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ARBORICULTURAL IMPACT ASSESSMENT TREE PROTECTION SPECIFICATION

Sydney Grammar School Weigall Sports Complex

Prepared for: JATTCA PROPERTY SOLUTIONS

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Revision C

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1.0 INTRODUCTION

1.1 Background

1.1.1 This Arboricultural Impact Assessment Report and Tree Protection Specification was prepared for Jattca, on behalf of Sydney Grammar School (SGS), in relation to the proposed State Significant Development Application (SSDA) for the Weigall Sports Complex at Neild Avenue, Rushcutters Bay.

1.1.2 The purpose of this Report is to undertake a Visual Tree Assessment¹ (VTA), determine the impact of the proposed works on the trees, and where appropriate, recommend the use of sensitive construction methods and tree protection methods to minimise adverse impacts. The ecological and heritage significance of the trees has not been assessed and is beyond the scope of this Report.

1.1.3 In preparing this Report, the author has considered the objectives of the following:

- *State Environmental Planning Policy Vegetation in Non-Rural Areas (2017)*
- *Planning Secretary's Environmental Assessment Requirements (July 2020)*
- *Woollahra Local Environmental Plan (2014)*
- *Woollahra Development Control Plan Chapter E3 - Tree Management & DA Guide - Attachment 4 (2013)*
- *Woollahra Municipal Council Register of Significant Trees (1991)*
- *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**)

1.1.4 This impact assessment is based on an assessment of the following supplied documentation/plans only:

- Site Plans A1000 & A1001 issue A – prepared by AJ+C
- Demolition Plan A1100 issue A – prepared by AJ+C
- General Arrangement Plans A2100-A2105 – prepared by AJ+C
- Elevations A3100, A3101, A3110 & A3111 – prepared by AJ+C
- Sections A3200, A3201, A3210 & A3211 – prepared by AJ+C
- Weigall Sport Complex Landscape Plan – prepared by ASPECT
- General Arrangement - Main Building – prepared by ASPECT
- General Arrangement - Car Park – prepared by ASPECT
- Sections – prepared by ASPECT
- Tree Canopy Coverage – prepared by ASPECT
- Planting Strategy Plan – prepared by ASPECT
- Planting Palette – prepared by ASPECT
- Planting Schedule – prepared by ASPECT

Refer to Plans (**Appendix 2**)

¹ Mattheck & Breloer (2003)

1.2 The Proposal

1.2.1 The scope of the project is as follows:

1.2.2 **Demolition** of the following existing structures and buildings (which are not heritage significant) at the southern edge of the SGS Weigall Sports Ground:

- Multipurpose/tennis courts and associated fencing;
- Barry Pavilion;
- The existing cricket nets off Alma Street; and
- Paved car park near Neild Avenue.

1.2.3 **Construction** of the SGS Weigall Sports Complex comprising the following:

- Building 1 - Sports facilities building accommodating the following facilities:
 - a) Ground floor: Main pool, programme pool, terrace/assembly facing Weigall, entry foyer, offices, change rooms, back of house, services and external car parking (5 spaces) and loading
 - b) Mezzanine floor: spectator terrace and services
 - c) First floor: Multipurpose sports hall 01 – basketball and volleyball, Multipurpose sports hall 02 –cardio, weights, taekwondo, fencing, PDHPE, change rooms, storage and services
 - d) Level 2: Multipurpose room 04; Multipurpose sports hall 03 –cardio, weights, taekwondo, fencing, PDHPE, storage and services
 - e) Driveway entry from Neild Avenue (comprising relocation of the existing driveway southwards with existing driveway potential retained for maintenance access)
- Building 2 – Car park comprising an ancillary car park of one/two split levels accommodating 93 spaces with an additional 4 spaces on grade, accessed from an existing entry from Alma Street (located on the existing cricket nets site). The lower ground level includes the flexibility to be used as an extension of the existing playing fields
- Parking for a total of 102 cars comprising:
 - a) Building 1: 5 spaces
 - b) Building 2: 97 car spaces (93 within the building and four at grade)
- Landscaping of the site including tree removal/retention/replacement, paths, fencing and lighting
- Building identification signage
- New kiosk substation.

1.2.4 **Use** of the completed building as an educational establishment with external/community use of the proposed facilities that coordinates with the programming of the SGS.

1.2.5 The proposal does not include any of the following:

- General learning areas (GLA)
- An increase in the existing student or staff population.

2.0 RESULTS

2.1 The Site

2.1.1 The State Significant Development Application (SSDA) site is part of the Weigall Playing Fields located on Neild Avenue at Rushcutters Bay.

2.1.2 Weigall is bordered by:

- Neild Avenue to the west (Neild Avenue is classified as a collector road and also forms part of the State Road MR625 managed by Roads and Maritime Services)
- State Rail land and the Eastern Suburbs Railway viaduct to the north
- White City (Hakoah Club and Maccabi Tennis Club), SGS Edgecliff Preparatory School, Vialoux Avenue, Alma Street and residential development to the south
- Residential development to the south and north-east
- A Sydney Water stormwater channel which traverses the site
- A right of way from Alma Street, benefiting the site, which crosses the site formerly known as White City

2.2 The Trees

2.2.1 One hundred and four (104) trees were addressed within this Report. The trees at Weigall are annually assessed by Arborsafe as part of the school's tree risk management program. The Arborsafe tree assessment data was provided to treeiQ and a detailed site inspection undertaken to allocate Useful Life Expectancy (ULE) ranges and Retention Value categories in line with the Methodology (**Appendix 1**). A Visual Tree Assessment² (VTA) was undertaken for those trees not covered by the existing tree inventory. Species and trunk diameter measurements were recorded for trees located outside of the site boundaries for the purposes of determining Tree Protection Zone (TPZ) calculations only.

2.2.2 The trees comprise of a mix of locally indigenous, Australian-native and exotic species. Thirty-four (34) species are represented with *Schinus areira* (Peppercorn) the dominant species on site.

2.2.3 Aerial images of the site from 1943 show the site was largely cleared and has since been replanted.³ Tree 74 *Ficus rubiginosa* (Port Jackson Fig) and the street trees along Neild Avenue are likely to pre-date 1943.

2.2.4 None of the trees are listed within the *Woollahra Council Significant Tree Register (1991)* or *Schedule 5 Environmental Heritage of the Woollahra Local Environmental Plan (2014)*.⁴

2.2.5 Tree 114 *Olea europaea* subsp. *Cuspidata* (African Olive) is listed as an exempt species within Section E3.4 of *Woollahra Development Control Plan Chapter E3* (Tree Management).

2.2.6 The trees listed in Table 1 are subject to a *General Biosecurity Duty* by the Department of Primary Industries. In particular, *Olea europaea* subsp. *Cuspidata* (African Olive) and *Sapium sebiferum* (Chinese Tallow Tree) must not be sold in NSW.⁵

² Mattheck & Breloer (2003)

³ NSW Government Spatial Services (2016)

⁴ Woollahra Council (1991); Woollahra Council (2014)

⁵ Department of Primary Industries (2017)

2.2.7 Table 1: General Biosecurity Duty Species

Species	Tree Number
<i>Celtis sinensis</i> (Chinese Hackberry)	D, F, G, H & N
<i>Cinnamomum camphora</i> (Camphor Laurel)	E
<i>Olea europaea</i> subsp. <i>Cuspidata</i> (African Olive)	114
<i>Sapium sebiferum</i> (Chinese Tallow Tree)	22, 23 & 24

2.2.8 A search of the BioNet Atlas of NSW Wildlife Database was undertaken in December 2019. *Syzygium paniculatum* Brush Cherry Lillypilly (Trees 115, 120, 122-130 & 133) is a locally indigenous species which is listed as *Endangered* under the NSW *Biodiversity Conservation Act (2016)* and *Vulnerable* under the Commonwealth *Environment Protection & Biodiversity Conservation Act (1999)*. Based on their locations, the trees are planted specimens and are not a component of locally indigenous vegetation community.

2.2.9 As required by Clause 2.3.2 of *Australian Standard 4970 Protection of Trees on Development Sites (2009)*, each tree (and tree group) 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 (and tree groups) have been allocated one of the following Retention Values:

- Priority for Retention
- Consider for Retention
- Consider for Removal
- Priority for Removal

2.2.10 Of the ninety (90) trees within the site:

- Six (6) trees (6.5%) were allocated a Retention Value of *Priority for Retention*
- Forty-two (42) trees (47%) were allocated a Retention Value of *Consider for Retention*
- Thirty-six (36) trees (40%) were allocated a Retention Value of *Consider for Removal*
- Six (6) trees (6.5%) were allocated a Retention Value of *Priority for Removal*

Refer to Tree Assessment Schedule (**Appendix 3**)

3.0 ARBORICULTURAL IMPACT ASSESSMENT

3.1 Tree Removal

3.1.1 Trees 15-19

Trees 15-19 were identified as *Schinus areira* (Peppercorn) and are located to the north of the existing tennis courts. The trees are of moderate Landscape Significance and have been allocated a Retention Value of *Consider for Retention*.

3.1.2 The supplied plans show that Trees 15-19 will need to be removed to accommodate the proposed building.

3.1.3 Tree 29

Tree 29 was identified as *Ulmus parvifolia* (Chinese Elm) and is located to the south of the existing tennis courts. The tree is of moderate Landscape Significance and has been allocated a Retention Value of *Consider for Retention*.

3.1.4 The supplied plans show that Tree 29 will need to be removed due to the extent of pruning required for building clearance.

3.1.5 Trees 31 & 36

Trees 31 and 36 were identified as *Jacaranda mimosifolia* (Jacaranda) and *Casuarina cunninghamiana* (River Sheoak) respectively and are located adjacent to the Neild Avenue frontage. The trees are of moderate Landscape Significance and have been allocated a Retention Value of *Consider for Retention*.

3.1.6 The supplied plans show that Tree 31 will need to be removed due to the extent of pruning required for building clearance and Tree 36 will need to be removed to accommodate to pedestrian entry off Neild Avenue.

