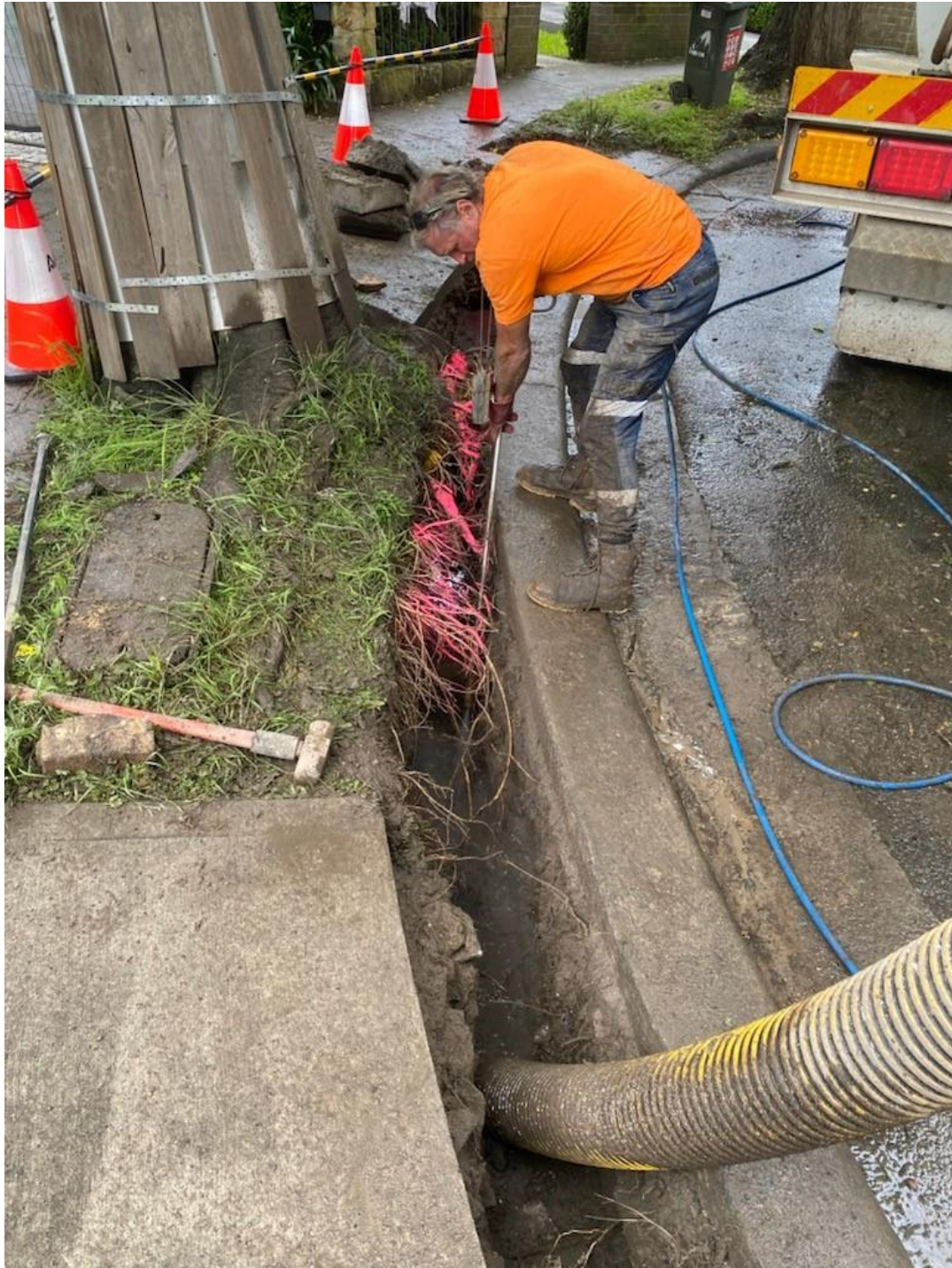


- 15.4 Timbers held together by iron hoop strapping and placed on top of existing soil levels to prevent compaction to Tree Protection Zone.



16 Excavation with Vac truck within Tree Protection Zone

16.1 Photo 1



A Vac truck is used to expose roots so services can be placed underneath tree roots.

16.2 Photo 2



Roots have been exposed and painted to highlight location so that services can be placed underneath tree roots without impact to tree roots

17 Root Pruning Methodology

- 17.1 Expose roots with hand tools or air spade or air knife. Clean roots with water or soft brush. Cover exposed roots and soil and prevent foot traffic in area. A trained arborist should inspect roots before pruning or removing roots.
- 17.2 Cover the roots with wetted rags or natural fibre. Then cover with soil where possible if left exposed for more than one day, or as soon as possible in extreme weather conditions. The natural fibre will break down in time and can be left on roots or buried.
- 17.3 Clean cut any roots found with a clean and sharp handsaw. The saw or secateurs should be cleaned by dipping in bleach or methylated spirits, or use alcohol wipes, to clean the saw. This can be done after each cut and must be done if pruning roots of different trees. This will minimise the spreading of pathogens or disease.
- 17.4 Drench the exposed soil with water and mulch soil surface with wood chips and leaf litter, not pine bark or palm fronds.
- 17.5 Hydrophobic soil may need wetting agent applied to aid in water penetration.
- 17.6 Cover the exposed soil along the excavation line with jute matting or hessian and apply water to the covering material once a day minimum in cool weather and up to 3 times per day in hot or windy conditions, until the trench is back filled. Hold jute matting in place with pegs or equivalent.

