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ARBORICULTURAL IMPACT ASSESSMENT

Sydney Football Stadium Village Precinct & Carpark

Prepared for: VENUES NSW

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1.0 INTRODUCTION

1.1 Background

- 1.1.1 On 6 December 2018, the then Minister for Planning approved a concept development application and concurrent early works package (SSD 9249) to facilitate redevelopment of the Sydney Football Stadium.
- 1.1.2 The concept approval established the maximum building envelope, design and operational parameters for a new stadium with up to 45,000 seats for patrons and allowing for 55,000 patrons in concert mode. The concurrent Stage 1 works, which were completed on 28 February 2020, facilitated the demolition of the former SFS and associated buildings.
- 1.1.3 Stage 2 of the Sydney Football Stadium (SFS) Redevelopment (SSD 9835) was approved by the Minister for Planning and Public Spaces on 6 December 2019. Stage 2 provides for:
 - construction of the stadium, including:
 - 45,000 seats (additional 10,000 person capacity in the playing field in concert mode) in four tiers including general admission areas, members seating and corporate / premium seating;
 - o roof cover over all permanent seats and a rectangular playing pitch;
 - a mezzanine level with staff and operational areas;
 - o internal pedestrian circulation zones, media facilities and other administration areas on the seating levels;
 - a basement level (at the level of the playing pitch) accommodating pedestrian and vehicular circulation zones, 50 car parking spaces, facilities for teams and officials, media and broadcasting areas, storage and internal loading areas;
 - o food and drink kiosks, corporate and media facilities; and four signage zones.
 - construction and establishment of the public domain within the site, including:
 - hard and soft landscaping works;
 - o publicly accessible event and operational areas;
 - o public art; and
 - o provision of pedestrian and cycling facilities.
 - wayfinding signage and lighting design within the site;
 - reinstatement of the existing Moore Park Carpark 1 (MP1) upon completion of construction works with 540 atgrade car parking spaces and vehicular connection to the new stadium basement level;
 - operation and use of the new stadium and the public domain areas within the site for a range of sporting and entertainment events; and
 - extension and augmentation of utilities and infrastructure.
- 1.1.4 SSD 9835 has been modified on five previous occasions:
 - MOD 1 amended Conditions B14 and B15 to satisfy the regulatory requirements of the Contaminated Land Management Act 1997;
 - MOD 2 approved the design, construction and operation of the Stadium Fitness Facilities;
 - MOD 3 approved design refinements to the western mezzanine and introduced a new condition to facilitate approval of signage details within the approved signage zones;

- MOD 4 relocated the approved photovoltaic array from the SFS roof to the Level 5 plant room roofs and revised the approved sustainability strategy; and
- MOD 5 updated plan references and dates in the Instrument of Consent.
- 1.1.5 A sixth modification which seeks approval for the fit out and operation of the SFS' eastern mezzanine for the Sydney Roosters Centre of Excellence (MOD 6) is anticipated to be exhibited shortly.

1.2 Purpose

- 1.2.1 This Arboricultural Impact Assessment Report was prepared for a new Precinct Village and Car Park modification. The purpose of this Report is to determine the impact of the proposed works on the trees, and where appropriate, recommend the use of tree sensitive construction methods and tree protection measures to minimise adverse impacts. A Visual Tree Assessment¹ (VTA) was undertaken as part of the initial Stage 2 SSDA and updated as appropriate.
- 1.2.2 In preparing this Report, the author is aware of and considered the following documents:
 - Sydney Development Control Plan Section 3.5 Urban Ecology (2012)
 - City of Sydney Register of Significant Trees (2013)
 - Australian Standard 4970 Protection of Trees on Development Sites (2009)
 - Australian Standard 4373 Pruning of Amenity Trees (2007)
 - Australian Standard 2303 Tree Stock for Landscape Use (2015)
 - Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal Work (2016)

Refer to Methodology (Appendix 1)

- 1.2.3 This Report is based on an assessment of the following supplied documentation/plans only:
 - Tree Removal & Retention Plan prepared by Aspect Studios, not dated
 - Illustrative Landscape Plan prepared by Aspect Studios, not dated
 - Architectural Services Level 0 (A13.L0.02) prepared by Cox dated 02.09.2021
 - Architectural Services Level 1 (A13.L0.01) prepared by Cox dated 02.09.2021
 - Architectural Services Plaza (A13.L0.03) prepared by Cox dated 02.09.2021
- 1.2.4 This Arboricultural Impact Assessment Report is to be read in conjunction with the following reports and documents:
 - Planning Statement prepared by Ethos Urban (August, 2021)
 - Architectural plans/elevations/sections prepared by Cox Architecture (August, 2021)
 - Architectural Design Statement, prepared by Cox Architecture (August, 2021)
 - Design Integrity Assessment Report prepared by Cox Architecture (August, 2021)
 - Landscape Plans and Landscape Design Report prepared by Aspect (August, 2021)
 - Transport Assessment prepared by JMT (August, 2021)
 - Noise and Vibration Assessment prepared by Arup (August, 2021)
 - Stormwater and Flooding Assessment prepared by Arup (August, 2021)

¹ Mattheck & Breloer (2003)

- Visual Impact Assessment prepared by Ethos Urban (August, 2021)
- Social/Economic Statement prepared by Ethos Urban (August, 2021)
- Heritage Impact Statement prepared by Artefact (August, 2021)
- Sustainability Assessment prepared by LCI (August, 2021)
- Security Statement/CPTED prepared by Intelligent Risks (August, 2021)
- Contamination Assessment prepared by TBC by VNSW (August, 2021)
- Aboricultural Assessment prepared by Tree IQ (August, 2021)
- Wind Assessment prepared by Arup (August, 2021)
- Infrastructure Services Strategy prepared by Arup (August, 2021)
- Geotechnical Assessment prepared by Arup (August, 2021)
- Public Domain Lighting Assessment prepared by Arup (August, 2021)
- BCA and Accessibility Statement prepared by Before Compliance (August, 2021)

1.3 The Proposal

- 1.3.1 Venues NSW (VNSW) is proposing to introduce a village community space, event plaza and multi-level car park to complement the SFS and adjoining Moore Park and Centennial Parklands. The proposed development will facilitate the permanent closure of the EP2 on-grass parking areas within Moore Park opposite the MP1 car park and enable its use for open space purposes consistent with the Moore Park Masterplan.
- 1.3.2 The vision for the Precinct Village and Car Park is set out below:

The Precinct Village and Car Park provides a platform and canvas for an exceptional community asset and iconic design, that visually and physically connects to the adjacent Moore Park East and Kippax Lake. It provides patrons with quality café and dining experiences in an idyllic parkland setting and well-being play and relaxation nodes which engage with all ages. An event plaza, connected to the Stadium plaza provides a seamless opportunity for greater patron and community engagement through non-event and event day functions (Architectural Design Statement, Cox August 2021).

- 1.3.3 The Precinct Village and Car Park has been designed to align with the conditions and commitment established within SSD 9835, particularly relating to delivering a LEED Gold rated sustainable precinct, and will include:
 - Up to a maximum of 1,500 space multilevel carpark below ground level with the following access arrangements:
 - o 1 x egress point onto Moore Park Road to be used on event days only;
 - o 1 x two-lane access point from Driver Ave to be used on event and non-event days; and
 - dedicated area within the car park for operation/servicing vehicles.
 - Reconfiguration of the currently approved drop off requirements for the elderly and mobility impaired.
 - Free flow level pedestrian access to and from the SFS concourse from Driver Ave and Moore Park Road.
 - Electric car charging provision.
 - A versatile and community public domain, comprising:
 - o provision for 4 x north-south orientated tennis courts on non-event days with the potential to become an event platform on event days;
 - children's playground;
 - 1,500m2 cafe/ retail/restaurants with associated amenities in a single storey pavilion (6 metre) low level;
 - o customer service office and ticket window; and
 - vertical transport provisions.
 - Utilities provision augmentation.

- 1.3.4 Figure 1 illustrates the proposed Precinct Village and Car Park concept. Refer to the Architectural Design Statement (Cox, August 2021) and landscape plans (Aspect, August 2021) for further details.
- 1.3.5 The Precinct Village and Car Park is proposed to be delivered in two stages:
- 1.3.6 Stage 1, herein referred to as the East Car Park, consists of the area between the Rugby Australia and NRL Central buildings, immediately adjacent to the SFS concourse.
- 1.3.7 Stage 2, herein referred to as the West Car Park, consists of the residual area immediately adjacent to the proposed East Car Park, bounded by Driver Ave and Moore Park Road.
- 1.3.8 The East Car Park is proposed to be delivered ahead of the opening of the SFS in 2022. The West Car Park is proposed to be delivered after the SFS opening, sometime in 2023.