3.1.7 Tree 32

Tree 32 was identified as *Corymbia citriodora* (Lemon Scented Gum) are located adjacent to the Neild Avenue frontage. The tree is of moderate Landscape Significance and has been allocated a Retention Value of *Consider for Retention*.

3.1.8 The supplied plans show that Tree 32 will need to be removed to the extent of pruning required for building clearance.

3.1.9 Trees 34, 35 & 37

Trees 34 and 37 were identified as *Schinus areira* (Peppercorn) and Tree 35 was identified as *Casuarina cunninghamiana* (River Sheoak) and are located adjacent to the Neild Avenue frontage. Trees 34 and 37 are of low Landscape Significance and have been allocated a Retention Value of *Consider for Removal*. Tree 35 is of moderate Landscape Significance and has been allocated a Retention Value of *Consider for Retention*.

3.1.10 The supplied plans show that Trees 34, 35 and 37 will need to be removed to accommodate the pedestrian entry off Neild Avenue.

3.1.11 Tree 47

Tree 47 was identified as *Schinus areira* (Peppercorn) and is located adjacent to the Neild Avenue frontage. The tree is of low Landscape Significance and has been allocated a Retention Value of *Consider for Removal*.

3.1.12 The supplied plans show that Tree 47 is to be removed as part of the proposed landscape treatment.

3.1.13 Tree 61

Tree 61 was identified as *Phoenix canariensis* (Canary Island Date Palm) and is located near the Alma Street entry. The tree is of moderate Landscape Significance and has been allocated a Retention Value of *Consider for Retention*.

3.1.14 The supplied plans show that Tree 61 will need to be removed to accommodate the proposed carpark entry.

3.1.15 Tree 118

Tree 118 was identified as *Callistemon* sp. (Bottlebrush) and is located adjacent to the eastern site boundary. The tree is of low Landscape Significance and has been allocated a Retention Value of *Consider for Removal*.

3.1.16 The supplied plans show that Tree 118 is to be removed as part of the proposed landscape treatment.

3.1.17 Tree 119

Tree 119 was identified as *Lagerstroemia indica* (Crepe Myrtle) and is located adjacent to the southern site boundary. The tree is of low Landscape Significance and has been allocated a Retention Value of *Consider for Removal*.

3.1.18 The supplied plans show that Tree 119 will need to be removed to accommodate the proposed tuning circle.

3.1.19 Trees 120, 122, 125 & 126

Trees 120, 122, 125 and 126 were identified as *Syzygium paniculatum* (Lillypilly) and are located adjacent to the Neild Avenue frontage. Trees 120 and 122 are of low Landscape Significance and have been allocated a Retention Value of *Consider for Removal*. Trees 125 and 126 are of moderate Landscape Significance and have been allocated a Retention Value of *Consider for Retention*.

3.1.20 The supplied plans show that Trees 120 and 122 will need to be removed to accommodate the proposed substation and Trees 125 and 126 will need to be removed to accommodate the proposed vehicular entry.

3.2 Tree Retention

3.2.1 The supplied plans show that seventy (70) trees are to be retained as part of the proposed development. This includes six (6) trees with a Retention Value of *Priority for Retention*, twenty nine (29) trees with a Retention Value of *Consider for Retention*, twenty-nine (29) trees with a Retention Value of *Consider for Removal* and six (6) trees with a Retention Value of *Priority for Removal*.

3.2.2 Table 2: Retention Values

Priority for Retention	Consider for Retention	Consider for Removal	Priority for Removal
28, 48, 58, 67, 70 & 74	11, 12, 13, 22, 23, 24, 27, 30, 33, 38, 39, 40, 43, 45, 49, 50, 54, 62, 63, 71, 76, 77, 116, 117, 123, 124, 128, 129 & 130	42, 51, 52, 53, 55, 56, 57, 68, 75, 78, 79, 115, 127, 132, 133, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 168, 169, 170 & 171	30A, 30B, 30C, 30E, 69 & 114

3.2.3 An additional fourteen (14) trees (Trees A-N) located outside the site boundaries are also proposed for retention.

3.2.4 Works are proposed within the Tree Protection Zone (TPZ) areas of thirty-nine (39) trees as discussed below.

3.3 Minor Encroachment

3.3.1 The supplied plans show that works are proposed within the TPZ areas of Trees 28, 30, 40, 43, 45, 130, B and E-J. As the encroachment into the individual TPZ is less than 10% and outside of the Structural Root Zone (SRZ), the extent of works 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 that works are proposed with TPZ areas of Trees 11-13, 22-24, 27, 28, 30A-30C, 30E, 33, 38, 39, 42, 43, 45, 62, 116, 123, 124, 127-129 and D-M. The extent of works represents *Major Encroachments* as defined by AS-4970. Extensive information has been published relating to the use of tree sensitive design and construction methods which can be used to minimise impacts of development on tree health and reduce conflict between trees and built structures. Much of this information has been incorporated into best practice guidelines and standards (i.e. *British Standard 5837 Trees in Relation to Design, Demolition and Construction 2012* & *Australian Standard 4970-2009 Protection of Trees on Development Sites*). Specifically, Clause 3.3.4 of AS-4970, notes that design factors and tree sensitive methods can be used to minimise the impact of the encroachment. These methods should be confirmed as feasible by the relevant project consultants (i.e. architect, landscape, engineer etc) and may require flexibility at the time of construction. The following tree sensitive methods are recommended within the TPZ areas to minimise adverse impacts:

3.4.2 Pavement Installation

The pavement surfaces within the TPZ areas of Trees 11-13, 28, 33, 38, 39, 128, 129 and D should be designed and installed above existing grade (including any sub-base layers where required) with only minimal compaction of the sub-grade (i.e. pedestrian plate compactor only). However, a small amount of excavation will be required within the TPZ areas of Trees 38 and 39 where the pavement meets the footpath on Neild Avenue. Excavation for this section of the pavement should be undertaken using hand tools under the supervision of the Project Arborist. Root pruning should be undertaken by the Project Arborist only. Where significant roots (as determined by the Project Arborist) are to be retained, these roots should be protected with a covering of a compressible material (e.g. Abelflex) and the pavement locally thinned over these roots. In the event that large diameter, surface roots are present within the Structural Root Zone (SRZ) which cannot be pruned or covered with a modified (thinned) pavement/subbase, the path should be narrowed to allow for the retention of these roots within the SRZ.

3.4.3 Carpark

A two-level carpark is proposed in the south-eastern corner of the site. The slab for the upper ground level within the TPZ of Tree 62 should be installed above existing grade as even minor lowering of existing levels within the TPZ has the potential to impact the root system of tree. The design of the footing should allow for flexibility in the location and spanning of piers (where required) to allow for the retention of significant roots (as determined by the Project Arborist). The upper first level is setback by 7m to accommodate a section of the tree's crown. Refer to Plates (**Appendix 4**).

3.4.4 Boundary Fence, Gates & Signage

Where possible, the upgrading of the existing boundary fence should reuse the existing posts within TPZ areas. Where this cannot be achieved, the existing posts should be cut to ground level and the footings left in situ to minimise ground disturbance in TPZ areas.

3.4.5 The gates, signage and boundary wall (where required - refer above) within the TPZ areas of Trees 13, 22-24, 27, 30A, 30B, 30C, 30E, 33, 38, 39, 42, 43, 45, 116, 123, 124, 127-129 and D-M should be supported on isolated piered 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 (hand/hydrovac/airspade etc) and footing locations should be flexible and/or the footing design modified to enable the retention of roots (>25mm ϕ) as required by the Project Arborist.

3.4.6 Fire Hydrant

The fire hydrant/booster slab (including any sub-base layers where required) within the TPZ of Trees 128 and J should be installed above existing grade with only minimal compaction of the sub-grade (i.e. pedestrian plate compactor only). Sub surface pipework should be installed using either hydrovac or hand excavation methods with the services located around/below roots (>25mm ϕ , or as determined by the Project Arborist).

3.5 Other Works within TPZ Areas

3.5.1 Demolition Works

Demolition works within TPZ areas should be supervised by the Project Arborist and utilise tree sensitive methods. Structures should be demolished in small sections ensuring demolition machinery/equipment does not contact with any part of the tree. Existing structures within the SRZ can contribute to tree stability by providing ballast to the rootplate or act as a stop to the overturning of the rootball and should be retained in-situ if possible.

3.5.2 Underground Services

Underground services should be located outside of the TPZ areas. Where this is not possible, services should be installed using tree sensitive excavation (hand/hydrovac/air spade) methods with the services located around/below roots (>25mmØ) as required by the Project Arborist. Excavation using compact machinery 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).

3.5.3 Alternatively, boring methods may be used for underground service installation where the obvert level (highest interior level of pipe) 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 deemed necessary by the Project Arborist.

3.5.4 Landscaping

The installation of plants/turf within the TPZ should be undertaken using hand tools and roots (>25mmØ) should be protected. No mechanical cultivation/ripping of soils should be undertaken within TPZ areas. Soil conditioners and turf underlay may be installed however should not increase existing soil levels within the TPZ by greater than 100mm and must not raise levels within 1m of the base of any tree.

3.6 Pruning

3.6.1 The supplied plans show that Trees 33, 62, 128 and 129 will need to be pruned for building and vehicular clearance. Refer to Plates (**Appendix 4**).

3.6.2 It should be noted that the assessment of pruning requirements was made from ground level with no set-out of the proposed footprints provided. During the construction phase of a project some additional minor pruning works may be required to provide building clearances.

3.6.3 A two-stage approach is recommended to reduce the potential for unnecessary over pruning in the early stages of a project. Stage one pruning addresses the main branches where conflict will occur followed by a second, minor prune around the time of erection of scaffolding to address any (generally smaller) conflicting branches which could not be accurately identified during the initial ground level assessment.

3.6.4 Provision should be made within the scaffolding design so that additional pruning is not required. Where additional clearance is required, branches may be temporarily pushed or tied back. Where branches cannot be pushed or tied back without damage, scaffolding/hoarding should be modified and constructed around branches (with appropriate branch protection installed as required). Deadwood greater 30mmØ should be removed from the crowns of the trees in area with high value targets.

