

**Arboricultural Impact Assessment
For
Proposed Residential Development With In-fill Affordable Housing
State Significant Development Application (SSD-91496958)
At
159-167 Darley Road West
MONA VALE NSW**

Prepared for:

**The Trustee for
DREP1 Mona Vale Sub Trust
159-167 Darley Road West
MONA VALE NSW**

Ref: 2801AIARevB

13 November 2025

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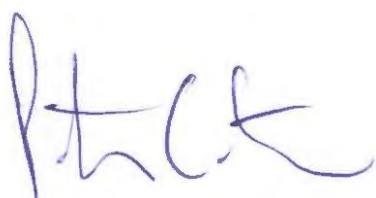


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13 November 2025



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- A. Tree Schedule
- B. Definitions of Terms
- C. Site Photographs
- D. Tree Protection Requirements (Generic)
- E. Tree Protection Plan



1. EXECUTIVE SUMMARY

1.1 GENERAL

- 1.1.1 This Arboricultural Impact Assessment (AIA) was prepared for the Trustee for DREP1 Mona Vale Sub Trust in relation to the likely impact on existing trees of proposed residential development at 159-167 Darley Road West, Mona Vale (the subject site). The subject site is located within the Northern Beaches Council Local Government Area.
- 1.1.2 The proposed development is formally titled: “*Residential with in-fill affordable housing – 150-167 Darley Road West Mona Vale – State Significant Development Application (SSD-91496958)*”.
- 1.1.3 This AIA has been prepared to address the requirement for an Arboricultural Impact Assessment (Requirement 14) in the Secretary’s Environmental Assessment Requirements (SEARs) to form part of the Environmental Impact Statement (EIS) to accompany the *State Significant Development Application SSD-91496958* to the Department of Planning Housing and Infrastructure (DPHI).

1.2 TREE IMPACTS

- 1.2.1 Eighty eight (88) trees were assessed of which twenty six (26) are to be retained, two (2) are to be transplanted on site, two (2) were previously removed and fifty eight (58) are to be removed.
- 1.2.2 Twenty six (26) trees are to be retained given acceptable TPZ encroachments. Of these nineteen (19) have no TPZ encroachments (excavation or compacted fill) and so will not require any particular tree protection during the works. Seven (7) of the retained trees have some level of TPZ encroachment and will require monitoring during the works. Refer to 4.2 for discussion and justification of the proposed works.
- 1.2.3 Two trees (Trees 18 and 45) are to be transplanted on site as indicated on the Landscape Plan.
- 1.2.4 Two trees (Trees 43 and 44) were recently removed following storm damage on 3 August, 2025.
- 1.2.5 Fifty eight (58) trees are to be removed. Of these, thirty seven (37) are Exempt Tree Species under *Pittwater 21 DCP*. The removal of the Exempt tree species will allow for the enhancement of the *Pittwater and Wagstaffe Spotted Gum Forest EEC*.
- 1.2.6 No trees located on adjoining properties are to be removed or will be significantly impacted by the proposed works.
- 1.2.7 Substantial replanting of Pittwater and Wagstaffe Spotted Gum Forest species is proposed.



1.2.8 The proposed development and the proposed tree retention and landscape replanting satisfy the *Outcomes of B4.22 Preservation of Trees and Bushland Vegetation* of the *Pittwater 21 DCP*. In particular:

- The urban forest of the Northern Beaches Council local government area is enhanced and protected.
- The pocket of *Pittwater and Wagstaffe Spotted Gum Forest EEC* on site that provides habitat for locally native plant and animal species is to be protected and enhanced.
- The proposed retention of trees and replanting of trees will promote the longterm survival of plant and animal communities.
- The existing scenic value and treed character of the site will be protected and enhanced.



2. BACKGROUND

2.1 INTRODUCTION

- 2.1.1 This Arboricultural Impact Assessment (AIA) was prepared for the Trustee for DREP1 Mona Vale Sub Trust in relation to the likely impact on existing trees of proposed residential development at 159-167 Darley Road West, Mona Vale (the subject site).
- 2.1.2 The proposed development is formally titled: *“Residential with in-fill affordable housing – 150-167 Darley Road West Mona Vale – State Significant Development Application (SSD-91496958)”*.
- 2.1.3 The purpose of this AIA is to describe and categorise the existing trees on and adjacent to the subject site and to assess the likely impact of the proposed development on these trees.
- 2.1.4 This AIA has been prepared to address the requirement for an Arboricultural Impact Assessment (Requirement 14) in the Secretary’s Environmental Assessment Requirements (SEARs) to form part of the Environmental Impact Statement (EIS) to accompany the *State Significant Development Application SSD-91496958* to the Department of Planning Housing and Infrastructure (DPHI).
- 2.1.5 Australian Standard *AS4970-2025 Protection of trees on development sites* has been used as a benchmark in the preparation of this Report.

As *AS4970-2025* is still undertaking minor amendments, the terminology from *AS4970-2009* has been used in this AIA. The key point of difference between the two editions of the Standard is *Tree Protection Zone (TPZ)* is no longer referred to in the 2025 edition. *AS4970-2025* uses *Notional Root Zone (NRZ)* to describe the notional circles around trees indicated on the Tree Protection Plan.

2.2 THE SUBJECT SITE

- 2.2.1 The subject site located at 159-167 Darley Road West, Mona Vale is legally described as Lots 1-5 in DP11109 (see Site Plan below). The site has a frontage of 76m to Darley Road West. The site currently contains four residential dwellings and associated garages and sheds and pavement as indicated on the Detail Survey being: *Plan of Detail and Levels Over Lots 1-5 in DP 11108 No. 159-167 Darley Road West, Mona Vale, Ref No. 52336 001DT Sheets 1 and 2* dated 9.8.2025 by LTS (the Survey).
- 2.2.2 The subject site is located in the Northern Beaches Council local government area.
- 2.2.3 The subject site has a slight northwesterly aspect characterised by a change in a grade from a high point of approximately 11.50 metres (south-eastern rear corner) to a low point of approximately 3.0 metres (north-west front corner).





Site Plan (Ethos Urban)

2.3 THE SUBJECT TREES

- 2.3.1 The general findings and data collected for each of the subject trees are contained in Tree Schedule (Attachment A). The trees are numbered and located on the Tree Protection Plan (Attachment E).
- 2.3.2 Eighty eight (88) trees were assessed being within 5m of the proposed site boundary or otherwise indicated on the supplied Detail Survey. Trees 31, 53, 55, 56, 57, 58, 59 and 87 are wholly within the adjoining properties and have been assessed as they were indicated on the Detail Survey. The existing fences are generally on the Title boundary of the subject site.
- 2.3.3 The vegetation on the site is a mix of native and exotic species of varying age and condition, some planted and some representative of remnant native vegetation.
- 2.3.4 The native vegetation on the site has been assessed by SLR as having remnants of Pittwater and Wagstaffe Spotted Gum Forest.
- 2.3.5 There are three mature Eucalypts located close to the Darley Street West front boundaries (Photo A). Tree 17 Blackbutt, *Eucalyptus pilularis* at the front of #161, Tree 37 Tasmanian Blue Gum, *Eucalyptus globulus subsp. globulus* at the front of #163 and Tree 75 Sydney Blue Gum, *Eucalyptus saligna* at the front of #167. All three are highly likely to have been planted rather than being remnants of original vegetation. None of these three tree species are listed in the assemblage of species for *Pittwater and Wagstaffe Spotted Gum Forest EEC*.



- 2.3.6 The Northern Beaches Council has an Exempt Tree Species List. Many of the existing trees on the site were Exempt Species. All Exempt tree species (except Tree 76 Bangalow Palm) have been recommended for removal irrespective of the proposed development footprint to allow for more appropriate replanting. The Exempt Tree Species List is included at Table 1 of *B4.22 Preservation of Trees and Bushland Vegetation* of the *Pittwater 21 DCP* which applies to the subject site.
- 2.3.7 The native understorey and ground cover vegetation were predominantly absent on the site due to the existing development and land use. Formal tree plantings and gardens have replaced the original natural vegetation on the site. Refer to the Flora and Fauna Report for further detail of understorey vegetation on the site.

2.4 THE PROPOSAL

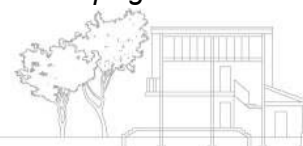
2.4.1 The proposed development is described by Ethos Urban as:

This SSDA seeks consent for the design and construction of a new residential flat development comprising.

- Site preparation works including demolition, excavation and tree removal;
- Construction of three (3) x 6-storey residential flat buildings, comprising:
 - 82 apartments, including:
 - 72 market apartments;
 - 10 affordable apartments (10.5% of GFA);
 - Separate residential lobbies;
 - Communal open spaces;
- Construction of 1-3 storeys of basement parking, comprising:
 - 164 car parking spaces, including:
 - 156 residential spaces;
 - Eight (8) accessible residential spaces;
 - 27 bicycle parking spaces;
 - Two (2) motorcycle parking spaces;
 - Waste and storage facilities;
- Associated landscaping, including transplanting of two (2) trees and planting of new trees and vegetation.

2.4.2 The recommendations and comments in this Report assume the following:

- A high quality, shady, outdoor environment is desired.
- The amenity of the adjoining neighbours needs to be considered.
- Existing landscape character is to be retained where possible through the retention of existing significant trees.
- Remnant vegetation is to be retained where possible and enhanced as part of the proposed landscaping.
- The proposed development and tree retention aim to satisfy the *Outcomes of B4.22 Preservation of Trees and Bushland Vegetation of the Pittwater 21 DCP*.
- The proposed development satisfies Point 14 *Tree and Landscaping* of the SEARs dated 22 August, 2025.



3. METHODOLOGY

3.1 DATA COLLECTION

- 3.1.1 In preparation of this Report a ground level, visual tree assessment (VTA)¹ was undertaken on 12 September, 2024. No aerial (climbing) inspections, woody tissue testing or tree root mapping were undertaken as part of this assessment.
- 3.1.2 Attachment B provides definition of terms used in this Report. Tree heights were estimated. Trunk diameter at breast height (DBH) was measured at 1.4 metres above ground level (unless otherwise stated) and rounded to the nearest 0.01 metre. Structural Root Zones (SRZ) and Tree Protection Zones (TPZ) were rounded to the nearest 0.1 metre.
- 3.1.3 All tree offsets mentioned in this Report are to centre of trunk unless otherwise stated.