Figure 1 – Precinct Village and Car Park Development

2.0 RESULTS

2.1 The Site

2.1.1 The Precinct Village and Car Park is proposed to be located on the land west of the SFS, currently approved under SSD 9835 as the MP1 Car Park. It will extend to Moore Park and Driver Avenue and will adjoin the existing UTS, Rugby Australia and NRL Central buildings, all of which are to be retained and do not form part of the project site. A Location Plan is provided as Figure 2.



Figure 2 - Precinct Village and Car Park Location

2.2 The Trees

2.2.1 Eighty-nine (89) trees were addressed within this Report. The trees comprise of a mix of locally indigenous and Australian-native species including *Banksia integrifolia* (Coastal Banksia), *Corymbia maculata* (Spotted Gum), *Eucalyptus* spp. (Eucalypt species), *Ficus rubiginosa* (Port Jackson Fig) and *Lophostemon confertus* (Brush Box) which are mainly located in the mounded garden bed which surrounds the existing carpark off Driver Avenue.

- 2.2.2 Many of trees which are located around the carpark have been planted close together which has resulted in suppression and impacted their crown form. In addition, a number of the trees are in fair or poor health and/or structural condition as evidenced by a reduced crown density, moderate and high volumes of deadwood, wounds in various stages of decay and bark inclusions. In particular, maintenance equipment has created wounds on the exposed surface roots of numerous trees. Wounds provide an entry point for wood decay pathogens which can potentially reduce tree health and structural condition.
- 2.2.3 The trees are not listed on the *City of Sydney Register of Significant Trees (2013), Sydney Local Environmental Plan (Schedule 5) Environmental Heritage (2012)* or are visible in 1943 aerial photographs of the site.²
- 2.2.4 A search of the *BioNet Atlas of NSW Wildlife Database* was undertaken in August 2021. No individual threatened tree species listed within this database for the area were identified during the current field investigations of the site.³ The ecological significance and habitat value of the trees has not been assessed and is beyond the scope of this report.
- 2.2.5 As required by Clause 2.3.2 of Australian Standard 4970 Protection of Trees on Development Sites (2009), each tree has been allocated a Retention Value. TreeiQ allocates one of four Retention Value categories based on a combination of Landscape Significance and Useful Life Expectancy (ULE). The assessment of Landscape Significance and ULE involves a degree of subjectivity and there will be a range of tree quality and value within each of the Retention Value categories. The Retention Values do not consider any proposed development works and are not a schedule for tree retention or removal. The trees have been allocated one of the following Retention Values:
 - Priority for Retention
 - Consider for Retention
 - Consider for Removal
 - Priority for Removal

Refer to Tree Assessment Schedule (Appendix 3)

3.0 ARBORICULTURAL IMPACT ASSESSMENT

3.1 Tree Removal

3.1.1 The supplied plans show that thirty-nine (39) trees are to be removed as part of the proposed development. This includes one (1) tree with a Retention Value of *Priority for Retention*, seven (7) trees with a Retention Value of *Consider for Retention*, twenty-nine (29) trees with a Retention Value of *Consider for Removal* and two (2) trees with a Retention Value of *Priority for Removal*.

3.1.2 Table 1: Tree Removal

Priority for Retention	Consider for Retention	Consider for Removal	Priority for Removal
147	137, 138, 148, 151, 187, 195 & 303	136, 192, 197, 245-1, 245-2, 245-3, 245-4, 245-5, 246-1, 246-2, 246-3, 246-4, 246-5, 246-6, 246-7, 246-8, 246-9, 246-10, 247-1, 247-2, 247-3, 247-4, 247-5, 247-6, 248-3, 248-4, 248-5, 248-6 & 301	190 & 302

² City of Sydney (2013); City of Sydney (2012); NSW Government Spatial Services (2016)

³ NSW Office of Environment and Heritage (2011)

3.1.3 Trees 136-138

Trees 136-138 were identified as *Eucalyptus saligna* (Sydney Blue Gum) and are a group of three (3) trees located near the junction of Moore Park Road and Driver Avenue. Tree 136 is of low Landscape Significance and has been allocated a Retention Value of *Consider for Removal*. Trees 137 and 138 are of moderate Landscape Significance and have been allocated a Retention Value of *Consider for Retention*.

- 3.1.4 The supplied plans show Trees 136-138 are proposed for removal to accommodate the new pedestrian entry at the corner Moore Park Road and Driver Avenue.
- 3.1.5 Tree 147

Tree 147 was identified as *Corymbia maculata* (Spotted Gum) and is located to the north of the site. The tree is of high Landscape Significance and has been allocated a Retention Value of *Priority for Retention*.

- 3.1.6 The supplied plans show Tree 147 is proposed for removal to accommodate the basement footprint.
- 3.1.7 Tree 148

Tree 148 was identified as *Eucalyptus saligna* (Sydney Blue Gum) and is a late-mature specimen located to the north of the site. The tree is in fair structural condition due to the presence of a major 1st order branch cavity. Tree 148 has an estimated Useful Life Expectancy (ULE) of 5-15 years, is of high Landscape Significance and has been allocated a Retention Value of *Consider for Retention*.

- 3.1.8 The supplied plans show Tree 148 is proposed for removal to accommodate the basement footprint.
- 3.1.9 Trees 151 & 303

Trees 151 and 303 were identified as *Eucalyptus saligna* (Sydney Blue Gum) and *Eucalyptus microcorys* (Tallowwood) respectively and are located to the north of the site. The trees are of moderate Landscape Significance and have been allocated a Retention Value of *Consider for Retention*.

- 3.1.10 The supplied plans show Trees 151 and 303 are proposed for removal to accommodate the basement footprint.
- 3.1.11 Tree 187

Tree 187 was identified as *Eucalyptus saligna* (Sydney Blue Gum) and is located to the south of the site. The tree is of moderate Landscape Significance and has been allocated a Retention Value of *Consider for Retention*.

- 3.1.12 The supplied plans show Tree 187 is proposed for removal due to the extent of pruning required for piling rig clearances.
- 3.1.13 Tree 190

Tree 190 was identified as *Eucalyptus paniculata* (Grey Ironbark) and is a late-mature specimen located to the south of the site. The tree is in poor health as evidenced by a reduced crown density of 50-75% and deadwood within its crown. It is in fair structural condition due to a depressed seam of tissue located on a 1st order branch. Tree 190 has a ULE of less than 5 years, is of moderate Landscape Significance and has been allocated a Retention Value of *Priority for Removal*.

3.1.14 The supplied plans show Tree 190 is proposed for removal due to the extent of pruning required for piling rig clearances.

Tree 190 is recommended for removal irrespective of future development works.

3.1.15 Tree 192

Tree 192 was identified as *Ficus rubiginosa* (Port Jackson Fig) and is located to the south of the site. The tree is in poor structural condition due to the presence of an extensive wound which is developing into a cavity on a 1st order branch. Tree 192 has a ULE of 5-15 years, is of low Landscape Significance and has been allocated a Retention Value of *Consider for Removal*.

3.1.16 The supplied plans show Tree 192 is proposed for removal due to accommodate new engineering services.

3.1.17 Tree 195

Tree 195 was identified as *Lophostemon confertus* (Brush Box) and is located to the south of the site. The tree is of moderate Landscape Significance and has been allocated a Retention Value of *Consider for Retention*.

3.1.18 The supplied plans show Tree 195 is proposed for removal to accommodate the basement footprint.

3.1.19 Trees 197, 245/1-5 & 301

Trees 197, 245/1-5 and 301 were identified as *Lophostemon confertus* (Brush Box) and are semi-mature specimens located within the existing driveway/carpark. The trees are of low Landscape Significance and have been allocated a Retention Value of *Consider for Removal*.

3.1.20 The supplied plans show Trees 197, 245/1-5 and 301 are proposed for removal to accommodate the basement footprint.

3.1.21 246/1-10, 247/1-6 & 248/3-6

Trees 246/1-10, 247/1-6 and 248/3-6 were identified as *Cupaniopsis anacardiodes* (Tuckeroo) and are semi-mature specimens located within the existing driveway/carpark. The trees are of low Landscape Significance and have been allocated a Retention Value of *Consider for Removal*.

3.1.22 The supplied plans show Trees 246/1-10, 247/1-6 and 248/3-6 are proposed for removal to accommodate the basement footprint.

3.1.23 Tree 302

Tree 302 was identified as *Eucalyptus tereticornis* (Forest Red Gum) and is located within the existing driveway/carpark. The tree is in poor health and structural condition due to a reduced crown density and wounds in early stages of decay. Tree 302 has a ULE of less than 5 years, is of moderate Landscape Significance and has been allocated a Retention Value of *Priority for Removal*.

3.1.24 The supplied plans show Tree 302 is proposed for removal to accommodate the basement footprint. Tree 302 is recommended for removal irrespective of future development works.

