rain Tree consulting
Arboricultural Management
PO Box 326 AVALON NSW 2107
Mobile 0419 250 248

5 May 2026

2 FISHBURN CRESCENT
CASTLE HILL, NSW

DEVELOPMENT PROPOSAL

ARBORICULTURAL IMPACT ASSESSMENT (AIA) REPORT
Ref No- 3926

Prepared for
Arada Development Management Pty Ltd
12 Harvey Street, PYRMONT NSW

Prepared by
Mark A. Kokot
AQF Level 5 Consulting arborist

CONTENTS **page**

INTRODUCTION **3**

METHODOLOGY **4**

1. SUMMARY OF ASSESSMENT

1.1 General tree assessment **5**

1.2 The development proposal **6**

1.3 Tree removal to accommodate design **6**
Figure 1, showing the design footprint & tree removal plan **6**

1.4 Discussion of development impacts **7**
Figure 2, showing T2 & 3 encroachment areas **7**
Figure 3, showing T5 & 6 encroachment areas **8**
Figure 4, showing Bulk Earthworks adjacent T10-12 **9**
Figure 5, showing T13 & 14 encroachment areas **11**
Figure 6, showing T15 & 16 encroachment areas **13**

2. CONCLUSIONS & RECOMMENDATIONS

2.1 Tree removal **13**

2.2 Specific tree management recommendations **13**

2.3 General tree protection requirements **15**

ANNEXTURE **18**
Annexture- 01: Arbor Express Root Mapping Investigation 19

APPENDICES **22**
Appendix- A: Terminology, notes & references 23
Appendix- B: Tree Protection & Fencing Detail 24
Appendix- C: Tree Retention Values *Checklist* 25
Appendix- D: Tree Assessment Schedule 26
Appendix- E: Tree Location Plan 31

INTRODUCTION

This report has been commissioned by Arada Development Management Pty Ltd. The purpose & scope of work is to assess potential impacts that may occur to trees in relation to a new State Significant Development Application (SSDA) within Lot 1 of DP 1316896, known as 2 Fishburn Crescent CASTLE HILL NSW.

Recommendations for retention or removal of trees are based on the tree's protection status being prescribed (LGA protected) trees, environmental & landscape significance, tree structural condition, estimated remaining Useful Life Expectancy (U.L.E.) and potential impacts to trees by the development proposal.

This report acknowledges and utilizes the current Australian Standards 'Protection of Trees on Development Sites' AS4970 – 2025 as explained within Notes of Appendix- A. Within this report development incursions within Notional Root Zone (NRZ) radiuses are based on percentages of incursion described as *Negligible* (0%), *Minor* (<10%), manageable *Moderate* (10<20%) or *Major* (>20%) NRZ occupancy. Development impacts may also be referred to as having *low*, *moderate* to *high-level* impacts within tree protection zones (TPZ's) being the area *that might be damaged by development* within the Notional Root Zone (NRZ) radius (AS4970). Where site restrictions within NRZ's exist development impacts or encroachment disturbances are based on author's experience, observations of site conditions, soil type and topography and as indicated within AS4970 Section 3.3.2 *Considerations in determining the Tree Protection Zone (TPZ).*

Each tree assessed within this report has been accorded a temporary identification number and is referred to by number throughout this report. For additional trees not plotted in provided documentation their location has been estimated by taking offsets from existing trees and structures.

The trees, their location and impacts by development disturbances have been detailed within the Tree Assessment Schedule Appendix- D and may be referenced for location within the Tree Location Plan of Appendix- E.

Care has been taken to obtain information from reliable sources. All data has been verified as far as possible, however, I can neither guarantee nor be responsible for the accuracy of information provided by others.

METHODOLOGY

1. In preparation for this report a site and ground level visual tree inspection was conducted on Friday 6 June 2025 by the author of this report. The principles of visual tree inspection were primarily adopted from components outlined within the ISA Tree Risk Assessment Manual (2017) and *Mattheck & Breloer* '*The Body Language of Trees*' 1994. The inspection included observing tree health and vigour, tree form, structure and structural condition as best as site conditions would allow. Where restricted visual access occurred the Useful Life Expectancy (ULE) and retention value of a tree was estimated based on the condition of above ground visual parts only. On completion of the inspection the retention value of the tree was then summarised utilising the compressed tree inspection Checklist provided within Appendix- C.

2. The inspection was limited to visual observations only. Tree height and canopy spread was estimated and expressed in metres with trunk diameters measured at approximately 1.4 metres above ground level, rounded off to the nearest 50mm and expressed as DSH (Diameter at Standard Height). Where multi stems at or near the base exist the stem group diameter was estimated as a tight clump. Where neighbouring trees were unable to be visually inspected trunk diameters and structural condition was estimated. Estimated trunk diameters were also provided where the trunks of trees have been protected by timber beam trunk protection, or fenced tree protection zones have been installed restricting access to trees. Unless specified otherwise all distances and development offsets within this report are taken from the centre of the tree as indicated within provided survey and/or design documentation.

4. Documentation reviewed to assist in preparation of this report include:

   Turner Architects, project No: 23104 design binder *specific to*:
   - Basement 01 Dwg No: 110-006 Rev DA.02 dated 24.4.2026.
   - Lower Ground Dwg No: 110-007 Rev DA.02 dated 24.4.2026.
   - Ground Level Dwg No: 110-008 Rev DA.02 dated 24.4.2026.
   - Upper Ground Level Dwg No: 110-009 Rev DA.02 dated 24.4.2026.

   Northrop Job no: SY26000353:
   - Level Difference Plan Dwg No: C13.01 Rev 1 dated 30.4.2026
   - Site Works, Sheet 1 & 2 Dwg No: C04.01 & 0.2 Rev 4 dated 30.4.2026.

   Greenarrow project No: 224-2065
   - Complete Stormwater Design package Rev A dated 30.4.2026.

   Arcadia job No: 24-1020, *specific to landscape design plans*:
   - Master Plan Dwg No: L-101, issue E dated 1.4.2026
   - Softworks, Lower, Ground & Upper Ground Floor Dwg No: L-401, issue E dated 1.4.2026.

   Arbor Express
   - Root Mapping Investigation, trees T13 & 14 dated 8.2.2026

   East Coast Surveyors
   - Detailed Survey, Sheet 1, Dwg No: ECP2896.D.01B, Rev B dated 17.5.2024

1. SUMMARY OF ASSESSMENT

1.1 General tree assessment

1.1.1 Sixteen (16) trees have been assessed for the purpose of this development proposal. Of the sixteen trees nine (9) trees are surrounding Council verge Street trees, and three (3) trees are neighbouring trees or groups of. Of the Council verge trees three (3) trees contain low retention values, and one (1) tree is a dead tree.

1.1.2 *Council verge trees* are identified as trees:

- T1 *to* 9.

Of these trees T1, 2 & 7 have been identified with low retention values and T4 is a dead tree. Being dead or trees of low retention value due to structural faults or poor condition the trees should generally not restrict development within the site due to the trees expected short remaining safe useful life expectancy.

Of the above trees T7 has been identified for removal to accommodate a new public pathway upgrade with trees T1 & 4 recommended for removal for safety reasons due to being dead or of hazardous condition.

1.1.3 *Neighbouring trees* are identified as trees:

- T10, 11 & 12.

The trees receive Bulk Earthwork cut & fill within the SRZ & TPZ with stormwater excavation and pathway services located within the TPZ of T10 & 11. Specific tree management has been detailed within this report with general recommendations consisting of no works to occur within the Structural Root Zone (SRZ) being *the area required for tree stability* (AS4970) without project arborist advice and certification.

1.1.4 *Trees within the site* are identified as trees:

- T13, 14, 15 & 16.

The above trees are highly significant trees with Sydney Blue Gum trees T15 & 16 forming part of an Endangered Ecological Community being protected under the Threatened Species Conservation Act 1995.

Of the above trees T13, 14 & 16 are established trees that receive SRZ occupancy by the design proposal with *High-level* impacts on tree vitality likely to occur by design coverage or disturbance within Notional Root Zone (NRZ) radiuses.

1.1.5 In general, with the exception of dead and low retention value trees the trees inspected are considered viable for retention without change in existing site conditions or modification within Tree Protection Zone (TPZ) radiuses as indicated within the SRZ & NRZ distance column provided within Appendix- D.

1.2 The development proposal

1.2.1 The development proposal consists of a State Significant Development Application (SSDA) providing multi-level residential apartments known as Buildings A, B & C. Deep excavation is required for ground floor and basement levels with new public domain areas including green space corridors incorporating the design. The proposal requires deep excavations, site leveling and change in existing environmental conditions within Structural Root Zone (SRZ) and Notional Root Zones (NRZ) radiuses of prescribed (protected) trees.

1.3 Tree removal to accommodate design

1.3.1 The design proposal requires the removal of three (3) trees T7, 8 & 9 of which T7 contains a low retention value.

1.3.2 Trees recommended for removal being potentially hazardous and at-risk of failure trees are identified as trees T1 & 4. Of these trees T1 is structurally defective and at risk of failing and T4 is a dead tree. Tree 2 has also been assessed as containing a low retention value and is only expected to remain viable for the very short term (5-15yrs).

Figure 1: showing proposed design footprint & tree removal plan

1.3.3 The identified development impacts and design requirements have been detailed and required to be reviewed as part of this report within Appendix-D, with the following sections summarising impacts by the design proposal.

1.4 Discussion of development impacts

Tree removal

1.4.1 Based on the documentation assessed three (3) trees T7, 8 & 9 specifically require removal to accommodate the design proposal. Impacts relating to tree removal consist of:

- Tree 7: The tree is located within the footprint of a proposed new public footpath upgraded.
- Trees 8 & 9: The trees are located within design footprints or receive *High-level* SRZ impacts by proposed new public pathways including public domain access to Pocket Park.