- 3.6.5 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.

3.7 Replacement Planting

- 3.7.1 The supplied plans show that forty-two (42) trees are proposed to help off-set the loss of canopy cover and amenity resultant from the tree removal. Trees should be supplied in accordance with *Australian Standard 2303 (2015) Tree Stock for Landscape Use*.
- 3.7.2 New tree plantings should be supervised by Horticulturalists (AQF Level 3 or above in Horticulture) to ensure correct planting methods.

4.0 CONCLUSION

- 4.1.1 One hundred and four (104) trees were addressed within this Report and comprise a mix of locally indigenous, Australian-native and exotic species.
- 4.1.2 The supplied plans show the proposed works include demolition of existing structures and buildings, construction of the SGS Weigall Sports Complex and use of the completed building as an educational establishment.
- 4.1.3 The supplied plans show that twenty (20) trees (Trees 15-19, 29, 31, 32, 34-37, 47, 61, 118-120, 122, 125 & 126) are proposed for removal as part of the works. Of these, Trees 15-19, 29, 31, 32, 35, 36, 61, 125 and 126 were allocated a Retention Value of *Consider for Retention* and Trees 34, 37, 47, 118, 119, 120 and 122 were allocated a Retention Value of *Consider for Removal*. No trees proposed for removal are of high or very high landscape significance or have been allocated a Retention Value of *Priority for Retention*.
- 4.1.4 The supplied plans show that eighty-four (84) trees (Trees 11-13, 22-24, 27, 28, 30, 30A-30C, 30E, 33, 38-40, 42, 43, 45, 48-58, 62, 63, 67-71, 74-79, 114-117, 123, 124, 127-130, 132, 133, 135-144, 168-171 & A-N) are proposed for retention as part of the works. Tree sensitive design and construction methods will be required for Trees 11-13, 22-24, 27, 28, 30A-30C, 30E, 33, 38, 39, 42, 43, 45, 62, 116, 123, 124, 127-129 and D-M to minimise adverse impacts. The trees should be protected as outlined within the Tree Protection Specification (**Appendix 5**) and Typical Protection Details (**Appendix 6**). In addition, the Project Arborist should review all Construction Certificate Plans, where works are proposed within the TPZ areas, to ensure no additional encroachments or impacts to the trees.
- 4.1.5 The supplied plans show that Trees 33, 62, 128 and 129 will need to be pruned for building and vehicular clearance. 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)*
- 4.1.6 The supplied plans show that forty-two (42) trees are proposed to help off-set the loss of canopy cover and amenity resultant from the tree removal. Trees should be supplied in accordance with *Australian Standard 2303 (2015) Tree Stock for Landscape Use*.

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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Appendix 1: Methodology

- 1.1 Site Inspection:** This report was determined as a result of a comprehensive site inspection during November 2019.
- 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*.⁶ The inspection was limited to a visual examination of the subject tree(s) from ground level only. The inspection was limited to a visual examination of the subject tree(s) from ground level only. No internal diagnostic or tissue testing was undertaken as part of this assessment. Trees outside the subject site were assessed from the property boundaries only.
- 1.3 Tree Dimensions:** The dimensions of the subject tree(s) are approximate only.
- 1.4 Tree Locations:** The location of the subject tree(s) was determined from the supplied plans. Trees not shown on the supplied plans have been plotted in their **approximate location only**.
- 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 rated as *Good, Fair or Poor* based on an assessment of the following factors:
- 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 rated as *Good, Fair or Poor* based on an assessment of the following factors:
- I. 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)
- 1.8 Useful Life Expectancy (ULE):** The ULE is an estimate of the longevity of the subject tree(s) in its growing environment. 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

⁶ 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 Significance	Description
Very High	The subject tree is listed as a Heritage Item under the <i>Local Environmental Plan</i> with a local or state level of significance.
	The subject tree is listed on Council's Significant Tree Register or meets the criteria for significance assessment of trees and/or landscapes by a suitably qualified professional. The criteria are based on general principles outlined in the Burra Charter and on criteria from the Register of the National Estate.
High	The subject tree creates a 'sense of place' or is considered 'landmark' tree.
	The subject tree is of cultural or historical importance or is widely known.
	The subject tree is a prominent specimen which 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 <i>Biodiversity Conservation Act (2016)</i> or the Commonwealth <i>Environmental Protection and Biodiversity Conservation Act (1999)</i> .
	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 <i>Biodiversity Conservation Act (2016)</i> or the Commonwealth <i>Environmental Protection and Biodiversity Conservation Act (1999)</i> .
	The subject tree is an excellent representative of the species in terms of aesthetic value.
Moderate	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.
	The subject tree provides a specific function such as screening or minimising the scale of a building.
Low	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 local Council's Tree Management Controls
	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:

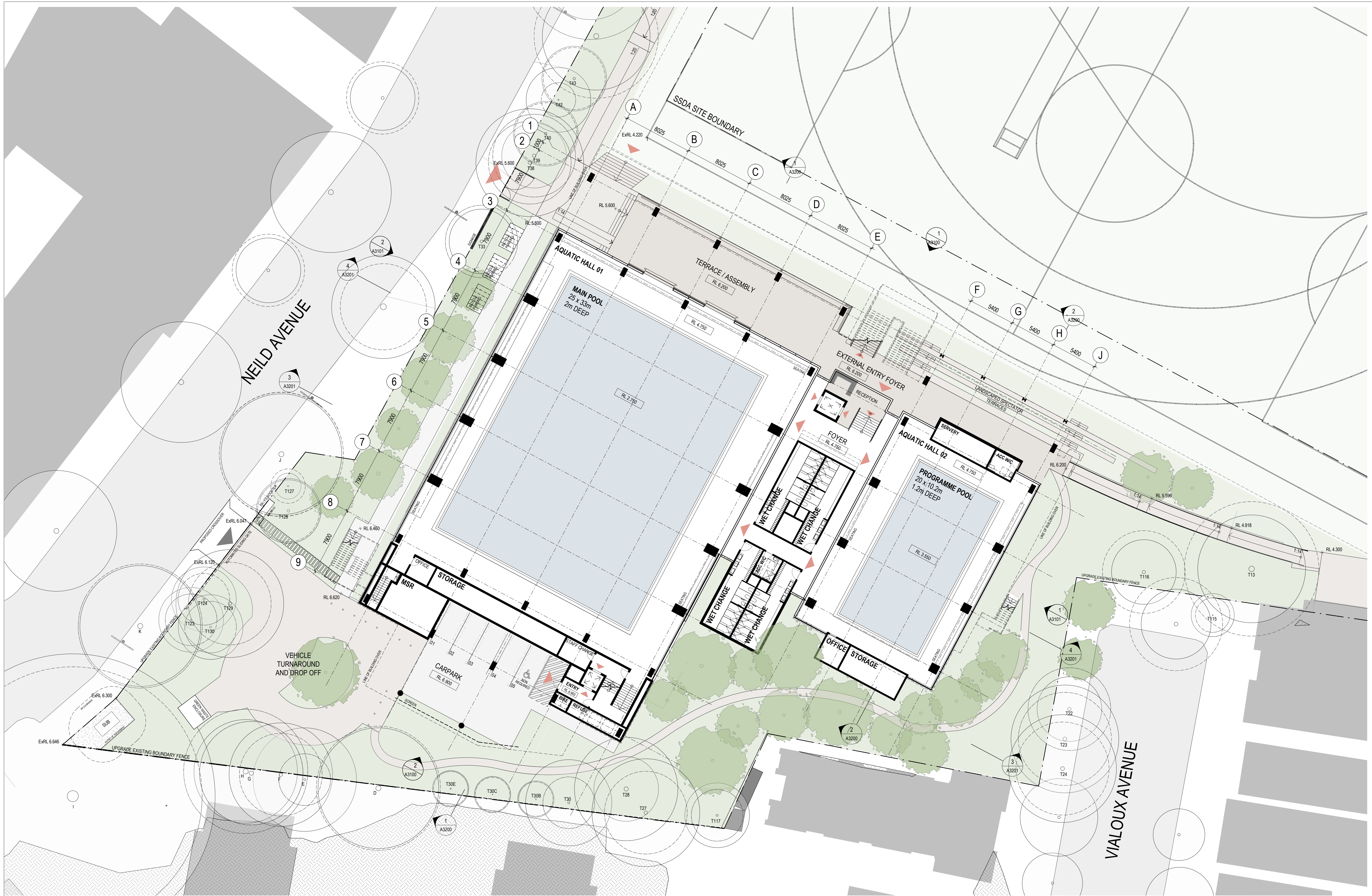
- I. Priority for Retention
- II. Consider for Retention
- III. Consider for Removal
- IV. Priority for Removal

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

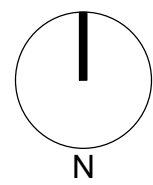
The above table has been modified from the Footprint Green Tree Significance and Retention Value Matrix.



