TREETALK
ARBORICULTURAL CONSULTING

ABN 36 323 568 677

Arboricultural Impact Assessment

8 Hampden Street
Hurlstone Park

Project No 5614/A
January 2026

Prepared for
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By Consulting Arborist
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Arboricultural Impact Assessment: 8 Hampden St Hurlstone Park

1.0 Summary

Trees that could be impacted upon by works at 8 Hampden Street Hurlstone Park have been assessed. The soil area of three nearby trees on adjacent properties must be considered where any works are proposed below existing levels. Pruning of one branch on a nearby tree may be required. No trees on the site will be impacted.

Tree numbers are provided on the *Tree Location Plan* in Appendix A1. The results of the arboricultural assessment are provided in *Tree Data Schedule* Appendix F.

Tree protection measures are provided in Appendix C with setback calculations in Appendix E (with modifications in Table 1) and diagrammatically represented on plan Appendices A4 & A4i: *Indicative Tree Protection Plan*.

2.0 Background

TreeTalk Arboricultural Consulting has been engaged by the owners of 8 Hampden Street Hurlstone Park (the site) to consider trees that may be impacted upon by works proposed. Works include demolition of the rear of the house and building new additions.

Plans of proposed works, that have been considered, are copied into Appendices A2 and A3.

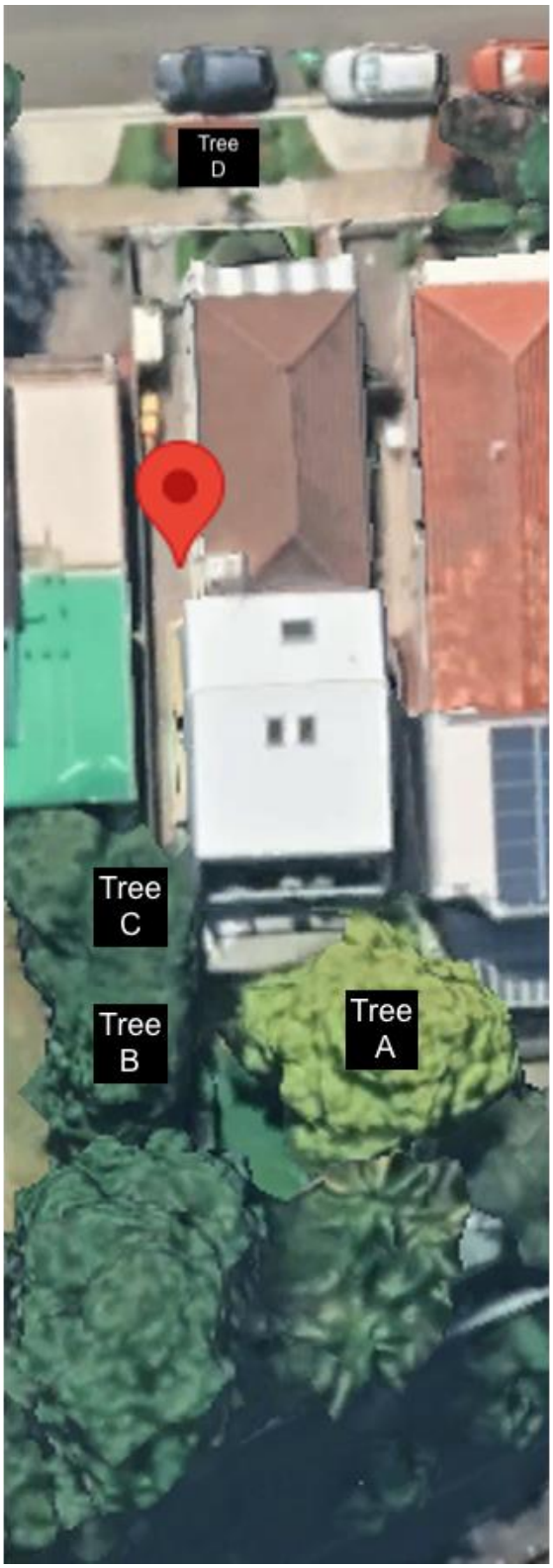
This report aims to:

- satisfy the requirements of the consenting authority, by providing arboricultural data on the trees including their species, dimensions, health, structural condition, and viability. Also, to provide information on constraints, setbacks and tree protection measures necessary, during site works, for trees being retained.

- advise the project manager, site managers and contractors on the constraints presented by the trees and the necessary management measures required to retain the trees in good condition with a viable and healthy future.

3.0 The Site and Tree Location

The site is a single residential property with relatively flat land with trees to the rear outside the area of works. There are trees nearby on adjacent land where works are planned. These trees are likely to have roots within the site.



Images 1-3 Subject site and trees.
From google maps, six Maps and photos

4.0 Method

TreeTalk consulting Arborist Sue Wylie visited the site on January 15th, 2026, to assess the trees and consider the likely impact by the works proposed.

The trees were assessed using the Visual Tree Assessment (VTA) method as described in Mattheck & Breloer (1994)[1], using non-invasive tools such as binoculars and acoustic mallet. Neither internal probing of live tissue nor aerial inspection by climbing was undertaken.

The VTA was performed from the ground considering overall *Health* and vitality, including percentage of canopy, epicormic growth, deadwood and predation by pests and diseases, and *Structural condition*, considering faults such as, poor branch attachment and mechanical (abiotic) or biological (biotic) damage.

Health and *Condition* was rated as *Good, Fair* or *Poor* (see Glossary), based on assessment at the time of inspection. Any indicators or evidence of concerns found to be outside normal tree development are noted.
Tree height was estimated and where relevant the orientation of the canopy is given. The trunk diameter was measured or estimated at breast height - 1.4 metres (DBH) and/or above root buttress (arb).