1.4.2 Given the poor structural condition of T1 the tree should be considered for removal with T2 also identified as containing a short retention value.

Unless specified otherwise the following discussions are based on the above trees being specified for retention.

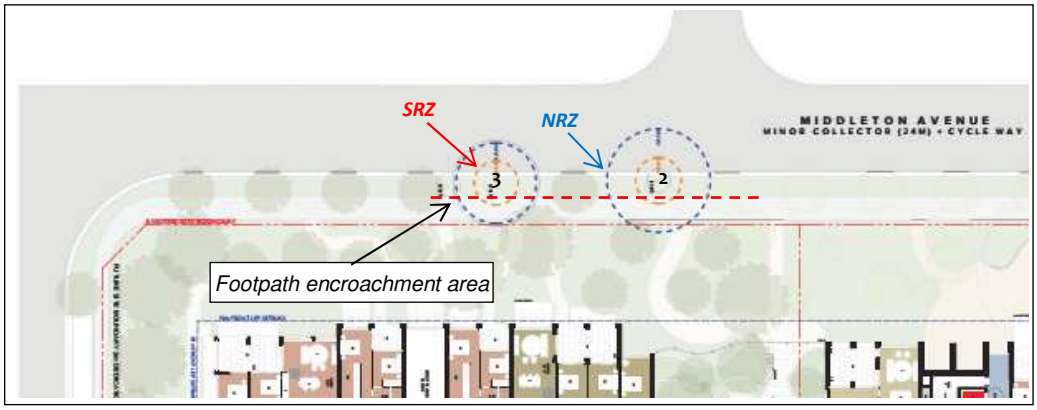
Tree retention:

Council verge trees T1 - 6

1.4.3 Trees 1 & 4: The existing footpath is proposed to remain adjacent T1 with T4 receiving slight occupancy by a new footpath upgrade within the SRZ. Tree retention requires no footpath upgrade, excavation or works are to occur within SRZ radiuses without project arborist advice and certification.

1.4.4 Trees 2 & 3: Both trees receive SRZ occupancy by a new proposed footpath upgrade with both trees receiving *Major (>20%)* SRZ & TPZ encroachment impacts. Mitigating impacts requires no root severing or excavation within the SRZ with footpath construction to be of tree sensitive design, being placed on top of ground level without excavation cut or compaction within the SRZ & TPZ. All final Civil design plans and work method within TPZs are to be reviewed and endorsed by an appointed project arborist prior to works.

Figure 2: showing T2 & 3 SRZ encroachment areas



1.4.5 Trees 5 & 6: Both trees receive SRZ occupancy by the design proposal with T5 receiving a *Moderate (10-<20%)* encroachment impact and T6 an overall initial *Major (>20%)* or *High-level* NRZ disturbance. Based on *Major* encroachments with SRZ occupancy the following tree management recommendations are provided:

a) Given tree location to roadside infrastructure and likely lineal or one-sided root systems, tree root investigations are recommended in areas of excavation for the proposed access driveway and parking bay layback. The investigation should also consider stormwater excavations within the SRZ and impact by the proposed Inlet Pit adjacent T5 [Plan STW-DA-001]. The management of the trees and location of services should then be based on the results of the root investigation.

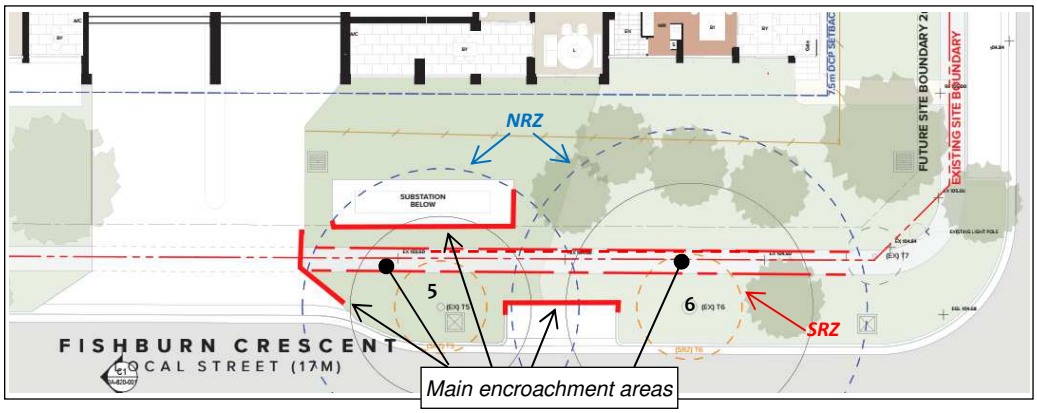
b) Demolition of the existing roadside kerb & gutter including all excavations within NRZ radiuses are to be supervised and certified by an appointed project arborist specific to; driveway access, driveway crossover and substation works.

c) Encountered tree roots are to be managed as instructed by the supervising arborist, treated and clean cut as per Section 2.3 subsection *g*) or as indicated within AS4970–2025 Section 4.5.4 *Root protection during works within the TPZ*.

d) Footpath construction is to be of tree sensitive design being placed on top of ground level without excavation cut or compaction within the SRZ & TPZ. All final Civil design plans and work method are to be reviewed and endorsed by an appointed project arborist prior to works commencing.

e) Standard Street tree protection is required as indicated within Appendix- B Item [C]. Within the site boundary tree protection fencing (Appendix- B Item [A]) should be installed at a minimum 4m boundary offset spanning the NRZ area providing a designated Tree Protection Zone (TPZ). Fencing should only be removed or altered with prior project arborist advice and certification.

Figure 3: showing T5 & 6 encroachment areas



Neighbouring trees T10, 11 & 12

1.4.6 The structural design footprint (basement & building footprint) proposes *Minor* (<10%) NRZ encroachment impacts to T11 & 12 with T10 receiving a *Moderate (10-<20%)* encroachment. Increased impacts occur by stormwater excavation, site leveling (cut & fill) and landscape pathway infrastructure proposed within the SRZ of T10 & 11. Given the site has been extensively cleared with reduced levels from the boundary the following recommendations in tree management are provided:

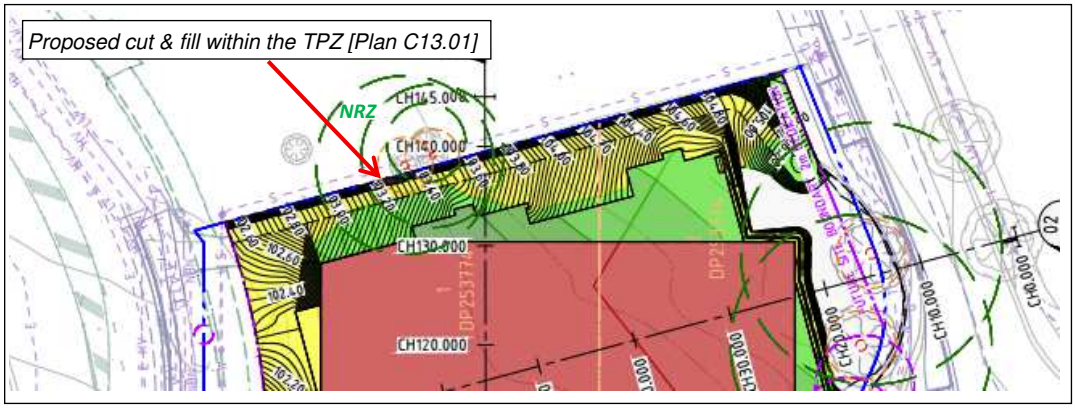
a) All excavations within NRZ radiuses are to be supervised and certified by an appointed project arborist. Within the SRZ should additional excavations be required all works are to be conducted manually, by hand. The project arborist is to determine if root pruning can be conducted or is roots are to be retained and protected.

b) Where approved by the project arborist tree roots are to be managed as instructed by the supervising arborist, treated and clean cut as per Section 2.3 subsection *g*) or as indicated within AS4970–2025 Section 4.5.4 *Root protection during works within the TPZ*.

c) Prior to the main excavation stage for basement excavations, tree protection fencing is to be installed at a 4m boundary offset being certified as fit for purpose by the site arborist.

d) Any additional excavation for minor works within TPZ's (landscaping and services) are to be supervised and certified by a site arborist.

Figure 4: showing Bulk Earthworks adjacent T10, 11 & 12



Site trees T13 & 14

1.4.7 The structural design (basement & building footprint) including Bulk Earthwork alterations proposes a *Moderate (12%)* NRZ encroachment impact on T13 and *Major (28%)* NRZ encroachment impact on T14, both without building footprint occupancy within the SRZ.

SRZ occupancy occurs by new public footpath adjacent T13 with no minor structural works within the SRZ of T14 proposed.

1.4.8 In considering AS4970-2025 Section 3.3.2 *Considerations in determining the TPZ*, it is determined the overall changes in environmental conditions by building elevations and disturbances within tree protection zones of mature established trees indicates the trees may not tolerate the proposed changes in environmental and site conditions. Adopting tree management principles as indicated within Australian Standards '*Protection of Trees on Development Sites'* AS4970-2025 may mitigate impacts, however, would not guarantee the established mature trees would remain viable.

Recommendations in tree management to assist with mitigating impacts by the design proposal should consist of:

a) Providing a detailed Tree Protection Plan (TPP) with Tree Protection Specifications (TPS) in accordance with Australian Standards '*Protection of Trees on Development Sites'* AS4970-2025 Section 2.2.6, which should include:
   - Specify any canopy pruning to clear building line elevations.
   - Detail a fenced tree protection zone that excludes development access during main excavation and construction stages.
   - Document critical stages of works within tree protection zones.
   - Ensure a Construction Management Plan (CMP) details the requirements of tree protection and work exclusion areas of tree protection zones.

b) Initial tree management should consist of securing tree protection fencing at a 1.5m basement offset, spanning to the extremities of tree protection zones or as certified as fit for purpose by an appointed project arborist.