18 References

Urban, J. (2008) *Up by Roots*

Matheny, N. and Clark, J. (1998) *Trees and Development*

19 Glossary

Absorbing roots – common term describing the fine, non-woody, short-lived roots that absorb water and mineral nutrients and that are often infected with beneficial organisms.

Aerobic – a biochemical process or condition occurring in the presence of oxygen.

Air knife – device that directs a jet of highly compressed air to excavate and loosen soil. Used within the root zone of trees or near underground structures such as pipes and wires to avoid or minimize damage to the roots or structure.

Anaerobic – biological process that occurs in the absence of oxygen.

Bark – protective outer covering of branches and stems that arises from the cork cambium or cambium.

Basal (or trunk) flare – the increased diameter where the roots and trunk meet (also known as the root flare or buttress).

Bifurcation – Tree fork - A tree fork is a bifurcation in the trunk of a tree giving rise to two roughly equal diameter branches. These forks are a common feature of tree crowns. The wood grain orientation at the top of a tree fork is such that wood cells interlock to provide sufficient mechanical support.

Branch collar – area where a branch joins another branch or trunk that is created by the over-lapping vascular tissues from both the branch and the trunk. Typically enlarged at the base of the branch.

Broad-leaved – trees whose foliage is flat and broad.

Buttress root – roots at the trunk base that help support the tree and equalize mechanical stress.

Cambium – thin layer(s) of meristematic cells that give rise (outward) to the phloem and (inward) to the xylem, increasing stem and root diameter.

Central leader – the main stem, trunk, or bole.

Clay – (1) soil particles with a typical grain size less than 0.002 millimetre (USDA classification) and less than 0.005 AASHTO Classification. (2) A soil predominantly composed of such particles.

Compaction – compression of the soil that breaks down soil aggregates and reduces soil volume and total pore space, especially macropore space.

Compartmentalization – natural defence process in trees by which chemical and physical boundaries are created that act to limit the spread of disease and decay organisms.

Compost – (1) (noun) organic matter that has been intentionally subjected to decay processes and is more or less decomposed. (2) (verb) To subject organic matter to decay and decomposition processes.

Compression – action of forces to squeeze, crush, or push together any material(s) or substance(s). Contrast with tension.

Coppicing – to cut back (a tree or shrub) to ground level periodically to stimulate growth.

Cork cambium – meristematic tissue from which the corky, protective outer layer of bark is formed.

Crown (or canopy) – the leaves and branches of a tree.

Deciduous – Trees that lose their leaves each year.

Decurrent – trees that lack a central leader; the crown is composed of a number of equal-sized branches.

Dripline – the edge of the canopy

D.C.P. – Development Control Plan

Epicormic branches – shoot arising from a latent or adventitious bud (growth point).

Evergreen – trees that maintain foliage throughout the year.

Expanding clay – clay that tends to expand when wet and then, when drying, contracts more than other particles in the soil.

Field capacity – maximum soil moisture content following the drainage of water due to the force of gravity.

Gap-graded – soil with some particles coarse and some fine but without any significant amount of intermediate-sized fine and very fine sand particles.

Girdling root – root that encircles all or part of the trunk of a tree or other roots and constricts the vascular tissue and inhibits secondary growth and the movement of water.

Heart rot – any of several types of fungal decay of tree heartwood, often beginning with infected wounds in the living portions of wood tissue.

Heartwood – wood that is altered (inward) from sapwood and provides chemical defence against decay-causing organisms and continues to provide structural strength to the trunk. Trees may or may not have heartwood.

Hyphae – long, root-like, filamentous cells of a fungus.

Inclusion - A narrow or appressed junction between two or more branches where bark formation continues to develop, gradually pushing the adjacent limb out from the primary one causing severe stress on the internal wood structure.

Infiltration – movement of water penetrating the soil surface and into the soil. Contrast with percolation.

Lateral roots – roots that branch from larger primary roots.

Loam – soil texture classification containing some proportion of each of the tree major soil particle types (sand, silt, and clay). Has good qualities for plant growth.

Multi-trunked – tree with more than one trunk arising at or near the ground.

Percolation – movement of water through the soil. Contrast with infiltration.

Phloem – plant vascular tissue that transports sugar and growth regulators. Situated on the inside of the bark, just outside the cambium. Is bidirectional (transports up and down). Contrast with xylem.

Pollarding – specialty pruning technique in which a tree with a large-maturing form is kept relatively short. Starting on a young tree, pruning cuts are made at the same point in the tree, resulting in the development of callus knobs at the cut height. Requires regular (usually annual) removal of the sprouts arising from the cuts.