3.2 IDENTIFICATION OF SUBJECT TREES

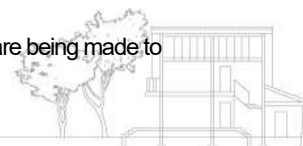
- 3.2.1 The subject trees were numbered and labelled on site with white plastic tags as per the Tree Schedule (Attachment A) and Tree Protection Plan (Attachment E) to assist others. These tags should be retained to guide the approved tree removal and tree protection monitoring during the works.

3.3 DOCUMENTS AND PLANS REFERENCED

- 3.3.1 The Conclusions and Recommendations in this Report are based on the findings from the site inspection, discussions with the Architect and the Project Team and analysis of the following Plans and documents:
- *Plan Showing Details and Levels Over Lots 1-5 in DP 11108 No 159-167 Darley Road West, Mona Vale, Ref No. 52336 001DT* dated 09.08.2024 prepared by LTS
 - *Architectural Issue A Project No. 2435* dated 5.11.25, by PBD Architects
 - *Landscape Plans Issue C* dated 7.11.25 prepared by Arcadia
 - *Stormwater Concept Design, Project No. 2024081DA, Dwgs. C00B- C16B Issue B* dated 11.11.25 prepared by Samana Blue Engineering
 - *Pittwater 21 DCP*
 - *AS4970-2009: Protection of Trees on Development Sites*²
 - *AS4373-2007: Pruning of Amenity Trees.*

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

² AS4970-2009 has recently been superseded by AS4970-2025. Given minor amendments are being made to AS4970-2025 this AIA refers to the earlier 2009 Australian Standard document.



3.4 AUSTRALIAN STANDARD AS4970-2009

- 3.4.1 The Australian Standard AS4970–2009 *Protection of trees on development sites* has been used as a benchmark in the preparation of this Report and the terminology and impact assessment methodology have been adopted from this document. This AIA complies with 2.3.5 *Arboricultural Impact Assessment of AS4970-2009*.
- 3.4.2 Recommendations have been based on tree ©Retention Value, Vigour, Condition, ULE and construction offsets (refer to Attachment B). Trees with ©Retention Value “A” should be given greater priority for retention than trees with ©Retention Value “B” or “C”. Trees with *Long* (40 years +) ULE should be given greater priority for retention than trees with *Short* (5-15 years) ULE (refer to Attachment B).
- 3.4.3 Tree Protection Zones (TPZ) and Structural Root Zones (SRZ) are as per *Section 3 of AS4970-2009* and are defined at Attachment B of this Report.
- 3.4.4 “Construction” for the purpose of this AIA means excavation (greater than 100mm), compacted fill or machine trenching³. “Excavation” includes cut batters, boxing-out for the various pavement types, trenching for utilities and footings for retaining walls.
- 3.4.5 Trees within proposed construction footprints are recommended for removal (**Rm**).
- 3.4.6 Where construction is proposed within Structural Root Zone (SRZ) offsets, those trees have been similarly recommended for removal (**Rm**). Fully elevated, pier and beam type construction or hand dug services trenches (or horizontal boring) is however possible within an SRZ.
- 3.4.7 Trees with greater than 25% of the Tree Protection Zone (TPZ) impacted by construction are generally recommended for removal (**Rm**). There are however different types of construction encroachments possible (e.g. compacted fill, cut, services trenches, pavement, retaining walls) with varying tree impacts likely. Some encroachments are permanent (e.g. Basements) whilst other encroachments are temporary (e.g. services trenches). Existing constraints to root development also vary the notional TPZ. Compacted fill can be equally as damaging to tree longevity: root development is restricted within heavily compacted soils.
- 3.4.8 TPZ encroachments of >10% are defined (3.3.3 of AS4970) as ‘major’. This does not mean that the tree will be fatally injured, but that ‘*the project arborist must demonstrate that the tree(s) would remain viable*’ following review of TPZ encroachment considerations as listed at 3.3.4 of the AS4970. Refer to Section 5.3 of this Report for explanation of tree retention recommendations.
- 3.4.9 Trees to be retained with construction impacting less than 25% of the TPZ area were rated as Retain Plus (R+). Specific construction monitoring will be required for the Retain (R+) trees (refer to Recommendations).
- 3.4.10 Where construction is proposed beyond the TPZ, those trees are rated as Retain (**R**) with no specific tree protection design or tree protection monitoring required (refer to Attachment D).

³“Construction” is equivalent to “works” as defined at 1.4.9 of AS4970-2009.



4. TREE IMPACTS

4.1 SUMMARY

- 4.1.1 Eighty eight (88) trees were assessed of which twenty six (26) are to be retained, two (2) are to be transplanted on site, two (2) were previously removed and fifty eight (58) are to be removed.
- 4.1.2 Twenty six (26) trees are to be retained given acceptable TPZ encroachments. Of these nineteen (19) have no TPZ encroachments (excavation or compacted fill) and so will not require any particular tree protection during the works. Seven (7) of the retained trees have some level of TPZ encroachment and will require monitoring during the works. Refer to 4.2 for discussion and justification of the proposed works.
- 4.1.3 Two trees (Trees 18 and 45) are to be transplanted on site as indicated on the Landscape Plan.
- 4.1.4 Two trees (Trees 43 and 44) were recently removed following storm damage on 3 August, 2025.
- 4.1.5 Fifty eight (58) trees are to be removed. Of these, thirty seven (37) are Exempt Tree Species under *Pittwater 21 DCP*. The removal of the Exempt tree species will allow for the enhancement of the *Pittwater and Wagstaffe Spotted Gum Forest EEC*.
- 4.1.6 No trees located on adjoining properties are to be removed or will be significantly impacted by the proposed works.
- 4.1.7 Refer to 4.2 below for a discussion and justification of the TPZ encroachments for the retained trees with reference to items for consideration at 3.3.4 of AS4970-2009.
- 4.1.8 Refer to the *Recommendations for Tree Management* at Section 5 below for tree-specific protection recommendations.
- 4.1.9 The implementation and certification of tree protection measures by the Project Arborist (see Section 5 below) will be required during works to ensure protection of those trees recommended for retention.

4.2 TPZ ENCROACHMENT CONSIDERATIONS

- 4.2.1 At 3.3.4 of AS4970-2009 are listed *TPZ encroachment considerations (a) – (h)* which are to be reviewed when assessing major (greater than 10%) TPZ encroachments. Below is a tree-by-tree review of these considerations and assessment of likely impacts. The TPZs shown on the TPP are notional only and do not reflect existing site-specific root confinement by the existing buildings. The works within the notional TPZs are discussed at Section 5.3 below.
- 4.2.2 Tree 1 (Broad-leaved Paperbark, *Melaleuca quinquenervia*) depicted in Photo C will survive the 25% encroachment associated with the proposed pedestrian Footpath. The pedestrian Footpath is to be graded up such that an edge strip only is required within the TPZ and no retaining wall is necessary. The tree is in *Good* vigour (*d*) hence providing the greatest opportunity for it to cope with the proposed works. There is ample deepsoil land contiguous with the tree to allow for compensatory root growth post-development if required.



- 4.2.3 Tree 30 (Spotted Gum, *Corymbia maculata*) will survive the 25% encroachment associated with the proposed Terrace A.G06 and retaining wall to A.G05. The retaining walls have been locally realigned to reduce total TPZ encroachment to 20%. The tree is in *Good* vigour (*d*) hence providing the greatest opportunity for it to cope with the proposed works. There is ample deepsoil land contiguous with the tree to allow for compensatory root growth post-development if required.
- 4.2.4 Tree 48 (Grey Ironbark, *Eucalyptus paniculata*) will survive the 12% encroachment associated with Terraces at B103 and B104. The tree is in *Good* vigour (*d*) hence providing the greatest opportunity for it to cope with the proposed works. There is ample deepsoil land contiguous with the tree to allow for compensatory root growth post-development if required.
- 4.2.5 Tree 75 (Sydney Blue Gum, *Eucalyptus saligna*) depicted in Photo D will survive the 20% encroachment associated with Building C and Substation construction. The Substation conduits are to enter from the north away from the TPZ. Retaining walls are to be restricted to the 6m boundary setback line within the TPZ. The tree is in *Good* vigour (*d*) hence providing the greatest opportunity for it to cope with the proposed works. There is existing hardstand within the area of the works which may have restricted actual root spread into the area. There is ample deepsoil land contiguous with the tree to allow for compensatory root growth post-development if required.

4.3 LANDSCAPE PLANS

- 4.3.1 *Landscape Plans Issue C* by Arcadia have been reviewed. These Plans coordinate accurately with the Tree Protection Plan in terms of tree retained or removed.
- 4.3.2 Existing soil levels are to be retained beyond the footprint of the buildings where coinciding with the TPZs of retained trees. Walkways are to be at or above grade within TPZs of retained trees and particularly the EEC species at the rear of the site (Photo E). Permeable or elevated paths and minor structures are possible within TPZs.
- 4.3.3 There are eighty four (84) trees proposed to be planted to compensate for those being removed. There are twenty seven (27) proposed trees which are listed in the Pittwater and Wagstaffe Spotted Gum Forest EEC.

4.4 STORMWATER PLANS

- 4.4.1 *Stormwater Concept Design, Project No. 2024081DA, Dwgs. C00B- C16B* prepared by Samana Blue Engineering have been reviewed.
- 4.4.2 No trees require removal due to stormwater trenching works. There are no trees being retained within the alignment of the stormwater exiting the site to Darley Street West.
- 4.4.3 Any stormwater trenching or pits required within TPZs of retained trees is to be undertaken with retention of roots greater than 50mmø. The stormwater installation is to be certified by the Project Arborist.
- 4.4.4 Stormwater Plans are to be reviewed for CC documentation.



4.5 SERVICES PLANS

- 4.5.1 Services Plans are to be reviewed for CC documentation. Routing of all services are to be outside TPZs wherever possible.
- 4.5.2 Any services trenching required within the TPZs of retained trees is to be undertaken with retention of roots greater than 50mmø. Services trenching is to be certified by the Project Arborist.