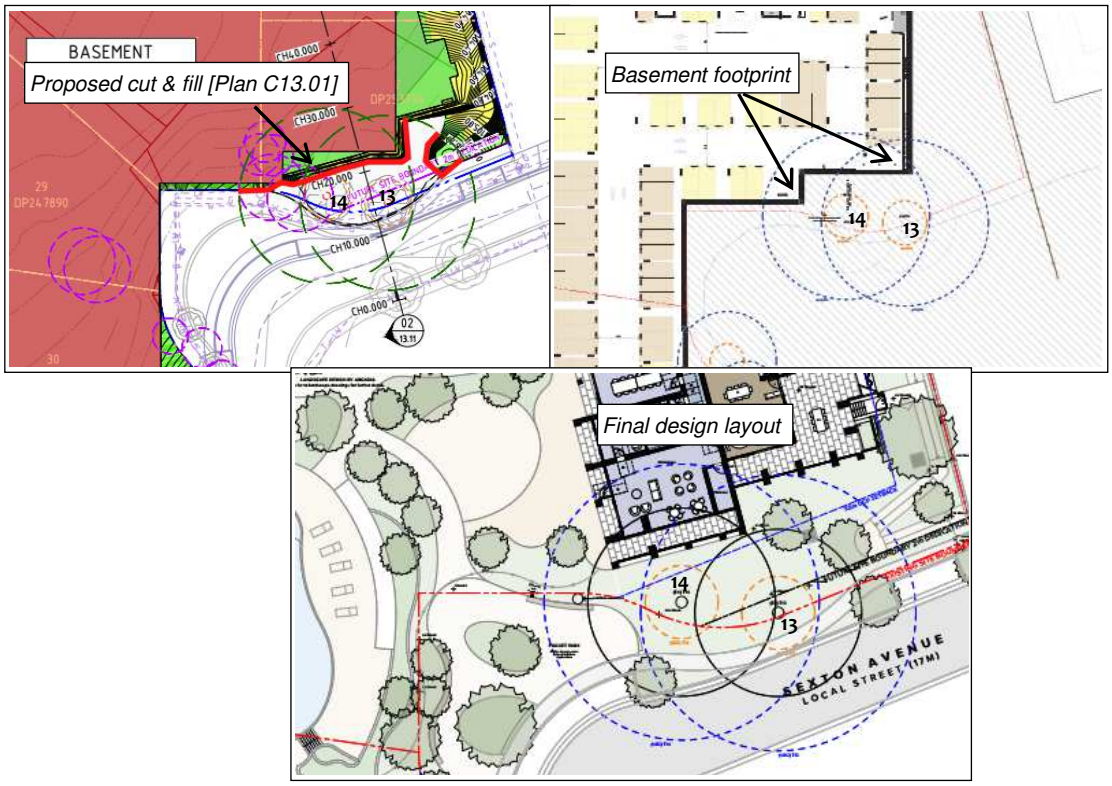
c) The designated fenced tree protection zone is to remain an initial main construction work access exclusion zone, see Section 2.3 *b*). Within the fenced TPZ:
   - The TPZ area shall be suitably mulched with native leaf mulch.
   - Irrigation is to be professionally installed as fit for purpose to maintain soil moisture levels.
   - TPZ signs stating a development access exclusion zone are to be placed at 4m intervals, see Appendix- B Item [A].

d) Specific requirements include; within the TPZ the initial excavation along the line of basement cut to a depth of 0.6m (600mm) is to be supervised and certified by an appointed site arborist, see Section 2.3 *f*). Encountered tree roots are to be managed as instructed by the supervising arborist, treated and clean cut as per Section 2.3 subsection *g*) or as indicated within AS4970 Section 4.5.4 *Root protection during works within the TPZ*.

e) Within the TPZ the face of the excavation cut shall be protected with geotextile fabric or similar to manage exposure, drying of roots and the soil profile.

f) Any additional excavation for minor works within the TPZ (landscaping and services) are to be approved, supervised and certified by a site arborist, see Section 2.3 *h*).

Figure 5: showing T13 & 14 encroachment areas



Site trees T15 & 16

1.4.9 The structural design (basement & building footprint) including Bulk Earthwork alterations proposes a *Major (>20%)* NRZ encroachment of at or near 22% for T15 and 26.8% for T16, both without basement and building footprint occupancy within the SRZ. SRZ occupancy occurs by new public domain works which surround the SRZ with the overall proposed occupancy and coverage over the SRZ & TPZ estimated at a >50% design encroachment or NRZ occupancy impact.

The overall changes in environmental conditions by building elevations and public domain disturbances within tree protection zones of mature and established trees indicates the trees may not tolerate the design disturbances and changes in site conditions. Adopting tree management principles as indicated within Australian Standards '*Protection of Trees on Development Sites'* AS4970-2025 may mitigate impacts, however, would not guarantee the established trees would remain viable.

Recommendations in tree management to assist with mitigating impacts by the design proposal should consist of:

a) Providing a detailed Tree Protection Plan (TPP) with Tree Protection Specifications (TPS) in accordance with Australian Standards '*Protection of Trees on Development Sites'* AS4970-2025 Section 2.2.6, which should include:

- Specify any canopy pruning to clear building line elevations.
- Detail a fenced tree protection zone that excludes development access during main excavation and construction stages.

- Document critical stages of works within tree protection zones.
- Ensure a Construction Management Plan (CMP) details the requirements of tree protection and work exclusion areas within tree protection zones.

b) Initial tree management should consist of securing tree protection fencing at a 1.5m basement offset, spanning to the radius of tree protection zones, or certified as installed as fit for purpose by an appointed project arborist.

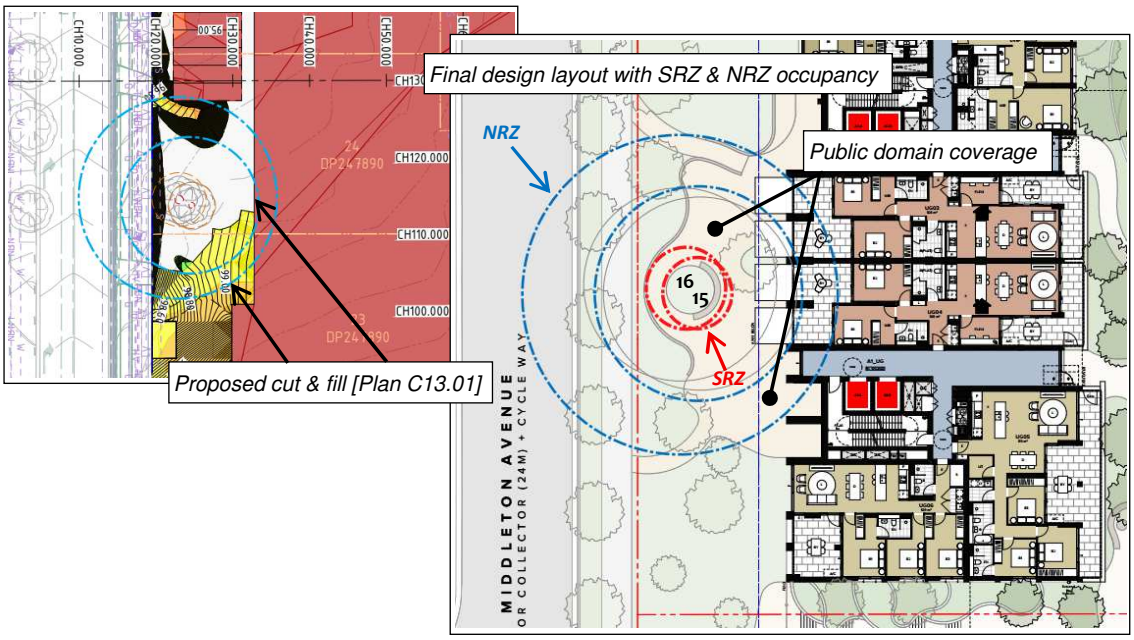
c) The designated fenced tree protection zone is to remain a main construction access and work exclusion area, see Section 2.3 *b*). Within the fenced TPZ:
   - The TPZ area shall be suitably mulched with native leaf mulch.
   - Irrigation is to be professionally installed as fit for purpose to maintain soil moisture levels.
   - TPZ signs stating a development access exclusion zone are to be placed at 4m intervals, see Appendix- B Item [A].

d) Specific requirements include; within the TPZ Bulk Earthwork excavation and the initial line of basement cut to a depth of 0.6m (600mm) is to be supervised and certified by an appointed site arborist, see Section 2.3 *f*). Encountered tree roots are to be managed as instructed by the supervising arborist, treated and clean cut as per Section 2.3 subsection *g*) or as specified within AS4970 Section 4.5.4 *Root protection during works within the TPZ*.

e) Within the TPZ the face of the basement excavation cut shall be protected with geotextile fabric or similar to manage exposure, drying of roots and the soil profile.

f) Tree protection fencing shall remain in place until construction of public domain works are require. All public domain works are to:
   - Be of an approved tree sensitive design and construction being placed on top of ground level without excavation cut or compaction, or be suspended above ground level to protect underlying tree roots.
   - All Civil design plans and works within the TPZ are to be reviewed and endorsed by an appointed project arborist prior to instalment.
   - Should excavation be required within the SRZ tree root investigations or root mapping is to be conducted to identify the impact on critical structural roots.
   - Any additional excavation for minor works within the TPZ (stormwater, landscaping and services) are to be approved, supervised and certified by a site arborist prior o being installed, see Section 2.3 *h*).

