

ALL ARBOR SOLUTIONS

Arboricultural Impact Assessment

Prepared for: Freecity North Sydney Development Pty Ltd

Site Address: 153 – 157 Walker Street
North Sydney
NSW
2060

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Document Title	Arboricultural Impact Assessment
Client	Freecity North Sydney Development Pty Ltd (ABN 77 680 512 270)
Project	Residential Mixed-Use Development with Hotel and Retail Floorspace
Site Details	153 – 157 Walker Street North Sydney NSW 2060
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Prepared by	Owen Tebbutt

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1	14/03/2025	Draft
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1.0 Summary

- 1.1 This report has been requested by Freecity North Sydney Development Pty Ltd and concerns the proposed development of SP50411 and Lot 1 DP84729 otherwise known as 153 and 157 Walker Street, North Sydney. It assesses the impacts of undertaking the proposed development works upon trees located within and where relevant adjacent to the property.
- 1.2 The proposal involves the demolition and removal of the existing multi-storey buildings across the site and construction of a multi-level hotel and residential apartments including basement level car parking.
- 1.3 A total of fourteen trees were assessed as part of the works. Trees identified for removal are shown within table 1. Trees identified for retention are shown within table 2.

Table 1: Trees identified for removal.

Trees to be removed	1, 2, 4, 5, 6, 8, 9, 10
Total	8

Table 2: Trees identified for retention.

Trees to be retained	3, 7, 11, 12, 13, 14
Total	6

- 1.4 Data relating to trees assessed as part of the proposal can be found as **Appendix 1** Tree Assessment Schedule. Development impacts and tree protection controls can be found within **Appendix 2** Development Impacts Schedule. The location of trees assessed as part of the proposal are shown within **Appendix 3** Tree Location Plan. Trees identified for retention and removal are shown within **Appendix 4** Tree Retention and Removal Plan.

2.0 Introduction

2.1 Background

- 2.1.1 This Arboricultural Impact Assessment (AIA) was prepared for Freecity North Sydney Development Pty Ltd. It relates to the proposed development of SP50411 and Lot 1 DP84729 otherwise known as 153 and 157 Walker Street, North Sydney (the site). It concerns the impact of development works on trees located within and adjacent to the subject site.
- 2.1.2 The proposed works involve the demolition and removal of existing structures over the two individual blocks and construction of a multi-level hotel and residential apartments including basement level car parking. Basement parking is accessed off Little Walker Street.
- 2.1.3 The following documentation was reviewed and assists in the preparation of this report:
- Plan showing detail & Levels Lot 1 DP84729 & SP50411 No 153-157 Walker Street, prepared by Rygate Surveyors, dated 03/02/2025.
 - 155 Walker Street, Architectural Drawings, prepared by Architectus Architecture, dated 09/05/2025.
- 2.1.4 The conclusions drawn within this report are based on the information provided and data collected during an on-site inspection.

2.2 Inspection Methodology and Data Collection

- 2.2.1 On 5 March 2025 I attended the site to undertake the tree assessment and collect data.
- 2.2.2 The trees were assessed using the principles of a ground based Visual Tree Assessment (VTA)¹ and methods consistent with modern arboriculture. No aerial (climbing) inspection, tissue sampling or diagnostic testing was undertaken as part of the inspection process unless otherwise stated.
- 2.2.3 Full results of the tree inspection and data collection can be found within the Tree Assessment Schedule (**Appendix 1**).
- 2.2.4 The height, radial canopy spread, trunk Diameter at Breast Height (DBH) and trunk diameter above root buttress was collect for each tree assessed. These physical dimensions were either estimated or measured.

¹ Mattheck, C. and Breloer, H (2006), *The Body Language of Trees – A Handbook for Failure Analysis*, The Stationary Office. Pages 118-122.

- 2.2.5 The vigour, condition and age class of the trees has been assessed and reflects the trees at the time of the inspection. The method for determining vigour, structure and age class can be found within the Tree Assessment Criteria (**Appendix 5**).
- 2.2.6 Each tree has been given Useful Life Expectancy (ULE) rating. This rating defines the length of time that the arborist feels an individual tree can be retained with an acceptable level of risk based on the information available at the time of inspection. The method used to determine these ratings can be found within the Useful Life Expectancy description and categories (**Appendix 5**).
- 2.2.7 Each tree has been assessed against the Institute of Australian Consulting Arborists (IACA) Significance of a Tree Assessment Rating System (STARS). This provides a dual method of objectively rating the viability and retention value of urban trees on development sites. The STARS assessment criteria and retention matrix table can be found within the Tree Significance Assessment Criteria and Retention Value Matrix (**Appendix 6**)

2.3 Trees on Development Sites

- 2.3.1 The Australian Standard 4970-2009 Protection of Trees on Development Sites defines the requirements for assessing trees with respect to development. It provides the guidance on how to decide which trees are appropriate for retention and on the means of protecting them during construction works. It describes the areas and offsets, referred to as the Tree Protection Zone (TPZ) and Structural Root Zone (SRZ) required to be free from development works to maintain tree vitality and stability. This report has been prepared in accordance with the conditions set out within the standard.
- 2.3.2 Tree Protection Zone – The tree protection zone is defined as a specified area above and below ground set aside for the protection of the tree's roots and crown. It is expressed as a radial measurement taken from the centre of the trunk at ground level.
- 2.3.3 Structural Root Zone – The structural root zone is defined as a specified area around the base of a tree required to maintain its stability within the ground. It is expressed as a radial measurement taken from the centre of the trunk at ground level. Excavation and development works are not recommended within the structural root zone unless additional investigation as to root size and location is undertaken.
- 2.3.4 Tree protection zone calculations have been made in accordance with AS4970-2009 and can be found within the Tree Assessment Schedule (**Appendix 1**). Calculation of the Structural Root Zone (SRZ) has been made where required.