5. RECOMMENDATIONS FOR TREE MANAGEMENT

5.1 ARBORIST INVOLVEMENT

- 5.1.1 An Arborist (the Project Arborist) experienced in tree protection on construction sites should be engaged prior to the commencement of construction work on the site. The Project Arborist shall monitor and report regularly to the Principal Certifying Authority (PCA) and the Applicant on the condition and protection of the retained trees during the construction works. The Project Arborist is to monitor any demolition, excavation, machine trenching or compacted fill placed within the TPZ of all retained trees.
- 5.1.2 The schedule of works for the development must acknowledge the role of the Project Arborist and the need to protect the retained trees. Sufficient notice must be given to the Project Arborist where his/her attendance is required. Should the proposed design change from that reviewed, additional arboricultural assessment will be required.
- 5.1.3 The Project Arborist is to certify tree protection measures at key stages of the construction. Copies of the Certifications should be sent to PCA.

Key stages for Certification are:

- Prior to demolition, bulk earthworks and approved tree removal
- Prior to Basement slab and wall construction
- Prior to stormwater installation
- Prior to landscaping
- Prior to Practical Completion.

Ad-hoc inspections and certification may be required at the request of the Site Foreman.

5.2 TREE RETENTION

- 5.2.1 The twenty six (26) trees to be retained are indicated on the Tree Protection Plan (Attachment E) and on the Tree Schedule (Attachment A).
- 5.2.2 Refer to 4.2 above for justification of the major (>10%) TPZ encroachments and 5.3 below for tree-specific tree protection recommendations to be implemented before and during the works.

5.3 TREE RETENTION RECOMMENDATIONS

5.3.1 ***Demolition of existing structures is within the TPZ of Trees 1, 2, 48, 53, 75***

Tree protection fencing may need to be temporarily removed to allow for demolition.

Demolition machinery to be used should be as small (light weight) as possible minimise soil compaction. Tracked machinery used should stand on existing hardstand wherever possible to minimise soil compaction.



5.3.1 **Haul Roads within TPZs**

A Construction Management Plan has not been reviewed. If haul roads or heavy construction traffic is proposed within TPZs of retained trees, ground protection is required to minimise root damage through soil compaction. Ground protection can comprise woodchip mulch, road aggregate or boarding depending upon the loads and frequency of use. The Project Arborist is to be consulted as to the most appropriate ground protection required.

5.3.1 **Bulk earthworks (cut or fill) within TPZs**

Bulk earthworks are required close to retained trees. Bulk earthworks are to be shored vertically within TPZs. Rock saw excavation is to be used wherever possible rather than benching towards trees.

5.3.2 **Building C and Substation are within the TPZ of Tree 75**

The Building C and associated landscape retaining walls have been amended to be installed at the 6m setback line to minimise the TPZ encroachment.

The Substation has been repositioned outside the SRZ of 3.2m radius. The base of the Substation is to be supported on piers and raised above existing ground lines to minimise root cutting. The conduits to and from the Substation are to be at the northern end of the Substation and away from the trunk of the tree.

5.3.1 **Pedestrian paving within TPZs**

Pedestrian paving is proposed within the TPZ of Trees 1 and 2 and possibly other trees within the rear setback landscape area. Paving is to be at or above existing ground lines to minimise root disturbance. Permeable surfaces are to be used wherever possible. Where concrete paving is required, the captured rainfall is to be allowed to drain to the TPZs beneath.

5.3.1 **Trenching for services within TPZs**

Trenches are to be routed outside TPZs wherever possible. Where this routing is not possible, trenching is to be horizontally bored or dug with a small (maximum 1.5t) tracked machine. All trenching for services is to be certified by the Project Arborist. Roots greater than 50mmØ are to be retained under or over services conduits, unless approved by the Project Arborist.

5.3.2 **Tree Protection Fencing**

Tree protection fencing as indicated on the TPP (Attachment E) should be installed prior to commencement of any works on the site including approved tree removal. Fencing may need to be temporarily moved to allow for tree removal and immediately reinstated. Where fencing not feasible as indicated on the TPP due to construction access issues, the trunk(s) are to be battered as per Figure 04 of the TPP to avoid bark wounding and ground protection provided with placement of mulch or additional matting or boarding.

5.3.1 **Mulching**

Areas within tree protection fencing are to be mulched to a maximum depth of 100mm with a weed-free wood chip mulch to conserve soil moisture and inhibit weed growth. Weed-free mulch produced during the tree removal should be stockpiled clear of retained trees for use during the construction and possibly for landscaping at the completion of the job.



5.3.2 ***Prohibited activities within fenced areas***

The following activities are prohibited within tree protection fencing areas:

- Topsoil stripping
- Storage of building material without installation of ground protection
- Parking or movement of heavy machinery without installation of ground protection
- Depositing of any potentially phytotoxic liquids or substances including concrete tailings
- Installation of site sheds without installation of ground protection
- Any excavation or compacted fill not indicated on approved construction drawings.

5.3.3 ***Crown Pruning***

If crown pruning is required to any tree, pruning is to comply with Australian Standard AS4373-2007: *Pruning of Amenity Trees*. The full extent of crown pruning may not be possible to determine until the construction has been commenced and method of construction has been approved. The width of scaffold may vary depending on construction method. Crown pruning should be kept to a minimum wherever possible. Crown pruning is to be undertaken by Contracting Arborist with minimum AQF Level 3 qualifications. Approval for crown pruning is to be granted under this SSDA or as a separate approval once works have commenced.

5.3.4 ***Other Tree Protection Measures***

Other tree protection measures (Attachment D) including additional mulching, temporary irrigation, scaffolding protection, prevention of soil compaction (machinery movements) and prevention of soil profile inversion (fill) should be implemented as required and as directed by the Project Arborist.

5.3.5 ***Tree Protection Plan***

The Tree Protection Plan (Attachment E) should be updated and include a Tree Protection Specification (TPS) for CC documentation to reflect any layout or level changes and account for any updates to drawings. Additional services Plans, not assessed for the DA submission are also to be reviewed to determine if there are any additional tree impacts. The amended TPP and TPS should be kept in the Site Office during the construction period to guide tree protection procedures.

The recommendations contained in the amended TPP and TPS should be incorporated into the Construction Management Plan and Vegetation Management Plan.

5.4 **TRANSPLANTATION**

5.4.1 Trees 18 and 45 (Cabbage Tree Palms, *Livistona australis*) and are to be transplanted on-site as indicated on the Landscape Plan.

5.4.2 A Transplant Method Statement is to be prepared by a tree transplant company to detail the feasibility, preparation, handling and aftercare of both trees. The trees will either be taken off-site temporarily and stored at a local nursery or stored on-site in a temporary nursery to be monitored by a suitably qualified person.

5.4.3 The transplantation is to be undertaken by a tree transplant company or be supervised by a suitably qualified person.



5.5 TREE REMOVAL

- 5.5.1 The fifty eight (58) trees to be removed are indicated on the Tree Protection Plan and on the Tree Schedule.
- 5.5.2 Thirty seven (37) of these fifty eight trees are included on the Northern Beaches Council Exempt Tree Species List and are to be removed irrespective of the development footprint. Some Exempt trees (except Tree 76) are being removed clear of the buildings to allow for planting of trees from the *Pittwater and Wagstaffe Spotted Gum Forest EEC* listing.
- 5.5.3 Trees protected under the *Pittwater 21 DCP* proposed to be removed are either located with trunks within the footprint of buildings or where trunks are located beyond the buildings there is an unacceptable level of excavation or compacted fill proposed, necessitating the tree removal. The % encroachment for each tree to be removed is listed in the Tree Schedule.
- 5.5.4 Tree removal is to be undertaken by Contracting Arborists with minimum AQF Level 3 qualifications. Tree removal and pruning works are to comply with Safe Work Australia “*Guide to Managing Risks of Tree Trimming and Removal Work*” July, 2016. Particular care is to be taken not to damage the crown or roots of trees being retained.
- 5.5.5 Where the trunk of a tree to be removed is located within the SRZ of a tree being retained (e.g. Tree 50) the stump of the tree being removed is to be ground out rather than being grubbed out to minimised root damage.



Attachment A: Tree Schedule



AIA Tree Schedule -
159-167 Darley St West, MONA VALE

TREE No.	COMMON NAME/ GENUS SPECIES	DBH (cm)	HEIGHT (m)	CANOPY RADIUS (m)	AGE CLASS	VIGOUR	CONDITION	SRZ RADIUS (m)	TPZ RADIUS (m)	% TPZ ENCROACHMENT	ULE	©SIG RATING	©RETENTION INDEX	RECOMMENDATION	COMMENTS
1	Broad-leaved Paperbark, <i>Melaleuca quinquenervia</i>	36	12	4	SM	G	F	2.2	4.3	25%	M	3	B	R+	Retain. Crown skew to S. Proposed pedestrian access path to be at existing grade within SRZ/TPZ.
2	Prickly-leaved Paperbark, <i>Melaleuca styphelioides</i>	10, 26	9	3	SM	G	G	2.1	3.6	25%	M	3	B	R+	Retain. Proposed pedestrian access path to be at existing grade within SRZ/TPZ.
3	Jacaranda, <i>Jacaranda mimosifolia</i>	30, 30	11	5	M	G	F	2.5	4.8	100%	M	4	C	Rm	Remove. Located within proposed pedestrian access path. Exempt species under B4.22 of Northern Beaches Council P21DCP.
4	Desert Oak, <i>Fraxinus oxycarpa</i>	53	6	3	OM	P	P	2.6	6.4	100%	S	4	D	Rm	Remove. Located within Basement 3 footprint. Previously lopped.
5	Mulberry, <i>Morus nigra</i>	19	4	3	SM	G	G	1.7	2.3	100%	S	4	D	Rm	Remove. Located within Basement 3 footprint. Exempt species under B4.22 of Northern Beaches Council P21DCP.
6	Illawarra Flame Tree, <i>Brachychiton acerifolius</i>	22	12	3	SM	G	G	1.8	2.6	100%	M	4	C	Rm	Remove. Located within Basement 3 footprint. Exempt species under B4.22 of Northern Beaches Council P21DCP.
7	Illawarra Flame Tree, <i>Brachychiton acerifolius</i>	45	16	4	M	G	G	2.5	5.4	100%	M	4	C	Rm	Remove. Located within Basement 3 footprint. Exempt species under B4.22 of Northern Beaches Council P21DCP.
8	Smooth Shelled Macadamia, <i>Macadamia integrifolia</i>	20	10	4	SM	G	F	1.8	2.4	100%	M	3	B	Rm	Remove. Located within Basement 3 footprint.
9	Jacaranda, <i>Jacaranda mimosifolia</i>	32, 42	14	6	M	G	F	2.7	6.0	100%	M	4	C	Rm	Remove. Proposed Basement 3 within SRZ. Exempt species under B4.22 of Northern Beaches Council P21DCP.
10	Broad-leaved Privet, <i>Ligustrum lucidum</i>	40 @g	9	4	M	G	P	2.3	4.8	100%	S	4	D	Rm	Remove. Located within Basement 3 footprint. Exempt species under B4.22 of Northern Beaches Council P21DCP.
11	Smooth Shelled Macadamia, <i>Macadamia integrifolia</i>	32	15	4	M	G	G	2.1	3.8	100%	M	3	B	Rm	Remove. Located within Basement 3 footprint.
12	Jacaranda, <i>Jacaranda mimosifolia</i>	23, 30	15	6	M	G	F	2.3	4.8	100%	M	4	C	Rm	Remove. Located within Basement 3 footprint. Exempt species under B4.22 of Northern Beaches Council P21DCP.