Figure 6: showing T15 & 16 encroachment areas



2. CONCLUSIONS & RECOMMENDATIONS

2.1 Tree removal

2.1.1 Based on the assessment conducted the following three (3) trees require or are recommended for removal to accommodate the design proposal.

- **T7, 8 & 9.**

2.1.2 Trees recommended for removal due to poor structural condition or are hazardous trees are identified as Council verge trees:

- **T1 & 4.**

Should T1 & 4 be specified for retention no works should be conducted within Structural Root Zone (SRZ) radiuses without project arborist advice, site supervision and certification.

2.2 Specific tree management recommendations

Trees 5 & 6

2.2.1 *Tree root investigations or root mapping*:

Given restricted radial root development and likely lineal or one-sided root systems tree root investigations or root mapping is recommended along the line of cut to accommodate driveway access, driveway verge crossover, stormwater services and proposed parking bay layback.

The management of the trees and location of services should then be based on the results of the investigation.

2.2.2 *Public domain and pathways*:

Within NRZ radiuses all public domain works and pathways are to be of tree sensitive design and construction. To mitigate impacts on underlying tree roots pathways or to be constructed on top of ground level without cut or compaction or be suspended to ensure underlying tree roots are retained and protected.

Prior to installation an appointed project arborist is recommended to review and endorse all public domain Civil design drawings and construction methodology within TPZ radiuses.

2.2.3 *General*:

A Tree Protection Plan (TPP) with Tree Protection Specifications (TPS) may be required once the final design is approved and what trees are permitted for removal. For those trees specified for retention within this report the following specific guidelines are provided:

a) An appointed project arborist is to be engaged to manage and oversee excavation works within tree protection zones.
b) The project arborist is to certify key milestone stages such as:
   - The installation of tree protection fencing, ground protection, branch and/or timber beam trunk protection prior to demolition and primarily prior to construction works.
   - Certify the supervision of excavation activities within tree protection zones.
   - Undertake specific *Hold point* activities as indicated within Section 2.3 subsection *k*).
c) There is to be no excavation for any services, including landscaping within specified Tree Protection Zones (TPZ's) and SRZ radiuses without prior arborist advice, supervision and certification.
d) Unless approved and certified otherwise the SRZ being *the area required for tree stability* (AS4970) is to remain a development access and excavation exclusion zone.
e) As indicated within Section 2.3 *General tree protection requirements*, subsection *h*) a*dditional inground services* that may include landscape works, fencing, sewer, stormwater, potable water and electrical services: final design and impact to trees shall be reviewed and endorsed by the project arborist prior to their installation.
f) The development site superintendent is recommended to be familiar with all tree protection and ongoing certification requirements, and is responsible for informing all subcontractors of the responsibilities and requirements of tree protection prior to their engagement, see Section 2.3 *General tree protection requirements* subsection *l & m)*

2.3 General tree protection requirements

a) Prior to site works, including demolition, Tree Protection Fencing (TPF) and/or zones as identified within this report or Appendix- B are recommended to be located under the guidance of an appointed AQF Level 5 site arborist. Unless specified otherwise the location of tree protection fencing is to be positioned to allow for adequate work access and/or be located at the extremity of the TPZ radius as indicated within the SRZ & NRZ distance column of Appendix- D.

Where design and construction access may be restrictive by tree protection fencing, timber beam trunk protection is recommended to be installed with ground protection mats provided to protect underlying tree roots within the SRZ or designated tree protection zones (TPZ's).

b) Unless approved otherwise activities to be excluded within Notional Root Zone (NRZ) or designated Tree Protection Zone (TPZ) radiuses, or within the canopy extension (TPZ area) include:

- No excavation, cultivation or disturbance of the soil, including scraping of the surface, spreading or stockpiling of fill.
- No equipment & material storage, dumping of waste, preparation of chemicals, including preparation of cement products.
- No movement or parking of vehicles and plant and refuelling.
- No washing down and cleaning of equipment or hard surfaces.
- No fires and physical damage to trees.

Activities that minimize the impact of TPZ disturbances include:

- Within NRZ or arborist specified TPZ radius or extending 2m outside the canopy dripline installation of native leaf mulch not greater than 80mm in depth with routine irrigation based on arborist advice is recommended.

c) In accordance with AS4970-2025, during works where *Minor* (<10%) NRZ or TPZ occupancy occurs outside of SRZ radiuses a minimum AQF Level 3 certified arborist is to be engaged to monitor, supervise excavation, advise and provide certification of protection works conducted. Where a *Moderate* (10-20%) or *Major (>20%)* NRZ or TPZ occupancy occurs an Australian Qualification Framework (AQF) Level 5 certified project arborist competent in methodology of protecting trees on development sites is to be engaged.

d) The project arborist is to provide final certification outlining tree protection measures with photographic evidence of ongoing works retained for final certification purposes (AS4970 S/5.5.2 *Final certification*).

e) The project arborist is to be familiar with protection measures specific to Australian Standard AS4970 'Protection of Trees on Development Sites' – 2025 requirements with any modification in Tree Protection Fencing (TPF) or Zones (Z) to be compliant with AS4970 Section 4.5 *Other Tree Protection Measures.*

f) *Approved excavation within TPZ setbacks*; there shall be no over excavation beyond the line of cut as shown within construction drawings without arborist advice. Should over excavation be required the extent of excavation should be detailed within approved drawings or a construction management plan for arborist review and endorsement.

g) Unless specified otherwise during approved excavation for *Minor* (<10%) TPZ encroachment areas, excavation is to be conducted manually (by hand) under the supervision of a minimum AQF Level 3 certified arborist. Where larger roots have been encountered, they are to be referred to an independent Level 5 arborist for further advice.

Where *Major* (>10%) TPZ encroachments occur, supervision is to be conducted by a minimum AQF Level 5 certified arborist. Where approved by the arborist the pruning of roots at or <30mm(Ø) is to be conducted in accordance with AS4970 – 2025 Section 4.5.4 *Root protection during works within the TPZ*, such that tree roots are not damaged or ripped beyond the point of excavation by site machinery.

For deep excavations exposed roots at the excavated cut face are to be protected with jute mesh, geotextile fabric or similar being secured in place to avoid drying of roots and the exposed soil profile.

h) *Additional works or inground services* that may include landscape works, fencing, sewer, stormwater, water and electrical services, final design and impact to trees shall be reviewed and endorsed by the project arborist prior to their installation. Where landscaping (excavation) is required within the SRZ further advice from an appointed project arborist is recommended.

i) *Tree sensitive construction measures* such as pier and beam bridging over critical roots, suspended slabs, cantilevered building sections, screw piles and contiguous piling can minimise the impact of encroachment (AS4970). Where Bushfire BAL conflicts exist with tree management advice the appointed project arborist shall be consulted to advise on an appropriate design outcome.

j) *Tree removal / canopy pruning:* where required tree removal and canopy reductions are to be approved by the Local Government Authority. Works are to be conducted by a suitably qualified AQF Level 3 certified arborist in accordance with AS4373 Pruning Standards, and specifically be conducted in accordance with Safe Work Australia – Guide to managing risks of tree trimming and removal works 2016 (www.swa.gov.au).

k) *Hold points*: specific to no works are to commence without arborist advice, inspections and certifications:

Hold Point	Task	Responsibility	Written certification	Project arborist timing
1	Clearly mark tree(s) for removal only	Principal contractor	Project arborist	Prior to works (demolition & site clearing)
2	Establishment of tree protection (fencing & signs)	Principal contractor	Project arborist	Prior to works (demolition & site clearing)
3	Supervision during all works and excavation within the TPZ / NRZ	Principal contractor	Project arborist	Be on site prior to works commencing within TPZ's
4	Inspection of trees by project arborist [1] & [2]	Principal contractor	Project arborist	[1] Every two (2) months during the construction period [2] immediately after removal of tree protection fencing
5	Project arborist final inspection	Principal contractor	Project arborist	Prior to issue of an Occupation Certificate (OC)

l) To ensure tree(s) are appropriately protected the development site superintendent is recommended to be familiar with all tree protection and ongoing certification requirements.

The superintendent is responsible for informing all subcontractors of the responsibilities and requirements of tree protection prior to their engagement.

m) Should there be any uncertainty with tree protection requirements, the site superintendent shall contact the appointed project arborist for advice prior to works occurring within tree protection zones (TPZ) or specified tree protection areas (TPA).

Should you require further liaisons in this matter please contact me direct on 0419 250 248

Yours sincerely

Mark A Kokot

AQF Level 5 consulting arborist

Diploma of Hort/Arboriculture (AQF5), Associate Diploma Parks Management (AQF4)
Certified Arborist / Tree Surgeon (AQF3), ISA Tree Risk Assessment Qualified exp-2029
Member: ISA, Arboriculture Australia & IACA, Working With Children No: WWC0144637E

ANNEXTURE

Annexture- 01: Arbor Express Root Mapping Investigation 19

Arbor Express

Arada
9/60 Castlereagh Street
Sydney NSW 2000

8 February 2026

To whom it may concern

Root Mapping Investigation
2 Fishburn Crescent, Castle Hill

Root mapping using an air spade/hand tools has been undertaken on 2 February 2026 and 3 February 2026 within the Tree Protection Zone (TPZ) of Trees 13 and 14 to determine the size and depth of the tree roots prior to the construction for the development. Figure 1 shows the tree locations at 2 Fishburn Crescent, Castle Hill. I have outlined where the root mapping was conducted in Figure 1 with a blue solid line marked trench 1 and trench 2. The depth of the trench was 600mm and 200mm. The location of the tree roots and measurements have been listed in Table 1.