 ELEMENTS TO BE DEMOLISHED	Revisions		Checked ADC	Approved LC	<div>Key</div> <div><div><div></div></div><div>N</div></div>	Client Sydney Grammar School	Architect <div>AJ+C ALLEN JACK+COTTIER</div> <div>79 Myrtle Street Chippendale NSW 2008 AUSTRALIA ph +61 2 9311 8222 fx +61 2 9311 8200 ABN 53 003 782 250</div>	Project SGS Weigall Sports Complex Neild Ave, Rushcutters Bay Proj. No. 19086	Drawing Title WEIGALL SPORTS COMPLEX BUILDING 01 AND BUILDING 02 DEMOLITION PLAN	Sheet Status NOT FOR CONSTRUCTION	<div>Scale</div> <div>1 : 500 @A1</div> <div><div>A1100</div><div>A</div></div> <div><div>0</div><div>5</div><div>10</div><div>20</div><div>40 m</div></div>
	A	02/09/2020									



Revisions	No.	Date	Description	Checked	Approved
A	02/09/2020	ISSUED FOR SSDA	ADC	LC	



Key

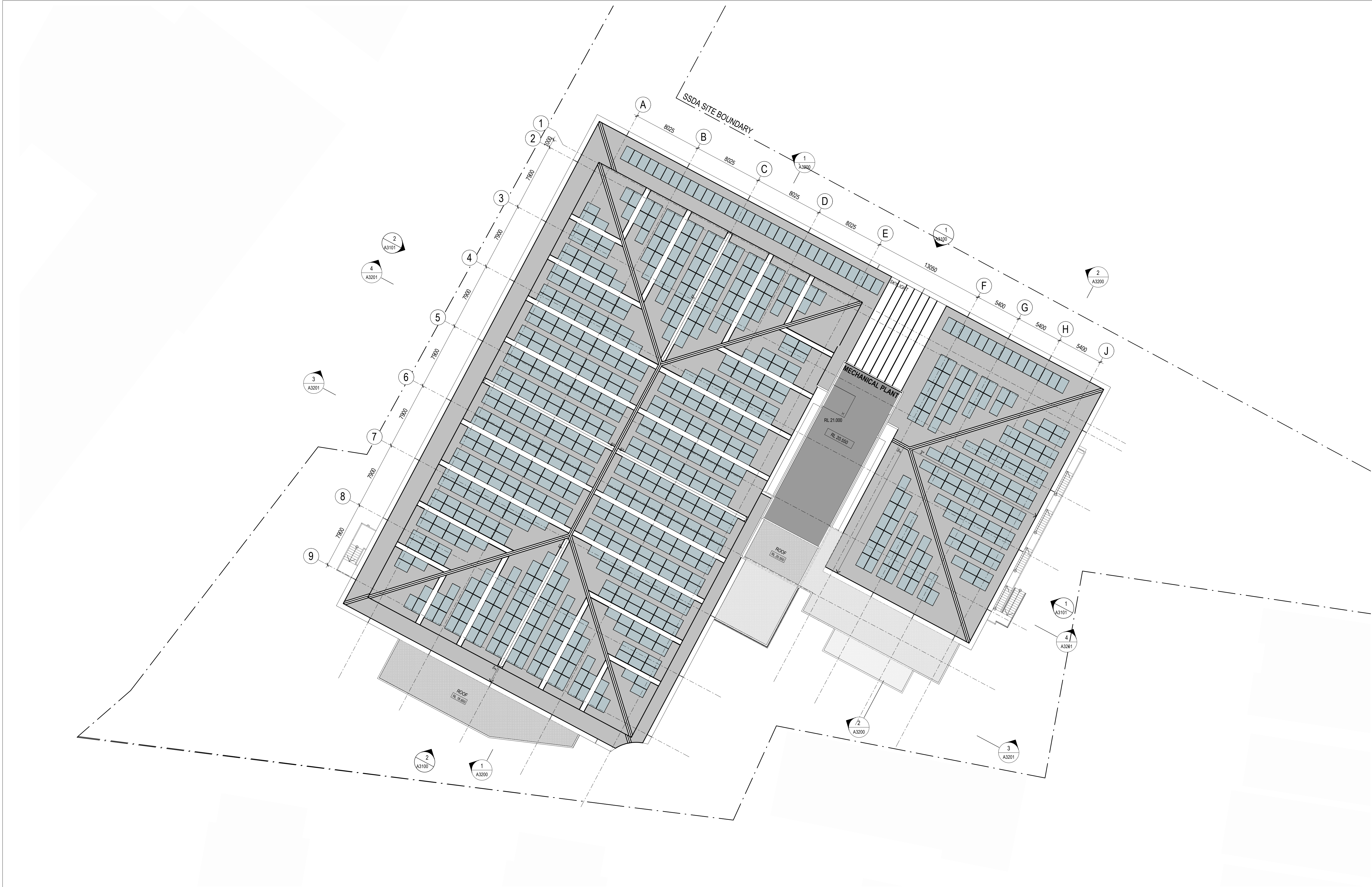
Client
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Project
SGS Weigall Sports Complex
Neild Ave, Rushcutters Bay
Proj. No. 19086

Drawing Title
**BUILDING 01
SPORTS FACILITIES BUILDING
GENERAL ARRANGEMENT PLAN
GROUND**
Sheet Status
NOT FOR CONSTRUCTION

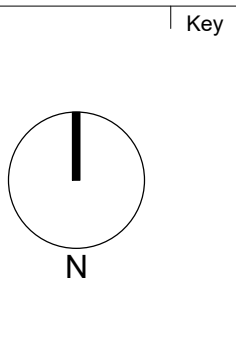
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1 : 200 @A1
Drawing No.
A2101
Issue
A
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<div>Revisions</div> <table><tr><th>No.</th><th>Date</th><th>Description</th></tr><tr><td>A</td><td>02/09/2020</td><td>ISSUED FOR SSDA</td></tr></table> <div>Checked ADC</div> <div>Approved LC</div>	No.	Date	Description	A	02/09/2020	ISSUED FOR SSDA	<div>Key</div> <div><div></div><div>N</div></div>	<div>Client</div> <div>Sydney Grammar School</div>	<div>Architect</div> <div><div>AJ+C</div><div>ALLEN JACK+COTTIER</div></div> <div>79 Myrtle Street Chippendale NSW 2008 AUSTRALIA ph +61 2 9311 8222 fx +61 2 9311 8200 ABN 53 003 782 250</div>	<div>Project</div> <div>SGS Weigall Sports Complex</div> <div>Neild Ave, Rushcutters Bay</div>	<div>Drawing Title</div> <div>BUILDING 01 SPORTS FACILITIES BUILDING GENERAL ARRANGEMENT PLAN ROOF</div>	<div>Scale</div> <div>1 : 200 @A1</div>	<div>Drawing No.</div> <div>A2105</div>	<div>Issue</div> <div>A</div>
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A	02/09/2020	ISSUED FOR SSDA												
			<div>Sheet Status</div> <div>NOT FOR CONSTRUCTION</div>	<div>DRAFT</div>										



Revisions	No.	Date	Description	Checked	Approved
A	02/09/2020	ISSUED FOR SSDA	ADC	LC	



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Neild Ave, Rushcutters Bay
Proj. No. 19086

Drawing Title
**BUILDING 02
CAR PARK
GENERAL ARRANGEMENT PLAN
LOWER/UPPER GROUND**
Sheet Status
NOT FOR CONSTRUCTION

Scale
1 : 200 @A1
Drawing No.
A2110
Issue
A
DRAFT

Appendix 3: Tree Assessment Schedule

ARBORSAFE DATA									TREEIQ DATA						
Tree No.	Species	Height [m]	DBH [mm]	Canopy Spread [m]	Health	Structural Condition	Age Class	Tree Significance	ULE (year)	Landscape Significance	Retention Value	Comments	Radial TPZ (m)	Radial SRZ (m)	Implication
11	<i>Lophostemon confertus</i> (Brush Box)	10-15	600	10-15	Good	Fair	Mature	Amenity value/shade; Attractive landscape feature;	15-40	Moderate	Consider for Retention		7.2	2.7	Retain. Major encroachment, pavement.
12	<i>Lophostemon confertus</i> (Brush Box)	15-20	750	10-15	Good	Fair	Mature	Amenity value/shade; Attractive landscape feature;	15-40	Moderate	Consider for Retention		9.0	3.0	Retain. Major encroachment, pavement.
13	<i>Schinus areira</i> (Peppercorn)	10-15	650	10-15	Good	Good	Mature	Amenity value/shade; Attractive landscape feature;	15-40	Moderate	Consider for Retention		7.8	2.8	Retain. Major encroachment, pavement & boundary fence.
15	<i>Schinus areira</i> (Peppercorn)	10-15	650	10-15	Good	Fair	Mature	Amenity value/shade; Attractive landscape feature; Screen value;	15-40	Moderate	Consider for Retention	Wound(s), advanced stages of decay	7.8	2.8	Remove.
16	<i>Schinus areira</i> (Peppercorn)	5-10	300	5-10	Good	Fair	Semi-Mature	Amenity value/shade; Attractive landscape feature; Screen value;	15-40	Moderate	Consider for Retention	Wound(s), early stages of decay.	3.6	2.0	Remove.
17	<i>Schinus areira</i> (Peppercorn)	10-15	400	5-10	Good	Fair	Semi-Mature	Amenity value/shade; Attractive landscape feature; Screen value;	15-40	Moderate	Consider for Retention	Wound(s), advanced stages of decay.	4.8	2.3	Remove.
18	<i>Schinus areira</i> (Peppercorn)	10-15	900	10-15	Good	Fair	Mature	Amenity value/shade; Attractive landscape feature; Screen value;	15-40	Moderate	Consider for Retention	Wound(s), early stages of decay.	10.8	3.2	Remove.