AIA Tree Schedule -
159-167 Darley St West, MONA VALE

TREE No.	COMMON NAME/ GENUS SPECIES	DBH (cm)	HEIGHT (m)	CANOPY RADIUS (m)	AGE CLASS	VIGOUR	CONDITION	SRZ RADIUS (m)	TPZ RADIUS (m)	% TPZ ENCROACHMENT	ULE	©SIG RATING	©RETENTION INDEX	RECOMMENDATION	COMMENTS
13	Avocado Tree, <i>Persea americana</i>	19	9	3	SM	F	F	1.7	2.3	100%	S	4	D	Rm	Remove. Located within landscape retaining wall south of Bld A. Exempt species under B4.22 of Northern Beaches Council P21DCP.
14	Canary Island Date Palm, <i>Phoenix canariensis</i>	55	15	4	M	G	G	1.5	5.0	10%	L	4	C	Rm	Remove. Clear of construction. Replace with more appropriate tree species. Exempt species under B4.22 of Northern Beaches Council P21DCP.
15	Jacaranda, <i>Jacaranda mimosifolia</i>	15, 33	14	6	M	F	F	2.3	4.8	5%	M	4	C	Rm	Remove. Clear of construction. Replace with more appropriate tree species. Exempt species under B4.22 of Northern Beaches Council P21DCP.
16	Coast Banksia, <i>Banksia integrifolia</i>	26	7	3	SM	G	F	2.0	3.1	100%	M	3	B	Rm	Remove. Located within 1m of proposed landscape fill north of Bld A. Crown skew to NE.
17	Blackbutt, <i>Eucalyptus pilularis</i>	86	24	8	M	G	G	3.2	10.3	40%	L	1	A	Rm	Remove. Proposed Basement 3 within SRZ. Located within 1m of proposed landscape fill north of Bld A. Minor crown pruning under high voltage powerlines. Minor pruning to SE adjacent dwelling. Possibly planted.
18	Cabbage Tree Palm, <i>Livistona australis</i>	30	5	2	SM	G	G	1.0	3.0	100%	M	3	B	T	Transplant. Located within landscape excavation north of Bld B. Transplant on-site as per Landscape Plan. Tree not on Survey.
19	Native Daphne, <i>Pittosporum undulatum</i>	17	6	2	SM	F	F	1.6	2.0	100%	S	4	D	Rm	Remove. Located within landscape excavation north of Bld B. Exempt species under B4.22 of Northern Beaches Council P21DCP, being less than 8m tall.
20	Jacaranda, <i>Jacaranda mimosifolia</i>	29	9	4	SM	F	F	2.0	3.5	100%	S	4	D	Rm	Remove. Located within Basement 3 footprint. Exempt species under B4.22 of Northern Beaches Council P21DCP. Ivy on lower trunk.
21	Native Daphne, <i>Pittosporum undulatum</i>	31	10	5	M	F	F	2.1	3.7	100%	S	4	D	Rm	Remove. Located within Basement 3 footprint. Crown skew to W. Ivy on lower trunk. Bangalow Palm (6m) at base.
22	Jacaranda, <i>Jacaranda mimosifolia</i>	32	14	5	M	G	F	2.1	3.8	100%	M	4	C	Rm	Remove. Located within Basement 3 footprint. Exempt species under B4.22 of Northern Beaches Council P21DCP.

AIA Tree Schedule -
159-167 Darley St West, MONA VALE

TREE No.	COMMON NAME/ GENUS SPECIES	DBH (cm)	HEIGHT (m)	CANOPY RADIUS (m)	AGE CLASS	VIGOUR	CONDITION	SRZ RADIUS (m)	TPZ RADIUS (m)	% TPZ ENCROACHMENT	ULE	©SIG RATING	©RETENTION INDEX	RECOMMENDATION	COMMENTS
23	Silky Oak, <i>Grevillea robusta</i>	14, 14	8	3	SM	G	F	1.8	2.4	100%	S	4	D	Rm	Remove. Located within Basement 3 footprint. Exempt species under B4.22 of Northern Beaches Council P21DCP. Not on Survey. Growing through deck.
24	Bangalow Palm, <i>Archontophoenix cunninghamiana</i>	17	9	2	M	G	G	1.0	3.0	100%	S	4	D	Rm	Remove. Located within Basement 3 footprint. Exempt species under B4.22 of Northern Beaches Council P21DCP. Not on Survey. Growing through existing deck.
25	Bangalow Palm, <i>Archontophoenix cunninghamiana</i>	17	10	2	M	G	G	1.0	3.0	100%	S	4	D	Rm	Remove. Located within Basement 3 footprint. Exempt species under B4.22 of Northern Beaches Council P21DCP. Not on Survey. Growing through existing deck.
26	Spotted Gum, <i>Corymbia maculata</i>	65	24	8	M	G	F	2.9	7.8	100%	M	3	B	Rm	Remove. Located within Basement 3 footprint. Crown skew to E. Crown lifted in past.
27	Lemon-scented Gum, <i>Corymbia citriodora</i>	68	25	8	M	G	G	2.9	8.2	100%	M	2	A	Rm	Remove. Located within Basement 3 footprint. Crown lifted in past. Planted non-indigenous native tree.
28	Jacaranda, <i>Jacaranda mimosifolia</i>	11, 26	13	5	M	G	F	2.1	3.6	100%	S	4	D	Rm	Remove. Located within Basement 3 footprint. Exempt species under B4.22 of Northern Beaches Council P21DCP.
29	Silky Oak, <i>Grevillea robusta</i>	45	23	4	M	G	G	2.5	5.4	100%	M	4	C	Rm	Remove. Located within Basement 3 footprint. Exempt species under B4.22 of Northern Beaches Council P21DCP.
30	Spotted Gum, <i>Corymbia maculata</i>	33	17	4	SM	G	G	2.2	4.0	25%	L	3	B	R+	Retain. Landscape retaining walls south of Bld A within TPZ to be locally realigned to reduce encroachment to 20%.
31	Weeping Fig, <i>Ficus benjamina</i>	35	15	5	SM	G	G	2.2	4.2	0%	S	3	C	R	Retain. On adjoining property.
32	Cabbage Tree Palm, <i>Livistona australis</i>	35	8	3	SM	G	G	1.0	4.0	0%	L	3	B	R	Retain.
33	Bull Bay Magnolia, <i>Magnolia grandiflora</i>	95 @g	9	6	M	G	F	3.2	11.4	100%	M	3	B	Rm	Remove. Located within proposed landscape walling and fill Bld B. Lopped adjacent to high voltage power lines.

AIA Tree Schedule -
159-167 Darley St West, MONA VALE

TREE No.	COMMON NAME/ GENUS SPECIES	DBH (cm)	HEIGHT (m)	CANOPY RADIUS (m)	AGE CLASS	VIGOUR	CONDITION	SRZ RADIUS (m)	TPZ RADIUS (m)	% TPZ ENCROACHMENT	ULE	©SIG RATING	©RETENTION INDEX	RECOMMENDATION	COMMENTS
34	Jacaranda, <i>Jacaranda mimosifolia</i>	25, 30	11	5	M	G	F	2.4	4.8	100%	M	4	C	Rm	Remove. Located within proposed landscape walling and fill Bld C. Exempt species under B4.22 of Northern Beaches Council P21DCP. Lopped under high voltage power lines
35	Bull Bay Magnolia, <i>Magnolia grandiflora</i>	16, 17	7	3	SM	G	F	1.9	2.4	100%	S	3	C	Rm	Remove. Located within proposed landscape walling and fill Bld C. Tree not on Survey.
36	Native Daphne, <i>Pittosporum undulatum</i>	12, 17	6	2	M	F	F	1.8	2.4	100%	S	4	D	Rm	Remove. Located within proposed landscape walling and fill Bld C. Exempt species under B4.22 of Northern Beaches Council P21DCP, being less than 8m tall.
37	Tasmanian Blue Gum, <i>Eucalyptus globulus</i> subsp. <i>globulus</i>	84	23	8	M	G	G	3.2	10.1	100%	M	2	A	Rm	Remove. Located within Basement 3 footprint. Planted non-indigenous native tree.
38	Jacaranda, <i>Jacaranda mimosifolia</i>	30	10	5	M	G	F	2.1	3.6	100%	S	4	D	Rm	Remove. Located within Basement 3 footprint. Exempt species under B4.22 of Northern Beaches Council P21DCP. Heavy crown skew to NE.
39	Weeping Fig, <i>Ficus benjamina</i>	40	10	4	SM	G	F	2.3	4.8	100%	M	4	C	Rm	Remove. Located within Basement 3 footprint. Exempt species under B4.22 of Northern Beaches Council P21DCP. Lopped adjacent to house.
40	Brushbox, <i>Lophostemon confertus</i>	37	11	5	SM	G	F	2.3	4.4	100%	M	3	B	Rm	Remove. Located within Basement 3 footprint. Heavy crown skew to W.
41	Red Bloodwood, <i>Corymbia gummifera</i>	64	22	6	M	G	F	2.9	7.7	100%	M	2	A	Rm	Remove. Located within Basement 3 footprint. Trunk wound to NE side @6ma.g.
42	Brushbox, <i>Lophostemon confertus</i>	25	13	5	SM	G	F	1.9	3.0	100%	M	3	B	Rm	Remove. Located within Basement 3 footprint. Heavy crown skew to W. Trunk wound N side @1m.
43	Broad-leaved Paperbark, <i>Melaleuca quinquenervia</i>	26	13	5	SM	G	F	2.0	3.1	100%	M	3	PR	PR	Previously Removed. Recently removed following storm uprooting. Located within Basement 3 footprint. Crown skew to N.