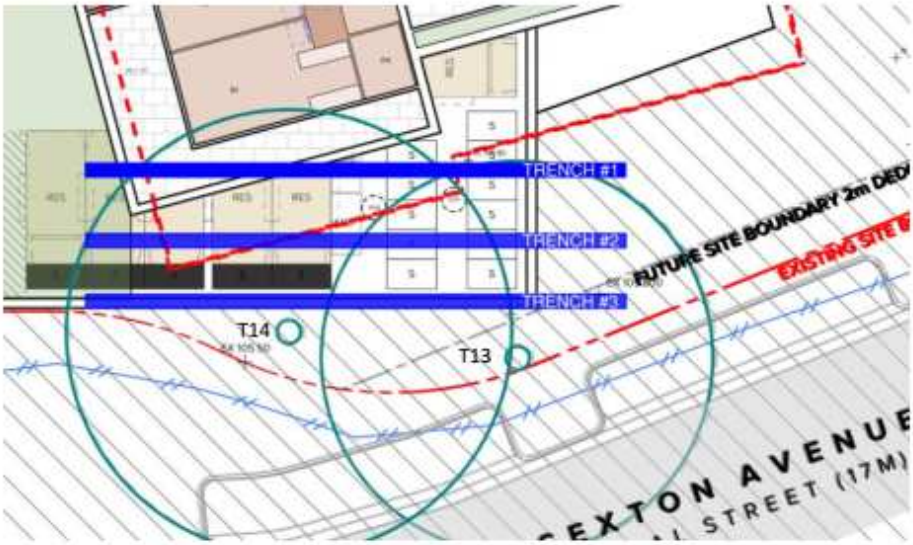


Figure 1: Tree 13 Tree Protection Zone and Root Mapping

Trench	Root #	Tree #	Root Diameter (mm)	Depth to the top of the root (mm)	Distance from the start marked with a 1 and 2 in photo 1 (mm)
1	1	13	30	600	2700
1	2	13	20	250	6900
1	3	14	30	450	13350
1	4	14	30	500	14300
2	5	13	70	300	300
2	6	13	50	400	1250
2	7	13	30	600	3750
2	8	13	40	400	4950
2	9	14	30	500	11850

Office Contact:
- Phone: 0466 586 842
- Email: info@arbor-express.com.au

Arbor Express

Trench	Root #	Tree #	Root Diameter (mm)	Depth to the top of the root (mm)	Distance from the start marked with a 1 and 2 in photo 1 (mm)
2	10	14	30	500	13850
2	11	14	35	600	14050

Table 1: Tree Root Data

Commentary

Based on the root mapping investigation, Roots 1–4 are considered to be of small diameter and located at a distance that indicates they are unlikely to form part of the primary structural root system of Trees 13 and 14. Pruning of these roots, if required to facilitate the proposed works, is expected to have minimal impact on the health and ongoing vitality of Trees 13 and 14, provided that pruning is undertaken using appropriate arboricultural techniques and in accordance with Australian Standard AS 4970-2025 – Protection of Trees on Development Sites and AS 4373-2007 – Pruning of Amenity Trees.

Roots 5–11 are of larger diameter and located in positions that indicate they are likely to contribute to the trees' structural support and nutrient uptake. Pruning or removal of these roots has the potential to adversely affect the stability, health, and long-term viability of Trees 13 and 14. As such, these roots should be retained.

For further information please contact Arbor Express via email at info@arbor-express.com.au A photolog has been attached overleaf.

Your sincerely.

Alex de Jong
AQF level 5 Arborist

Office Contact:
- Phone: 0466 586 842
- Email: info@arbor-express.com.au

Arbor Express

Photo Log

Photo 1: Trench 1 and 2

Office Contact:

- Phone: 0466 586 842
- Email: info@arbor-express.com.au

APPENDICES

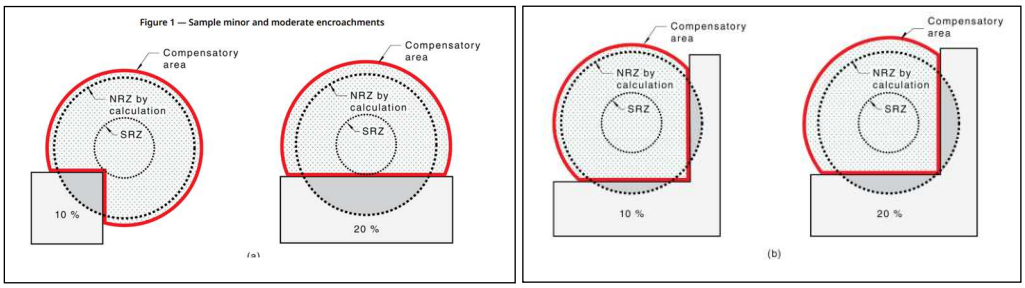
Appendix- A:	Terminology & references	23
Appendix- B:	Tree Protection & Fencing Detail	24
Appendix- C:	Tree Retention Values *Checklist*	25
Appendix- D:	Tree Assessment Schedule	26
Appendix- E:	Tree Location Plan	31

APPENDIX- A: Terminology, notes & references

Acceptable Risk: Exposure to or reject risk of varying degrees. The acceptable risk is defined as '*The person who accepts some degree of risk in return for a benefit being exposed to some risk of varying degree*. **Age classes:** (I) Immature refers to a well established but juvenile tree. (ESM) refers to an early semi mature tree not of juvenile appearance. (SM) Semi-mature refers to a tree at growth stages advancing into maturity and full size. (LSM) Late Semi- Mature, refers to a tree between semi-mature and close to mature. (EM) refers to a tree at the first stages of maturity. (M) Mature refers to a full size tree with some capacity for future growth. **Health:** Refers to a trees vigor exhibited by the crown density, leaf colour, presence of epicormic shoots, ability to withstand disease invasion and the degree of dieback. **Condition:** Refers to the tree's form and growth habit, as modified by its environment (aspect, suppression by other trees, soils) and the state of the scaffold (i.e. Trunk and major branches), including structural defects such as cavities, crooked trunks or week trunk / branch junctions. These are not directly connected with health and it is possible for a tree to be healthy but in poor condition. **Decay:** (*N*) – an area of wood that is undergoing decomposition. (*V*) – decomposition of an area of wood by fungi or bacteria. **Decline:** Is the response of a tree to a reduction of energy levels resulting from stress. Recovery from decline is difficult and slow; is usually irreversible. **Defect:** A identifiable fault in a tree. **Epicormic Shoots**: Shoots that arise from latent or adventitious buds that occur on stems and branches and on suckers produced from the base of the tree. A symptom / result of stress related factors. **Footprint:** The area occupied by site structures, including the dwelling driveways and hard surfaces. **Included Bark**: (Inclusion) a genetic weak fault, pattern of development at branch junctions where the bark is turned inwards rather than pushed out, can pose a potential hazard. **Order of branches:** First order being those that are the first to extend from the main trunk or codominant limbs, second order branches extend from the first order and third order branches extend from the second order. **Probability:** The likelihood of some event happening. **Risk:** Is the probability of something adverse happening. **Suppression:** Restrained growth pattern from competition of other trees or structures. **Wound:** Damage inflicted upon a tree through injury to its living cells, may continue to develop further weakening of the structure compromising structural integrity. **Works**: any activity that modifies above & below ground conditions within specified tree protection zone radiuses. **(>)** = estimated distance in site **(^)** = estimated distance above ground.
NOTE 1: This report acknowledges the current **Australian Standards 'Protection of Trees on Development Sites'** AS 4970 – 2025 with reference to the **Notional Root Zone (NRZ)** being a radius of 12x the DSH / area for arboricultural advice, and **Tree Protection Zone (TPZ):** being a combination of the root and crown area requiring protection that may be damaged by development. The NRS & TPZ takes into consideration the **Structural Root Zone (SRZ):** The area required for tree stability. Determined by AS4970 - 2025 Section 3.4 of the standards. The standard states where a *Major* or greater than 20% encroachment occurs the arborist is to take into consideration the schedule of determining impacts as set within AS4970 S/-3.3.6. Encroachments are referred to within this report as major (>20%), moderate (10-20%) or minor (<10%) encroachments (AS4970. 3.3.3, 3.3.5 & 3.3.6). To retain specific trees and ensure their viability development must take into consideration protection of the Notional (NRZ) or TPZ radius with terminology used for estimated percentage of development incursion noted below.

NOTE 2: The extent of inclusion within the NRZ radius has been categorised as follows:
Negligible (0%) incursion of no to low-level impact, *Minor (<10%)* of minor consequence, *Moderate* 10 - <20% incursion of a moderate level of impact provided works are outside the SRZ, and where the project arborist is required to demonstrate the tree/s remain viable. *Medium to high* 20 - <25% incursion impacts, *High level* 25 – <35% impact to *Significant* >35% incursion. Where *Major* (>20%) impacts occur design may require changes or further information to ensure a tree remains viable. **WBF** = located within the building footprint where design necessitates tree removal.