ARBORSAFE DATA									TREEIQ DATA						
Tree No.	Species	Height [m]	DBH [mm]	Canopy Spread [m]	Health	Structural Condition	Age Class	Tree Significance	ULE (year)	Landscape Significance	Retention Value	Comments	Radial TPZ (m)	Radial SRZ (m)	Implication
19	<i>Schinus areira</i> (Peppercorn)	10-15	950	10-15	Good	Fair	Mature	Amenity value/shade; Attractive landscape feature; Significant due to age/size; Screen value;	15-40	Moderate	Consider for Retention	Wound(s), advanced stages of decay.	11.4	3.3	Remove.
20	REMOVED										REMOVED				REMOVED
21	REMOVED										REMOVED				REMOVED
22	<i>Sapium sebiferum</i> (Chinese Tallow Tree)	5-10	400	5-10	Good	Good	Mature	Amenity value/shade;	15-40	Moderate	Consider for Retention		4.8	2.3	Retain. Major encroachment, boundary fence.
23	<i>Sapium sebiferum</i> (Chinese Tallow Tree)	5-10	450	10-15	Good	Fair	Mature	Amenity value/shade;	15-40	Moderate	Consider for Retention		5.4	2.4	Retain. Major encroachment, boundary fence.
24	<i>Sapium sebiferum</i> (Chinese Tallow Tree)	10-15	450	10-15	Good	Fair	Mature	Amenity value/shade;	15-40	Moderate	Consider for Retention		5.4	2.4	Retain. Major encroachment, boundary fence.
27	<i>Ulmus parvifolia</i> (Chinese Elm)	10-15	400	10-15	Fair	Fair	Semi-Mature	Amenity value/shade;	5-15	Moderate	Consider for Retention	Crown density 50-75%	4.8	2.3	Retain. Major encroachment, boundary fence.
28	<i>Araucaria columnaris</i> (Cook Pine)	15-20	500	5-10	Good	Good	Semi-Mature	Attractive landscape feature; Amenitiy value/shade;	40+	Moderate	Priority for Retention	Missing terminal leader.	6.0	2.5	Retain. Minor encroachment, building. Major encroachment, pavement &

ARBORSAFE DATA									TREEIQ DATA						
Tree No.	Species	Height [m]	DBH [mm]	Canopy Spread [m]	Health	Structural Condition	Age Class	Tree Significance	ULE (year)	Landscape Significance	Retention Value	Comments	Radial TPZ (m)	Radial SRZ (m)	Implication
															boundary fence.
29	<i>Ulmus parvifolia</i> (Chinese Elm)	10-15	400	10-15	Good	Fair	Semi-Mature	Amenity value/shade;	15-40	Moderate	Consider for Retention		4.8	2.3	Remove.
30	<i>Hymenosporum flavum</i> (Native Frangipani)	10-15	250	5-10	Fair	Fair	Mature	Amenity value/shade;	5-15	Moderate	Consider for Retention	Crown density 25-50%.	3.0	1.9	Retain. Minor encroachment, pavement & boundary fence.
30A	<i>Hymenosporum flavum</i> (Native Frangipani)	5-10	75	0-5	Poor	Good	Mature	Assessed by tQ	<5	Low	Priority for Removal	Crown density 25-50%. Partially suppressed.	2.0	1.5	Retain. Major encroachment, boundary fence.
30B	<i>Hymenosporum flavum</i> (Native Frangipani)	5-10	150	0-5	Poor	Good	Mature	Assessed by tQ	<5	Low	Priority for Removal	Crown density 25-50%. Partially suppressed.	2.0	1.5	Retain. Major encroachment, boundary fence.
30C	<i>Hymenosporum flavum</i> (Native Frangipani)	5-10	75 75	0-5	Poor	Good	Mature	Assessed by tQ	<5	Low	Priority for Removal	Crown density 25-50%. Partially suppressed.	2.0	1.5	Retain. Major encroachment, boundary fence.
30D	Dead							Dead			Dead				DEAD
30E	<i>Hymenosporum flavum</i> (Native Frangipani)	5-10	150	0-5	Poor	Good	Mature	Assessed by tQ	<5	Low	Priority for Removal	Crown density 25-50%. Partially suppressed.	2.0	1.5	Retain. Major encroachment, boundary fence.

ARBORSAFE DATA									TREEIQ DATA						
Tree No.	Species	Height [m]	DBH [mm]	Canopy Spread [m]	Health	Structural Condition	Age Class	Tree Significance	ULE (year)	Landscape Significance	Retention Value	Comments	Radial TPZ (m)	Radial SRZ (m)	Implication
31	<i>Jacaranda mimosifolia</i> (Jacaranda)	5-10	450	10-15	Good	Fair	Semi-Mature	Attractive landscape feature; Amenity value/shade;	15-40	Moderate	Consider for Retention	Major co-dominant inclusion.	5.4	2.4	Remove.
32	<i>Corymbia citriodora</i> (Lemon Scented Gum)	15-20	500	10-15	Fair	Good	Semi-Mature	Attractive landscape feature; Amenity value/shade;	5-15	Moderate	Consider for Retention	Crown density 75-95%.	6.0	2.5	Remove.
33	<i>Corymbia citriodora</i> (Lemon Scented Gum)	15-20	350	5-10	Good	Good	Semi-Mature	Attractive landscape feature; Amenity value/shade;	15-40	Moderate	Consider for Retention		4.2	2.2	Retain. Major encroachment, pavement, signage & boundary fence.
34	<i>Schinus areira</i> (Peppercorn)	5-10	250	5-10	Good	Fair	Semi-Mature	Amenity value/shade;	5-15	Low	Consider for Removal	Partially suppressed.	3.0	1.9	Remove.
35	<i>Casuarina cunninghamiana</i> (River Sheoak)	15-20	300	5-10	Good	Fair	Semi-Mature	Amenity value/shade;	15-40	Moderate	Consider for Retention		3.6	2.0	Remove.
36	<i>Casuarina cunninghamiana</i> (River Sheoak)	15-20	250	5-10	Good	Good	Semi-Mature	Amenity value/shade;	15-40	Moderate	Consider for Retention		3.0	1.9	Remove.
37	<i>Schinus areira</i> (Peppercorn)	<5	150	<5	Fair	Fair	Juvenile		5-15	Low	Consider for Removal	Heavily suppressed.	2.0	1.5	Remove.

ARBORSAFE DATA									TREEIQ DATA						
Tree No.	Species	Height [m]	DBH [mm]	Canopy Spread [m]	Health	Structural Condition	Age Class	Tree Significance	ULE (year)	Landscape Significance	Retention Value	Comments	Radial TPZ (m)	Radial SRZ (m)	Implication
38	<i>Schinus areira</i> (Peppercorn)	5-10	400	10-15	Good	Fair	Semi-Mature	Amenity value/shade;	15-40	Moderate	Consider for Retention		4.8	2.3	Retain. Major encroachment, pavement, gates & boundary fence.
39	<i>Casuarina cunninghamiana</i> (River Sheoak)	15-20	400	5-10	Good	Fair	Semi-Mature	Amenity value/shade;	15-40	Moderate	Consider for Retention		4.8	2.3	Retain. Major encroachment, pavement, gates & boundary fence.
40	<i>Casuarina glauca</i> (Swamp Sheoak)	15-20	300	5-10	Fair	Good	Semi-Mature	Amenity value/shade;	15-40	Moderate	Consider for Retention		3.6	2.0	Retain. Minor encroachment, pavement & boundary fence.
42	<i>Schinus areira</i> (Peppercorn)	<5	150	5-10	Fair	Fair	Semi-Mature	Amenity value/shade;	15-40	Low	Consider for Removal		2.0	1.5	Retain. Major encroachment, boundary fence.
43	<i>Corymbia citriodora</i> (Lemon Scented Gum)	10-15	300	5-10	Fair	Fair	Semi-Mature	Amenity value/shade;	5-15	Moderate	Consider for Retention	Crown density 75-95%.	3.6	2.0	Retain. Minor encroachment, pavement. Major encroachment, boundary fence.
45	<i>Schinus areira</i> (Peppercorn)	5-10	600	10-15	Good	Fair	Mature	Amenity value/shade;	15-40	Moderate	Consider for Retention		7.2	2.7	Retain. Minor encroachment, pavement. Major encroachment, boundary fence.

ARBORSAFE DATA									TREEIQ DATA						
Tree No.	Species	Height [m]	DBH [mm]	Canopy Spread [m]	Health	Structural Condition	Age Class	Tree Significance	ULE (year)	Landscape Significance	Retention Value	Comments	Radial TPZ (m)	Radial SRZ (m)	Implication
47	<i>Schinus areira</i> (Peppercorn)	<5	150	5-10	Fair	Fair	Juvenile		5-15	Low	Consider for Removal	Partially suppressed.	2.0	1.5	Remove.
48	<i>Schinus areira</i> (Peppercorn)	15-20	950	15-20	Fair	Fair	Mature	Amenity value/shade; Attractive landscape feature; Significant due to age/size;	15-40	High	Priority for Retention		11.4	3.3	Retain. No works within TPZ.
49	<i>Corymbia citriodora</i> (Lemon Scented Gum)	15-20	450	10-15	Good	Good	Semi-Mature	Amenity value/shade; Attractive landscape feature;	15-40	Moderate	Consider for Retention		5.4	2.4	Retain. No works within TPZ.
50	<i>Corymbia citriodora</i> (Lemon Scented Gum)	15-20	350	5-10	Good	Fair	Semi-Mature	Attractive landscape feature; Amenity value/shade;	5-15	Moderate	Consider for Retention	Crown density 75-95%.	4.2	2.2	Retain. No works within TPZ.
51	<i>Schinus areira</i> (Peppercorn)	5-10	300	<5	Fair	Fair	Semi-Mature	Amenity value/shade;	5-15	Low	Consider for Removal	Partially suppressed.	3.6	2.0	Retain. No works within TPZ.
52	<i>Schinus areira</i> (Peppercorn)	5-10	200	5-10	Fair	Good	Semi-Mature	Amenity value/shade;	15-40	Low	Consider for Removal	Partially suppressed.	3.0	1.9	Retain. No works within TPZ.
53	<i>Schinus areira</i> (Peppercorn)	5-10	250	5-10	Fair	Good	Semi-Mature	Amenity value/shade;	15-40	Low	Consider for Removal	Partially suppressed.	3.0	1.9	Retain. No works within TPZ.
54	<i>Corymbia citriodora</i> (Lemon Scented Gum)	15-20	600	15-20	Good	Good	Mature	Amenity value/shade; Attractive landscape feature;	15-40	Moderate	Consider for Retention		7.2	2.7	Retain. No works within TPZ.