AIA Tree Schedule -
159-167 Darley St West, MONA VALE

TREE No.	COMMON NAME/ GENUS SPECIES	DBH (cm)	HEIGHT (m)	CANOPY RADIUS (m)	AGE CLASS	VIGOUR	CONDITION	SRZ RADIUS (m)	TPZ RADIUS (m)	% TPZ ENCROACHMENT	ULE	©SIG RATING	©RETENTION INDEX	RECOMMENDATION	COMMENTS
44	Grey Ironbark, <i>Eucalyptus paniculata</i>	50	15	7	M	F	P	2.6	6.0	100%	S	3	PR	PR	Previously Removed. Recently removed following storm damage. Located within Basement 3 footprint. Heavy crown skew to N.
45	Cabbage Tree Palm, <i>Livistona australis</i>	32	9	3	M	G	G	1.0	4.0	100%	L	3	B	T	Transplant. Located within Basement 3 footprint.
46	Grey Ironbark, <i>Eucalyptus paniculata</i>	44	24	6	M	F	P	2.4	5.3	100%	S	3	C	Rm	Remove. Located within Basement 3 footprint. Tree not on Survey. Major trunk wound @5m N side. Lopped over house to E.
47	Grey Ironbark, <i>Eucalyptus paniculata</i>	59	25	5	M	G	P	2.8	7.1	25%	S	3	C	Rm	Remove. SRZ within Bld B footprint. Ganoderma fruiting body @ 1m N side. Trunk defect.
48	Grey Ironbark, <i>Eucalyptus paniculata</i>	60	27	8	M	G	F	2.8	7.2	12%	L	2	A	R+	Retain. Major encroachment associated with landscape south of Bld B. Crown skew to W. Storm damaged 1st Order branch at 15m a.g. to be pruned.
49	Grey Gum, <i>Eucalyptus punctata</i>	51	23	5	M	F	P	2.6	6.1	5%	S	3	C	Rm	Remove. Minor TPZ encroachment Bld B but to be removed due to safety concerns. Major trunk defect @ 10m. Major deadwood to 200mØ.
50	Grey Ironbark, <i>Eucalyptus paniculata</i>	80	28	8	M	G	G	3.1	9.6	5%	L	1	A	R+	Retain. Minor TPZ encroachment associated with landscape walling south of Bld B.
51	Cocos Palm, <i>Syagrus romanzoffianum</i>	26	12	3	M	G	G	1.0	4.0	0%	M	4	C	Rm	Remove. Clear of construction. Replace with more appropriate species. Exempt species under B4.22 of Northern Beaches Council P21DCP.
52	Grey Ironbark, <i>Eucalyptus paniculata</i>	53	25	5	M	G	F	2.6	6.4	0%	M	3	B	R	Retain. Clear of construction. All lowest branches removed to 18m a.g.
53	Jacaranda, <i>Jacaranda mimosifolia</i>	26	14	4	SM	G	G	2.0	3.1	0%	M	4	C	R	Retain. Clear of construction. On adjoining property. Exempt species under B4.22 of Northern Beaches Council P21DCP.
54	Broad-leaved Privet, <i>Ligustrum lucidum</i>	32	9	3	M	F	F	2.1	3.8	0%	S	4	D	Rm	Remove. Clear of construction. Replace with more appropriate species. Exempt species under B4.22 of Northern Beaches Council P21DCP.

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159-167 Darley St West, MONA VALE

TREE No.	COMMON NAME/ GENUS SPECIES	DBH (cm)	HEIGHT (m)	CANOPY RADIUS (m)	AGE CLASS	VIGOUR	CONDITION	SRZ RADIUS (m)	TPZ RADIUS (m)	% TPZ ENCROACHMENT	ULE	©SIG RATING	©RETENTION INDEX	RECOMMENDATION	COMMENTS
55	Grey Ironbark, <i>Eucalyptus paniculata</i>	80	27	8	M	G	G	3.1	9.6	0%	L	1	A	R	Retain. Clear of construction. On adjoining property.
56	Grey Gum, <i>Eucalyptus punctata</i>	65	23	6	M	F	F	2.9	7.8	0%	M	2	A	R	Retain. Clear of construction. On adjoining property.
57	Dead Tree, <i>Dead</i>	30	13					2.1	3.6	0%	Rm	4	D	R	Retain. Clear of construction. On adjoining property.
58	Tallowwood, <i>Eucalyptus microcorys</i>	50	17	6	M	G	F	2.6	6.0	0%	M	3	B	R	Retain. Clear of construction. On adjoining property. Planted non-indigenous native tree.
59	Spotted Gum, <i>Corymbia maculata</i>	40	18	5	M	G	F	2.3	4.8	0%	M	3	B	R	Retain. Clear of construction. On adjoining property.
60	Prickly-leaved Paperbark, <i>Melaleuca styphelioides</i>	40, 43	10	6	M	F	F	2.8	7.2	0%	S	3	C	R	Retain. Clear of construction. Trunk on rear boundary.
61	Grey Ironbark, <i>Eucalyptus paniculata</i>	86	27	8	M	G	G	3.2	10.3	0%	L	1	A	R	Retain. Clear of construction. Trumpet vine on lower trunk.
62	Grey Gum, <i>Eucalyptus punctata</i>	72	23	8	M	F	F	3.0	8.6	9%	M	3	B	R+	Retain. Minor encroachment Bld C. Heavy crown skew to N.
63	Weeping Fig, <i>Ficus benjamina</i>	30	10	4	SM	G	G	2.1	3.6	0%	S	4	D	Rm	Remove. Clear of construction. Replace with more appropriate species Exempt species under B4.22 of Northern Beaches Council P21DCP.
64	Weeping Fig, <i>Ficus benjamina</i>	12, 27	8	4	SM	G	F	2.1	3.6	0%	S	4	D	Rm	Remove. Clear of construction. Replace with more appropriate species. Exempt species under B4.22 of Northern Beaches Council P21DCP. Heavy crown skew to W.
65	Cocos Palm, <i>Syagrus romanzoffianum</i>	23	12	4	M	G	G	1.0	5.0	0%	M	4	C	Rm	Remove. Clear of construction. Replace with more appropriate species. Exempt species under B4.22 of Northern Beaches Council P21DCP.
66	Weeping Fig, <i>Ficus benjamina</i>	39	15	6	SM	G	G	2.3	4.7	100%	M	4	C	Rm	Remove. Located within Bld C footprint. Replace with more appropriate species Exempt species under B4.22 of Northern Beaches Council P21DCP.
67	Weeping Fig, <i>Ficus benjamina</i>	10, 24	13	4	SM	G	F	2.0	3.6	100%	M	4	C	Rm	Remove. Located within Bld C footprint. Exempt species under B4.22 of Northern Beaches Council P21DCP.

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TREE No.	COMMON NAME/ GENUS SPECIES	DBH (cm)	HEIGHT (m)	CANOPY RADIUS (m)	AGE CLASS	VIGOUR	CONDITION	SRZ RADIUS (m)	TPZ RADIUS (m)	% TPZ ENCROACHMENT	ULE	©SIG RATING	©RETENTION INDEX	RECOMMENDATION	COMMENTS
68	Jacaranda, <i>Jacaranda mimosifolia</i>	26	10	4	SM	F	F	2.0	3.1	100%	S	4	D	Rm	Remove. Located within Bld C footprint. Exempt species under B4.22 of Northern Beaches Council P21DCP.
69	Dead Tree, <i>Dead</i>	25						1.9	3.0	100%	Rm	4	D	Rm	Remove. Located within Bld C footprint.
70	Fiddlewood, <i>Citharexylum spinosum</i>	44	15	6	M	G	F	2.4	5.3	100%	M	4	C	Rm	Remove. Located within Bld C footprint. Exempt species under B4.22 of Northern Beaches Council P21DCP. Crown skew to S.
71	Fiddlewood, <i>Citharexylum spinosum</i>	51	16	8	M	G	F	2.6	6.1	100%	M	4	C	Rm	Remove. Located within Bld C footprint. Exempt species under NBC DCP. Crown skew to N. Recent storm damage 200Ø trunk lean.
72	Fiddlewood, <i>Citharexylum spinosum</i>	52	18	8	M	G	F	2.6	6.2	100%	M	4	C	Rm	Remove. Located within Bld C footprint. Exempt species under B4.22 of Northern Beaches Council P21DCP. Crown skew to W.
73	Fiddlewood, <i>Citharexylum spinosum</i>	38	16	6	M	G	F	2.3	4.6	100%	M	4	C	Rm	Remove. Located within Bld C footprint. Exempt species under B4.22 of Northern Beaches Council P21DCP. Crown skew & trunk lean to NE.
74	Kurrajong, <i>Brachychiton populneus</i>	39	8	4	M	F	F	2.3	4.7	100%	M	3	B	Rm	Remove. Located within Bld C footprint. Crown skew to N.
75	Sydney Blue Gum, <i>Eucalyptus saligna</i>	82	25	8	M	G	G	3.2	9.8	20%	L	1	A	R+	Retain. Major encroachment from Bld C and associated landscape works. Crown pruning required. Substation proposed within TPZ. Retaining walls to be restricted to 6m side setback.
76	Bangalow Palm, <i>Archontophoenix cunninghamiana</i>	22	7	2	SM	G	G	1.0	3.0	0%	S	3	C	R	Retain. Clear of construction. Exempt species under B4.22 of Northern Beaches Council P21DCP but is to be retained.
77	Red Ash, <i>Alphitonia excelsa</i>	25	14	6	SM	G	F	1.9	3.0	100%	M	3	B	Rm	Remove. Located within Bld C footprint. Crown skew to E.
78	Red Ash, <i>Alphitonia excelsa</i>	19, 40	18	5	M	G	F	2.5	4.8	100%	M	3	B	Rm	Remove. Located within Bld C footprint. Crown skew to N.
79	Grey Ironbark, <i>Eucalyptus paniculata</i>	65	23	8	M	G	G	2.9	7.8	100%	L	2	A	Rm	Remove. Located within Bld C footprint.