NOTE-3: Showing acceptable 10 & 20% incursion within NRS radiuses (AS4970)

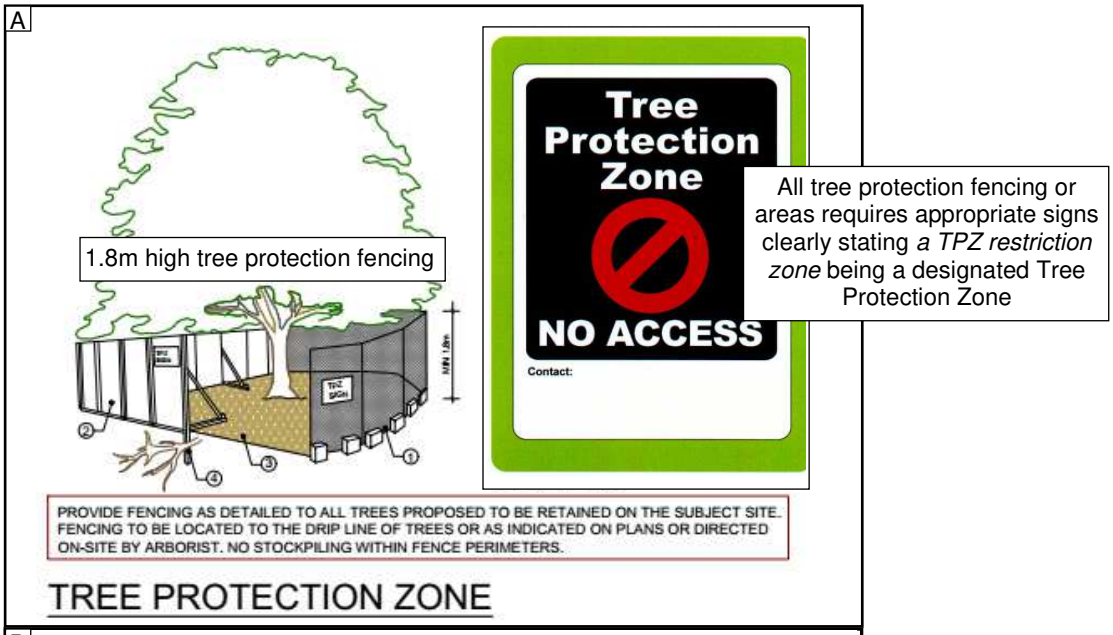


SELECTED REFERENCES:

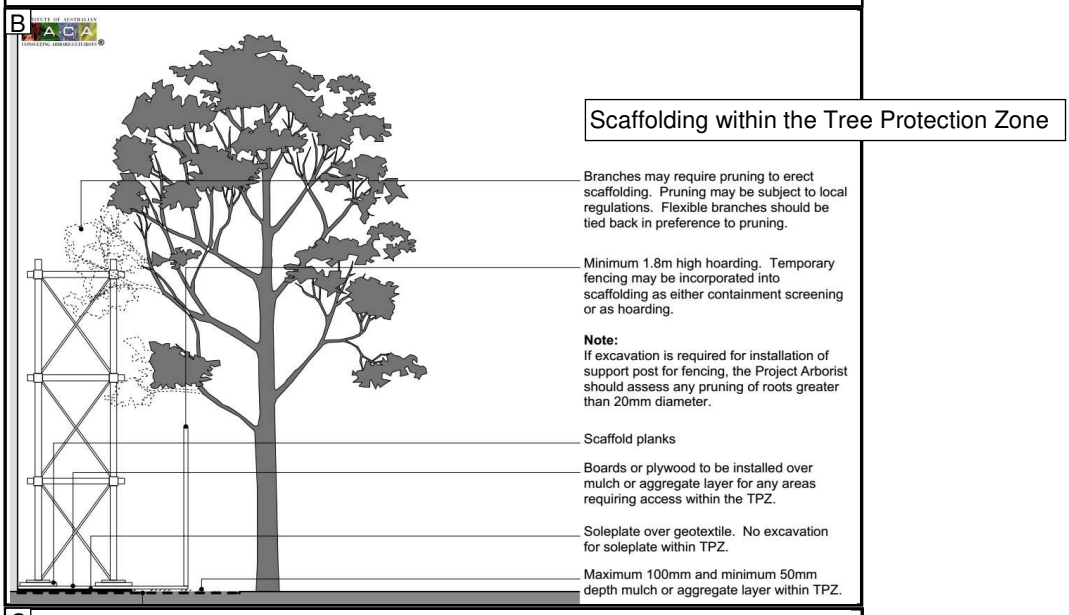
Barrell J. 1993, 'Preplanning Tree Surveys: Safe useful Life expectancy (SULE) is the Natural Progression", Arboricultural Journal 17: 1, February 1993, pp. 33-46.
International Society of Arboriculture (ISA) 2013, Tree Risk Assessment Manual, Martin Graphics, Champaign Illinois U.S.
Mattheck, C. & Breloer, H.(1994) *The Body Language of Trees.* Research for Amenity Trees No.4 the Stationary Office, London.
Standards Australia 2009, *Australian Standards 4970 Protection of Trees on Development Sites* - Standards Australia, Sydney, Australia.
The Hills Shire Council Tree Management Fact Sheet https://www.thehills.nsw.gov.au/Council/Fact-Sheet-Directory/Fact-Sheets-Tree-and-Vegetation-Management

APPENDIX- B: Tree protection fencing, ground and trunk protection detail

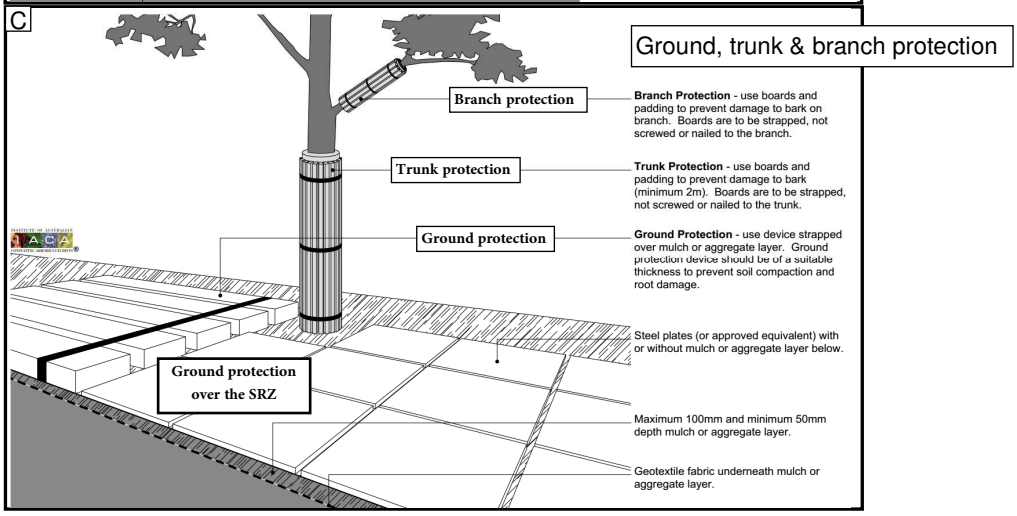
A



B



C



APPENDIX- C: Tree Retention Value *Check list* ©*rainTree consulting*

i) Landscape Significance (LS): The significance of a tree in the landscape is a combination of its amenity, environmental and heritage values. There are no industry standards for referencing tree retention value or significance. The values provided may be subjective, however, are based after IACA Sustainable Retention Index Value (SRIV) which offer a visual understanding of the relative importance of the tree to the environment. The LS of a tree is described in seven categories to assist in determining the retention value of trees.

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

ii) Visual Tree Assessment (VTA)

0	If appropriate to VTA - **exempt* trees from Local Government Authority (LGA) Tree Management Orders or known NSW *Weedwise environmentally invasive species	2E	Tree location likely to be affected by infrastructure restricting root growth potential, or tree has potential to cause infrastructure damage where risk mitigation or rectification works may compromise tree anchorage. Tree(s) may be contained by solid structures with restricted radial root anchorage
0A	Noxious or invasive weed species located within heritage conservation areas		
1	Trees that are dead, significantly declining >75% volume or obviously hazardous	3	This rating incorporates trees that may require further investigation of defects such as cavities or symptoms indicating internal decay to an extent that cannot be quantified under visual examination. Further inspections may be in the way of arborist climbing inspection within the canopy, root crown investigation and/or drill penetrating or Picus Sonic Tomograph ultrasound testing procedures to determine percentage of internal decay.
2	Trees that are structurally damaged. Have poor structure or weak & detrimental large stem inclusions capable or failure opposed to 2B. Tree also may be affected by extensive borer damage, fungal pathogens (wood rot) or viruses. Some symptoms may be reversible, remediated or controlled give appropriate management.		
2A	Tree damage specific to basal and/or root plate damage, or very shallow soils, or steep topography resulting in poor anchorage where condition may become problematic in near future / may include trees with included bark splits to ground level	4	Trees which appear specifically environmentally stressed by drought, poor soil or site conditions including pest or disease infestation(s). Symptoms may be reversible given appropriate management
2B	Defect specific to stem inclusions development (weak branch attachments) where the condition may not be immediately detrimental however, require annual to biannual monitoring with control to prevent stem failure by installing slings, cable or bracing. Tree may also contain multi stems or codominant twin stems	5	Trees that have become exposed or are subject to wind loading, or have tall forest form where exposure may result in windthrow or limb snap
		5A	Screen trees, trees or shrubs, that are routinely hedged, pruned or managed for height control
2C	Tree may contain minor wounds, pest or minor pathogen activity, altered from storm damaged to an extent that is not considered immediately detrimental - may also display average form. Likely to require close annual monitoring or minor corrective pruning	6	Trees may be typical for species type, of good form and visual condition for age class. May have suppressed one sided canopy, or are low risk trees
2D	Trees significantly altered by recent storm or over pruning events which may reduce retention values due to average form- or tree extensively pruned for power line clearance	7	VTA restricted by canopy or plant material vine or ivy covering tree parts, or site conditions which do not allow access- fences to neighbouring sites

iii) Retention Value (RV): Determined by structural condition: [1] tree fee of visual defects and viable for retention, [2] viable for retention with minor faults which may reduce ULE, [3] trees containing faults that are likely to become problematic in the future, [4] trees that should be considered for removal due to poor or average condition.

1	High retention	2	Medium retention	3	Low retention	4	Consider removal

iv) U.L.E. categories Useful Life Expectancy (after *Barrell* 1996, modified by the author). A trees U.L.E. category is the life expectancy of the tree modified first by its age, health, condition, safety and location. U.L.E. assessments are not static but may be modified as dictated by changes in trees health and environment.