ARBORSAFE DATA									TREEIQ DATA						
Tree No.	Species	Height [m]	DBH [mm]	Canopy Spread [m]	Health	Structural Condition	Age Class	Tree Significance	ULE (year)	Landscape Significance	Retention Value	Comments	Radial TPZ (m)	Radial SRZ (m)	Implication
55	<i>Corymbia citriodora</i> (Lemon Scented Gum)	5-10	100	<5	Good	Fair	Juvenile		5-15	Low	Consider for Removal	Partially suppressed.	2.0	1.5	Retain. No works within TPZ.
56	<i>Schinus areira</i> (Peppercorn)	<5	200	5-10	Good	Fair	Semi-Mature	Amenity value/shade;	15-40	Low	Consider for Removal	Partially suppressed.	3.0	1.9	Retain. No works within TPZ.
57	<i>Schinus areira</i> (Peppercorn)	5-10	350	5-10	Good	Fair	Semi-Mature	Amenity value/shade;	15-40	Low	Consider for Removal	Partially suppressed.	4.2	2.2	Retain. No works within TPZ.
58	<i>Lophostemon confertus</i> (Brush Box)	15-20	1000	20-30	Good	Good	Mature	Commemorative tree; Amenity value/shade; Attractive landscape feature; Particularly old/venerable; Significant due to age/size;	15-40	High	Priority for Retention		12.0	3.4	Retain. No works within TPZ.
61	<i>Phoenix canariensis</i> (Canary Island Date Palm)	5-10	650	5-10	Good	Good	Mature	Amenity value/shade; Attractive landscape feature;	15-40	Moderate	Consider for Retention		7.8	2.8	Remove.
62	<i>Jacaranda mimosifolia</i> (Jacaranda)	10-15	800	10-15	Good	Fair	Mature	Amenity value/shade; Attractive landscape feature;	15-40	Moderate	Consider for Retention	Crown density 75-95%.	9.6	3.1	Retain. Major encroachment, carpark.
63	<i>Lophostemon confertus</i> (Brush Box)	10-15	600	10-15	Good	Fair	Mature	Amenity value/shade; Attractive landscape feature;	15-40	Moderate	Consider for Retention		7.2	2.7	Retain. No works within TPZ.

ARBORSAFE DATA									TREEIQ DATA						
Tree No.	Species	Height [m]	DBH [mm]	Canopy Spread [m]	Health	Structural Condition	Age Class	Tree Significance	ULE (year)	Landscape Significance	Retention Value	Comments	Radial TPZ (m)	Radial SRZ (m)	Implication
67	<i>Platanus xacerifolius</i> (London Plane Tree)	10-15	500	10-15	Good	Fair	Semi-Mature	Amenity value/shade; Attractive landscape feature;	40+	High	Priority for Retention		6.0	2.5	Retain. No works within TPZ.
68	<i>Tristaniopsis laurina</i> (Water Gum)	5-10	400	5-10	Fair	Fair	Semi-Mature	Amenity value/shade;	5-15	Low	Consider for Removal	Crown density 50-75%	4.8	2.3	Retain. No works within TPZ.
69	<i>Brachychiton acerifolius</i> (Illawarra Flame Tree)	10-15	450	5-10	Poor	Fair	Semi-Mature	Amenity value/shade;	<5	Low	Priority for Removal	Crown density 0-25%.	5.4	2.4	Retain. No works within TPZ.
70	<i>Melaleuca quinquenervia</i> (Broad Leaf Paperbark)	15-20	950	10-15	Good	Fair	Mature	Amenity value/shade; Significant due to age/size; Attractive landscape feature;	15-40	High	Priority for Retention	Bark inclusions, minor.	11.4	3.3	Retain. No works within TPZ.
71	<i>Melaleuca quinquenervia</i> (Broad Leaf Paperbark)	10-15	550	5-10	Good	Fair	Mature	Amenity value/shade; Attractive landscape feature;	15-40	Moderate	Consider for Retention	Bark inclusions, minor.	6.6	2.6	Retain. No works within TPZ.
74	<i>Ficus rubiginosa</i> (Port Jackson Fig)	15-20	1100	20-30	Good	Fair	Mature	Amenity value/shade; Attractive landscape feature; Significant due to age/size; Significant habitat - nests/hollows;	15-40	High	Priority for Retention	Crown density 75-95%.	13.2	3.5	Retain. No works within TPZ.
75	<i>Eucalyptus haemastoma</i> (Scribbly Gum)	<5	250	<5	Good	Fair	Juvenile	Attractive landscape feature;	15-40	Low	Consider for Removal		3.0	1.9	Retain. No works within TPZ.
76	<i>Citharexylum spinosum</i> (Fiddlewood)	10-15	600	10-15	Good	Fair	Mature	Amenity value/shade;	15-40	Moderate	Consider for Retention		7.2	2.7	Retain. No works within TPZ.

ARBORSAFE DATA									TREEIQ DATA						
Tree No.	Species	Height [m]	DBH [mm]	Canopy Spread [m]	Health	Structural Condition	Age Class	Tree Significance	ULE (year)	Landscape Significance	Retention Value	Comments	Radial TPZ (m)	Radial SRZ (m)	Implication
77	<i>Melaleuca quinquenervia</i> (Broad Leaf Paperbark)	10-15	800	10-15	Good	Good	Mature	Amenity value/shade; Significant due to age/size; Attractive landscape feature;	15-40	Moderate	Consider for Retention	Bark inclusions, minor.	9.6	3.1	Retain. No works within TPZ.
78	<i>Glochidion ferdinandi</i> (Cheese Tree)	5-10	200	5-10	Good	Good	Semi-Mature	Amenity value/shade;	15-40	Low	Consider for Removal		3.0	1.9	Retain. No works within TPZ.
79	<i>Melaleuca quinquenervia</i> (Broad Leaf Paperbark)	<5	100	<5	Good	Good	Juvenile	Attractive landscape feature;	40+	Low	Consider for Removal		2.0	1.5	Retain. No works within TPZ.
114	<i>Olea europaea</i> ssp. <i>africana</i> (African Olive)	5-10	150	<5	Fair	Fair	Mature	Weed species;	<5	Low	Priority for Removal		2.0	1.5	Retain. No works within TPZ.
115	<i>Syzygium paniculatum</i> (Lillypilly)	5-10	100	<5	Good	Good	Semi-Mature	Hedge tree; Attractive landscape feature; Screen value;	15-40	Low	Consider for Removal		2.0	1.5	Retain. No works within TPZ.
116	<i>Eucalyptus saligna</i> (Sydney Blue Gum)	15-20	400	5-10	Excellent	Excellent	Semi-Mature	Attractive landscape feature; Amenity value/shade;	15-40	Moderate	Consider for Retention		4.8	2.3	Retain. Major encroachment, boundary fence.
117	<i>Araucaria cunninghamiana</i> (Hoop Pine)	10-15	250	5-10	Good	Good	Semi-Mature	Amenity value/shade;	15-40	Moderate	Consider for Retention		3.0	1.9	Retain. No works within TPZ.
118	<i>Callistemon</i> sp. (Bottlebrush)	<5	150	<5	Good	Good	Juvenile	Within group; Attractive landscape feature;	15-40	Low	Consider for Removal		2.0	1.5	Remove.

ARBORSAFE DATA									TREEIQ DATA						
Tree No.	Species	Height [m]	DBH [mm]	Canopy Spread [m]	Health	Structural Condition	Age Class	Tree Significance	ULE (year)	Landscape Significance	Retention Value	Comments	Radial TPZ (m)	Radial SRZ (m)	Implication
119	<i>Lagerstroemia indica</i> (Crepe Myrtle)	5-10	150	5-10	Good	Fair	Mature	Attractive landscape feature;	15-40	Low	Consider for Removal	Partially suppressed.	2.0	1.5	Remove.
120	<i>Syzygium paniculatum</i> (Lillypilly)	5-10	250	5-10	Good	Fair	Semi-Mature	Screen value;	5-15	Low	Consider for Removal	Partially suppressed.	3.0	1.9	Remove.
122	<i>Syzygium paniculatum</i> (Lillypilly)	10-15	200	5-10	Good	Fair	Semi-Mature	Amenity value/shade; Screen value;	5-15	Low	Consider for Removal	Partially suppressed. Wound(s), early stages of decay.	3.0	1.9	Remove.
123	<i>Syzygium paniculatum</i> (Lillypilly)	10-15	200	5-10	Good	Good	Semi-Mature	Amenity value/shade; Screen value;	15-40	Moderate	Consider for Retention	Partially suppressed.	3.0	1.9	Retain. Major encroachment, boundary fence.
124	<i>Syzygium paniculatum</i> (Lillypilly)	10-15	250	5-10	Good	Good	Semi-Mature	Amenity value/shade; Significant habitat - nests/hollows; Screen value;	15-40	Moderate	Consider for Retention		3.0	1.9	Retain. Major encroachment, boundary fence.
125	<i>Syzygium paniculatum</i> (Lillypilly)	10-15	350	5-10	Good	Fair	Mature	Amenity value/shade; Screen value;	15-40	Moderate	Consider for Retention		4.2	2.2	Remove.
126	<i>Syzygium paniculatum</i> (Lillypilly)	10-15	350	5-10	Good	Good	Mature	Amenity value/shade; Screen value;	15-40	Moderate	Consider for Retention		4.2	2.2	Remove.
127	<i>Syzygium paniculatum</i> (Lillypilly)	5-10	150	<5	Good	Fair	Semi-Mature	Amenity value/shade; Screen value;	15-40	Low	Consider for Removal	Heavily suppressed.	2.0	1.5	Retain. Major encroachment, boundary fence.

ARBORSAFE DATA									TREEIQ DATA						
Tree No.	Species	Height [m]	DBH [mm]	Canopy Spread [m]	Health	Structural Condition	Age Class	Tree Significance	ULE (year)	Landscape Significance	Retention Value	Comments	Radial TPZ (m)	Radial SRZ (m)	Implication
128	<i>Syzygium paniculatum</i> (Lillypilly)	10-15	300	5-10	Good	Good	Mature	Amenity value/shade; Screen value;	15-40	Moderate	Consider for Retention		3.6	2.0	Retain. Major encroachment, pavement, boundary fence & fire hydrant booster.
129	<i>Syzygium paniculatum</i> (Lillypilly)	10-15	400	10-15	Good	Good	Mature	Amenity value/shade; Screen value;	15-40	Moderate	Consider for Retention		4.8	2.3	Retain. Major encroachment, pavement, gates & boundary fence.
130	<i>Syzygium paniculatum</i> (Lillypilly)	5-10	250	5-10	Good	Good	Semi-Mature	Amenity value/shade; Screen value;	15-40	Moderate	Consider for Retention		3.0	1.9	Retain. Minor encroachment, pavement & boundary fence.
132	<i>Platanus xacerifolius</i> (London Plane Tree)	<5	<100	<5	Fair	Fair	Juvenile		40+	Low	Consider for Removal		2.0	1.5	Retain. No works within TPZ.
133	<i>Syzygium paniculatum</i> (Lillypilly)	<5	<100	<5	Good	Good	Juvenile	Amenity value/shade;	40+	Low	Consider for Removal		2.0	1.5	Retain. No works within TPZ.
135	<i>Casuarina glauca</i> (Swamp Sheoak)	5-10	100	<5	Good	Good	Juvenile	Amenity value/shade;	15-40	Low	Consider for Removal		2.0	1.5	Retain. No works within TPZ.
136	<i>Cupaniopsis anacardioides</i> (Tuckeroo)	5-10	150	5-10	Good	Fair	Semi-Mature	Amenity value/shade;	5-15	Low	Consider for Removal	Trunk contact with fence.	2.0	1.5	Retain. No works within TPZ.