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80	Cabbage Tree Palm, <i>Livistona australis</i>	35	17	3	M	G	G	1.0	4.0	0%	L	3	B	R	Retain. Clear of construction.
81	Cabbage Tree Palm, <i>Livistona australis</i>	33	14	3	M	G	G	1.0	4.0	0%	L	3	B	R	Retain. Clear of construction.
82	Flax-leaved Paperbark, <i>Melaleuca linariifolia</i>	24	10	3	M	G	G	1.9	2.9	0%	M	3	B	R	Retain. Clear of construction.
83	Jacaranda, <i>Jacaranda mimosifolia</i>	48	13	6	M	G	F	2.5	5.8	100%	M	4	C	Rm	Remove. Located within Bld C footprint. Exempt species under B4.22 of Northern Beaches Council P21DCP.
84	Cocos Palm, <i>Syagrus romanzoffianum</i>	23	18	3	M	G	G	1.0	4.0	100%	S	4	D	Rm	Remove. Located within Bld C footprint. Exempt species under B4.22 of Northern Beaches Council P21DCP.
85	Black Teatree, <i>Melaleuca bracteata</i>	14	5	2	SM	G	G	1.5	2.0	0%	M	4	C	R	Retain. Clear of construction. Tree not on Survey.
86	Sandpaper Fig, <i>Ficus coronata</i>	34	12	5	M	F	F	2.2	4.1	0%	M	3	B	R	Retain. Clear of construction.
87	Rough Shelled Macadamia, <i>Macadamia tetraphylla</i>	15, 25	10	4	M	F	G	2.1	3.6	0%	M	3	B	R	Retain. Clear of construction. On adjacent property.
88	Bull Bay Magnolia, <i>Magnolia grandiflora</i>	23	5	4	M	F	F	1.9	2.8	0%	M	4	C	R	Retain. Clear of construction. Previously lopped.
88															

**AIA Tree Schedule -
159-167 Darley St West, MONA VALE**

Summary Data

©RETENTION INDEX	NO. OF TREES
A	11
B	25
C	30
D	20
PR	2
Total	88

RECOMMENDATION	NO. OF TREES
R	19
R+	7
T	2
Rm	58
PR	2
Total	88

©RETENTION INDEX	RECOMMENDATION			
	R	R+	T	Rm
A	3	3	0	5
B	9	4	2	10
C	6	0	0	24
D	1	0	0	19

Attachment B: Definition of Terms



COMMON NAME/GENUS SPECIES CULTIVAR – Common names can vary with selected texts. Where species is unknown, “sp.” indicated after genus. Where cultivar is unknown “cv” indicated after species.

DBH – Diameter at Breast Height. Tree trunk diameter measured at breast height (1.4 metres above ground level). Fabric diameter tape is used which assumes a circular cross section. Multiple measurements indicate multiple trunks. Where DBH measurement cannot be taken at 1.4m the height at which it has been taken is indicated.

CANOPY SPREAD RADIUS – Average canopy radius (widest + narrowest ÷ 2). Circular canopy depictions on Tree Plan/Survey are indicative only. Where canopy spread was significantly skewed, all four cardinal point measurements were recorded.

AGE CLASS – Immature (IM), Semi-mature (SM), Mature (M), Over-mature (OM). Assessment of the tree's current Age. A **Mature (M)** tree has reached a near stable size (biomass) above and below ground. Trees can have a *Mature* age class for >90% of life span. **Over-mature (OM)** trees show symptoms of irreversible decline and decreasing biomass.

VIGOUR – Good (G), Fair (F) or Poor (P). The general appearance of the canopy/foliage of the tree at the time of inspection. Vigour can vary with the season and rainfall frequency. A tree can have *Good* vigour but be hazardous due to *Poor* condition. A tree in *Good* vigour has the ability to sustain its life processes. Vigour is synonymous with health.

CONDITION – Good (G), Fair (F) or Poor (P). The general form and structure of the trunk/s and branching. Trunk lean, trunk/branch structural defects, canopy skewness or other hazard features are considered.

SRZ RADIUS – Structural Root Zone. The area around a tree required for tree stability. Earthworks should be prohibited within the SRZ. The area is calculated from the formula and graph at Figure 1 of AS4970-2009. The SRZ graph has been adapted from the work of Claus Mattheck (1994). DBH + 10% has been used for the calculation of SRZ. Where DBH is measured at grade or at a height other than 1.4m above grade, 10% has not been added.

TPZ RADIUS – Tree Protection Zone. Radial offset (m) of twelve times (12x) trunk DBH measured from centre of trunk (for trees less than 0.3 metre DBH minimum TPZ is 2.0 metres). To satisfactorily retain the tree, construction activity (both soil cut and fill) must be restricted within this offset. TPZ offsets are rounded to the nearest 0.1 metre. Existing constraints to root spread can vary. Generally an area equivalent to the TPZ should be available to the tree post development. Encroachment occupying up to 10% of the TPZ area is acceptable without detailed rootzone assessment. Encroachments greater than 10% require specific arboricultural assessment as per 3.3.3 and 3.3.4 of Australian Standard AS4970-2009 *Protection of trees on development sites*.

TPZ ENCROACHMENT – The cut or compacted fill encroachment within the notional TPZ. The Tree Protection Zone is X12 trunk diameter (DBH) as per 3.2 of AS4970-2009. Refer to the Tree Retention section of the AIA for methods/design used to minimise encroachments.

ULE – Useful Life Expectancy. The length of time from the date of inspection that the Arborist estimates the tree will live and provide a useful positive contribution to the landscape amenity of the site. ULE ratings are **Long** (retainable for 40 years or more), **Medium** (retainable for 16-39 years), **Short** (retainable for 5-15 years) and **Removal** (tree requiring immediate removal due to imminent risk or absolute unsuitability).

©SIG. RATING – ©Significance Rating Scale (see notes over)

©RETENTION INDEX (see notes over)

RECOMMENDATIONS – Retain (R) No TPZ encroachments; Retain Plus (R+) Acceptable levels of TPZ encroachment; Transplant (T) or Remove (Rm).

COMMENTS – Comments relating to the location, surroundings and hazard potential of the trees at the time of inspection and where applicable the reason for removal.



©SIG. RATING – ©Significance Rating Scale. A site specific qualitative evaluation of a tree relative to the existing land use developed by Tree Wise Men® Australia Pty Ltd. Takes into consideration the impact of the tree on the surrounding landscape, streetscape and bushland. Rarity, habitat value, historical/cultural value and structural form of the tree are considered in this rating system. It is possible for a tree to have a *Short* ULE and a ©Significance Rating of 1. Likewise it is possible for a tree to be given a *Long* ULE and a ©Significance Rating of 4 (e.g. weed species). The ©Significance Ratings used in this Report are as outlined in Table 1.

Table 1: ©Significance Rating Characteristics

Rating	Significance	Characteristics (some or all)
©Sig. Rating 1	Exceptional	- Major contribution to site amenity - Remnant specimen - Heritage Listed - Listed on Significant Tree Register - Threatened Species - Good vigour and condition - Cultural significance - Possible habitat tree for threatened fauna - Excellent, well formed specimen - Rare or unusual species - Large above ground biomass - Unique within the site and surrounds
©Sig. Rating 2	High	- Considerable contribution to site amenity - Remnant specimen - Good vigour and condition - Threatened Species - Cultural significance - Possible habitat tree for threatened fauna - Well formed specimen - Rare or unusual species - Large or moderate above ground biomass - Other specimens with similar characteristics within the site and surrounds
©Sig. Rating 3	Moderate	- Minor contribution to site amenity - Remnant or planted - Fair or Poor vigour and condition - Potential for growth - Well formed or asymmetrical form - Other specimens with similar characteristics within the site and surrounds
©Sig. Rating 4	Low	- Small/poor specimen - Poor vigour and condition - Inappropriate for the location - Minor contribution to landscape amenity - Easily replaced - Weed species or TPO Exempt - Hazardous - Previously ©Sig. Rating 5 tree



©RETENTION INDEX. A site specific assessment of an individual tree's retention value developed by Tree Wise Men® Australia Pty Ltd. Incorporating ULE and ©Significance Rating each tree is allocated a ©Retention Value of A, B, C or D. The ©Retention Index values can be described as follows:

©Retention Value A High	Should be retained	Major redesign may be required (e.g. movement of building footprint, re-alignment of roadway).
©Retention Value B Moderate	Could be retained	Minor redesign may be required (e.g. level changes, pavement detail).
©Retention Value C Low	Could be removed	Should not constrain proposed development.
©Retention Value D Very Low	Should be removed (irrespective of development layout.)	- Should not constrain proposed development. Remove ULE should be removed irrespective of development layout.
	Should be removed or permanently fenced off	- Should not constrain proposed development Short ULE could be retained pending landscape proposal.

©Retention Index		©Significance Rating			
		1	2	3	4
ULE Rating	Long (40+ years)	A		B	C
	Medium (15-40 years)			B	C
	Short (5-15 years)	B		C	D
	Remove (< 5 years)	D			



Attachment C: Site Photographs





Photo A: The subject site looking south showing the three mature, planted Eucalypts not representative of *Pittwater and Wagstaffe Spotted Gum Forest EEC*. Tree 75 is to be retained.



Photo B: On 3 August, 2025 Tree 44 (Grey Ironbark) fell and damaged Tree 43 (Broad-leaved Paperbark). Both trees were removed due to safety concerns





Photo C: Trees 1 and 2 to be retained in the northeast, front corner of the site with proposed paving to be constructed at existing grade.