The Tree Protection Zone (TPZ)[2] and Structural Root Zone (SRZ)[3] measurements have been arrived at using widely recognised methods as detailed in *Australian Standard AS 4970– 2025* (see Appendix B2).

Calculations as per AS4970 Protection of trees on development sites for tree protection are given in and modifications in Table 1 below.

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5.0 Findings and Discussion

Complete tree findings are provided in the *Tree Data Schedule* (Appendix F).

1 Mattheck, Claus; Breloer, Helge 1994) *The Body Language of Trees: A Handbook for Failure Analysis - Research for Amenity Trees No4*, Pub. Forestry Comm., London.
2 Notional Root Zone: NRZ = an area around a tree with radius of 12 x DBH.
3 Structural Root Zone: SRZ = $64(D \times 50)^{0.42}$. As per Australian Standard AS 4970 – 2025, *Protection of Trees on Development Sites*.

Site trees at the rear of the site are well outside the area of proposed works.

Image 4: Tree A

Tree A is a *Melaleuca Spp.* (Paperbark / Honey Myrtle) in the adjacent property to the east (Image 4). It is in good overall health and condition. This tree is likely to have roots within the site. Works that may impact on tree roots are those below ground such as new footings, drainage or any level reductions.

Tree roots from this tree must be protected to the extent of its structural root (SRZ) or tree heath and stability could be impacted.

Branches overhang the site and one branch growing to the north may be impacted by works processes. This should be determined by the builder and if required pruning specifications are provided in Appendix D1.

Tree B is a *Camellia japonica* (Japanese Camellia) In the adjacent property to the west. It is in good overall health and condition. Roots from this tree (or Tree C) have lifted the brick paving at the rear of the house (Image 5).

Tree C is an unidentified species in good overall health and condition. Roots from this tree (or Tree B) have lifted the brick paving at the rear of the house (Image 5).

Works in the area of trees B and C have not been determined, however, as these trees appear to have roots within the site, these roots must be protected to the extent of their structural root (SRZ) or tree heath and stability could be impacted.

Works that may impact on these trees are any works below existing grade such as new footing/piers, drainage, or new paving.

Images 6 & 7: Paving & drainage adjacent to Tree C

6.0 Tree Protection Specification (TPS) and Modified Distances

Tree Protection measures must be the first works on site. Diagrammatic representation of fencing and soil protection is provided in Appendix A4, and distances taken from Table 1 below ***Modified NRZ measures on one side*** and NRZ (in Appendix E) on other sides.

Fence to the NRZ within the site, of Trees on adjacent land and manage carefully.

The NRZ must be fenced, and the site area mulched before other works begin. (Mulch must be replenished periodically and trees watered in dry periods).

Ensure:

- No machinery within **Modified NRZ** distances of all trees being retained.
- Hand clearing and careful removal of concrete paths and surfaces within modified distances.
- Isolate trees with fencing and mulch area.
- Footings, or fencing must be outside the SRZ by Pier and beam construction in **Modified NRZ.**

Where these conditions cannot be met, further arboricultural advice must be obtained.

Table 1: Modified Tree Protection Distances[4]

Tree No.	Species	**SRZ** Radius	Action	**NRZ** Radius works side
A	Honey Myrtle	2.4m	All works must be entirely above exiting grade. New footings must avoid roots 2cm or greater/ Ensure drainage does not impact in tree roots	3.0m
B	Camellia	2.0m	All works must be entirely above exiting grade. Ensure drainage does not impact in tree roots	2.5m
C	Unidentified species	2.6m	All works must be entirely above exiting grade. Ensure drainage does not impact in tree roots	3.5m
D	Street Tree	1.5m	Ensure drainage does not impact in tree roots	1.5m

Do not enter or perform works within SRZ without your arborist onsite or with specific information provided.

7.0 Possible Impact upon Trees to be Avoided or Managed

Footings must be outside the SRZ and by Pier and beam construction within **Modified NRZ.** Careful hand digging to locate piers to avoid roots 2cm or greater must be undertaken.

Ideally the existing paving can be retained to protect the soil and roots within the modified NRZ.

Installation of new paving must be entirely above existing grade as roots are just below the soil surface and are easily damaged.

Works processes near trees causes compaction leading to whole tree decline. For this reason soil surface protection measures are necessary.

Installing tree protection measures prior to all other works will avoid inadvertent damage to tree roots and growing area. Drainage installation must be considered and be outside the SRZ of nearby trees.

8.0 Conclusion

Trees nearby on adjacent land were assessed and these can be retained and protected within the works proposed, if protection measures of tree roots within the site are followed as discussed in the tree protection measures section of this report.

Specific set back distances are provided in Table 1. Diagrammatic representation of tree protection measures is provided in Appendix A4, with general information provided in Appendices C1, C2, and C3.

4 As per AS 4970: Australian Standard AS 4970 – 2025 *Protection of trees on development sites*. NRZ - Notional Root Zone

and Appendix E. The root zone of the subject adjacent trees must be protected to ensure their stability and survival.

A pre works discussion must be had between the site manager/ builder and the project arborist.

9.0 Recommendations

To minimise the impact upon the retained trees, works must be performed to distances provided in Table 1, Appendix E and as discussed in Appendices C of this report.

Where any plan variations are proposed, within the NRZ of retained trees, your project arborist (AQF 5) should be consulted.

The site manager and all contractors entering the site, must be advised of Tree protection requirements, and a copy of this report available on-site. The most relevant sections of the report are *Appendix A4 – Indicative Tree Protection Diagram*, Section 6, 7 and Appendices C.