3.2 Tree Retention

3.2.1 The supplied plans show that fifty (50) trees are to be retained as part of the proposed development. This includes two (2) trees with a Retention Value of *Priority for Retention*, twenty-eight (28) trees with a Retention Value of *Consider for Retention* and twenty (20) trees with a Retention Value of *Consider for Removal*.

3.2.2 Table 2: Tree Retention

Priority for Retention	Consider for Retention	Consider for Removal	Priority for Removal
143 & 158	133, 139, 142, 145, 146, 149, 154, 155, 156, 163, 164, 167, 170, 174, 176, 178, 179, 180, 181, 182, 184, 186, 189, 193, 194, 304, 305 & 306	140, 141, 157, 159, 160, 161, 165, 166, 168, 169, 171, 172, 173, 175, 177, 183, 185, 191, 246-11 & 246-12	

3.2.3 No Works within TPZ

The supplied plans show no works are proposed within the Tree Protection Zone (TPZ) areas of Trees 157, 160, 175, 177, 179, 182, 185, 246-11 and 246-12.

3.3 Minor Encroachment

3.3.1 The supplied plans show that works are proposed within the TPZ areas of Trees 163 and 167. As the encroachments into the TPZ areas are less than 10% and outside of the Structural Root Zone (SRZ) areas, the extent of work represents *Minor Encroachments* as defined by *Australian Standard 4970-2009 Protection of Trees on Development Sites* (AS-4970). A *Minor Encroachment* is considered acceptable by AS-4970 when it is compensated for elsewhere and contiguous within the TPZ. The encroachments into TPZ areas should be compensated for by extending the TPZ in areas not subject to encroachment.

3.4 Major Encroachment

- 3.4.1 The supplied plans show works are proposed with the TPZ areas of Trees 133, 139-143, 145, 146, 149, 154-156, 158, 159, 161, 164-166, 168-174, 176, 178, 180, 181, 183, 184, 186, 189, 191, 193, 194 and 304-306. The extent of work represents *Major Encroachments* as defined by AS-4970. The individual encroachments for each tree is listed in the Tree Assessment Schedule (Appendix 3).
- 3.4.2 To minimise adverse impacts, the entire area between external footpaths directly adjacent to Driver Avenue and Moore Park Road and the footprint of the proposed basement should be treated as a single TPZ. Existing ground levels should be maintained, and all works within this area should be undertaken using tree sensitive methods including designing and constructing all new structures (i.e new entry, paths/pavements, terraces, stairs, engineering services) to accommodate the trees. If required, excavation within the TPZ areas should be undertaken using tree sensitive methods with roots (>25mmø) retained and protected as required by the Project Arborist. In particular, the design should consider the existing landform (i.e mounded garden bed) and roots (including large surface roots), and provide sufficient clearance from the trunks and lower branches of the trees to accommodate future tree growth and movement. Additional information of tree sensitive methods is outlined below.

3.4.3 Tree Removal

Trees which cannot be removed without significant ground disturbance should either be cut to ground level or stump ground. Stump grinding should not be undertaken in the SRZ of existing trees to be retained.

3.4.4 Basement Excavation

No over-excavation, benching or battering should be undertaken beyond the line of the basement footprint as shown on the Tree Retention + Demolition Plan (prepared by Aspect Studios, noted dated). Preliminary excavation and root pruning should be undertaken along the excavation line within and adjacent to TPZ areas prior to the commencement of the bulk excavation works.

3.4.5 Underground & Engineering Services

Underground and engineering services should be located outside of the TPZ areas. Where this is not possible, services should be installed using tree sensitive excavation methods with the services located around/below roots (>25mmø) as required by the Project Arborist. Excavation using compact machinery (<2T) fitted with a flat bladed bucket is permissible where approved by the Project Arborist. Excavation using compact machinery should be undertaken in small increments, guided by a spotter who is to look for and prevent damage to roots (>25mmø).

3.4.6 Alternatively, boring methods may be used for underground service installation where the obvert level (highest interior level) is greater than 1200mm below existing grade. Excavations for starting and receiving pits for boring equipment should be located outside of the TPZ areas or located to avoid roots (>25mmø) as required by the Project Arborist.

3.4.7 Pavement Demolition

Pavement demolition within TPZ areas should retain existing sub-base layers. If sections of the sub-base layer require removal, the sub-base materials should be lifted in thin (20mm) layers using an excavator (<3.5T) fitted with a flat bladed bucket. The excavator operator should be guided by a spotter at all times to identify and expose tree roots which may be present in/under the sub-base layer. Roots (>25mmø) should be exposed by localised hand excavation and protected from damage. The existing kerb between the mounded garden bed and proposed basement should be cut to ground level and all underground sections retained in-situ as required by the Project Arborist.

3.4.8 Pavements

Pavements (including sub-base layers) within the TPZ areas should be installed above existing grade to minimise the potential for root damage. Pavements may be installed at existing grade only where replacing existing paving and utilising existing sub-base layers. Roots (>25mmø) identified with sub-base layers should be retained, and surfaces and sub-base layers should be thinned/modified as required.

3.4.9 Platforms/Stairs/Terraces/Seating & Other Landscape Fixtures

The platforms/stairs/terraces/seating and other landscape fixtures within the TPZ areas should be supported on isolated footings (with all other parts of the structures positioned above existing ground levels). Excavation for footings within the TPZ areas should be undertaken using tree sensitive methods. Footing locations should be flexible and/or the footing design modified to enable the retention of roots (>25mmø) as required by the Project Arborist. Sufficient clearance should be provided between the structures and the trunks and lower branches of the trees to accommodate future tree growth and movement.

3.4.10 Landscape Levels

Existing levels should be maintained wherever possible. Where minor regrading is required, these works should be undertaken using tree sensitive methods to enable the retention of roots (>25mmø) as required by the Project Arborist.

3.4.11 Other than the installation of soil conditioners to a maximum depth of 50mm above the existing soil profile, the installation of imported soil mixes should be excluded from the TPZ areas. Soil conditioners must not be placed around the base of the trunk/root collar of a tree.

3.4.12 Landscape Planting

The installation of plants should be undertaken using hand tools and roots (>25mmø) should be protected. No mechanical cultivation/ripping of soils should be undertaken.

3.5 Pruning

3.5.1 The supplied plans show that Tree 184 will need to be Selectively Pruned to remove 3x 100-150mm 1st order branches for piling rig clearance. The assessment of the pruning requirements detailed in this Report was estimated from ground level only without marking of basement/pile locations. In addition, the trees could only be viewed from outside the site only due to current Covid restrictions. During the construction phase of a project some additional minor pruning works may be required to provide building and construction clearances.

Refer to Plate 6 (Appendix 4)

- 3.5.2 Deadwood greater 25mmø should be removed from those trees which are situated in close proximity to 'high target' areas (i.e. areas of frequent use/vulnerable structures).
- 3.5.3 Pruning works should be carried out by a Practising Arborist. The Practising Arborist should hold a minimum qualification equivalent (using the Australian Qualifications Framework) of Level 3 or above, in Arboriculture or its recognised equivalent. The Practising Arborist should have a minimum of 3 years' experience in practical Arboriculture. Pruning work should be undertaken in accordance with Australian Standard 4373: Pruning of Amenity Trees (2007), Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal Work (2016) and other applicable legislation and codes.

4.0 SUMMARY & CONCLUSIONS

- 4.1.1 Eighty-nine (89) trees were addressed within this Report and comprise of a mix of locally indigenous and Australian-native species. The trees are not listed in *City of Sydney Register of Significant Trees (2013), Sydney Local Environmental Plan (Schedule 5) Environmental Heritage (2012)* or are visible in 1943 aerial photographs of the site.⁴
- 4.1.2 Venues NSW (VNSW) is proposing to introduce a village community space, event plaza and multi-level car park to complement the SFS and adjoining Moore Park and Centennial Parklands. The proposed development will facilitate the permanent closure of the EP2 on-grass parking areas within Moore Park opposite the MP1 car park and enable its use for open space purposes consistent with the Moore Park Masterplan.