2.3.5 Under AS4970 development encroachments into the tree protection zone are defined as either minor or major.

- A minor encroachment is less than 10% of the area of the TPZ and is outside of the SRZ. Where this occurs detailed root investigation works should not be required and the loss of root zone compensated for elsewhere and contiguous with the TPZ.
- A major encroachment is greater than 10% of the area of the TPZ or is inside the SRZ. Where a major encroachment exists the project arborist must demonstrate that the tree will remain viable. The area lost should be compensated for elsewhere and contiguous with the TPZ. Major encroachments may require detailed root investigation works to be undertaken.

2.3.6 It should be understood that the tree protection and structural root zone are indicative and do not consider the physical constraints of a site which may influence the architecture, development and spread of a tree's root system. The establishment of tree protection zones to their fullest extent may not be possible due to environmental or site constraints. Where this occurs, their establishment is to be undertaken under the guidance of the project arborist.

3.0 Findings and Observations

3.1 The site

3.1.1 The site is identified as of SP50411 and Lot 1 DP84729. It is a 1928m² square site with an east west orientation. Walker Street borders the western side of the site.

3.1.2 Existing site features include:

- Multi-level buildings
- Existing vegetation

3.1.3 The site is not listed as a heritage item, nor is it within a heritage conservation area, under Schedule 5, Environmental Heritage of the North Sydney Environment Plan 2013. The site is not identified as having areas of biodiversity as shown within the NSW Biodiversity Values Map and Threshold Tool

3.2 The Trees

3.2.1 A total of fourteen trees were assessed as part of this report. Individual tree details and data captured during the on-site inspection may be found as **Appendix 1** Tree Assessment schedule. Tree locations can be seen within **Appendix 3** Tree Retention and Removal Plan.

3.2.2 The trees are protected under the conditions of the North Sydney Development Control Plan 2013, Part C, Section 16 Tree and Vegetation Management.

3.2.3 Generally the trees were found to be in good health and condition, consistent with their species type, age class and growing environment.

3.2.4 Trees 1, 2, 4, 5, 6, 8, 9 and 10 are located wholly within the subject site. Trees 3, 7, 11 and 12 are council owned street trees located along the Walker Street frontage of the property. Trees 13 and 14 are located to the rear of the site within Doris Fitton Park.

4.0 Impacts of the Proposed Works

4.1 General

- 4.1.1 A development Impact's schedule can be found in **Appendix 2**. This schedule identifies the specific protection zone encroachments for each individual tree. A tree retention and removal plan can be found as **Appendix 4**.
- 4.1.2 Design drawings show the entire site is to be excavated to accommodate the basement level car parking (refer to architectural Plans prepared by Architectus). Trees 1, 2, 4, 5, 6, 8, 9 and 10 are positioned within the footprint (refer **Appendix 4** – showing basement level carparking) of these excavations and shall require removal.
- 4.1.3 The protection zones of trees 7, 11, 12 and 13 are clear of the proposed design. These trees are not expected to be significantly impacted by the proposal.
- 4.1.4 Excavation of the site poses minor encroachments into the protection zones of trees 3 and 14 by 3% and 6% respectively. It is likely that existing below ground built features have influenced the spread and development of roots restricting their encroachment into the area of excavation. As such, the chance of root loss arising from the excavation works is considered to be negligible.
- 4.1.5 Trees 13 and 14 are located within Doris Fitton Park on Little Walker Street to the rear of the site. Whilst these trees are not significantly impacted upon by the design it is envisioned that minor selective pruning works may be required to accommodate construction activities.

4.2 Trees to be removed

- 4.2.1 Trees 1, 2, 4, 5, 6, 8, 9 and 10 have been identified for removal.

4.3 Trees to be retained

- 4.3.1 Trees 3, 7, 11, 12, 13 and 14 are to be retained and protected throughout the development process.

4.4 Tree pruning works

- 4.4.1 It is envisioned that selective pruning works may need to be undertaken upon trees 3 13 and 14 to accommodate demolition works the establishment of hording and/ crane lifting operations.
- 4.4.2 Selective pruning works are not expected to require the removal of significant branches and/or portion of an individual tree's canopy. It is recommended that a pruning

specification/report is prepared detailing the exact pruning requirements to each tree when more information is available.

- 4.4.3 The pruning specification/report is to be prepared by a suitably qualified arborist with a minimum qualification of AQF level 5 and meet the requirements of AS4373(2007) Pruning of Amenity Trees.

5.0 Conclusions

5.1 A total of fourteen trees were assessed as part of the proposed development. Of these eight are located within the footprint of, or significantly impacted upon, by the proposed development requiring their removal. Six trees are effectively clear of the proposed works allowing for their retention.