Please contact me directly on 0417 022 692, if any sections of this report require clarification.

Sue Wylie
Principal Arboriculturist
TreeTalk Arboricultural Consulting
Diploma of Horticulture (Arboriculture)
Australian Qualification Framework (AQF5)

Bibliography
References

Harris R.W., Clark, J.R., Matheny N., (2004) *Arboriculture – Integrated Management of Landscape Trees, Shrubs and Vines*. Pub. Prentice Hall, New Jersey USA

Lonsdale, D. (1999) *Principles of Tree Hazard Assessment and Management*, Pub. Forests Commission, The Stationery Office, London.

Mattheck, C., and Breloer, H., (2003) *The Body Language of Trees – A handbook for failure analysis*. Research for Amenity Trees No 4. Pub. The Stationary Office London.

Shigo, Alex L. (1991) *Modern Arboriculture - Touch Trees*, Pub. Shigo and Tree Associates, Snohomish, WA, USA.

Smiley, Thomas E; Matheny, Nelda; Lilly, Sharon (2011!) *Best Management Practices – Tree Risk Assessment*. The International Society of Arboriculture (ISA).

Standards Australia (2007) Australian Standard AS4373-2007 *Pruning of Amenity Trees,* Pub. Standards Australia, Sydney.

Standards Australia (2025) Australian Standard AS4970-2025 *Protection of Trees on Development Sites*, Pub. Standards Australia, Sydney. Licensed to Ms. Sue Wylie

Useful References

Planting / Pruning
http://hort.ifas.ufl.edu/woody/documents/RPG%20Tree%20Planting%20Cue%20Card[1].pdf
www.mortonarb.org/trees-plants/tree-and-plant-advice/horticulture-care/how-plant-trees

Tree Benefits
www.mortonarb.org/trees-plants/benefits-trees/sources-benefits-trees
www.treesaregood.com/treeowner/treeownerinformation.aspx
www.treesaregood.com/treecare/resources/WhyToppingHurts.pdf
www.treesaregood.com/treecare/resources/New_TreePlanting.pdf
www.naturewithin.info/
www.greenhealth.washington.edu
www.isa-arbor.sk/dokumenty/Tree_stability_%20Engels_Peter%20Sterken.pdf
http://hort.ifas.ufl.edu/woody/

Weeds
www.environment.nsw.gov.au/cpp/WeedRemovalFactsheets.htm

Environmental References
https://actforbees.org/resources/gardening-for-bees/
www.beesbusiness.com.au/articles/Choosing_plants_to_attract_native_bees.pdf
www.aussiebee.com

Local References

Age of Tree:

Young: Less than 1/3 life expectancy

Semi-mature: 1/3 to 2/3 life expectancy
Mature: Older than 2/3 life expectancy
Over-Mature /Senescent: Older than 2/3 life expectancy and showing signs of irreversible decline

Condition of tree:

Good: Tree is generally healthy and free from and obvious signs of structural weakness or significant adverse effects of pests and diseases or infection.

Fair: Tree is generally vigorous although has some indication of being adversely affected by the early effects of disease or infection or environmental or mechanical damage. Appropriate tree maintenance can usually improve trees overall health and halt decline.

Poor: Tree in decline and is not likely to improve with reasonable maintenance practices or has a structural fault such as bark *inclusion*.

Dead: Tree no longer capable of sustained growth

Diameter at breast height (DBH): The trunk diameter at 1.4 m above ground level

D arb = Ø = Trunk diameter, in m, measured above the root buttress.

Development Works: Includes any physical activity in relation to land that is specified by the determining authority.

Included Bark: Patterns of development at branch junctions where bark is turned inwards rather than pushed out. – A potentially weak attachment.

Project Arborist: The person responsible for carrying out the tree assessment, report preparation, consultation with designers, specifying tree protection measures, monitoring and certification. The project arborist will be suitably experienced and competent in arboriculture, having acquired through training, qualification (minimum Australian Qualification Framework (AQF) Level 5, Diploma of Horticulture (Arboriculture)) and/or equivalent experience, the knowledge and skills enabling that person to perform the tasks required by this Standard.

Structural Root Zone (SRZ): The area around the base of a tree required for the tree's stability in the ground. The woody root growth and soil cohesion in this area are necessary to hold the tree upright. The SRZ is nominally circular with the trunk at its centre and is expressed by its radius in metres. This zone considers a tree's structural stability only, not the root zone required for a tree's vigour and long-term viability, which will usually be a much larger area.

Tree: Long-lived woody perennial plant greater than (or usually greater than) 3 m in height with one or relatively few main stems or trunks (or as defined by the determining authority).

Tree Protection Zone (TPZ): A specified area above and below ground and at a given distance from the trunk set aside for the protection of a tree's roots and crown to provide for the viability and stability of a tree to be retained where it is potentially subject to damage by development.

Notional Root Zone (NRZ): represents the ideal, theoretical root protection and management area, i.e. 12 x trunk diameter at DBH/DSH. Encroachment Minor ≤ 10%, Moderate 10 - 20% , Major >20%.

TMO/TPO Tree Management Order/ Tree Preservation Order – Legislation (usually part of Local Environment Plan (LEP) directing management of trees and vegetation).

ULE: Useful Life Expectancy (after Barrell) (see table in following Appendix).

Vigour: Ability of a tree to sustain its life processes. The term 'vigour' in this document is synonymous with commonly used terms such as 'health' and 'vitality'.