⁴ City of Sydney (2013); City of Sydney (2012); NSW Government Spatial Services (2016)

- 4.1.3 The supplied plans show that thirty-nine (39) trees (Trees 136-138, 147, 148, 151, 187, 190, 192, 195, 197, 245/1-5, 246/1-10, 247/1-6, 248/3-6 and 301-303 are to be removed as part of the proposed development. This includes one (1) tree with a Retention Value of *Priority for Retention*, seven (7) trees with a Retention Value of *Consider for Removal* and two (2) trees with a Retention Value of *Priority for Removal*. Thirty (30) of the trees to be removed are of low Landscape Significance and new tree planting using healthy, advanced size specimens could replace the loss of amenity from tree removal within a short time period.
- 4.1.4 The supplied plans show that fifty (50) trees (Trees 133, 139-143, 145, 146, 149, 154-161, 163-186, 189, 191, 193, 194, 246-11, 246-12, 304, 305 and 306) are to be retained as part of the proposed development. This includes two (2) trees with a Retention Value of *Priority for Retention*, twenty-eight (28) trees with a Retention Value of *Consider for Retention* and twenty (20) trees with a Retention Value of *Consider for Removal*.
- 4.1.5 The supplied plans show works are proposed within the TPZ areas of forty-one (41) trees. For Trees 133, 139-143, 145, 146, 149, 154-156, 158, 159, 161, 164-166, 168-174, 176, 178, 180, 181, 183, 184, 186, 189, 191, 193, 194, 304-306, tree sensitive methods as outlined within Section 3.4 should be used within TPZ areas to minimise adverse impacts. Existing ground levels should be maintained, and all new structures should be designed to accommodate the trees. In particular, the design and construction should consider the existing landform (i.e mounded garden bed) and roots (including large surface roots) and provide sufficient clearance from the trunks and lower branches of the trees to accommodate future tree growth and movement. A Tree Protection Plan & Specification should be prepared by the Project Arborist when detailed construction plans have been finalised.
- 4.1.6 Replacement planting should be supplied in accordance with Australian Standard 2303 (2015) Tree Stock for Landscape Use. Replacement planting should be supplied in accordance with Australian Standard 2303 (2015) Tree Stock for Landscape Use.
- 4.1.7 The supplied plans show that Tree 184 will need to be Selectively Pruned to remove 3x 100-150mm 1st order branches for piling rig clearance. During the construction phase of a project some additional minor pruning works may be required to provide building and construction clearances. Pruning work should be undertaken in accordance with Australian Standard 4373: Pruning of Amenity Trees (2007), Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal Work (2016) and other applicable legislation and codes.

5.0 LIMITATIONS & DISCLAIMER

TreeiQ takes care to obtain information from reliable sources. However, TreeiQ can neither guarantee nor be responsible for the accuracy of information provided by others. Plans, diagrams, graphs and photographs in this Arboricultural Report are visual aids only and are not necessarily to scale. This Report provides recommendations relating to tree management only. Advice should be sought from appropriately qualified consultants regarding design/construction/ecological/heritage etc issues.

This Report has been prepared for exclusive use by the client. This Report shall not be used by others or for any other reason outside its intended target or without the prior written consent of TreeiQ. Unauthorised alteration or separate use of any section of the Report invalidates the Report.

Many factors may contribute to tree failure and cannot always be predicted. TreeiQ takes care to accurately assess tree health and structural condition. However, a tree's internal structural condition may not always correlate to visible external indicators. There is no warranty or guarantee, expressed or implied that problems or deficiencies regarding the trees or site may not arise in the future. Information contained in this report covers only the trees assessed and reflects the condition of the trees at the time of inspection. Additional information regarding the methodology used in the preparation of this Report is attached as Appendix 1. A comprehensive tree risk assessment and management plan for the trees is beyond the scope of this Report.

Reference should be made to any relevant legislation including Tree Management Controls. All recommendations contained within this Report are subject to approval from the relevant Consent Authority.

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- 1.1 Site Inspection: This report was determined as a result of several comprehensive site inspections during 2019. Minor updates to the Tree Assessment Schedule were undertaken if a change in health or structural condition was observed at any additional site inspections. The comments and recommendations in this report are based on findings from these site inspections.
- 1.2 Visual Tree Assessment (VTA): The subject tree(s) was assessed using the Visual Tree Assessment criteria and notes as described in The Body Language of Trees – A Handbook for Failure Analysis.⁵ The inspection was limited to a visual examination of the subject tree(s) from ground level only. No internal diagnostic testing was undertaken as part of this assessment. Trees outside the subject site were assessed from the property boundaries only.
- 1.4 **Tree Dimensions**: The dimensions of the subject tree(s) are approximate only.
- 1.5 **Tree Locations:** The location of the subject tree(s) was determined from the supplied plans.
- 1.5 Trees & Development: Tree Protection Zones, Tree Protection Measures and Sensitive Construction Methods for the subject tree were based on methods outlined in Australian Standard 4970-2009 Protection of Trees on Development Sites.

The Tree Protection Zone (TPZ) is described in AS-4970 as a combination of the root area and crown area requiring protection. It is an area isolated from construction disturbance, so that the tree remains viable.

The Structural Root Zone (SRZ) is described in AS-4970 as the area around the base of a tree required for the tree's stability in the ground. Severance of structural roots within the SRZ is not recommended as it may lead to the destabilisation and/or demise of the tree.

In some cases it may be possible to encroach into or make variations to the theoretical TPZ. A Minor Encroachment is less than 10% of the area of the TPZ and is outside the SRZ. The area lost to this encroachment should be compensated for elsewhere and contiguous with the TPZ. A Major Encroachment is greater than 10% of the TPZ or inside the SRZ. In this situation the Project Arborist must demonstrate that the tree would remain viable. This may require root investigation by non-destructive methods or the use of sensitive construction methods.

- 1.6 Tree Health: The health of the subject tree(s) was determined by assessing:
 - I. Foliage size and colour
 - II. Pest and disease infestation
 - III. Extension growth
 - IV. Crown density
 - V. Deadwood size and volume
 - VI. Presence of epicormic growth
- 1.7 Tree Structural Condition: The structural condition of the subject tree(s) was assessed by:
 - Ι. Assessment of branching structure
 - (i.e co-dominant/bark inclusions, crossing branches, branch taper, terminal loading, previous branch failures)
 - II. Visible evidence of structural defects or instability
 - (i.e root plate movement, wounds, decay, cavities, fungal brackets, adaptive growth)
 - III. Evidence of previous pruning or physical damage
 - (root severance/damage, lopping, flush-cutting, lions tailing, mechanical damage)
- Useful Life Expectancy (ULE): The ULE is an estimate of the longevity of the subject tree(s) in its growing environment. 1.8 The ULE is modified where necessary to take in consideration tree(s) health, structural condition and site suitability. The tree(s) has been allocated one of the following ULE categories (Modified from Barrell, 2001):
 - I. 40 years +
 - II. 15-40 years
 - III. 5-15 years
 - IV. Less than 5 years

⁵ Mattheck & Breloer (2003)

1.9 Landscape Significance: Landscape Significance was determined by assessing the combination of the cultural, environmental and aesthetic values of the subject tree(s). Whilst these values are subjective, a rating of high, moderate, low or insignificant has been allocated to the tree(s). This provides a relative value of the tree's Landscape Significance which may aid in determining its Retention Value. If the tree(s) can be categorized into more than one value, the higher value has been allocated.

Landscape	Description
Significance	Description
	The subject tree is listed as a Heritage Item under the Local Environmental Plan with a local or state level of
	significance.
Very High	The subject tree is listed on Council's Significant Tree Register or is considered to meet the criteria for
	significance assessment of trees and/or landscapes by a suitably qualified professional. The criteria are based
	on general principles outlines in the Burra Charter and on criteria from the Register of the National Estate.
	The subject tree creates a 'sense of place' or is considered 'landmark' tree.
	The subject tree is of local, cultural or historical importance or is widely known.
	The subject tree forms part of the curtilage of a heritage item with a known or documented association with
	that item.
	The subject tree has been identified by a suitably qualified professional as a species scheduled as a
	Threatened or Vulnerable Species for the site defined under the provisions of the NSW Biodiversity
High	Conservation Act (2016) or the Commonwealth Environmental Protection and Biodiversity Conservation Ac
riigii	(1999).
	The subject tree is known to contain nesting hollows to a species scheduled as a Threatened or Vulnerable
	Species for the site as defined under the provisions of the NSW Biodiversity Conservation Act (2016) or the
	Commonwealth Environmental Protection and Biodiversity Conservation Act (1999).
	The subject tree is an excellent representative of the species in terms of aesthetic value.
	The subject tree is of significant size, scale or makes a significant contribution to the canopy cover of the
	locality.
	The subject tree makes a positive contribution to the visual character or amenity of the area.
Moderate	The subject tree provides a specific function such as screening or minimising the scale of a building.
	The subject tree is a good representative of the species in terms of aesthetic value.
	The subject tree is a known environmental weed species or is exempt under the provisions of the loca
Low	Council's Tree Management Controls
LOW	The subject tree makes little or no contribution to the amenity of the locality.
	The subject tree is a poor representative of the species in terms of aesthetic value.