ARBORSAFE DATA									TREEIQ DATA						
Tree No.	Species	Height [m]	DBH [mm]	Canopy Spread [m]	Health	Structural Condition	Age Class	Tree Significance	ULE (year)	Landscape Significance	Retention Value	Comments	Radial TPZ (m)	Radial SRZ (m)	Implication
137	<i>Jacaranda mimosifolia</i> (Jacaranda)	<5	100	<5	Good	Fair	Semi-Mature	Attractive landscape feature;	40+	Low	Consider for Removal		2.0	1.5	Retain. No works within TPZ.
138	<i>Acacia longifolia</i> (Coastal Wattle)	<5	300	5-10	Good	Fair	Mature	Amenity value/shade;	5-15	Low	Consider for Removal		3.6	2.0	Retain. No works within TPZ.
139	<i>Jacaranda mimosifolia</i> (Jacaranda)	<5	<100	<5	Fair	Poor	Semi-Mature		5-15	Low	Consider for Removal		2.0	1.5	Retain. No works within TPZ.
140	<i>Jacaranda mimosifolia</i> (Jacaranda)	<5	100	<5	Fair	Fair	Semi-Mature		5-15	Low	Consider for Removal		2.0	1.5	Retain. No works within TPZ.
141	<i>Jacaranda mimosifolia</i> (Jacaranda)	<5	<100	<5	Fair	Fair	Semi-Mature		5-15	Low	Consider for Removal		2.0	1.5	Retain. No works within TPZ.
142	<i>Jacaranda mimosifolia</i> (Jacaranda)	<5	150	<5	Good	Poor	Semi-Mature		15-40	Low	Consider for Removal		2.0	1.5	Retain. No works within TPZ.
143	<i>Jacaranda mimosifolia</i> (Jacaranda)	<5	100	<5	Fair	Fair	Semi-Mature		15-40	Low	Consider for Removal		2.0	1.5	Retain. No works within TPZ.
144	<i>Jacaranda mimosifolia</i> (Jacaranda)	5-10	100	<5	Good	Fair	Semi-Mature		5-15	Low	Consider for Removal	Partially suppressed.	2.0	1.5	Retain. No works within TPZ.

ARBORSAFE DATA									TREEIQ DATA						
Tree No.	Species	Height [m]	DBH [mm]	Canopy Spread [m]	Health	Structural Condition	Age Class	Tree Significance	ULE (year)	Landscape Significance	Retention Value	Comments	Radial TPZ (m)	Radial SRZ (m)	Implication
168	<i>Glochidion ferdinandi</i> (Cheese Tree)	5-10	150	5-10	Good	Good	Semi-Mature	Attractive landscape feature;	15-40	Low	Consider for Removal		2.0	1.5	Retain. No works within TPZ.
169	<i>Glochidion ferdinandi</i> (Cheese Tree)	5-10	200	5-10	Fair	Good	Semi-Mature	Attractive landscape feature;	15-40	Low	Consider for Removal		3.0	1.9	Retain. No works within TPZ.
170	<i>Melaleuca quinquenervia</i> (Broad Leaf Paperbark)	5-10	250	<5	Excellent	Good	Semi-Mature	Attractive landscape feature;	15-40	Low	Consider for Removal		3.0	1.9	Retain. No works within TPZ.
171	<i>Glochidion ferdinandi</i> (Cheese Tree)	<5	150	<5	Fair	Fair	Semi-Mature	Attractive landscape feature;	15-40	Low	Consider for Removal		2.0	1.5	Retain. No works within TPZ.
A	<i>Melaleuca decora</i> (White Feather Honey Myrtle)		350									Outside site.	4.2	2.2	Retain. No works within TPZ.
B	<i>Eucalyptus microcorys</i> (Tallowwood)		450									Outside site.	5.4	2.4	Retain. Minor encroachment, boundary fence.
C	<i>Syzygium smithii</i> 'Minor' (Dwarf Lilly Pilly)		700									Outside site.	8.4	2.9	Retain. No works within TPZ.
D	<i>Celtis sinensis</i> (Chinese Hackberry)		600									Outside site.	7.2	2.3	Retain. Major encroachment, pavement & boundary fence.

ARBORSAFE DATA									TREEIQ DATA						
Tree No.	Species	Height [m]	DBH [mm]	Canopy Spread [m]	Health	Structural Condition	Age Class	Tree Significance	ULE (year)	Landscape Significance	Retention Value	Comments	Radial TPZ (m)	Radial SRZ (m)	Implication
E	<i>Cinnamomum camphora</i> (Camphor Laurel)		250									Outside site.	3.0	1.9	Retain. Minor encroachment, pavement. Major encroachment, boundary fence.
F	<i>Celtis sinensis</i> (Chinese Hackberry)		400									Outside site.	4.8	2.3	Retain. Minor encroachment, pavement. Major encroachment, boundary fence.
G	<i>Celtis sinensis</i> (Chinese Hackberry)		500									Outside site.	6.0	2.5	Retain. Minor encroachment, pavement. Major encroachment, boundary fence.
H	<i>Celtis sinensis</i> (Chinese Hackberry)		600									Outside site.	7.2	2.7	Retain. Minor encroachment, pavement. Major encroachment, boundary fence.
I	<i>Ficus microcarpa</i> var. <i>Hillii</i> (Hills Fig)		1300									Outside site.	15.0	3.7	Retain. Minor encroachment, substation. Major encroachment, boundary fence.

ARBORSAFE DATA									TREEIQ DATA						
Tree No.	Species	Height [m]	DBH [mm]	Canopy Spread [m]	Health	Structural Condition	Age Class	Tree Significance	ULE (year)	Landscape Significance	Retention Value	Comments	Radial TPZ (m)	Radial SRZ (m)	Implication
J	<i>Lophostemon confertus</i> (Brushbox)		600									Outside site.	7.2	2.7	Retain. Minor encroachment, fire hydrant booster. Major encroachment, boundary fence.
K	<i>Lophostemon confertus</i> (Brushbox)		600									Outside site.	7.2	2.7	Retain. Major encroachment, boundary fence.
L	<i>Lophostemon confertus</i> (Brushbox)		650									Outside site.	7.8	2.8	Retain. Major encroachment, boundary fence.
M	<i>Lophostemon confertus</i> (Brushbox)		650									Outside site.	7.8	2.8	Retain. Major encroachment, boundary fence.
N	<i>Celtis sinensis</i> (Chinese Hackberry)		500 max.									Self-sown weed species. Group of 5 trees under 10m in height	6.0	2.5	Retain. No works within TPZ.

Appendix 4: Plates







Note: In addition to the pruning works detailed above, additional pruning of smaller diameter (<50mm dia.) higher order branches may be required. All pruning works should be supervised by the Project Arborist

Appendix 5: Tree Protection Specification

1.0 Appointment of Project Arborist

A Project Arborist shall be engaged prior the commencement of work on-site and monitor compliance with the protection measures. The Project Arborist shall inspect the tree protection measures and Compliance Certification shall be prepared by the Project Arborist for review by the Principal Certifying Authority prior to the release of the Compliance Certificate.

The Project Arborist shall have a minimum qualification equivalent (using the Australian Qualifications Framework) of NSW TAFE Certificate Level 5 or above in Arboriculture.

The site-specific requirement for mulching, irrigation, the location of tree protection fencing and temporary access, and other specific tree protection measures shall be confirmed through consultation between the Head Contractor/Project Manager and the Project Arborist prior to the commencement of works.

1.1 Compliance

Contractors and site workers shall receive a copy of these specifications a minimum of 3 working days prior to commencing work on-site. Contractors and site workers undertaking works within the Tree Protection Zone shall sign the site log confirming they have read and understand these specifications, prior to undertaking works on-site.

1.2 Tree Protection Zone

The tree to be retained shall be protected prior and during construction from activities that may result in an adverse effect on their health or structural condition. The area within the Tree Protection Zone (TPZ) shall exclude the following activities, unless otherwise stated:

- Modification of existing soil levels, excavations and trenching
- Mechanical removal of vegetation
- Movement of natural rock
- Storage of materials, plant or equipment or erection of site sheds
- Affixing of signage or hoarding to the trees
- Preparation of building materials, refueling or disposal of waste materials and chemicals
- Lighting fires
- Movement of pedestrian or vehicular traffic
- Temporary or permanent location of services, or the works required for their installation
- Any other activities that may cause damage to the tree

NOTE: If access, encroachment or incursion into the TPZ is deemed essential, prior authorisation is required by the Project Arborist.

1.3 Tree Protection Fencing

TPZ fencing shall be installed at the perimeter of the TPZ. The exact location of the fencing shall be confirmed through consultation between the Head Contractor/Project Manager and the Project Arborist prior to the commencement of works. Fencing may be setback to allow for demolition/construction access and for the installation of pavements only where appropriate ground protection is installed and approved by the Project Arborist.

As a minimum, the Tree Protection Fence shall consist of 1.8m high wire mesh panels supported by concrete feet. Panels shall be fastened together and supported to prevent sideways movement. The tree shall not be damaged during the installation of the Tree Protection Fencing. Refer to Typical Tree Protection Details (3) (**Appendix 6**).