[1] Australian Standard 4970-2025: *Protection of trees on development sites* Licensed to Ms Sue Wylie

Limitations

Trees are dynamic living structures, growing and adapting to conditions around them. A Tree's condition will change and vary over time depending on weather, environmental factors and mechanical or human interaction.
Assessment is limited to the conditions at the time of the inspection and only trees discussed in the report have been assessed. Plans used to assess likely impact are those appended (Appendix A).

Ongoing monitoring of all nearby trees is advised and where significant changes are observed, further advice should be requested. Unusual developments or sudden changes in a tree's condition should be addressed immediately.

There should be **NO changes within the Structural Root Zone** (SRZ) of a tree without specific arboricultural advice and supervision being provided from an experienced AQF Level 5 arborist.
This also applies to underground utilities and services such as plumbing/gas/drainage and can also apply to landscaping works such as paving below existing grade and fill greater than 10cm above grade.

Photographs are inserted as a guide to matters discussed however these could be misleading and may exaggerate or minimise the elements under discussion. The text should be the main guide to the importance of images and diagrammatic representation on plans.

This report is primarily about tree protection measures as they relate to the works proposed (as given in the attached plans) and does not necessarily address tree maintenance or tree management works required.

The report is to be considered in its entirety and where unclear clarification should be sought.

Interesting Native Species for the Site

Shade/ Canopy Trees

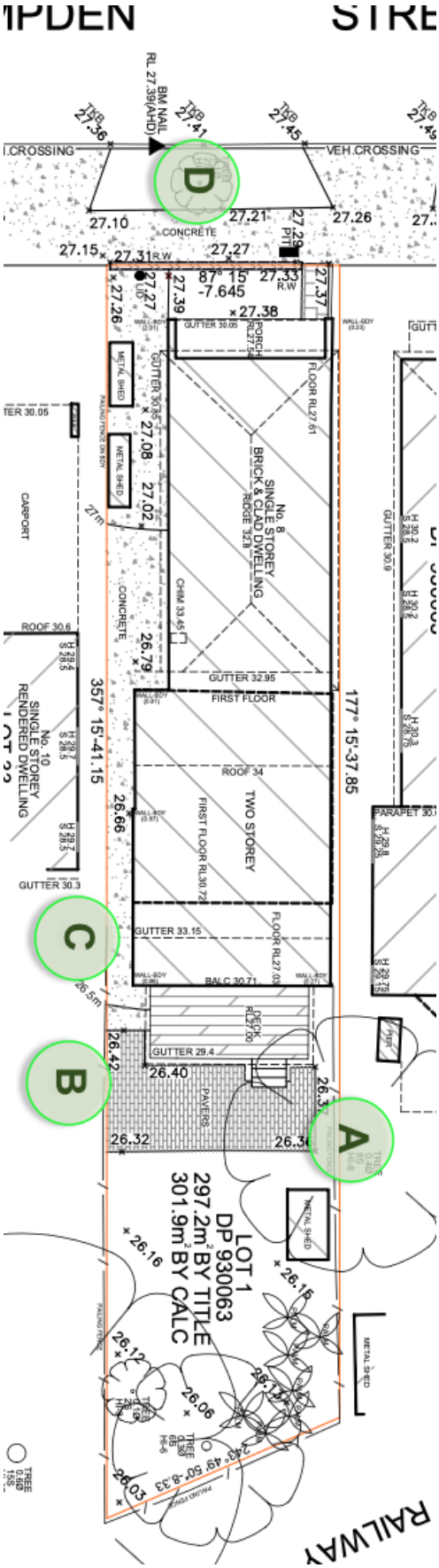
Stenocarpus sinuatus Firewheel Tree,
Eucalyptus sideroxylon Red Ironbark
Eucalyptus haemastoma *Scribbly Gum*
Corymbia eximia Yellow Bloodwood
Brachychiton discolor Lacebark Kurrajong
Brachychiton acerifolius Illawarra Flame tree
Hymenosporum flavum Native Frangipani