- **1.10 Retention Value**: Retention Value was based on the subject tree's Useful Life Expectancy and Landscape Significance. The Retention Value was modified where necessary to take in consideration the subject tree's health, structural condition and site suitability. The subject tree(s) has been allocated one of the following Retention Values:
 - I. Priority for Retention
 - II. Consider for Retention
 - III. Consider for Removal
 - IV. Priority for Removal

ULE		Landscape Significance						
	Very High	High	Moderate	Low				
40 years +	Driarity for	Priority	for Retention	Consider for				
15-40 years	Priority for Retention	Priority for Retention	Consider for Retention	Removal				
5-15 years	Retention	Conside	r for Retention	Removal				
Less than 5 years	Consider for Removal		Priority for Removal					

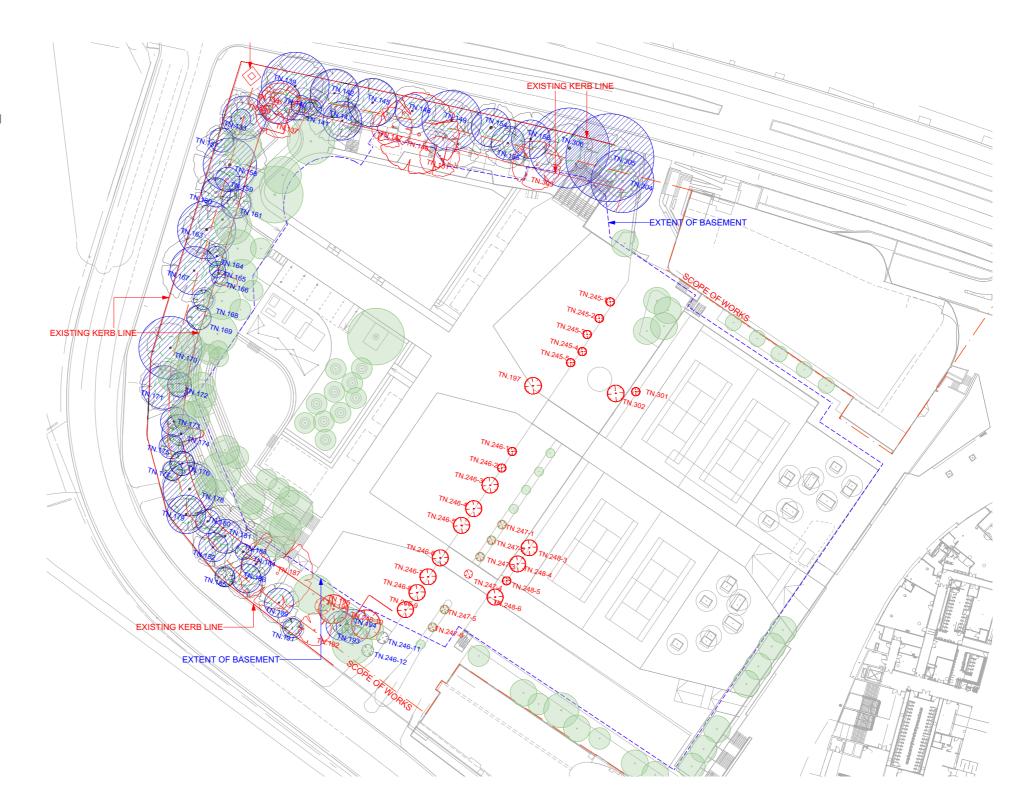
The above table has been modified from the Footprint Green Tree Significance and Retention Value Matrix.

Tree Retention + Demolition Plan for Village Precinct and Car Park

SSD 9835 provides for an overall tree replacement strategy across the SFS development. The modification for the Stadium Fitness Facilities increased the total to 120 trees.

The Stadium Plaza modification proposes the planting of an additional eighty-nine (89) trees and the removal of thirty-nine (39) existing trees. Retention of existing fig species (Ficus macrophylla and Ficus rubiginosa) were of high priority to retain and extend Moore Park parkland character and protection of local habitats (bat habitats).

Proposed trees are native Australian species, many of which are endemic to the Eastern Suburbs Banksia Scrub.




Legend

Tree proposed for Demolition

Existing Tree to retained and protected

Proposed New Trees



Appendix 3: Tree Assessment Schedule

Tree No.	Species	Height (m)	Crown Spread (m)	DBH (mm)	Health Rating	Structural Condition Rating	Age Class	ULE (years)	Landscape Significance	Comments	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
133	Ficus rubiginosa (Port Jackson Fig)	7	6	450 @ 800mm above grade	Fair	Fair	Mature	15-40	Moderate	Small (<25mmø) & medium (25-75mmø) deadwood in low volumes. Heavily suppressed. Wound(s), early signs of decay. Footpath in SRZ.	Consider for Retention	5.4	2.4	Retain. Major encroachment, new entry.
136	Eucalyptus saligna (Sydney Blue Gum)	11	5	200	Good	Good	Mature	15-40	Low	Small (<25mmø) deadwood in low volumes. Small (<25mmø) epicormic growth in low volumes. Partially suppressed. Wound(s), no visible sign of decay.	Consider for Removal	2.4	1.7	Remove. New entry.
137	Eucalyptus saligna (Sydney Blue Gum)	23	10	350	Good	Good	Mature	15-40	Moderate	Medium (25-75mmø) & large (>75mmø) deadwood in low volumes. Partially suppressed.	Consider for Retention	4.2	2.2	Remove. New entry.
138	Eucalyptus saligna (Sydney Blue Gum)	23	10	300 350	Good	Good	Mature	15-40	Moderate	Large (>75mmø) deadwood in low volumes. Partially suppressed. Co- dominant inclusions, major. Wound(s), early signs of decay.	Consider for Retention	5.4	2.4	Remove. New entry.
139	Ficus rubiginosa (Port Jackson Fig)	8	7	700 @ grade	Fair	Poor	Mature	5-15	Moderate	Crown density 50-75%. Small (<25mmø), medium (25-75mmø) & large (>75mmø) deadwood in moderate volumes. Small (<25mmø) epicormic growth in moderate volumes. Heavily suppressed. Codominant inclusions, minor. Wound(s). Mechanical damage to exposed surface roots. Previous branch failure(s). Crossing branches with abrasion wounding.	Consider for Retention	8.4	2.9	Retain. Major encroachment, kerb/carpark demolition & new entry.
140	Eucalyptus saligna (Sydney Blue Gum)	8	6	200	Good	Good	Mature	15-40	Low	Small (<25mmø) & medium (25-75mmø) deadwood in low volumes. Small (<25mmø) epicormic growth in low volumes. Partially suppressed. Grade alteration, fill. mulch soil up trunk	Consider for Removal	2.4	1.7	Retain. Major encroachment, kerb/carpark demolition.
141	Eucalyptus saligna (Sydney Blue Gum)	8	5	200	Good	Fair	Mature	5-15	Low	Small (<25mmø) & medium (25-75mmø) deadwood in low volumes. Small (<25mmø) epicormic growth in low volumes. Partially suppressed. Wound(s), no visible sign of decay. Trunk cavity(s), major.	Consider for Removal	2.4	1.7	Retain. Major encroachment, kerb/carpark demolition.

Tree No.	Species	Height (m)	Crown Spread (m)	DBH (mm)	Health Rating	Structural Condition Rating	Age Class	ULE (years)	Landscape Significance	Comments	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
142	Ficus rubiginosa (Port Jackson Fig)	8	6	500 @ grade	Good	Fair	Mature	5-15	Moderate	Crown density 50-75%. Small (<25mmø) & medium (25-75mmø) deadwood in moderate volumes. Partially suppressed. Wound(s) with fungal brackets. Mechanical damage to exposed surface roots. Girdled roots. Crossing branches.	Consider for Retention	6	2.5	Retain. Major encroachment, kerb/carpark demolition & path.
143	Corymbia maculata (Spotted Gum)	24	10	400	Good	Good	Mature	15-40	High	Medium (25-75mmø) deadwood in low volumes. Structures within SRZ.	Priority for Retention	4.8	2.3	Retain. Major encroachment, kerb/carpark demolition & path/platforms/ stairs.
145	Ficus rubiginosa (Port Jackson Fig)	7	7	500 @ grade	Fair	Poor	Mature	5-15	Moderate	Crown density 50-75%. Small (<25mmø) & medium (25-75mmø) deadwood in moderate volumes. Partially suppressed. Bark inclusion(s), major. Wound(s) with fungal brackets. Mechanical damage to exposed surface roots.	Consider for Retention	6	2.5	Retain. Major encroachment, kerb/carpark demolition & platforms/stairs.
146	Ficus rubiginosa (Port Jackson Fig)	7	7	350 @ grade	Fair	Poor	Mature	5-15	Moderate	Crown density 50-75%. Small (<25mmø) & medium (25-75mmø) deadwood in moderate volumes. Partially suppressed. Co-dominant inclusion(s), major. Wound(s) with fungal brackets. Mechanical damage to exposed surface roots.	Consider for Retention	4.2	2.2	Retain. Major encroachment, kerb/carpark demolition & platforms.
147	Corymbia maculata (Spotted Gum)	20	10	400	Good	Good	Mature	15-40	High	Small (<25mmø), medium (25-75mmø) & large (>75mmø) deadwood in low volumes. Phototrophic lean, slight.	Priority for Retention	4.8	2.3	Remove. Basement/stairs
148	Eucalyptus saligna (Sydney Blue Gum)	23	12	500	Good	Fair	Late Mature	5-15	High	Crown density 75-95%. Small (<25mmø) & medium (25-75mmø) deadwood in low volumes. Wound(s), no visible sign of decay. 1st order branch cavity, major. Structures within SRZ. Adaptive growth.	Consider for Retention	6	2.5	Remove. Basement.
149	Ficus rubiginosa (Port Jackson Fig)	7	7	400 @ grade	Fair	Poor	Mature	5-15	Moderate	Crown density 50-75%. Small (<25mmø), medium (25-75mmø) & large (>75mmø) deadwood in moderate volumes. Small (<25mmø) epicormic growth in low volumes. Partially suppressed. Wound(s). Trunk cavity(s), minor.	Consider for Retention	4.8	2.3	Retain. Major encroachment, kerb/carpark demolition & platforms.