Psyllid – tiny sap sucking insects which attack mostly native plants such as lily pillily.

Reaction wood – wood formed in leaning or crooked trunks and stems as a means of counteracting the effects of gravity.

Root crown – the point at which the trunk and buttress roots meet.

Root plate – area under the ground around the base of the tree where the roots taper away from the trunk (see zone of rapid taper). The area of the primary roots that structurally support the forces on the tree.

R.L – Reduced level.

Scaffold branches – the major structural support branches that attach to the trunk.

Sapwood – outer wood (xylem) that is active in longitudinal transport of water and minerals.

Soil – surface layers of sand, silt, clay, and organic material on the surface of the earth that support plants. More generally, the material between the rocky parts of the planet and the atmosphere composed of fine – to coarse-grained mineral material.

Soil amendment – item added to the soil to improve certain aspects of the soil's condition.

Suckers – shoot arising from the roots.

S.R.Z. – Structural Root Zone

Taper – the change in diameter associated with height or length; related to strength.

Tap root – central, vertical root growing directly below the main stem or trunk that may or may not persist into plant maturity; rarely exists in nursery-produced plants.

Tension – in mechanics, the action of forces to stretch or pull apart any material or substance.

Trunk flare or root flare – transition zone from trunk to roots, above the ground where the trunk expands begins to expand to the form root structures that support the tree.

T.P.Z - Tree Protection Zone.

Xylem – main water – and mineral-conducting (unidirectional, up only) tissue in trees and other plants. Provides structural support. Arises (inward) from the cambium and becomes wood after lignifying. Contract with phloem.

Zone of rapid taper – area around the base of the tree under the ground where the roots taper away from the trunk. The taper reflects the stresses within the root generated by wind and gravity.

20 Expert Witness Code of Conduct

20.1 UNIFORM CIVIL PROCEDURE RULES 2005, as of 1st December 2021

Schedule 7 Expert witness code of conduct

(Rule 31.23)

1 Application of code

This code of conduct applies to any expert witness engaged or appointed—

- (a) to provide an expert's report for use as evidence in proceedings or proposed proceedings, or
- (b) to give opinion evidence in proceedings or proposed proceedings.

2 General duties to the Court

An expert witness is not an advocate for a party and has a paramount duty, overriding any duty to the party to the proceedings or other person retaining the expert witness, to assist the court impartially on matters relevant to the area of expertise of the witness.

3 Content of report

Every report prepared by an expert witness for use in court must clearly state the opinion or opinions of the expert and must state, specify or provide—

- (a) the name and address of the expert, and
- (b) an acknowledgement that the expert has read this code and agrees to be bound by it, and
- (c) the qualifications of the expert to prepare the report, and
- (d) the assumptions and material facts on which each opinion expressed in the report is based (a letter of instructions may be annexed), and
- (e) the reasons for and any literature or other materials utilised in support of each such opinion, and
- (f) (if applicable) that a particular question, issue or matter falls outside the expert's field of expertise, and
- (g) any examinations, tests or other investigations on which the expert has relied, identifying the person who carried them out and that person's qualifications, and
- (h) the extent to which any opinion which the expert has expressed involves the acceptance of another person's opinion, the identification of that other person and the opinion expressed by that other person, and

(i) a declaration that the expert has made all the inquiries which the expert believes are desirable and appropriate (save for any matters identified explicitly in the report), and that no matters of significance which the expert regards as relevant have, to the knowledge of the expert, been withheld from the court, and

(j) any qualification of an opinion expressed in the report without which the report is or may be incomplete or inaccurate, and

(k) whether any opinion expressed in the report is not a concluded opinion because of insufficient research or insufficient data or for any other reason, and

(l) where the report is lengthy or complex, a brief summary of the report at the beginning of the report.

4 Supplementary report following change of opinion

(1) Where an expert witness has provided to a party (or that party's legal representative) a report for use in court, and the expert thereafter changes his or her opinion on a material matter, the expert must forthwith provide to the party (or that party's legal representative) a supplementary report which must state, specify or provide the information referred to in clause 3(a), (d), (e), (g), (h), (i), (j), (k) and (l), and if applicable, clause 3(f).

(2) In any subsequent report (whether prepared in accordance with subclause (1) or not), the expert may refer to material contained in the earlier report without repeating it.

5 Duty to comply with the court's directions

If directed to do so by the court, an expert witness must—

(a) confer with any other expert witness, and

(b) provide the court with a joint report specifying (as the case requires) matters agreed and matters not agreed and the reasons for the experts not agreeing, and

(c) abide in a timely way by any direction of the court.

6 Conferences of experts

Each expert witness must—

(a) exercise his or her independent judgment in relation to every conference in which the expert participates pursuant to a direction of the court and in relation to each report thereafter provided, and must not act on any instruction or request to withhold or avoid agreement, and

(b) endeavour to reach agreement with the other expert witness (or witnesses) on any issue in dispute between them, or failing agreement, endeavour to identify and clarify the basis of disagreement on the issues which are in dispute.