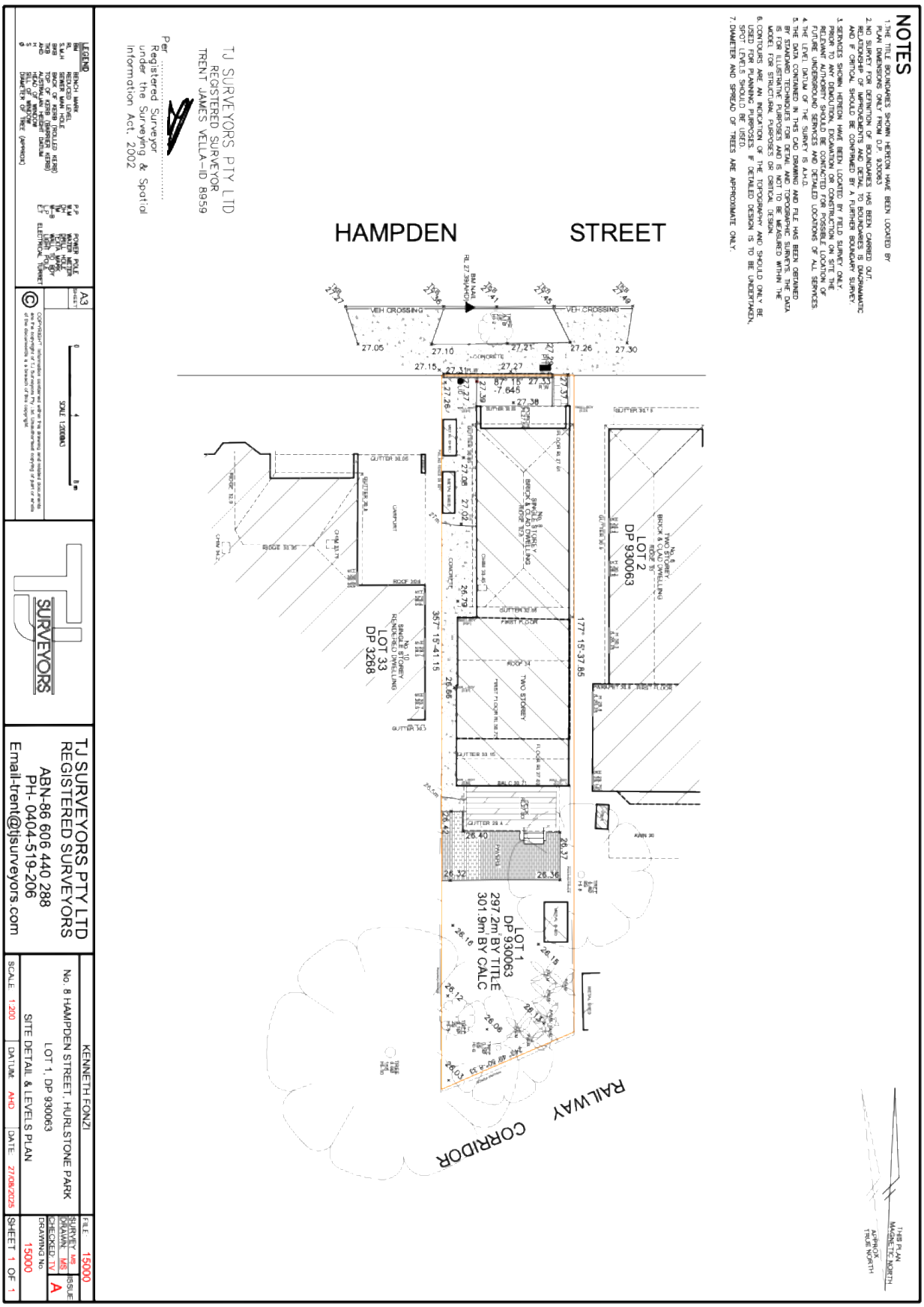
Shrubs

Angophora hispida Dwarf Apple
Acacia fimbriata *Fringed Wattle*

Screening

Waterhousea floribunda Weeping Lilly Pilly
Elaeocarpus kirtonii Silver Quandong
Banksia integrifolia Coastal Banksia
Backhousia citriodora Lemon-scented Myrtle


HAMPDEN STREET
BM NAIL RL 27.39(AHD)
CROSSING
VEH.CROSSING
CONCRETE
27.10
27.15
27.21
27.26
27.31 R.W
27.27
27.33 R.W
87° 15'
-7.645
27.38
27.39
27.37
27.26
GUTTER 30.05
PORCH RL27.54
METAL SHED
GUTTER 30.7
27.08
27.02
FLOOR RL27.61
No. 8 SINGLE STOREY BRICK & CLAD DWELLING RIDGE 32.8
CARPORT
27m
CHIM 33.45
CONCRETE
ROOF 30.6
26.79
GUTTER 32.95
FIRST FLOOR
357° 15' 41.15
177° 15' 37.85
No. 10 SINGLE STOREY RENDERED DWELLING
ROOF 34
TWO STOREY
FIRST FLOOR RL30.72
26.66
GUTTER 30.3
GUTTER 33.15
FLOOR RL27.03
BALC 30.71
26.5m
DECK RL27.00
GUTTER 29.4
26.42
26.40
PAVERS
26.32
26.3
LOT 1 DP 930063 297.2m² BY TITLE 301.9m² BY CALC
26.16
26.15
26.12
26.06
242° 49' 50" 3.33
26.03
RAILWAY
A
B
C
D