Tree No.	Species	Height (m)	Crown Spread (m)	DBH (mm)	Health Rating	Structural Condition Rating	Age Class	ULE (years)	Landscape Significance	Comments	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
151	Eucalyptus saligna (Sydney Blue Gum)	12	9	300	Good	Good	Mature	15-40	Moderate	Small (<25mmø) deadwood in low volumes. 1st order branch cavity, minor. Structures within SRZ. Recently lost central leader.	Consider for Retention	3.6	2	Remove. Basement.
154	Ficus rubiginosa (Port Jackson Fig)	10	9	400 @ grade	Fair	Poor	Mature	5-15	Moderate	Small (<25mmø), medium (25-75mmø) & large (>75mmø) deadwood in moderate volumes. Partially suppressed. Codominant inclusions, major. Bark inclusion(s), minor. Wound(s). Mechanical damage to exposed surface roots.	Consider for Retention	4.8	2.3	Retain. Major encroachment, kerb/carpark demolition & platforms.
155	Eucalyptus saligna (Sydney Blue Gum)	22	12	350	Good	Fair	Mature	15-40	Moderate	Medium (25-75mmø) deadwood in low volumes. Trunk cavity(s), major. Borer.	Consider for Retention	4.2	2.2	Retain. Major encroachment, kerb/carpark demolition & platforms.
156	Ficus rubiginosa (Port Jackson Fig)	6	7	400 @ grade	Fair	Fair	Mature	5-15	Moderate	Small (<25mmø) & medium (25-75mmø) deadwood in low volumes. Small (<25mmø) epicormic growth in moderate volumes. Heavily suppressed. Bark inclusion(s), minor. Mechanical damage to exposed surface roots. Structures within SRZ.	Consider for Retention	4.8	2.3	Retain. Major encroachment, kerb/carpark demolition & platforms.
157	Eucalyptus microcorys (Tallowwood)	8	5	250	Good	Good	Mature	15-40	Low	Small (<25mmø) & medium (25-75mmø) deadwood in low volumes. Small (<25mmø) epicormic growth in low volumes. Partially suppressed.	Consider for Removal	3	1.9	Retain. No works within TPZ.
158	Eucalyptus microcorys (Tallowwood)	22	8	550	Good	Good	Mature	15-40	High	Small (<25mmø) & medium (25-75mmø) deadwood in low volumes. Mechanical damage to exposed surface roots. Grade alteration, cut.	Priority for Retention	6.6	2.6	Retain. Major encroachment, kerb/carpark demolition & new entry.
159	Eucalyptus microcorys (Tallowwood)	7	7	250	Good	Fair	Mature	5-15	Low	Small (<25mmø) & medium (25-75mmø) deadwood in moderate volumes. Heavily suppressed. Mechanical damage to exposed surface roots.	Consider for Removal	3	1.9	Retain. Major encroachment, new entry.

Tree No.	Species	Height (m)	Crown Spread (m)	DBH (mm)	Health Rating	Structural Condition Rating	Age Class	ULE (years)	Landscape Significance	Comments	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
160	Ficus rubiginosa (Port Jackson Fig)	6	5	300	Fair	Poor	Mature	5-15	Low	Small (<25mmø) & medium (25-75mmø) deadwood in moderate volumes. Heavily suppressed. Branch cavity, major. Mechanical damage to exposed surface roots. Flush cuts.	Consider for Removal	3.6	2	Retain. No works within TPZ.
161	Corymbia maculata (Spotted Gum)	12	5	300	Fair	Good	Mature	5-15	Low	Crown density 25-50%. Small (<25mmø) & medium (25-75mmø) deadwood in moderate volumes. Partially suppressed. Structures within SRZ.	Consider for Removal	3.6	2	Retain. Major encroachment, kerb/carpark demolition, new entry & engineering services.
163	Ficus rubiginosa (Port Jackson Fig)	12	10	600 @ grade	Good	Fair	Mature	5-15	Moderate	Small (<25mmø), medium (25-75mmø) & large (>75mmø) deadwood in moderate volumes. Co-dominant inclusions, minor. Wound(s). Mechanical damage to exposed surface roots. Flush cuts. Remove partially failed 150mm branch hung up in crown.	Consider for Retention	7.2	2.7	Retain. Minor encroachment, kerb/carpark demolition & engineering services.
164	Lophostemon confertus (Brush Box)	10	3	200	Good	Good	Mature	15-40	Moderate	Small (<25mmø) deadwood in low volumes. Heavily suppressed.	Consider for Retention	2.4	1.7	Retain. Major encroachment, kerb/carpark demolition.
165	Lophostemon confertus (Brush Box)	9	3	150	Fair	Fair	Mature	5-15	Low	Small (<25mmø) & medium (25-75mmø) deadwood in moderate volumes. Heavily suppressed.	Consider for Removal	2	1.5	Retain. Major encroachment, kerb/carpark demolition.
166	Lophostemon confertus (Brush Box)	9	4	300	Good	Good	Mature	5-15	Low	Small (<25mmø) & medium (25-75mmø) deadwood in low volumes. Small (<25mmø) epicormic growth in low volumes. Partially suppressed. Structures within SRZ.	Consider for Removal	3.6	2	Retain. Major encroachment, kerb/carpark demolition.
167	Ficus rubiginosa (Port Jackson Fig)	11	10	500 @ grade	Good	Fair	Mature	15-40	Moderate	Small (<25mmø), medium (25-75mmø) & large (>75mmø) deadwood in moderate volumes. Partially suppressed. Codominant inclusions, minor. Bark inclusion(s), major. Wound(s). Root severance within SRZ. Mechanical damage to exposed surface roots. Flush cuts.	Consider for Retention	6	2.5	Retain. Minor encroachment, kerb/carpark demolition.

Tree No.	Species	Height (m)	Crown Spread (m)	DBH (mm)	Health Rating	Structural Condition Rating	Age Class	ULE (years)	Landscape Significance	Comments	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
168	Lophostemon confertus (Brush Box)	9	4	200	Good	Good	Mature	15-40	Low	Partially suppressed. Flush cuts.	Consider for Removal	2.4	1.7	Retain. Major encroachment, kerb/carpark demolition.
169	Lophostemon confertus (Brush Box)	9	4	250	Fair	Good	Mature	5-15	Low	Small (<25mmø) & medium (25-75mmø) deadwood in moderate volumes. Bark inclusion(s), minor.	Consider for Removal	3	1.9	Retain. Major encroachment, kerb/carpark demolition.
170	Ficus rubiginosa (Port Jackson Fig)	8	10	650@ grade	Fair	Good	Mature	15-40	Moderate	Crown density 50-75%. Small (<25mmø) & medium (25-75mmø) deadwood in moderate volumes. Small (<25mmø) epicormic growth in low volumes. Wound(s). Mechanical damage to exposed surface roots.	Consider for Retention			Retain. Major encroachment, kerb/carpark demolition & terraces.
171	Ficus rubiginosa (Port Jackson Fig)	7	6	250 250 250	Good	Fair	Mature	5-15	Low	Partially suppressed. Phototrophic lean, severe. Wound(s). Mechanical damage to exposed surface roots. Flush cuts.	Consider for Removal	5.4	2.4	Retain. Major encroachment, kerb/carpark demolition, terraces & path.
172	Lophostemon confertus (Brush Box)	9	4	250	Good	Good	Mature	15-40	Low	Small (<25mmø) deadwood in low volumes. Partially suppressed.	Consider for Removal	3	1.9	Retain. Major encroachment, kerb/carpark demolition, terraces & path.
173	Lophostemon confertus (Brush Box)	8	4	300	Good	Poor	Mature	5-15	Low	Small (<25mmø), medium (25-75mmø) & large (>75mmø) deadwood in low volumes. Bark inclusion(s), minor. Trunk cavity(s), major. Mechanical damage to exposed surface roots.	Consider for Removal	3.6	2	Retain. Major encroachment, kerb/carpark demolition & terraces.
174	Lophostemon confertus (Brush Box)	12	6	400	Good	Good	Mature	15-40	Moderate	Small (<25mmø) deadwood in low volumes. Mechanical damage to exposed surface roots.	Consider for Retention	4.8	2.3	Retain. Major encroachment, kerb/carpark demolition & terraces.
175	Lophostemon confertus (Brush Box)	5	3	250	Good	Poor	Mature	5-15	Low	Crown density 50-75%. Small (<25mmø) deadwood in low volumes. Heavily suppressed. Phototrophic lean, moderate. Trunk cavity(s), major. Mechanical damage to exposed surface roots.	Consider for Removal	3	1.9	Retain. No works within TPZ.