5.2 Prior to the commencement of any construction works a project arborist is to be appointed. The role and responsibility of the project arborist is to provide on-going advice for works within identified sensitive areas and is to include at a minimum:

- Participation in the pre-clearing site walk-through, including confirmation of trees to be retained and the setup of tree protection measures
- Inspect the setup of tree protection zones prior to the commencement of construction works
- Ensure tree protection measures meet the requirements of *AS4970(2007) Protection of Trees on Development Sites*.
- Provide advice on methods to minimise the extent of encroachment within the protection zones of trees
- Provide advice for long-term tree health such as watering regimes, fertiliser application and mulching
- Provide advice on non-destructive digging technics within tree protection zones
- Provide advice on when to stop works within a tree protection zone and make recommendations on refinements to the work methodology
- Review adequacy of site training and induction material regarding tree protection zones
- Assess and report on any significant roots that require removal prior to their removal. If structural roots are encountered and need to be cut, they shall provide advice on the position and method of removal to minimise potential impacts

- Assess and report on the need for any additional tree removals required within the project area
- Undertake regular monitoring / site inspections during construction to monitor tree health and recommend additional tree care if there are signs of stress

5.3 Tree protection fencing is to be installed at the limits of the TPZ or as determined by the project arborist. Fencing shall consist of 1.8m high interlocking chain link or plywood fencing panels. The fencing shall be erected in such a way as to prevent building materials, soil and unauthorised personnel entering the TPZ. The use of temporary fencing panels is considered to be an acceptable form of tree protection fencing. Further details regarding tree erection of tree protection fencing can be found as Figure 1.

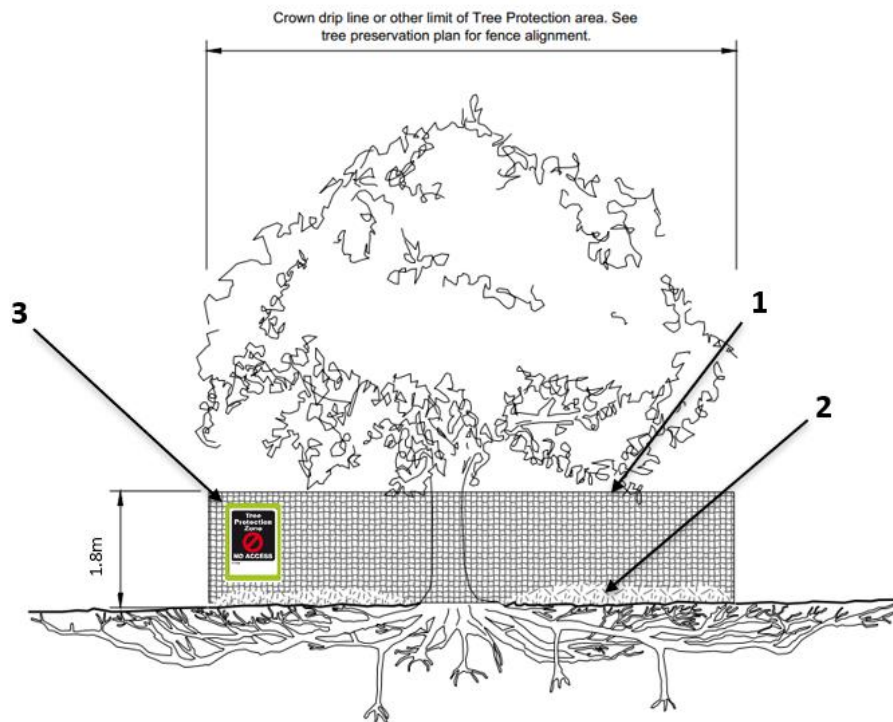


Figure 1: Tree protection zone detail. **1.** Tree Protection Fencing- To consist of chain wire mesh panels with shade cloth (if required) held in place with concrete feet or plywood or wooden fence panels. Fence to be a minimum height of 1.8m and to be established to the extent of the TPZ as directed by the project arborist. AS4687 specifies applicable fencing requirements. **2.** Mulching – If deemed applicable by the project arborist the area within the TPZ is to be mulched. Mulch is to comply with AS4454 and maintained to a depth of 100-150mm. **3.** Signage – Signs identifying the TPZ should be placed around the edge of the TPZ and identifiable from within the development site. Lettering on the sign should comply with AS1319.

5.4 Signs identifying the TPZ shall be attached to the tree protection fencing and clearly visible from within the development site. The contact details of either the site manager or project arborist shall be displayed on the sign.

Figure 2 below illustrates indicative tree protection zone signage.



Figure 2: Example of TPZ signage.

- 5.5 Where the establishment of a TPZ is deemed not possible trunk and ground protection measures are to be employed. Trunk protection is installed by first wrapping the stem of the tree in hessian or like material then strapping timber battens over the top. It is recommended that timber battens with the dimensions of length 2000mm, width 75mm and depth 50mm are used. The battens are not to be directly screwed or nailed into the tree.

Where necessary branch protection may be required. Branch protection is installed in the same fashion as the trunk protection mentioned above but cut to suit the shape of the branch. Refer figure 3.

Further details regarding trunk and branch protection can be found as Figure 3.