NOTES
1. THE TITLE BOUNDARIES SHOWN HEREON HAVE BEEN LOCATED BY PLAN DIMENSIONS ONLY, FROM D.P. 930063.
2. NO SURVEY FOR DEFINITION OF BOUNDARIES HAS BEEN CARRIED OUT, AND IF CRITICAL SHOULD BE CONFIRMED BY A FURTHER BOUNDARY SURVEY.
3. SERVICES SHOWN HEREON HAVE BEEN LOCATED BY FIELD SURVEY ONLY. PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON SITE THE RELEVANT AUTHORITY SHOULD BE CONTACTED FOR POSSIBLE LOCATION OF UNDERGROUND SERVICES AND DETAILED LOCATIONS OF ALL SERVICES.
4. THE LEVEL DATUM OF THE SURVEY IS AHD.
5. THE DATA CONTAINED IN THIS CAD DRAWING AND FILE HAS BEEN OBTAINED BY STANDARD TECHNIQUES FOR DETAIL AND TOPOGRAPHIC SURVEYS. THE DATA IS FOR ILLUSTRATIVE PURPOSES AND IS NOT TO BE MEASURED WITHIN THE MODEL FOR STRUCTURAL PURPOSES OR CRITICAL DESIGN.
6. CONTOURS ARE AN INDICATION OF THE TOPOGRAPHY AND SHOULD ONLY BE USED FOR PLANNING PURPOSES. IF DETAILED DESIGN IS TO BE UNDERTAKEN, SPOT LEVELS SHOULD BE USED.