Tree No.	Species	Height (m)	Crown Spread (m)	DBH (mm)	Health Rating	Structural Condition Rating	Age Class	ULE (years)	Landscape Significance	Comments	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
176	Lophostemon confertus (Brush Box)	9	4	250	Good	Good	Mature	15-40	Moderate	Crown density 50-75%. Small (<25mmø) deadwood in moderate volumes. Partially suppressed. Structures within SRZ.	Consider for Retention	3	1.9	Retain. Major encroachment, kerb/carpark demolition & terraces.
177	Ficus rubiginosa (Port Jackson Fig)	4	3	200	Good	Fair	Mature	15-40	Low	Crown density 50-75%. Small (<25mmø) deadwood in low volumes. Small (<25mmø) epicormic growth in moderate volumes. Heavily suppressed. Wound(s), advanced stages of decay. Flush cuts. Fig psyllid.	Consider for Removal	2.4	1.7	Retain. No works within TPZ.
178	Corymbia maculata (Spotted Gum)	16	8	550	Good	Good	Mature	15-40	Moderate	Small (<25mmø) & medium (25-75mmø) deadwood in low volumes.	Consider for Retention	6.6	2.6	Retain. Major encroachment, kerb/carpark demolition & terraces.
179	Ficus rubiginosa (Port Jackson Fig)	6	8	400	Fair	Fair	Mature	5-15	Moderate	Small (<25mmø) & medium (25-75mmø) deadwood in low volumes. Partially suppressed. Co-dominant inclusions, minor. Wound(s), early signs of decay. Mechanical damage to exposed surface roots. Flush cuts. Fig psyllid.	Consider for Retention	4.8	2.3	Retain. No works within TPZ.
180	Corymbia maculata (Spotted Gum)	10	5	250	Good	Good	Mature	15-40	Moderate	Small (<25mmø) & medium (25-75mmø) deadwood in low volumes. Mechanical damage to exposed surface roots. Structures within SRZ.	Consider for Retention	3	1.9	Retain. Major encroachment, kerb/carpark demolition & terraces.
181	Eucalyptus saligna (Sydney Blue Gum)	22	8	350	Good	Fair	Mature	15-40	Moderate	Small (<25mmø) deadwood in low volumes.	Consider for Retention	4.2	2.2	Retain. Major encroachment, kerb/carpark demolition & terraces.
182	Ficus rubiginosa (Port Jackson Fig)	5	6	300	Good	Fair	Mature	15-40	Moderate	Small (<25mmø), medium (25-75mmø) & large (>75mmø) deadwood in moderate volumes. Partially suppressed. Flush cuts.	Consider for Retention	3.6	2	Retain. No works within TPZ.

Tree No.	Species	Height (m)	Crown Spread (m)	DBH (mm)	Health Rating	Structural Condition Rating	Age Class	ULE (years)	Landscape Significance	Comments	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
183	Banksia integrifolia (Coastal Banksia)	5	3	150	Good	Good	Mature	5-15	Low	Wound(s), no visible sign of decay. Structures within SRZ.	Consider for Removal	2	1.5	Retain. Major encroachment, kerb/carpark demolition & terraces.
184	Eucalyptus saligna (Sydney Blue Gum)	20	9	300	Good	Good	Mature	15-40	Moderate	Small (<25mmø) & medium (25-75mmø) deadwood in low volumes. Partially suppressed.	Consider for Retention	3.6	2	Retain. Major encroachment, kerb/carpark demolition, terraces & path.
185	Eucalyptus saligna (Sydney Blue Gum)	10	4	200	Good	Good	Mature	15-40	Low	Structures within SRZ.	Consider for Removal	2.4	1.7	Retain. No works within TPZ.
186	Ficus rubiginosa (Port Jackson Fig)	5	6	300	Good	Good	Mature	15-40	Moderate	Partially suppressed. Flush cuts. Fig psyllid.	Consider for Retention	3.6	2	Retain. Major encroachment, path.
187	Eucalyptus saligna (Sydney Blue Gum)	22	10	400	Good	Good	Mature	15-40	Moderate	Medium (25-75mmø) deadwood in low volumes. Mechanical damage to exposed surface roots. Split branch.	Consider for Retention	4.8	2.3	Remove. Extent of pruning for piling rig.
189	Ficus rubiginosa (Port Jackson Fig)	6	7	300	Good	Good	Mature	15-40	Moderate	Small (<25mmø) & medium (25-75mmø) deadwood in low volumes. Bark inclusion(s), minor. Mechanical damage to exposed surface roots. Flush cuts.	Consider for Retention	3.6	2	Retain. Major encroachment, path.
190	Eucalyptus paniculata (Grey Ironbark)	14	9	550	Poor	Fair	Late Mature	<5	Moderate	Crown density 50-75%. Small (<25mmø), medium (25-75mmø) & large (>75mmø) deadwood in moderate volumes. Depressed seam of tissue on 1st order branch. Mechanical damage to exposed surface roots.	Priority for Removal	6.6	2.6	Remove. Extent of pruning for piling rig.
191	Eucalyptus saligna (Sydney Blue Gum)	10	4	200	Good	Good	Mature	15-40	Low	Mature epicormic at base.	Consider for Removal	2.4	1.7	Retain. Major encroachment, engineering services.

Tree No.	Species	Height (m)	Crown Spread (m)	DBH (mm)	Health Rating	Structural Condition Rating	Age Class	ULE (years)	Landscape Significance	Comments	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
192	Ficus rubiginosa (Port Jackson Fig)	6	6	250	Good	Poor	Mature	5-15	Low	Small (<25mmø) deadwood in low volumes. Wound(s), advanced stages of decay. Trunk cavity(s), major. Mechanical damage to exposed surface roots.	Consider for Removal	3	1.9	Remove. Engineering services.
193	Lophostemon confertus (Brush Box)	7	4	300	Good	Good	Mature	15-40	Moderate	Small (<25mmø) & medium (25-75mmø) deadwood in low volumes. Partially suppressed. Mechanical damage to exposed surface roots.	Consider for Retention	3.6	2	Retain. Major encroachment, engineering services.
194	Lophostemon confertus (Brush Box)	7	4	350	Fair	Good	Mature	15-40	Moderate	Crown density 50-75%. Small (<25mmø) & medium (25-75mmø) deadwood in low volumes. Small (<25mmø) epicormic growth in low volumes.	Consider for Retention	4.2	2.2	Retain. Major encroachment, kerb/carpark demolition.
195	Lophostemon confertus (Brush Box)	7	4	300	Good	Good	Mature	15-40	Moderate	Small (<25mmø) deadwood in low volumes.	Consider for Retention	3.6	2	Remove. Basement.
197	Lophostemon confertus (Brush Box)	4	3	200	Good	Fair	Semi- mature	5-15	Low	Crown density 50-75%. Small (<25mmø) & medium (25-75mmø) deadwood in low volumes. Split branch.	Consider for Removal	2.4	1.7	Remove. Basement.
245-1	Lophostemon confertus (Brush Box)	4	2	100	Good	Good	Semi- mature	5-15	Low	Limited inspection of trunk due to installation of trunk protection. Crown density 50-75%. Structures within SRZ. Sap sucking leaf damage. Buried root collar.	Consider for Removal	2	1.5	Remove. Basement.
245-2	Lophostemon confertus (Brush Box)	4	2	100	Good	Good	Semi- mature	5-15	Low	Limited inspection of trunk due to installation of trunk protection. Crown density 50-75%. Structures within SRZ. Sap sucking leaf damage. Buried root collar.	Consider for Removal	2	1.5	Remove. Basement.
245-3	Lophostemon confertus (Brush Box)	4	2	100	Good	Fair	Semi- mature	5-15	Low	Limited inspection of trunk due to installation of trunk protection. Crown density 50-75%. Structures within SRZ. Sap sucking leaf damage. Buried root collar.	Consider for Removal	2	1.5	Remove. Basement.
245-4	Lophostemon confertus (Brush Box)	4	2	100	Good	Good	Semi- mature	5-15	Low	Limited inspection of trunk due to installation of trunk protection. Crown density 50-75%. Structures within SRZ. Sap sucking leaf damage. Buried root collar.	Consider for Removal	2	1.5	Remove. Basement.