Photo D: Tree 75 Sydney Blue Gum to be retained adjacent Building C.





Photo E: The rear of the site contains remnant tree species representative of *Pittwater and Wagstaffe Spotted Gum Forest EEC*. Particular care is proposed to maintain existing soil levels with construction of walkways.



Attachment D: Tree Protection Requirements (Generic)





TREE PROTECTION REQUIREMENTS (GENERIC)

The following generic tree protection requirements (1-12) should be implemented to minimise the impact of the proposed development on the retained trees. These requirements shall be implemented during the construction period in the event that no site-specific requirements are detailed in this document. Tree Protection Requirements should comply with *Section 4 Tree Protection Measures of AS4970-2009 Protection of trees on development sites* and the Tree Protection Plan (TPP) attached to this document.

1. Arborist Involvement – An Arborist (the project Arborist) with minimum AQF Level 5 qualifications, experienced in tree protection on construction sites shall be engaged prior to the commencement of work on the site. The Arborist's tasks will be to monitor and report regularly to the PCA and the Applicant on the condition of the retained trees for the duration of works on site. The Project Arborist shall be present to certify tree protection measures and to supervise any excavation, trenching or tunnelling within the TPZ of any retained trees.

The schedule of works for the development shall acknowledge the role of the Project Arborist and the need to protect the retained trees. Sufficient notice shall be given to the Project Arborist where his/her attendance is required. Should the proposed design change from that reviewed, additional arboricultural assessment will be required.

2. Tree Pruning and Removal – All tree pruning (including root pruning) and tree removal shall be carried out by a qualified and experienced Arborist (minimum AQF Level 3 qualification) to Australian Standard *AS4373-2007 Pruning of amenity trees* and the Safe Work Australia "Guide to Managing Risks of Tree Trimming and Removal Work" July, 2016.

When tree stumps are within the TPZ of retained trees, stump grinding of rootballs shall be performed rather than complete "grubbing". This will minimise unnecessary root damage to the retained trees. Unnecessary damage often occurs to retained trees when undertaken by earthmoving machinery.

3. Mulching – If construction activity is proposed within TPZ offsets mulching is required. Mulch to a depth of 100 millimetres using partially composted green waste mulch. The mulch should be free of weed seeds and other contaminants. Should constant access be required within the trees' TPZs, outside the protective fencing, heavier mulch should be spread to a depth no greater than 100 millimetres to reduce soil compaction.

4. Temporary Irrigation – Where construction related activity or root cutting is proposed within the TPZ of retained trees, temporary irrigation or water cart access may need to be provided to the remaining unimpacted TPZ areas to maintain adequate soil moisture levels. Delivery volumes are to allow for mulch layer and recent rainfall. The Project Arborist is to monitor soil moisture levels.



5. Tree Protection Fencing – The retained trees shall be protected by means of fencing as per Figure 3 of AS4970-2009 or as detailed in the TPP prior to commencement of demolition or bulk earthworks.

It should be constructed from 1.8 metre high chain link wire or welded mesh suspended by galvanised steel pipe or equivalent and enclose as much of the TPZ as practicable allowing for building alignments.

The location of the fence may need to be altered from that indicated on the Tree Protection Plan at a project meeting between the Civil Contractor and the Project Arborist. The area enclosed shall be mulched (3) and irrigated (4) and kept free from all building materials, contaminants and other debris and shall not be used for storage of any building materials or parking of vehicles or plant. If scaffolding (8) is required within a tree protection zone, the ground is to be mulched prior to erection of scaffolding.

6. Trunk Protection – Trunk and branch protection is to comply with Figure 4 of AS4970-2009 or as detailed in the TPP. Lengths of timber (75mm x 50mm x 2000mm) shall be used to protect a tree's trunk if construction or traffic is proposed within its SRZ and the tree cannot be fenced. The lengths of timber should be fastened around the trunk at 200 millimetre centres with hoop iron strapping or similar.

7. Signs – Signs complying with Figure C1 of AS4970-2009 should be placed at regular intervals (min. 1 per 15 metres) on tree protection fencing.

8. Scaffolding – If scaffolding or hoarding is required within the TPZ, install as per Figure 5 of AS4970-2009 or as detailed in the TPP. Installation is to be prior to demolition or bulk earthworks.

9. Bulk Earthworks – To prevent unnecessary root damage, walk machinery within defined haul routes beyond TPZs wherever possible. The excavation shall be carried out under the supervision of the Project Arborist. All roots within TPZ of retained trees are to be hand cut prior to machine cutting. Immediately following excavation, the face of the cut within the TPZ shall be draped and maintained moist until backfilled. This should be done using a 10mm thick jute matting or equivalent, pinned at ground level and allowed to cover the full depth of the rootzone excavation.

There is to be no soil battering or unnecessary over excavation within TPZ offsets. Topsoil stripping should be prohibited within TPZ offsets unless approved by the Project Arborist.

10. Prevention of Soil Compaction – During the construction period there may be considerable traffic movement associated with general building activities. The resultant soil compaction and possible contamination of the soil can have an equally detrimental impact on the tree as the severing of roots during excavation.

Specific machinery access tracks should be determined through consultation between the Civil Contractor and the project Arborist. Should heavy vehicle movement be required within a retained tree's TPZ, a track should be formed at grade using large diameter (up to 100mm) aggregate over geofabric or a corduroy of heavy timbers.

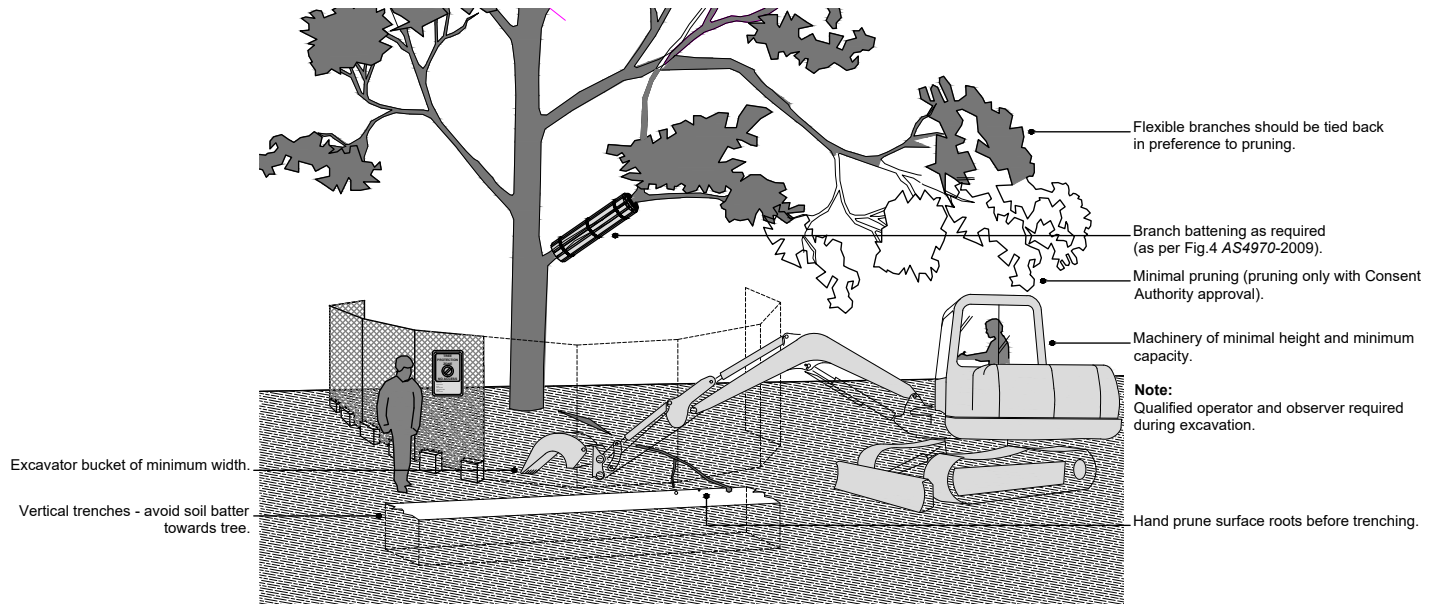
11. Prevention of Soil Inversion – Care shall be taken to avoid inversion of the soil layers on the site and particularly within TPZs. Clays placed over coarse textured soils reduces water infiltration, creating a perched water table, resulting in decline and/or death of underlying tree roots due to moisture stress.

12. Services – Trenching for services is to be regarded as "construction". Trenching within TPZ offsets should be avoided wherever possible to ensure <25% root loss (of TPZ) occurs on retained trees. Directional ("trenchless") boring or suspension of services should be used wherever possible. Where trenching is to occur within TPZ offsets, it is to be undertaken by hand to rock with no roots >50mm to be cut, under supervision of the Project Arborist.