7. DIAMETER AND SPREAD OF TREES ARE APPROXIMATE ONLY.
HAMPDEN STREET
VEH CROSSING
VEH CROSSING
LOT 2 DP 930063
LOT 1 DP 930063 297.2m² BY TITLE 301.9m² BY CALC
LOT 33 DP 3268
No. 10 SINGLE STOREY RENDERED DWELLING
No. 6 TWO STOREY BRICK & CLAD DWELLING
TWO STOREY
SINGLE STOREY BRICK & CLAD DWELLING
CARPORT
RAILWAY CORRIDOR
177° 15' 37.85
357° 15' 41.15
TJ SURVEYORS PTY LTD
REGISTERED SURVEYOR
TRENT JAMES VELLA–ID 8959
Per .....
Registered Surveyor
under the Surveying & Spatial Information Act, 2002
LEGEND
SURVEYORS
TJ SURVEYORS PTY LTD
REGISTERED SURVEYORS
ABN-86 606 440 288
PH- 0404-519-206
Email-trent@tjsurveyors.com
KENNETH FONZI
No. 8 HAMPDEN STREET, HURLSTONE PARK
LOT 1, DP 930063
SITE DETAIL & LEVELS PLAN
SCALE 1:200
DATUM AHD
DATE 27/08/2025
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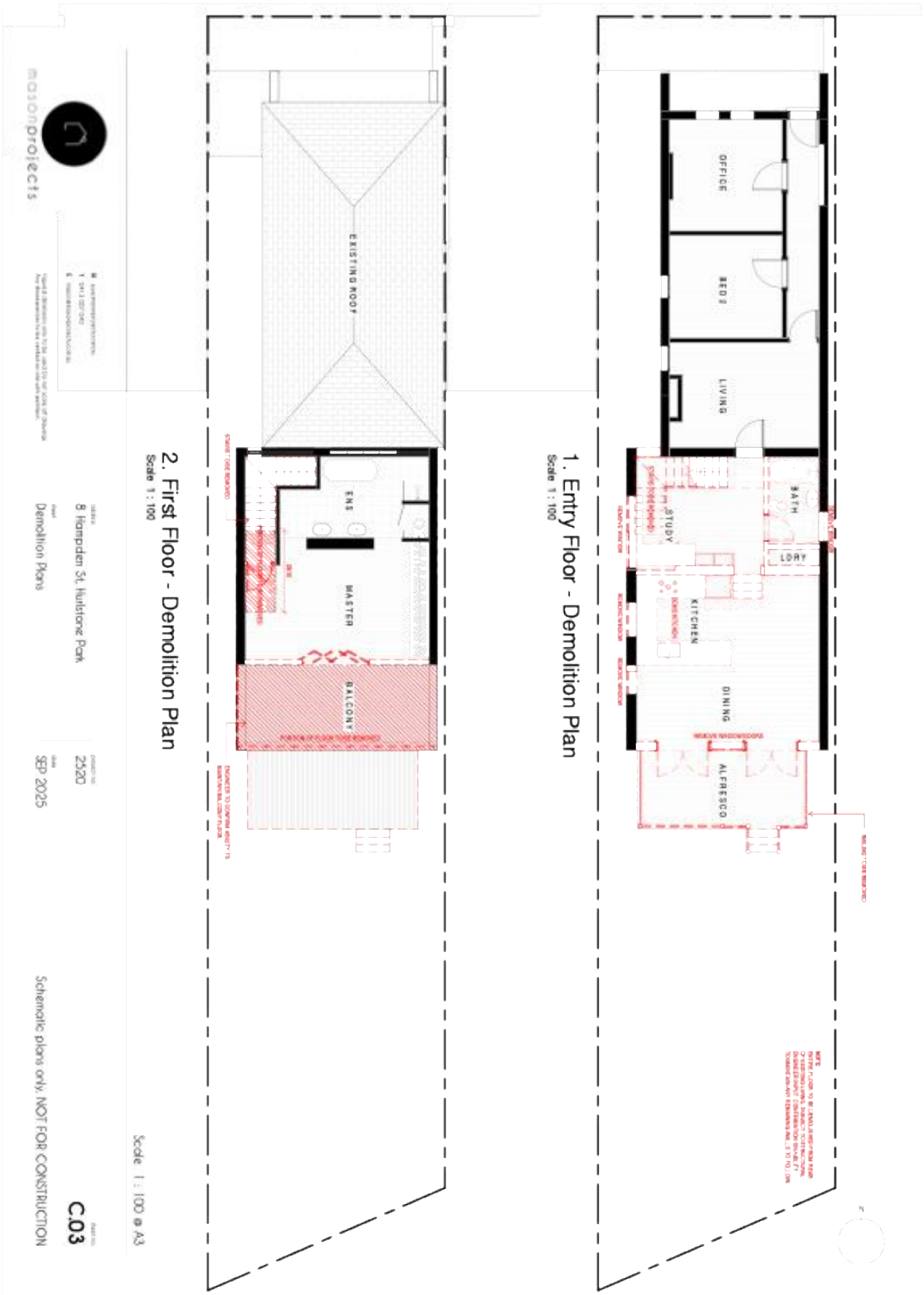
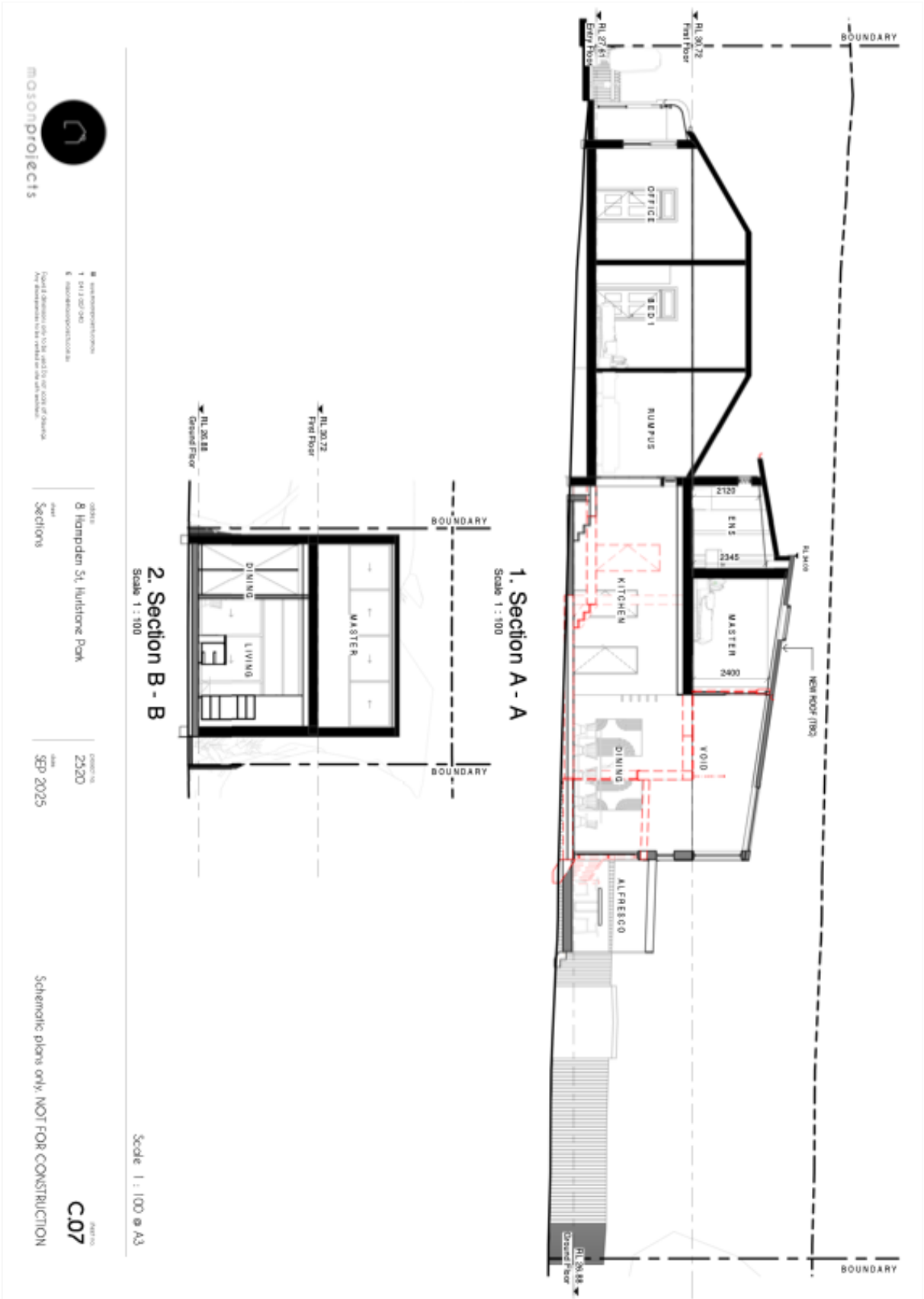
SURVEY MB
DRAWN MB
CHECKED TV
ISSUE A
DRAWING No. 15000
SHEET 1 OF 1