Tree No.	Species	Height (m)	Crown Spread (m)	DBH (mm)	Health Rating	Structural Condition Rating	Age Class	ULE (years)	Landscape Significance	Comments	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
245-5	Lophostemon confertus (Brush Box)	4	2	100	Good	Good	Semi- mature	5-15	Low	Limited inspection of trunk due to installation of trunk protection. Crown density 50-75%. Structures within SRZ. Sap sucking leaf damage. Buried root collar.	Consider for Removal	2	1.5	Remove. Basement.
246-1	Cupaniopsis anacardiodes (Tuckeroo)	6	3	150	Good	Good	Semi- mature	15-40	Low	Limited inspection of trunk due to installation of trunk protection.	Consider for Removal	2.0	1.6	Remove. Basement.
246-11	Cupaniopsis anacardiodes (Tuckeroo)	6	3	150	Good	Good	Semi- mature	15-40	Low	Limited inspection of trunk due to installation of trunk protection.	Consider for Removal	2.0	1.6	Retain. No works within TPZ.
246-12	Cupaniopsis anacardiodes (Tuckeroo)	6	3	150	Good	Good	Semi- mature	15-40	Low	Limited inspection of trunk due to installation of trunk protection.	Consider for Removal	2.0	1.6	Retain. No works within TPZ.
246-2	Cupaniopsis anacardiodes (Tuckeroo)	6	3	150	Good	Good	Semi- mature	15-40	Low	Limited inspection of trunk due to installation of trunk protection.	Consider for Removal	2.0	1.6	Remove. Basement.
246-3	Cupaniopsis anacardiodes (Tuckeroo)	6	3	150	Good	Good	Semi- mature	15-40	Low	Limited inspection of trunk due to installation of trunk protection.	Consider for Removal	2.0	1.6	Remove. Basement.
246-4	Cupaniopsis anacardiodes (Tuckeroo)	6	3	150	Good	Good	Semi- mature	15-40	Low	Limited inspection of trunk due to installation of trunk protection.	Consider for Removal	2.0	1.6	Remove. Basement.
246-5	Cupaniopsis anacardiodes (Tuckeroo)	6	3	150	Good	Good	Semi- mature	15-40	Low	Limited inspection of trunk due to installation of trunk protection.	Consider for Removal	2.0	1.6	Remove. Basement.
246-6	Cupaniopsis anacardiodes (Tuckeroo)	6	3	150	Good	Good	Semi- mature	15-40	Low	Limited inspection of trunk due to installation of trunk protection.	Consider for Removal	2.0	1.6	Remove. Basement.

Tree No.	Species	Height (m)	Crown Spread (m)	DBH (mm)	Health Rating	Structural Condition Rating	Age Class	ULE (years)	Landscape Significance	Comments	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
246-7	Cupaniopsis anacardiodes (Tuckeroo)	6	3	150	Good	Good	Semi- mature	15-40	Low	Limited inspection of trunk due to installation of trunk protection.	Consider for Removal	2.0	1.6	Remove. Basement.
246-8	Cupaniopsis anacardiodes (Tuckeroo)	6	3	150	Fair	Good	Semi- mature	15-40	Low	Crown density 75-95%. Small (<25mm) diameter deadwood in low volumes. Limited inspection of trunk due to installation of trunk protection.	Consider for Removal	2.0	1.6	Remove. Basement.
246-9	Cupaniopsis anacardiodes (Tuckeroo)	6	3	150	Good	Good	Semi- mature	15-40	Low	Limited inspection of trunk due to installation of trunk protection.	Consider for Removal	2.0	1.6	Remove. Basement.
246-10	Cupaniopsis anacardiodes (Tuckeroo)	6	3	150	Good	Good	Semi- mature	15-40	Low	Limited inspection of trunk due to installation of trunk protection.	Consider for Removal	2.0	1.6	Remove. Basement.
247-1	Cupaniopsis anacardiodes (Tuckeroo)	4	2	150	Fair	Good	Semi- mature	5-15	Low	Crown density 75-95%. Small (<25mm) diameter deadwood in low volumes. Limited inspection of trunk due to installation of trunk protection.	Consider for Removal	2.0	1.6	Remove. Basement.
247-2	Cupaniopsis anacardiodes (Tuckeroo)	4	2	150	Good	Good	Semi- mature	15-40	Low	Limited inspection of trunk due to installation of trunk protection.	Consider for Removal	2.0	1.6	Remove. Basement.
247-3	Cupaniopsis anacardiodes (Tuckeroo)	4	2	150	Good	Poor	Semi- mature	5-15	Low	Limited inspection of trunk due to installation of trunk protection.	Consider for Removal	2.0	1.6	Remove. Basement.
247-4	Cupaniopsis anacardiodes (Tuckeroo)	4	2	150	Good	Good	Semi- mature	15-40	Low	Limited inspection of trunk due to installation of trunk protection.	Consider for Removal	2.0	1.6	Remove. Basement.
247-5	Cupaniopsis anacardiodes (Tuckeroo)	4	2	150	Good	Good	Semi- mature	15-40	Low	Limited inspection of trunk due to installation of trunk protection.	Consider for Removal	2.0	1.6	Remove. Basement.

Tree No.	Species	Height (m)	Crown Spread (m)	DBH (mm)	Health Rating	Structural Condition Rating	Age Class	ULE (years)	Landscape Significance	Comments	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
247-6	Cupaniopsis anacardiodes (Tuckeroo)	4	2	150	Good	Good	Semi- mature	15-40	Low	Limited inspection of trunk due to installation of trunk protection.	Consider for Removal	2.0	1.6	Remove. Basement.
248-3	Cupaniopsis anacardiodes (Tuckeroo)	4	2	150	Good	Good	Semi- mature	15-40	Low	Limited inspection of trunk due to installation of trunk protection.	Consider for Removal	2.0	1.6	Remove. Basement.
248-4	Cupaniopsis anacardiodes (Tuckeroo)	4	2	150	Good	Good	Semi- mature	15-40	Low	Limited inspection of trunk due to installation of trunk protection.	Consider for Removal	2.0	1.6	Remove. Basement.
248-5	Cupaniopsis anacardiodes (Tuckeroo)	4	2	150	Good	Good	Semi- mature	15-40	Low	Limited inspection of trunk due to installation of trunk protection.	Consider for Removal	2.0	1.6	Remove. Basement.
248-6	Cupaniopsis anacardiodes (Tuckeroo)	4	2	150	Good	Good	Semi- mature	15-40	Low	Limited inspection of trunk due to installation of trunk protection.	Consider for Removal	2.0	1.6	Remove. Basement.
301	Lophostemon confertus (Brush Box)	5	2	150	Good	Good	Mature	15-40	Low	Crown density 75-95%. Small (<25mm) diameter deadwood in low volumes.	Consider for Removal	2	1.5	Remove. Basement.
302	Eucalyptus tereticornis (Forest Red Gum)	4	2	150	Poor	Poor	Mature	<5	Low	Crown density 50-75%. Wounds, early stages of decay.	Priority for Removal	2	1.5	Remove. Basement.
303	Eucalyptus microcorys (Tallowwood)	23	7	850	Good	Good	Mature	15-40	Moderate	Medium (25-75mmø) deadwood in low volumes. Codominant inclusion, minor. Wound(s), early stages of decay.	Consider for Retention	10.2	3.2	Remove. Basement.
304	Lophostemon confertus (Brush Box)	16	5	650	Fair	Good	Mature	15-40	Moderate	Crown density 50-75%. Small (<25mmø) and medium (25-75mmø) deadwood in low volumes.	Consider for Retention	7.8	2.9	Retain. Major encroachment, basement, pavement & stairs.

Tree No.	Species	Height (m)	Crown Spread (m)	DBH (mm)	Health Rating	Structural Condition Rating	Age Class	ULE (years)	Landscape Significance	Comments	Retention Value	Radial TPZ (m)	Radial SRZ (m)	Implication
305	Ficus rubiginosa (Port Jackson Fig)	16	8	425 500 300 550	Good	Good	Mature	15-40	Moderate	Medium (25-75mmø) deadwood in low volumes. Wound(s), early stages of decay.	Consider for Retention	10.9	3.3	Retain. Major encroachment, basement, pavement & stairs.
306	Ficus rubiginosa (Port Jackson Fig)	16	7	600 400 400	Good	Good	Mature	15-40	Moderate	Medium (25-75mmø) deadwood in low volumes. Wound(s), early stages of decay.	Consider for Retention	9.9	3.2	Retain. Major encroachment, basement, pavement, stairs & engineering services.

Appendix 4: Plates

carpark



frontage at the entrance to the existing



Plate 2: Showing trees on the Driver Ave frontage



Plate 3: Showing trees on the corner Driver Avenue & Moore Park Rd



Plate 4: Showing trees on the Moore Park frontage, near the UTS building



Park Rd frontage