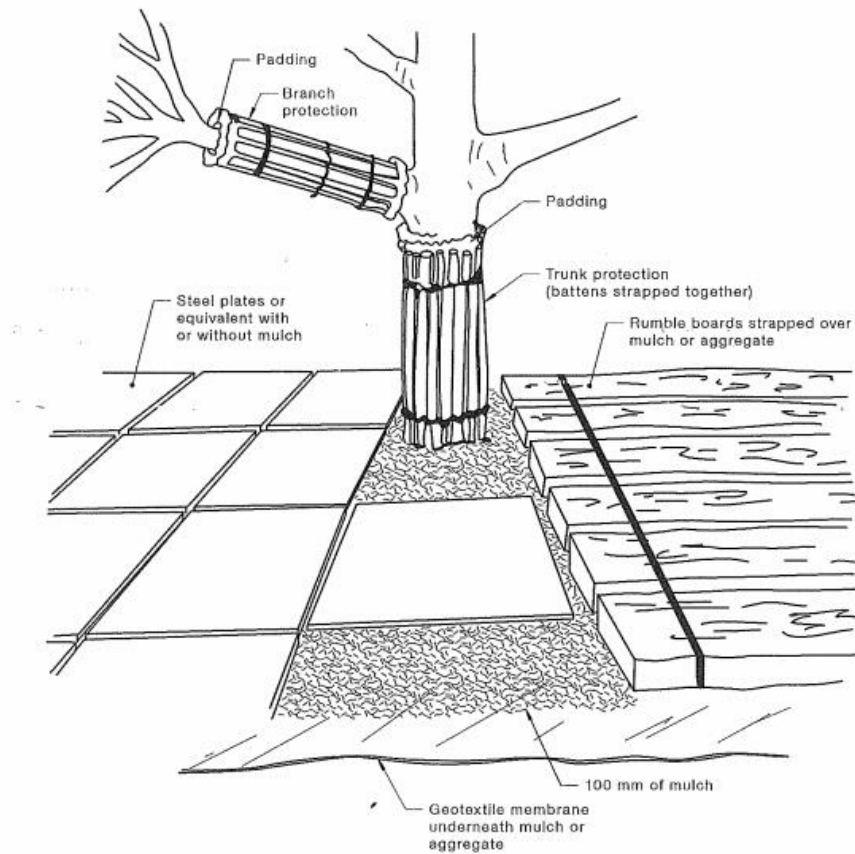


Figure 3: Trunk and branch protection shall be installed as shown in the attached diagram. The materials and positioning of protection are to be specified by the project arborist. A minimum height of 2m is recommended. No temporary power lines, stays, guys and the like are to be attached to any part of the tree. Do not drive nails into the trunks or branches. If temporary access for machinery is required within the TPZ ground protection measures will be required. Measures may include a permeable membrane such as geotextile fabric beneath a layer of mulch or crushed rock below rumble boards.

Appendix 1: Tree Assessment Schedule

Tree No	Botanical Name	Height (m)	Canopy Spread (m)	DBH (mm)	DAB (mm)	Age Class	Vigour	Condition	ULE	Landscape Significance	Retention Value	TPZ (m)	SRZ (m)	Tree Characteristics
1	<i>Cinnamomum camphora</i>	15-20	5x5	600	650	Mature	Normal	Good	Medium	High	High	7.20	2.76	Tree is growing within a contained garden bed area. Possible raised soil levels around base of tree, Epicormics of branch tops throughout crown. Crown density appears slightly sparse. Lower stem in contact with structure. Twiggy dead branches throughout crown.
2	<i>Cinnamomum camphora</i>	15-20	6x6	850	850	Mature	High	Good	Medium	High	High	10.20	3.09	Tree is growing within a contained garden bed area. Brick ring around base of trunk confirms raised soil levels. Epicormics of branch tops throughout crown. Crown density appears slightly high. Twiggy dead branches throughout crown. Old stem/branch off southern side of trunk base with decay.
3	<i>Platanus x acerifolia</i>	10-15	4x4	300	400	Mature	Normal	Good	Medium	High	High	3.60	2.25	Council owned street tree located within footpath. Branches up to approx. 40mm dia. overhang boundary. Clearance along the boundary is <10% of canopy volume.
4	<i>Ficus macrocarpa</i> var. <i>Hillii</i>	5-10	3x3	224	250	Mature	Normal	Good	Medium	Medium	Medium	2.68	1.85	Tree is growing within a contained raised garden bed. Twiggy dead branches in lower crown. Pruned for pedestrian access clearances and adjacent building clearances. Sooty mould apparent on foliage.
5	<i>Ficus macrocarpa</i> var. <i>Hillii</i>	5-10	2x2	120	200	Mature	Normal	Good	Medium	Medium	Medium	2.00	1.68	Tree is growing within a contained raised garden bed. Twiggy dead branches in lower crown. Pruned for pedestrian access clearances. Sooty mould apparent on foliage.
6	<i>Ficus macrocarpa</i> var. <i>Hillii</i>	5-10	1x1	150	200	Mature	Normal	Good	Medium	Medium	Medium	2.00	1.68	Tree is growing within a contained raised garden bed. Twiggy dead branches in lower crown. Pruned for pedestrian access clearances and adjacent building clearances. Sooty mould apparent on foliage.
7	<i>Platanus x acerifolia</i>	5-10	2x2	100	150	Young	Normal	Good	Medium	Medium	Medium	2.00	1.50	Council owned street tree located within the footpath. Recently newly planted tree. Low canopy and branches may be in conflict with hording erection.
8	<i>Ficus macrocarpa</i> var. <i>Hillii</i>	<5	1x1	150	200	Mature	Normal	Good	Medium	Medium	Medium	2.00	1.68	Tree is growing in a raised contained garden bed. Top of tree removed through pruning. Live foliage originates from epicormics. Sunburn damage to upper side of stem. Sooty mould apparent over canopy.
9	<i>Ficus macrocarpa</i> var. <i>Hillii</i>	5-10	3x3	197	300	Mature	Normal	Good	Medium	Medium	Medium	2.36	2.00	Tree is growing within a contained raised garden bed. Twiggy dead branches in lower crown. Pruned for pedestrian access clearances and adjacent building clearances. Sooty mould apparent on foliage.
10	<i>Ficus macrocarpa</i> var. <i>Hillii</i>	5-10	3x3	300	400	Mature	Normal	Good	Medium	Medium	Medium	3.60	2.25	Tree is growing within a contained raised garden bed. Twiggy dead branches in lower crown. Pruned for pedestrian access clearances and adjacent building clearances. Sooty mould apparent on foliage.