Attachment E: Tree Protection Plan

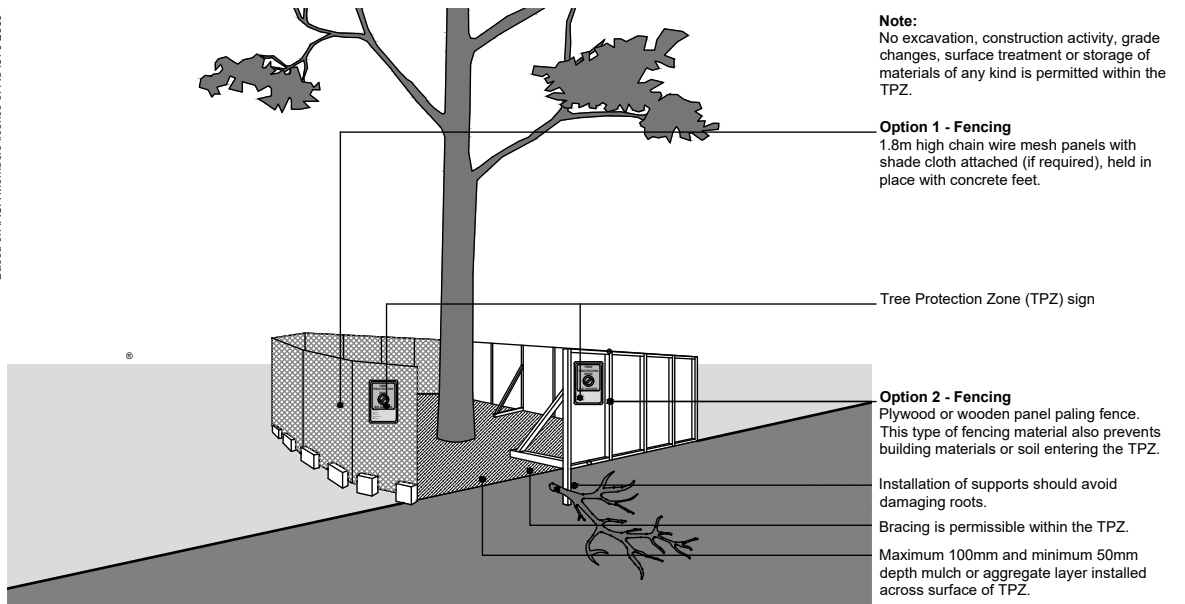




06

Machinery Use Within Tree Protection Zone (TPZ)

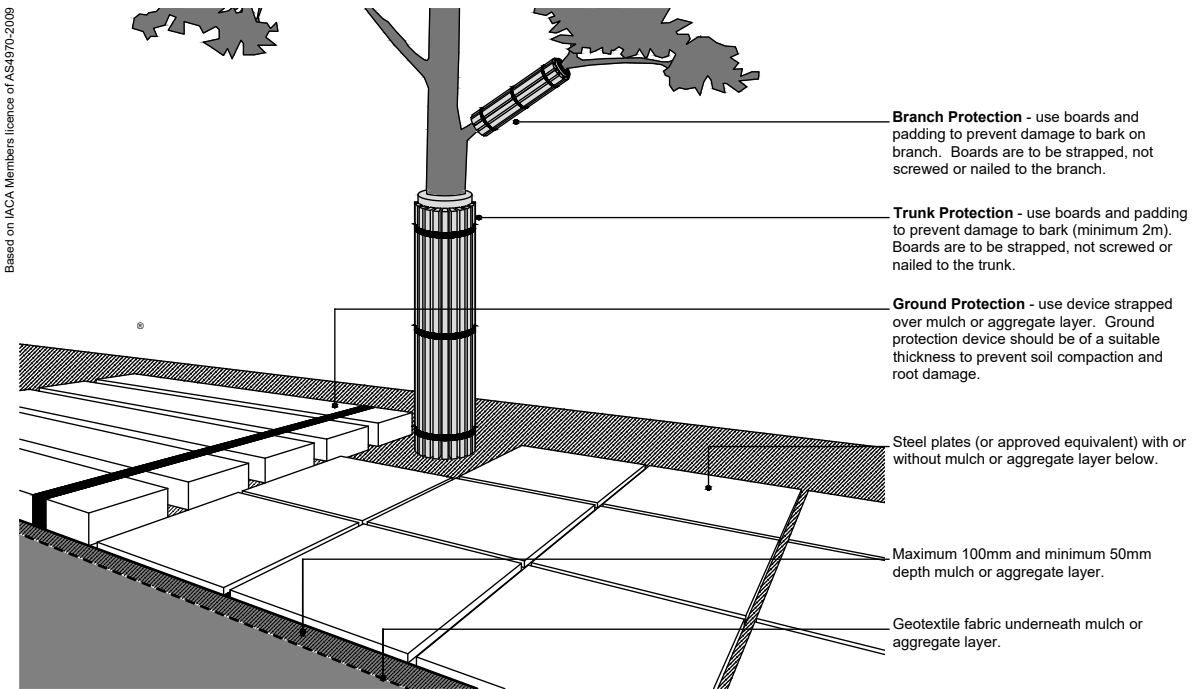
Not to Scale
Copyright © 2014 TWM



03

Tree Protection Fencing

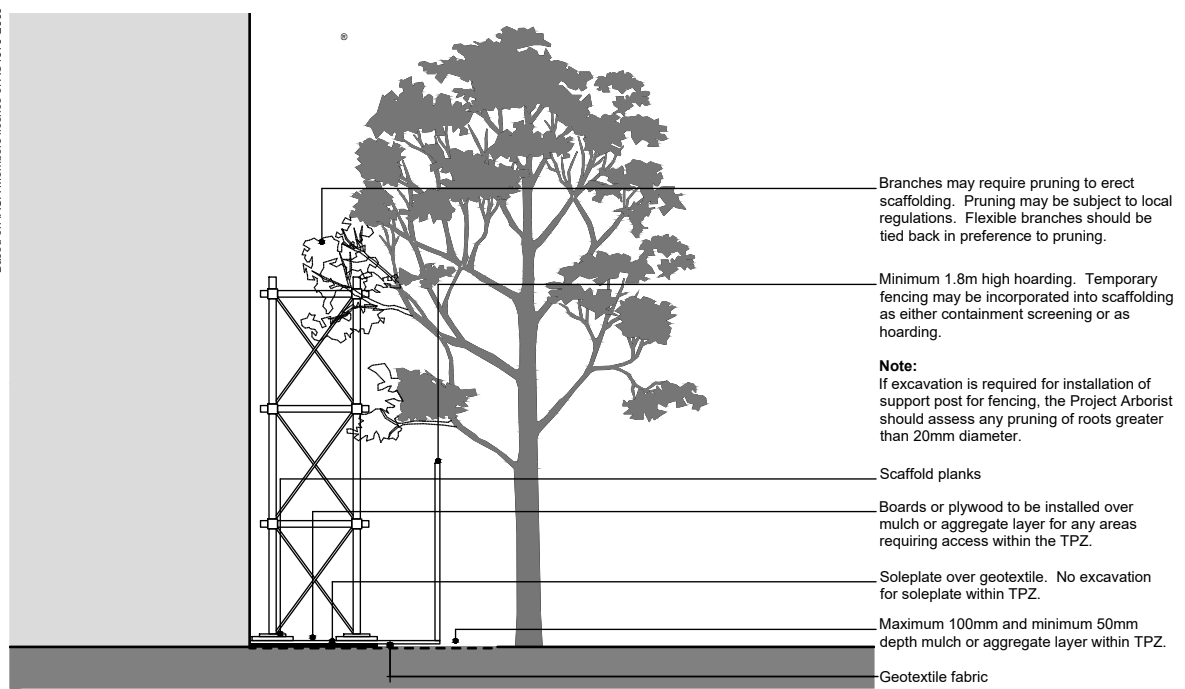
Not to Scale
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04

Examples of Branch, Trunk and Ground Protection

Not to Scale
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05

Indicative Scaffolding within a Tree Protection Zone (TPZ)

Not to Scale
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ARBORICULTURAL CONSULTANCY

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Notes:

1. Tree impact assessment has been considered in relation to **AS4970-2009 Protection of trees on development sites**.
2. This **Tree Protection Plan** is equivalent to the Development Submission Plan identified in Table 1, **AS4970-2009**.
3. This **Tree Protection Plan** should be incorporated into the site Construction Management Plan and the Sediment Control Plan.
4. Tree impact assessment includes likely impacts from development including: building platforms, driveways/ accessways, services/infrastructure installation and cut/fill batters.
5. The extent of TPZ shown on this plan does not reflect any confinement of roots by existing structures, buildings, walls, topography, etc.

6. A **Project Arborist** with minimum AQF Level 5 qualifications is to be engaged to supervise works within TPZ areas and monitor and report regularly on the condition of trees.
7. **Tree Protection Fencing** as indicated, should be installed prior to demolition of existing structures and other site preparation works. Tree Protection Fencing should comprise of:

chainlink wire or wire mesh panels as per Figure 03 of the TPP. If the location of the fencing needs to be altered, this shall be determined at a project meeting between the Civil Contractor and the Project Arborist. The following activities are to be prohibited within tree protection fencing: topsoil stripping, excavation, placement of soil fill, storage of any materials, placement of site sheds/offices, parking of heavy machinery, placement of machinery haul roads.
8. If **scaffolding** is required within TPZ, install as shown in Figure 05 of the TPP.

9. Services installation should be supervised by the **Project Arborist**, using directional boring wherever possible or manual excavation where trenching is to occur. No roots greater than 50mm diameter are to be cut or damaged. Services should be routed beyond TPZ wherever possible.
10. **Trunk battening** and **ground protection** to be installed to trees where works are required within Tree Protection Fencing. Battening to comply with Figure 04 of the TPP.
11. All **tree pruning** is to comply with **AS4373-2007, Pruning of amenity trees**. All approved tree removal is to comply with WorkCover Code of Practice for the Amenity Tree Industry. All tree pruning and removal shall be carried out by a qualified and experienced Arborist (minimum AQF Level 3 qualification).
12. **Mulch** is to be spread to a depth of 100mm within the TPZs if construction activity is proposed within TPZ offsets. Where TPZs are greater than 5 metres or where native seeding regeneration would be prohibited by the mulch, seek advice from the Project

Arborist and Ecologist.

13. **Over-excavation** or battering towards trees is to be avoided unless indicated on Approved earthworks or services drawings and approved by the Project Arborist.
14. Contiguous **strip footings** are to be avoided wherever possible. Use discontinuous pier and beam type footings or other lightweight construction for walling and fencing within TPZs.
15. **Temporary irrigation**, hand watering or water cart may be required to maintain adequate soil moisture levels. The Project Arborist is to monitor soil moisture levels and advise on delivery volumes and frequency.
16. Temporary **haul roads** may be required to be installed where heavy machinery movements are proposed within TPZs of trees to minimise compaction. Woodchip mulch should be used as a minimum. Recycled concrete or other aggregate placed over a geofabric may be required for heavy use areas.

TITLE:

CLIENT:

PROJECT:

DRAWING NO:

DRAWN BY:

BASED ON:

©TREE PROTECTION PLAN

THE TRUSTEE FOR DREP1 MONA VALE SUB TRUST

RESIDENTIAL WITH INFILL AFFORDABLE HOUSING.
STATE SIGNIFICANT DEVELOPMENT APPLICATION
159-167 DARLEY STREET WEST MONA VALE
2801TPPreVA SHT 2 OF 2

MH

IACA Licence of AS4970-2009 Protection of trees on development sites

REV: A

DATE: 11/11/2025