1. Long U.L.E. - Appear retainable at the time of assessment for over 40 years with an acceptable degree of risk assuming reasonable maintenance.
2. Medium U.L.E. - Appear to be retainable at the time of assessment for 15 to 40 years with an acceptable degree of risk assuming reasonable maintenance.
3. Short U.L.E. - Trees appear to be retainable at the time of assessment for 5 to15 years with an acceptable degree of risk assuming reasonable maintenance.
4. Very short - Removal- Trees which should be scheduled for removal within the very short term or as specified within this report.
5. Small, young or regularly pruned – Trees under 5m in height that can be easily moved or replaced, includes screen plantings or hedge lines.

APPENDIX- D: Tree Assessment Schedule

Refer Appendix- C Tree retention value Checklist

	Trees requiring removal due to hazardous or dead condition - subject to Local Government Authority notification		Trees with low retention value: due to senescence, are significantly environmentally stressed, have developing defects, are NSW Weedwise listed or are LGA *exempt non-prescribed trees

Tree No	*Botanical Name* COMMON NAME	Height x spread (m)	DSH (mm)	SRZ / NRZ (m)	Age	Vigour (health)	Condition (structure)	LS	VTA	RV	ULE	Comments CV = Council verge tree NT = Neighbouring tree
1 *cv*	*Eucalyptus scoparia* Wallangatta White Gum	9 x 4	250	2 / 3	ESM	Fair	Poor	4	4-2	3	4	Significantly environmentally stressed, decline in canopy, large diameter dead wood, large open wound from ground level to 2.2m E side= structurally defective tree of low retention value
Design impact summary: Structurally defective tree at edge of main road should be considered for removal. Design Plan 110-008 show tree retention with C04.01 retaining the existing footpath. Given setback to the existing boundary and no new works within the NRZ a Negligible (0%) design encroachment impact occurs. Tree management is recommended to consist of 1) notify tree owner of defective tree. 2) if tree to be retained manage tree in accordance with Section 2.3 General tree protection requirements, specific to: no excavation within the SRZ without project arborist advice and certification.												
2 *cv*	*Callistemon viminalis* Bottle Brush	8 x 5	450at base	2.4 / 5.4	M	Good	Fair / Poor	4-3	2-2D	3	3	Four (4x) stems at near ground level all with branch bark inclusion faults at base, STH stem removed modifying form, has one-sided canopy biomass- WST, canopy exposure subject to wind snap= low retention value
Design impact summary: Slight excavation within the site proposes a Minor (<10%) NRZ occupancy [Plan C13.01], with proposed footpath upgrade located within the SRZ, at or near 1.6m from the tree. The combined disturbance is a Major (>20%), High (25-35%) level NRZ occupancy at or near 28.7% disturbance [Plan 110-009]. Given pathway works are proposed within the SRZ, tree root investigations or root mapping should be conducted where excavation is required, or pathway constructed using tree sensitive design and construction methods being placed on top of ground level without cut or compaction to protect underlying tree roots. No excavation within the SRZ should occur without prior arborist advice and certification												
3 *cv*	*Eucalyptus sideroxylon* Red Ironbark	14 x 9	350	2.3 / 4.2	ESM	Good	Fair / Good	3	2C	2	1	Narrow canopy form, lower trunk skewed at 3m, past central limb snap at 9m with epicormic end shoots
Design impact summary: Within the site a Negligible (0%) NRZ encroachment impact occurs. Proposed footpath upgrade is located within the SRZ, at or near 1.3m from the tree with overall pathway coverage or disturbance having a Major (>20%) or Moderate to High (20-25%) NRZ disturbance at or near 22.5%. Tree management is similar toT2 above: where tree root investigations or root mapping should be conducted where excavation is required within the SRZ, or pathway constructed using tree sensitive design and construction methods being placed on top of ground level without cut or compaction to protect underlying tree roots. No excavation within the SRZ should occur without prior arborist advice and certification												
4 *cv*	Dead tree	9 x 5	250	2 / -	-	-	-	6	1	4	4	Dead tree, no obvious habitat values
Design & impact summary: Not plotted within design documentation. New pathway disturbance may disrupt tree anchorage where tree removal should occur prior to and excavation or works occurring within the SRS.												

Refer Appendix- C Tree retention value Checklist

	Trees requiring removal due to hazardous or dead condition - subject to Local Government Authority notification		Trees with low retention value: due to senescence, are significantly environmentally stressed, have developing defects, are NSW Weedwise listed or are LGA *exempt non-prescribed trees

Tree No	*Botanical Name* COMMON NAME	Height x spread (m)	DSH (mm)	SRZ / NRZ (m)	Age	Vigour (health)	Condition (structure)	LS	VTA	RV	ULE	Comments CV = Council verge tree NT = Neighbouring tree
5 *cv*	*Eucalyptus scoparia* Wallangatta White Gum	13 x 11	450, 250	2.8 8.4	SM	Good	Good	3	2C	2	1	Twin stems at 1m, minor past pruning cuts N side, canopy 4m in site at 4m^
Design impact summary: Tree likely has a lineal root system, partly running parallel to the existing roadside kerb. New works consist of proposed substation, site excavation (leveling), footpath upgrade, driveway crossover for vehicle access, additional parking layback with increased kerb location and modification of the SW Inlet Pit [Plan STW-DA-001]. Works proposed within the SRZ are pathway and Stormwater(SW) upgrade with a combined NRZ disturbance of Moderate (10-<20%) NRZ disruption at or near 19.3% encroachment. Based on AS4970 / Section 3.3.2 Considerations in determining the TPZ, the overall disturbance should be considered a High-level disruption where tree root investigations should occur where proposed excavation cut for driveway services, vehicle layback and any SW upgrade is required. The management of the tree should then be based on the results of the investigation with general tree management should be specific to: no disturbance or excavation within the SRZ without arborist advice, all demolition and excavations within the NRZ to be supervised and certified by an appointed site arborist.											
6 *cv*	*Corymbia maculata* Spotted Gum	20 x 15	900	3.2 10.8	SM	Good	Fair / Good	2	2C	2	1	Four 4x stems at 2.4m, vehicle impact damage S side at 2.2m, past limb snap sections in lower branch scaffolds NTH, canopy 7m in site at 5m^
Design impact summary: As with T5, tree likely has a lineal root system, partly running parallel to the existing roadside kerb. New works consist of site excavation (leveling), footpath upgrade, additional parking layback with increased kerb location and modification of stormwater service line [Plan STW-DA-001]. Works proposed within the SRZ are pathway and Stormwater(SW) upgrade with a combined NRZ disturbance of Major (>20%) or High (25-35%) level NRZ disruption at or near 35%. The deep soil disturbance has been mitigated by final landscape design and planting [Plan LP-401] where the finished design with proposed deep soil may likely have a Moderate and manageable NRZ impact. Tree sensitive design in footpath construction would additionally mitigate disturbances with tree root investigations conducted where excavation is proposed within the SRZ, primarily for SW services [Plan STW-DA-001]. Tree management should also be specific to: no disturbance or excavation within the SRZ without prior arborist advice, all demolition and excavations within the NRZ to be supervised and certified by an appointed site arborist.											
7 *cv*	*Eucalyptus robusta* Mahogany	5 x 3.5	250	2 3	ESM	Poor	Poor	4	4-2	3	3	Requires fruit for correct ID, environmentally stressed with excessive epicormic shoot development throughout, stunted form, open wound at 3m E side with decay and pathogen activity- above wound / stem section dead= low retention value
Design impact summary: Design location of proposed public pathway upgrade necessitates tree removal [Plan 110-009]. Given poor tree structural condition the tree should also be considered for removal due to the trees low retention value.												
8 *cv*	*Lophostemon confertus* Brush Box	12 x 8	400	2.4 4.8	ESM	Good	Fair / Good	3	2B	2	1	Suppressed canopy form S side, multi stems at 2m, upper branch scaffold twin at 4.5m with minor stem inclusion development.
Design impact summary: Design location of proposed parking layback necessitates tree removal with the tree falling within the footprint of design [Plan 110-009].												

Refer Appendix- C Tree retention value Checklist

	Trees requiring removal due to hazardous or dead condition - subject to Local Government Authority notification		Trees with low retention value: due to senescence, are significantly environmentally stressed, have developing defects, are NSW Weedwise listed or are LGA *exempt non-prescribed trees