Tree No	Botanical Name	Height (m)	Canopy Spread (m)	DBH (mm)	DAB (mm)	Age Class	Vigour	Condition	ULE	Landscape Significance	Retention Value	TPZ (m)	SRZ (m)	Tree Characteristics
11	<i>Platanus x acerifolia</i>	<5	2x2	80	100	Young	Normal	Good	Medium	Medium	Medium	2.00	1.50	Council owned street tree located within the footpath. Recently newly planted tree. Low branches may be in conflict with hording erection.
12	<i>Platanus x acerifolia</i>	10-15	4x4	300	400	Mature	Normal	Good	Long	High	High	3.60	2.25	Council owned street tree located within footpath.
13	<i>Ficus sp</i>	15-20	5x5	673	750	Mature	Normal	Good	Long	High	High	8.07	2.93	Tree located in park to rear of site. Canopy clear of site. Tree potentially affected by deliveries and/or crane lifting operations.
14	<i>Ficus sp</i>	15-20	6x6	1011	1000	Mature	Normal	Good	Long	High	High	12.13	3.31	Tree located in park to rear of site. Canopy clear of site. Tree potentially affected by deliveries and/or crane lifting operations.

Appendix 2: Development Impacts Schedule

Tree No	Botanical Name	Development Impacts	Tree Protection Controls	Retain or Remove Tree
1	<i>Cinnamomum camphora</i>	The tree is located within the footprint of the proposed building (refer Appendix 4). Excavation to accommodate basement level car parking requires the tree to be removed. The tree cannot be retained under the current design.	Nil	Remove
2	<i>Cinnamomum camphora</i>	The tree is located within the footprint of the proposed building (refer Appendix 4). Excavation to accommodate basement level car parking requires the tree to be removed. The tree cannot be retained under the current design.	Nil	Remove
3	<i>Platanus x acerifolia</i>	Excavation of the site to accommodate the basement level car parking poses a minor encroachment of 3% into the TPZ. Existing built environment likely to have restricted root development into the footprint of works. As such these works are not expected to impact upon the tree. It is envisioned that selective pruning works are likely required to accommodate demolition works and/or establishment of hording. Branches up to 40mm in diameter cross the boundary line. Selective pruning works are not expected to require the removal of more than 10% of the total canopy volume of the tree.	Establish a tree protection zone around the tree under the guidance of the project arborist. Tree protection fencing is to meet the requirements of point 5.3 of this report. Where a tree protection zone cannot be installed the trunk of the tree is to be protected through the attachment of trunk protection battens (refer to point 5.5). In the event that roots (>25mm in diameter) are exposed during demolition works the project arborist is to be contacted and an inspection undertaken. Exposed roots are to be managed in accordance with the project arborists recommendations. Selective pruning works are to be determined by the project arborist when a hording plan has been developed, and a pruning report/specification prepared. Monitor the health and condition of the tree throughout the construction phase of the project.	Retain
4	<i>Ficus macrocarpa</i> var. <i>Hillii</i>	The tree is located within the footprint of the proposed building (refer Appendix 4). Excavation to accommodate basement level car parking requires the tree to be removed. The tree cannot be retained under the current design.	Nil	Remove
5	<i>Ficus macrocarpa</i> var. <i>Hillii</i>	The tree is located within the footprint of the proposed building (refer Appendix 4). Excavation to accommodate basement level car parking requires the tree to be removed. The tree cannot be retained under the current design.	Nil	Remove
6	<i>Ficus macrocarpa</i> var. <i>Hillii</i>	The tree is located within the footprint of the proposed building (refer Appendix 4). Excavation to accommodate basement level car parking requires the tree to be removed. The tree cannot be retained under the current design.	Nil	Remove
7	<i>Platanus x acerifolia</i>	The TPZ is clear of the footprint of the proposed design. No significant impacts expected as a result of the design.	Establish a tree protection zone around the tree under the guidance of the project arborist. Tree protection fencing is to meet the requirements of point 5.3 of this report. Where a tree protection zone cannot be installed the trunk of the tree is to be protected through the attachment of trunk protection battens (refer to point 5.5). Monitor the health and condition of the tree throughout the construction phase of the project.	Retain
8	<i>Ficus macrocarpa</i> var. <i>Hillii</i>	The tree is located within the footprint of the proposed building (refer Appendix 4). Excavation to accommodate basement level car parking requires the tree to be removed. The tree cannot be retained under the current design.	Nil	Remove
9	<i>Ficus macrocarpa</i> var. <i>Hillii</i>	The tree is located within the footprint of the proposed building (refer Appendix 4). Excavation to accommodate basement level car parking requires the tree to be removed. The tree cannot be retained under the current design.	Nil	Remove
10	<i>Ficus macrocarpa</i> var. <i>Hillii</i>	The tree is located within the footprint of the proposed building (refer Appendix 4). Excavation to accommodate basement level car parking requires the tree to be removed. The tree cannot be retained under the current design.	Nil	Remove
11	<i>Platanus x acerifolia</i>	The TPZ is clear of the footprint of the proposed design. No significant impacts expected as a result of the design.	Establish a tree protection zone around the tree under the guidance of the project arborist. Tree protection fencing is to meet the requirements of point 5.3 of this report. Where a tree protection zone cannot be installed the trunk of the tree is to be protected through the attachment of trunk protection battens (refer to point 5.5). Monitor the health and condition of the tree throughout the construction phase of the project.	Retain