1.4 Signage

Signs identifying the TPZ should be placed around the edge of the TPZ and be visible from within the development site. The lettering on the sign should comply with *Australian Standard - 1319 (1994) Safety signs for the occupational environment*. The signage shall be installed prior to the commencement of works on-site and shall be maintained in good condition for the duration of the development period.

1.5 Site Management

Materials, waste storage, and temporary services shall not be located within the TPZ.

1.6 Trunk Protection

Trunk protection shall be installed as required by the Project Arborist. Trunk protection shall be installed by wrapping padding (either carpet underlay or 10mm thick jute geotextile mat) around the trunk and first order branches to a minimum height of 2m. Timber battens (90 x 45mm) spaced at 150mm centres shall be strapped together and placed over the padding. Timber battens must not be fixed to the trees. Refer to Typical Tree Protection Details (3) (**Appendix 6**).

Branch protection shall be installed as deemed necessary by the Project Arborist.

1.7 Ground Protection

Pedestrian, vehicular and machinery access within a TPZ shall be restricted to areas of existing pavement or from areas of temporary ground protection such as ground mats or steel road plates. Refer to Typical Tree Protection Details (3) (**Appendix 6**).

1.8 Works within the Tree Protection Zones

In some cases works within the TPZ may be authorized by the determining authority. **These works shall be supervised by the Project Arborist.** When undertaking works within the TPZ, care should be taken to avoid damage to the tree's root system, trunks and lower branches.

If roots (>25mm ϕ) are encountered during the demolition, excavation and construction works, these roots must be retained in an undamaged condition and advice sought from the Project Arborist. Adjustment of final levels and design shall remain flexible to enable the retention of roots (>25mm ϕ) where deemed necessary by the Project Arborist.

1.9 Structure & Pavement Demolition

Demolition of existing structures/pavement within the TPZ shall be supervised by the Project Arborist. Machinery is to be excluded from the TPZ unless operating from the existing slabs, pavements or areas of ground protection (refer to Section 1.7). Machinery shall work in conjunction with a spotter to guide the machinery operator and ensure that the ground surface/tree roots beneath the structure/pavement are not disturbed/damaged by demolition works. Machinery should not contact any part of a tree. Wherever possible, footings or elements below grade shall be retained to minimise disturbance to roots.

Small structures to be demolished within a TPZ shall be carefully broken up in small sections using a hand-operated pneumatic/electric breaker and waste material removed by hand/hand tools. Large structures to be demolished within the TPZ shall be undertaken within the footprint of the existing structure ('top down, pull back') and away from the trees.

When removing slab/pavement sections within TPZ, machinery shall work backwards out of the TPZ to ensure machinery remains on un-demolished sections of slab at all times. Existing sub-base materials within a TPZ shall remain in-situ and (and reused) where possible. If the existing sub-base is to be removed, these works shall be undertaken by hand/hand tools ensuring that tree roots are retained and protected.

If roots (>25mm ϕ) are encountered during the demolition works, these roots must be retained in an undamaged condition and advice sought from the Project Arborist. Exposed roots shall be protected from direct sunlight, drying out and extremes of temperature by covering with a 10mm thick jute geotextile fabric. The geotextile fabric shall be kept in a damp condition at all times. Where the Project Arborist determines that the tree is using underground elements (i.e footings, pipes, rocks etc.) for support, these elements shall be left in-situ.

1.10 Underground Services

The installation of underground services shall be located outside of the TPZ. Where this is not possible, they shall be installed using tree sensitive excavation methods (hand/hydrovac/airspade) with the services installed around/below roots (>25mm ϕ) or 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 (>25mm ϕ).

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

Drilling/piling machinery shall be excluded from the TPZ unless operating from an area where ground protection has been installed (refer to Section 1.7) or from the existing slabs or pavements. Drilling/piling machinery shall be of a suitable size to not damage the trees' roots, trunk, branches and crown. No clearance pruning is permitted to allow for machinery access. Machinery shall work in conjunction with an observer to ensure that adequate clearance from trees is maintained at all times

1.11 Plant/Turf Installation

Plant installation within TPZ areas shall be undertaken using hand tools and roots (>25mmØ) shall be protected. No mechanical cultivation/ripping of soils shall be undertaken within TPZ areas.

Landscape planting shall be completed in the final stage of the development works and tree protection fencing and trunk protection shall remain in place until these works are due to commence.

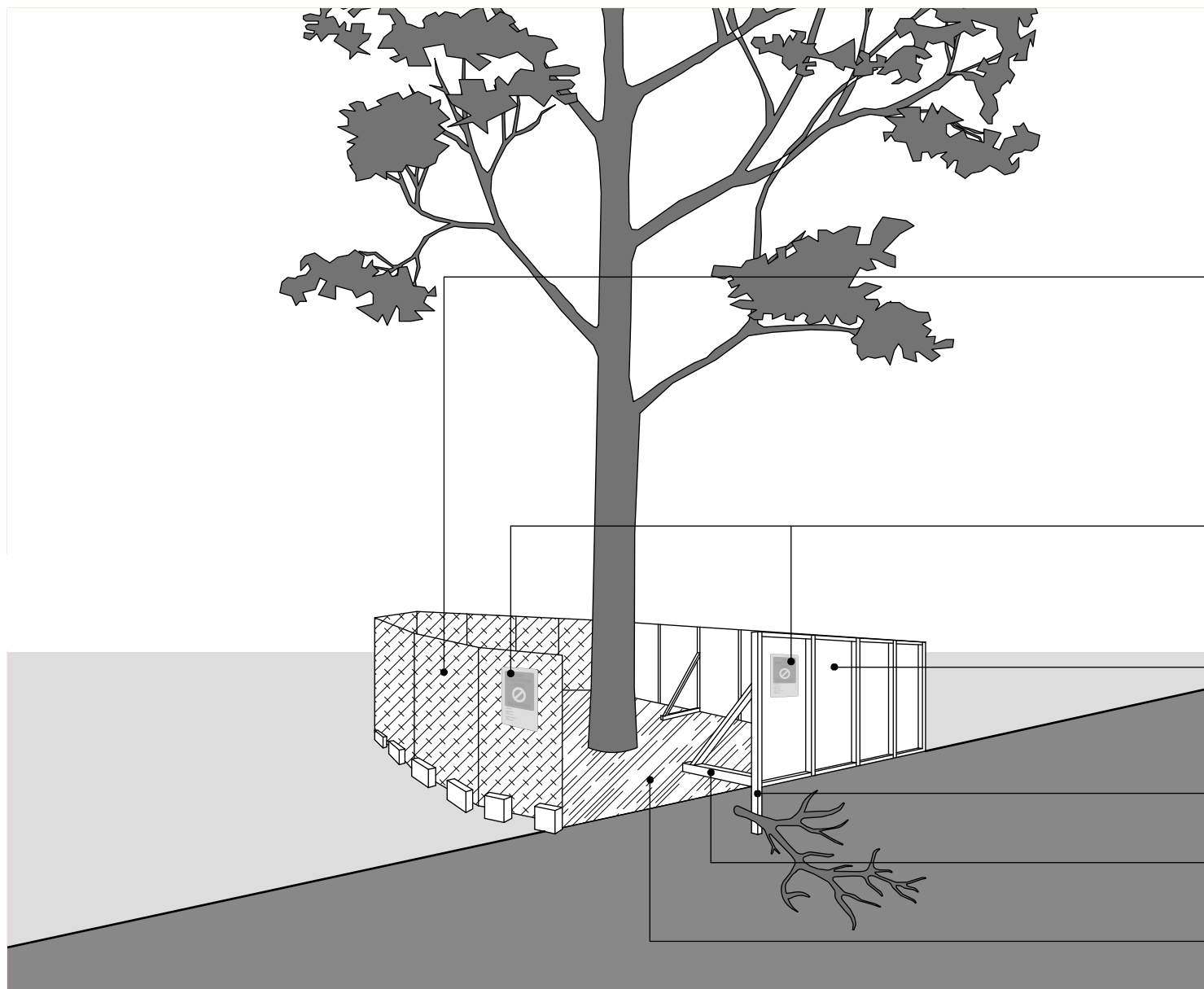
1.12 Excavations, Root Protection & Root Pruning

All excavation works (including root investigations) within TPZ areas shall supervised by the Project Arborist and utilise tree sensitive methods. These methods include hand, airspade or hydrovac excavation. Where approved by the Project Arborist, excavation using compact machinery fitted with a flat bladed bucket is permissible. Unless specified otherwise, excavation using compact machinery (<2t) shall be undertaken in small increments, guided by a spotter who is to look for and prevent damage to roots (>25mmØ).

Exposed roots shall be protected from direct sunlight, drying out and extremes of temperature by covering with a 10mm thick jute mat, followed by a layer of plastic membrane. Coverings shall be weighted to secure them in place. The mat shall be kept in a damp condition at all times.

No over-excavation, battering or benching shall be undertaken beyond the footprint of any structure unless approved by the Project Arborist. Hand excavation and root pruning shall be undertaken along the excavation line prior to the commencement of mechanical excavation to prevent tearing and shattering damage to the roots from excavation equipment.

Roots (>25mmØ) shall be pruned by the Project Arborist only. Roots (<25mmØ) may be pruned by the Principal Contractor. Root pruning shall be undertaken with clean, sharp secateurs or a pruning saw to ensure a smooth wound face, free from tears. Damaged roots shall be pruned behind the damaged tissues with the final cut made to an undamaged part of the root.



Note:

No excavation, construction activity, grade changes, surface treatment or storage of materials of any kind is permitted within the TPZ.

Option 1 - Fencing

1.8m high chain wire mesh panels with shade cloth attached (if required), held in place with concrete feet.

Tree Protection Zone (TPZ) sign

Option 2 - Fencing

Plywood or wooden panel paling fence. This type of fencing material also prevents building materials or soil entering the TPZ.

Installation of supports should avoid damaging roots.

Bracing is permissible within the TPZ.

Maximum 100mm and minimum 50mm depth mulch or aggregate layer installed across surface of TPZ.