Tree No	*Botanical Name* COMMON NAME	Height x spread (m)	DSH (mm)	SRZ / NRZ (m)	Age	Vigour (health)	Condition (structure)	LS	VTA	RV	ULE	Comments CV = Council verge tree NT = Neighbouring tree
9 *CV*	*Lophostemon confertus* Brush Box	12 x 9	350, 300	2.7 7.8	ESM	Good	Fair / Good	3	2B	2	1	Twin stems at 1m with minor stem inclusion development, canopy 4m in site at 3.5m^
Design impact summary: Design location of proposed parking layback, public pathway, Pocket Park public access and basement footprint within the NRZ necessitates tree removal receiving a Significant NRZ encroachment impact, at or near 68.3% with direct SRZ occupancy [Plan 110-009].												
10 *NT*	*Schefflera actinophylla* Umbrella Tree	8 x 8	750at base	2.8 9	M	Good	Fair / Good	4	2B-7	2	2	Restricted visual inspection, above visual parts appear in good order with minor stem inclusion development evident, canopy 3.5m in site at 4m^
Design impact summary: Proposed site works of cut & fill at the boundary and site leveling is located within the SRZ [Plan C13.01], with additional pathway access areas [Plan 110-009]. Based on the basement footprint and 6m ground floor setback the design footprint proposes a Moderate (10-<20%) or Moderate to Low (10-15%) NRZ incursion at or near 12% with additional works of pathways and stormwater increasing temporary impacts within the TPZ. Mitigating impacts and tree management should consist of: project arborist supervision and certification during all excavations within the SRZ & TPZ with appropriate root pruning conducted in accordance with AS4970 – 2025 Section 4.5.4 Root protection during works within the TPZ. Given the species type (Umbrella tree) all tree management outlined within Section 2.3 General tree protection requirements applies, specific to: installation of standard tree protection fencing certified as being fit for purpose by an appointed site arborist.												
11 *NT*	*Schefflera actinophylla* Umbrella Tree	7 x 5	600at base	2.7 7.2	M	Good	Fair / Good	4	2B-7	2	2	Restricted visual inspection, above visual parts appear in good order with minor stem inclusion development evident, canopy 3m in site at 3.5m^
Design impact summary: As with T10, proposed site works of cut & fill at the boundary and site leveling is located within the SRZ [Plan C13.01] with additional pathway access areas [Plan 110-009]. Based on the basement and design footprint the design footprint proposes a Minor (<10%) NRZ incursion with additional works of pathways and stormwater increasing temporary impacts within the TPZ. Mitigating impacts and tree management is recommended to consist of: project arborist supervision and certification during all excavations within the SRZ & TPZ with appropriate root pruning conducted in accordance with AS4970 – 2025 Section 4.5.4 Root protection during works within the TPZ. Given the species type (Umbrella tree) all tree management outlined within Section 2.3 General tree protection requirements applies, specific to: installation of standard tree protection fencing certified as being fit for purpose by an appointed site arborist.												
12*x5* *NT*	*Syagrus romanzoffiana* Cocos Palm	8 x 6	250	- 4	SM	Good	Good	4	6-7	1	2	Restricted visual inspection, above visual parts appear in good order, 5x palms spanning 8m along boundary
Design impact summary: Proposed site works of cut & fill at the boundary for site leveling is located within the NRZ [Plan C13.01] with additional pathway access areas having a Minor (<10%) TPZ disturbance [Plan 110-009]. Given Palm trees adventitious root systems tree management should consist of project arborist supervision and certification during all excavations within the TPZ with appropriate root pruning conducted in accordance with AS4970 – 2025 Section 4.5.4 Root protection during works within the TPZ with installation of standard tree protection fencing certified as being fit for purpose by an appointed site arborist.												

Refer Appendix- C Tree retention value Checklist

	Trees requiring removal due to hazardous or dead condition - subject to Local Government Authority notification		Trees with low retention value: due to senescence, are significantly environmentally stressed, have developing defects, are NSW Weedwise listed or are LGA *exempt non-prescribed trees

Tree No	*Botanical Name* COMMON NAME	Height x spread (m)	DSH (mm)	SRZ / NRZ (m)	Age	Vigour (health)	Condition (structure)	LS	VTA	RV	ULE	Comments CV = Council verge tree NT = Neighbouring tree
13	*Eucalyptus tereticornis* Forest Red Gum	22 x 16	1100	3.5 / 13.2	M	Good	Fair / Good	2	2B-2C-7	2	1	Main twin stems at 3.5m codominant, suppressed canopy form WST side, large diameter dead wood, protective fencing restricting access, past demolition within SRZ & TPZ evident, typical for species type in age class, canopy in site 9m> N & E at 6m^
Design impact summary: New basement, building footprint including cut & fill requirement proposes a Moderate (10-<20%) or Moderate to Low (10-15%) NRZ incursion at or near 12% encroachment impact without SRZ occupancy, with proposed public pathway within the SRZ [Plan 110-009 & C013.1]. Based on AS4970 Section 3.3.2 Considerations in determining the TPZ, the overall disturbance should be considered a High-level disruption with tall building elevation and changes in environmental conditions likely to disrupt tree vitality. Generally, given tree age and establishment within the site the tree may not tolerate the overall changes in environmental conditions. Tree root investigations within Trench 1 revealed no critical roots that would disrupt tree anchorage, however, identifies the primary root system required for nutrient and moisture uptake. Managing construction impacts requires all standard recommendations provided within Section 2.3 General tree protection requirements, specific to: no access or excavation within the SRZ without project arborist advice and certification, ensuring no stormwater(SW) Pit or SW excavation is located within 7m of the tree [Plan STW-DA-001] with a detailed Tree Protection Plan (TPP) with Tree Protection Specifications (TPS) that clearly shows a development activity exclusion zone with tree protection fencing installed at a 1.5m offset from the basement footprint.											
14	*Eucalyptus tereticornis* Forest Red Gum	24 x 18	1100	3.5 / 13.2	M	Good	Fair / Good	2	2C-4-7	2	1	Canopy slightly environmentally stressed, slight low foliage volume, broad form, large diameter dead wood, minor limb snap sections evident, multi stems at 5m (x5), potential central cavity N side, minor stem wounds at 7m, suppressed canopy form E side, protective fencing restricting access, past demolition within SRZ & TPZ, typical for species type in age class, canopy in site 12m N, NNW at 9m^
Design impact summary: New basement, building footprint including cut & fill requirement proposes a High (25-35%) NRZ disturbance and encroachment impact at or near 28.5%, without SRZ occupancy [Plan 110-009 & C013.1]. Canopy reduction pruning may also be required to accommodate design. Similar to T13, based on AS4970 Section 3.3.2 Considerations in determining the TPZ, the overall disturbance should be considered a Major disruption by tall building elevations and changes in environmental conditions that are likely to disrupt tree vitality. Given tree age and establishment the tree will unlikely tolerate the overall changes in environmental conditions and proposed occupancy within the TPZ. Tree root investigations provided within Trench 1 revealed no critical roots that would disrupt tree anchorage, however, identifies part of the primary root system required for nutrient and moisture uptake with the investigation not taking into account the overall basement footprint within the TPZ, see Annexture-01. Mitigating construction impacts requires all standard recommendations provided within Section 2.3 General tree protection requirements, specific to: no access or excavation within the SRZ without project arborist advice and certification, ensuring no stormwater excavation occurs within a specified protection area detailed within a Tree Protection Plan (TPP) with Tree Protection Specifications (TPS) that clearly shows a development activity exclusion zone and tree protection fencing installed at a 1.5m offset from the basement footprint .											

Refer Appendix- C Tree retention value Checklist

	Trees requiring removal due to hazardous or dead condition - subject to Local Government Authority notification		Trees with low retention value: due to senescence, are significantly environmentally stressed, have developing defects, are NSW Weedwise listed or are LGA *exempt non-prescribed trees

Tree No	*Botanical Name* COMMON NAME	Height x spread (m)	DSH (mm)	SRZ / NRZ (m)	Age	Vigour (health)	Condition (structure)	LS	VTA	RV	ULE	Comments CV = Council verge tree NT = Neighbouring tree
15	*Eucalyptus saligna* Sydney Blue Gum	21 x 16	750	3 / 9	SM	Good	Fair	2	2-3	3	<2	Twin stems at 8.5m with large open cavity below junction E side= benefit from further investigations, suppressed canopy form NW, biomass STH, poor branch taper on lower branch scaffolds to 14m S side, potential minor wound at 15m EST, past demolition within SRZ & TPZ, canopy extension 8m EST at 9m^, STH side canopy 6m> at 9m^
Design impact summary: New basement, building footprint including cut & fill requirement proposes a Moderate to High (20-25%) NRZ incursion at or near 22% [Plan 110-009 & C013.1], with additional landscape public hardstand coverage having a combined Significant SRZ & NRZ occupancy at or near 55.4%. Based on the building footprint with site leveling cut outside the SRZ the tree is capable of being managed in accordance with standard practices outlined within Section 2.3 General tree protection requirements. Based on the extent of SRZ & TPZ coverage by proposed landscape public hardstand altering environmental conditions [Plan 110-009 & L-401] the tree will unlikely tolerate final design disturbances within the SRZ & TPZ. Mitigating construction impacts requires all standard recommendations provided within Section 2.3 General tree protection requirements, specific to: no access or excavation within the SRZ without project arborist advice and approval, ensuring stormwater is located against the basement footprint, public hardstand to be of tree sensitive design and construction with a final Tree Protection Plan (TPP) with Tree Protection Specifications (TPS) provided that clearly shows a development activity exclusion zone with tree protection fencing installed at a 1.5m basement footprint offset, extending to TPZ extremities and certified as fit for purpose by a site arborist.											
16	*Eucalyptus saligna* Sydney Blue Gum	21 x 16	1100	3.5 / 13.2	SM	Good	Good	2	2C	2	1	Suppressed canopy form STH side biomass NW, mid branch scaffolds horizontal form, some with poor branch taper, minor kino wound stain at 5m W side junction, past demolition within SRZ & TPZ, canopy extension NTH side 9m at 5m^
Design & impact summary: Landscape design impacts are similar to T15 with new basement, OSD, building footprint including cut & fill requirement proposing a High (25-35%) NRZ incursion at or near 26.8% [Plan 110-009 & C013.1], with additional landscape public hardstand coverage having a combined Significant SRZ & NRZ occupancy / disturbance estimated at or near 50.9%. Based on the basement & building footprint with site leveling cut outside the SRZ the tree is capable of being managed in accordance with standard practices outlined within Section 2.3 General tree protection requirements. Based on the extent of SRZ & TPZ coverage by proposed landscape public hardstands altering environmental conditions [Plan 110-009 & L-401] the tree will unlikely tolerate the final design occupancy and disturbances within the SRZ & TPZ. Mitigating construction impacts requires all standard recommendations provided within Section 2.3 General tree protection requirements, specific to: no access or excavation within the SRZ without project arborist advice and approval, ensuring stormwater is located against the basement footprint, public hardstand to be of tree sensitive design and construction with a final Tree Protection Plan (TPP) with Tree Protection Specifications (TPS) provided that clearly shows a development activity exclusion zone with tree protection fencing installed at a 1.5m basement footprint offset, extending to TPZ extremities and certified as fit for purpose by a site arborist.											

APPENDIX- E: Tree Location Plan