Tree No	Botanical Name	Development Impacts	Tree Protection Controls	Retain or Remove Tree
12	<i>Platanus x acerifolia</i>	The TPZ is clear of the footprint of the proposed design. No significant impacts expected as a result of the design.	Establish a tree protection zone around the tree under the guidance of the project arborist. Tree protection fencing is to meet the requirements of point 5.3 of this report. Where a tree protection zone cannot be installed the trunk of the tree is to be protected through the attachment of trunk protection battens (refer to point 5.5). Monitor the health and condition of the tree throughout the construction phase of the project.	Retain
13	<i>Ficus sp</i>	The TPZ is clear of the footprint of the proposed design. It is envisioned that selective pruning works are likely required to accommodate demolition, crane lifting operations and/or establishment of hording. Selective pruning works are expected to require the reduction of branch tips at the northeast corner of the site and are considered to be minor pruning. No significant impacts expected as a result of the design.	The tree is located far enough from the proposed works not to require the installation of specific tree protection measures. Selective pruning works are to be determined by the project arborist when a hording plan has been developed, and a pruning report/specification prepared. Monitor the health and condition of the tree throughout the construction phase of the project.	Retain
14	<i>Ficus sp</i>	Excavation of the site to accommodate the basement level car parking poses a minor encroachment of 6% into the TPZ. Existing built environment likely to have restricted root development into the footprint of works. As such these works are not expected to impact upon the tree. It is envisioned that selective pruning works are likely required to accommodate demolition, crane lifting operations and/or establishment of hording. Selective pruning works are expected to require the reduction of branch tips at the northeast corner of the site and are considered to be minor pruning. No significant impacts expected as a result of the design.	The tree is located far enough from the proposed works not to require the installation of specific tree protection measures. In the event that roots (>25mm in diameter) are exposed during demolition works the project arborist is to be contacted and an inspection undertaken. Exposed roots are to be managed in accordance with the project arborists recommendations. Selective pruning works are to be determined by the project arborist when a hording plan has been developed, and a pruning report/specification prepared. Monitor the health and condition of the tree throughout the construction phase of the project.	Retain

Appendix 5: Tree Inspection criteria.

Tree number: Identifying number given to individual (or group of) trees.

Botanical Name: Latin name for tree showing genus and species.

Common Name: The common name given to the tree.

Tree Dimensions: The physical dimensions of the tree.

- **Height:** Estimated or measured height of tree in meters.
- **Spread:** Estimated or measured radial canopy spread of tree in meters.
- **Diameter at Breast Height (DBH):** The estimated or measured diameter of trunk in millimetres measured at 1.4m from ground.
- **Diameter at Base (DAB):** The estimated or measured diameter of the trunk in millimetres measured above the root flare.

Age Class: An estimation of how old the tree is in relation to its life expectancy.

- **Young** – Age less than 20% of life expectancy of tree in situ
- **Mature** – Age 20% - 80% of life expectancy of tree in situ
- **Old** – Age greater than 80% of life expectancy of tree in situ
- **Dead** – Tree is dead

Vigour: Ability of a tree to sustain its life processes. This is independent of the condition of a tree but may impact upon it. Vigour can appear to alter rapidly with change of seasons (seasonality) e.g., dormant, deciduous or semi-deciduous trees. Vigour can be categorised as Dormant, Low, Normal and High.

- **Dormant Vigour** – Determined by the existing turgidity in the lower order branches in the outer extremity of the crown, with good bud set and formation, and where the last extension growth is distinct from those most recently preceding it, evident by bud scale scars. Normal vigour during dormancy is achieved when such growth is evident on a majority of branches throughout the crown.
- **Low Vigour** – Reduced ability of a tree to sustain its life processes. This may be evident by the atypical growth of leaves, reduced crown cover and reduced crown density, branches, roots and trunk, and a deterioration of their functions with reduced resistance to predation. This is independent of the condition of a tree but may impact upon it, and especially the ability of a tree to sustain itself against predation.
- **Normal Vigour** – Ability of a tree to maintain and sustain its life processes. This may be evident by the typical growth of leaves, crown cover and crown density, branches, roots and trunk and resistance to predation. This is independent of the condition of a tree but may impact upon it, and especially the ability of a tree to sustain itself against predation.
- **High Vigour** – Accelerated growth of a tree due to incidental or deliberate artificial changes to its growing environment that are seemingly beneficial, but may result in premature aging or failure if the favourable conditions cease, or promote prolonged senescence if the favourable conditions remain, e.g. water from a leaking pipe, water and nutrients from a leaking or disrupted sewer pipe, nutrients from animal waste, a tree growing next to a chicken coop, or a stock feed lot, or a regularly used stockyard, a tree subject to stringent watering and fertilisation program, or some trees may achieve an extended lifespan from continuous pollarding practices over the life of the tree.

Condition: A tree's crown form and growth habit, as modified by its environment (aspect, suppression by other trees, soils) the stability and viability of the root plate, trunk and structural branches (first (1st) and possibly (2nd) order branches), including structural defects such as wounds, cavities or hollows, crooked trunk or weak trunk/branch junctions and the effects of predation by pests and diseases. These may not be directly connected with vigour and it is possible for a tree to be of normal vigour but in poor condition. Condition can be categorised as Dead, Poor, Fair and Good.

- **Dead Condition** – Tree is no longer capable of performing any of the following processes or is exhibiting any of the following symptoms; Photosynthesis via its foliage crown (as indicated by the presence of moist, green or other coloured leaves), Osmosis (the ability of the roots system to take up water), Turgidity (the ability of the plant to sustain moisture pressure in its cells), Epicormic shoots or epicormic strands in Eucalypts (the production of new shoots as a response to stress, generated from latent or adventitious buds or from a lignotuber), Permanent leaf loss, Permanent leaf wilting (the loss of turgidity which is marked by desiccation of stems leaves and roots), Abscission of the epidermis (bark desiccates and peels off to the beginning of the sap wood).
- **Poor Condition** - Tree is of good habit or misshapen, a form that may be severely restricted for space and light, exhibits symptoms of advanced and irreversible decline such as fungal, or bacterial infestation, major die-back in the branch and foliage crown, structural deterioration from insect damage e.g. termite infestation, or storm damage or lightning strike, ring barking from borer activity in the trunk, root damage or instability of the tree, or damage from physical wounding impacts or abrasion, or from altered local environmental conditions and has been unable to adapt to such changes and may decline further to death regardless of remedial works or other modifications to the local environment that would normally be sufficient to provide for its basic survival if in good to fair condition. Deterioration physically, often characterised by a gradual and continuous reduction in vigour but may be independent of a change in vigour, but characterised by a proportionate increase in susceptibility to, and predation

by pests and diseases against which the tree cannot be sustained. Such conditions may also be evident in trees of advanced senescence due to normal phenological processes, without modifications to the growing environment or physical damage having been inflicted upon the tree. This may be independent from, or contributed to by vigour.

- **Fair Condition** - Tree is of good habit or misshapen, a form not severely restricted for space and light, has some physical indication of decline due to the early effects of predation by pests and diseases, fungal, bacterial, or insect infestation, or has suffered physical injury to itself that may be contributing to instability or structural weaknesses, or is faltering due to the modification of the environment essential for its basic survival. Such a tree may recover with remedial works where appropriate, or without intervention may stabilise or improve over time, or in response to the implementation of beneficial changes to its local environment. This may be independent from, or contributed to by vigour.
- **Good Condition** - Tree is of good habit, with crown form not severely restricted for space and light, physically free from the adverse effects of predation by pests and diseases, obvious instability or structural weaknesses, fungal, bacterial or insect infestation and is expected to continue to live in much the same condition as at the time of inspection provided conditions around it for its basic survival do not alter greatly. This may be independent from, or contributed to by vigour.

Useful Life Expectancy (ULE) is the length of time that the arborist assesses an individual tree can be retained with an acceptable level of risk based on the information available at the time of inspection. It is a snapshot in time of the potential an individual tree has for survival in the eyes of the assessor. ULE is not static – it is closely related to tree health and the surrounding conditions. Alterations in these variables may result in changes to the ULE assessment. Consequently, the reliability all ULE assessments have will decrease as time passes from the initial assessment and the potential for changes in variables increases. ULE can be categorised as Long, Medium, Short, Remove, Young or Small.

- **Long (L)**: Trees that appear to be retainable at the time of the assessment for more than 40 years with an acceptable level of risk.
- **Medium (M)**: Trees that appear to be retainable at the time of the assessment for 15-40 years with an acceptable level of risk.
- **Short (S)**: Trees that appear to be retainable at the time of the assessment for 5-15 years with an acceptable level of risk.
- **Remove (R)**: Trees that should be removed within the next 5 years.
- **Young or Small Trees (Y)**: Trees that can be reliably moved or replaced.

Appendix 6: Tree Significance Assessment Criteria & Retention Value Matrix

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

In the development of this document IACA acknowledges the contribution and original concept of the Footprint Green Tree Significance & Retention Value Matrix, developed by Footprint Green Pty Ltd in June 2010.

The landscape significance of a tree is an essential criterion to establish the importance that a particular tree may have on a site. However, rating the significance of a tree becomes subjective and difficult to ascertain in a consistent and repetitive fashion due to assessor bias. It is therefore necessary to have a rating system utilising structured quantitative criteria to assist in determining the retention value for a tree. To assist this process all definitions for terms used in the *Tree significance – Assessment Criteria* and *Tree Retention Value – Priority Matrix*, are taken from the IACA Dictionary for Managing Trees in Urban Environments 2009.

This rating system will assist in the planning processes for proposed works, above and below ground where trees are to be retained on or adjacent a development site. The system uses a scale of High, Medium and Low significance in the landscape. Once the landscape significance of an individual tree has been defined, the retention value can be determined.

Tree Significance – Assessment Criteria

1. High significance in landscape

- The tree is in good condition and good vigour
- The tree has a form typical for the species
- The tree is a remnant or is a planted locally indigenous specimen and/or is rare or uncommon in the local area or of botanical interest or of substantial age
- The tree is listed as a heritage item, threatened species or part of an endangered ecological community or listed on council's significant tree register
- The tree is visually prominent and visible from a considerable distance when viewed from most directions within the landscape due to its size and scale and makes a positive contribution to the local amenity
- The tree supports social and cultural sentiments or spiritual associations, reflected by the broader population or community group or has commemorative values
- The tree's growth is unrestricted by above and below ground influences, supporting its ability to reach dimensions typical for the taxa in situ – tree is appropriate to the site conditions

2. Medium significance in landscape

- The tree is in fair-good condition and good or low vigour
- The tree has form typical or atypical of the species
- The tree is a planted locally indigenous or a common species with its taxa commonly planted in the local area
- The tree is visible from surrounding properties, although not visually prominent as partially obstructed by other vegetation or buildings when viewed from the street
- The tree provides a fair contribution to the visual character and amenity of the local area
- The tree's growth is moderately restricted by above or below ground influences, reducing its ability to reach dimensions typical for the taxa in situ

3. Low significance in landscape

- The tree is in fair-poor condition and good or low vigour
- The tree has form atypical of the species
- The tree is not visible or is partly visible from the surrounding properties as obstructed by other vegetation or buildings
- The tree provides a minor contribution or has a negative impact on the visual character and amenity of the local area
- The tree is a young specimen which may or may not have reached dimensions to be protected by local Tree Preservation Orders or similar protection mechanisms and can easily be replaced with a suitable specimen
- The tree's growth is severely restricted by above or below ground influences, unlikely to reach dimensions typical for the taxa in situ – tree is inappropriate to the site conditions
- The tree is listed as exempt under the provisions of the local Council Tree Preservation Order or similar protection mechanisms
- The tree has a wound or defect that has the potential to become structurally unsound
- Environmental Pest / Noxious Weed Species
- The tree is an environmental pest species due to its invasiveness or poisonous/allergenic properties.
- The tree is a declared noxious weed by legislation
- Hazardous / Irreversible Decline
- The tree is structurally unsound and/or unstable and is considered potentially dangerous
- The tree is dead, or is in irreversible decline, or has the potential to fail or collapse in full or in part in the immediate to short term

The tree is to have a minimum of three (3) criteria in a category to be classified in that group.

Note: The assessment criteria are for individual trees only, however, can be applied to a monoculture stand in its entirety e.g., hedge.

Table 1.0 Tree Retention Value – Priority Matrix

	Tree Significance					
		1. High	2. Medium	3. Low		
		Significance in Landscape	Significance in Landscape	Significance in Landscape		
Useful Life Expectancy					Environmental Pest / Noxious Weed Species	Hazardous / Irreversible Decline
	Long >40 years					
	Medium 15-40 years					
	Short <1-15 years					
	Dead or Young & Small					

Legend for Matrix Assessment

	Priority for retention (High): These trees are considered important for retention and should be retained and protected. Design modification or re-location of building/s should be considered to accommodate the setbacks as prescribed by the Australian Standard AS4970 <i>Protection of trees on development sites</i> . Tree sensitive construction measures must be implemented e.g., pier and beam etc if works are to proceed within the Tree Protection Zone.
	Consider for retention (Medium): These trees may be retained and protected. These are considered less critical; however, their retention should remain priority with the removal considered only if adversely affecting the proposed building/works and all other alternatives have been considered and exhausted.
	Consider for removal (Low): These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.
	Remove (R): These trees are considered hazardous, in irreversible decline or weeds and should be removed irrespective of development.

References

Australia ICOMOS Inc. 1999, The Burra Charter – The Australian OCOMOS Charter for Places of Cultural Significance, International Council of Monuments and Sites, www.icomos.org/australia
 Draper BD and Richards PA 2009, Dictionary for Managing Trees in Urban Environments, Institute of Australian Consulting Arboriculturists (IACA), CSIRO Publishing, Collingwood Victoria, Australia.
 Footprint Green Pty Ltd 2001, Footprint Green Tree Significance & Retention Value Matrix, Avalon, NSW Australia, www.footprintgreen.com.au