masonprojects
8 Hampden St, Hurlstone Park
Demolition Plans
2520
SEP 2025
C.03
Schematic plans only. NOT FOR CONSTRUCTION
Scale 1 : 100 @ A3
2. First Floor - Demolition Plan
Scale 1 : 100
EXISTING ROOF
ENS
MASTER
BALCONY
1. Entry Floor - Demolition Plan
Scale 1 : 100
OFFICE
BED 2
LIVING
STUDY
BATH
LDRY
KITCHEN
DINING
ALFRESCO


Boundary 7.65 m
EXISTING STREET SETBACK
OFFICE
BED 2
RUMPUS
BATH
LDRY
KITCHEN
PTRY
LIVING
DINING
ALFRESCO
LAWN
Boundary 37.84 m
Boundary 41.15 m
Boundary 8.33 m
LOT 2 DP 830063
LOT 33 DP 3268
CALCULATIONS
LEGEND
EXISTING WALLS TO REMAIN
PROPOSED NEW WALLS
PROPOSED NEW STRUCTURES
EXISTING WALLS & STRUCTURES TO BE REMOVED - TYPICAL
masonprojects
8 Hampden St, Hurlstone Park
Ground Floor Plan
2520
SEP 2025
C.05
Scale As indicated @ A3
Schematic plans only. NOT FOR CONSTRUCTION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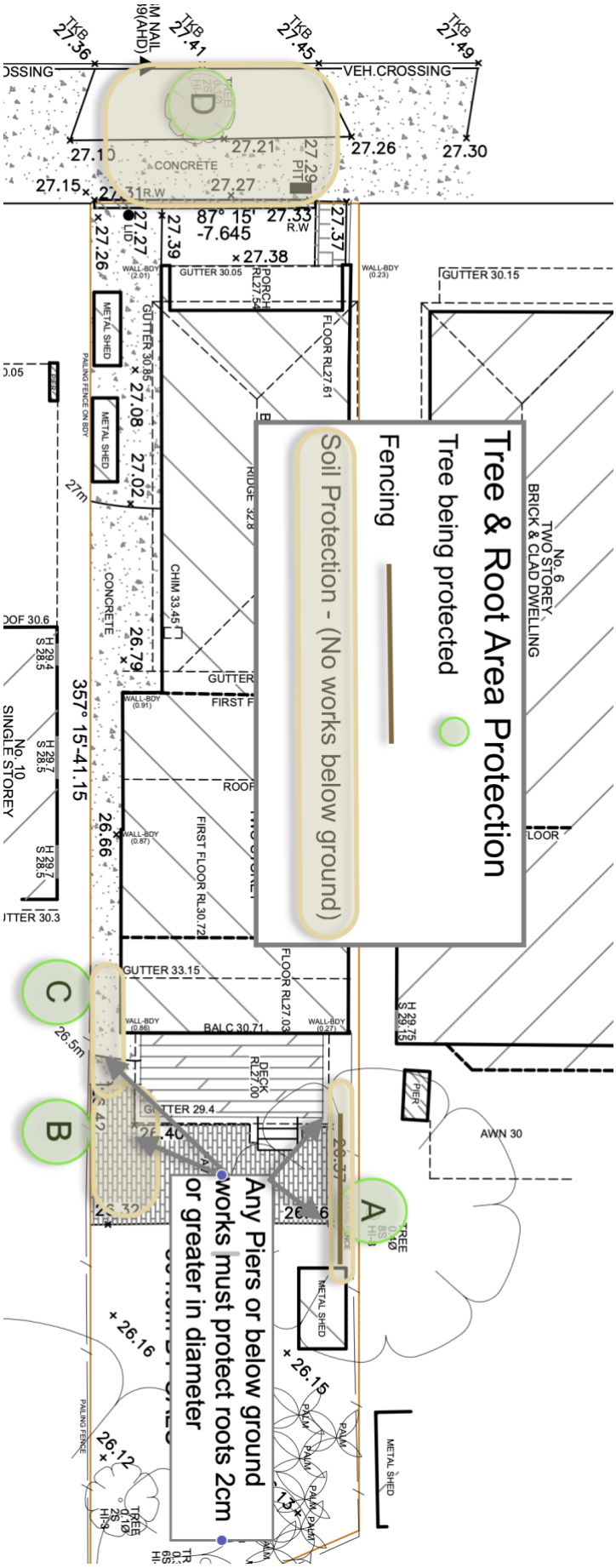
8 Hampden St, Hurlstone Park
Sections
2520
SEP 2025
C.07
Schematic plans only. NOT FOR CONSTRUCTION
Scale 1 : 100 @ A3
1. Section A - A
Scale 1 : 100
2. Section B - B
Scale 1 : 100
BOUNDARY
RL 27.61 Entry Floor
RL 30.72 First Floor
RL 26.88 Ground Floor
OFFICE
BED 1
RUMPUS
ENS
2120
2345
KITCHEN
MASTER
2400
DINING
VOID
ALFRESCO
NEW ROOF (TBC)
LIVING
DINING
MASTER

Appendix A4

Indicative* Tree Protection Plan

overlaying enlarged section of Survey by TJ Surveyors, File 1500, Dwg No: 150/Issue A, Sheet 1 of 1, Dated 27/08/25

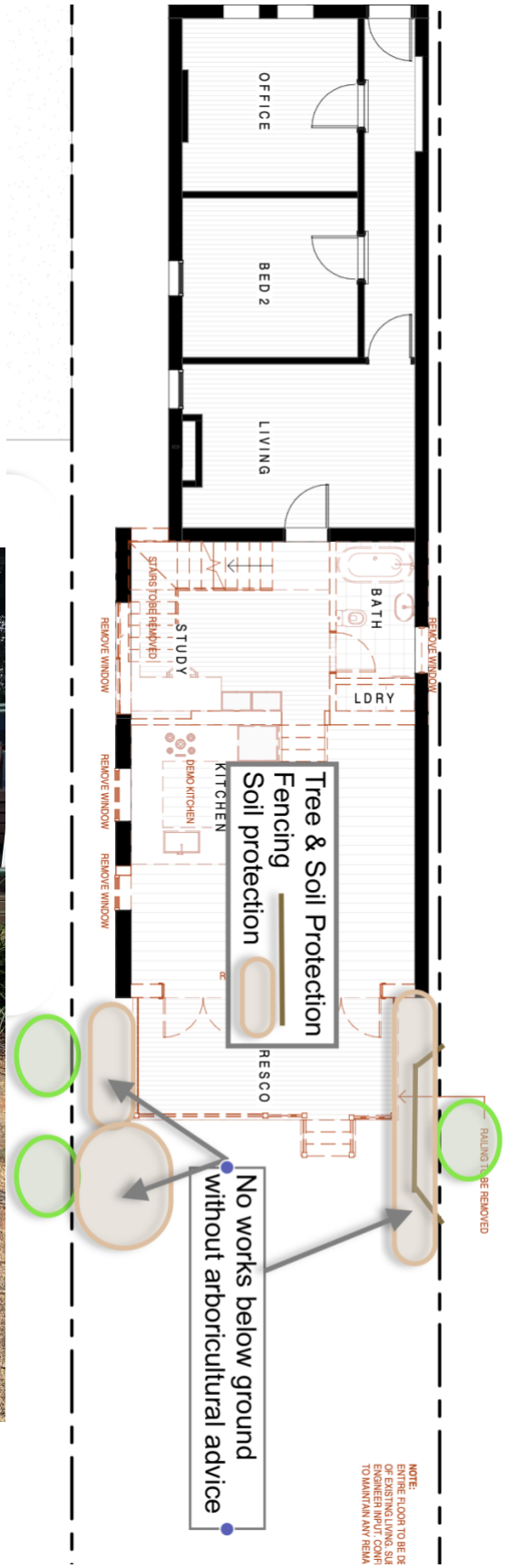
***Note: Distances given in Table 1 (page 7) must be applied**

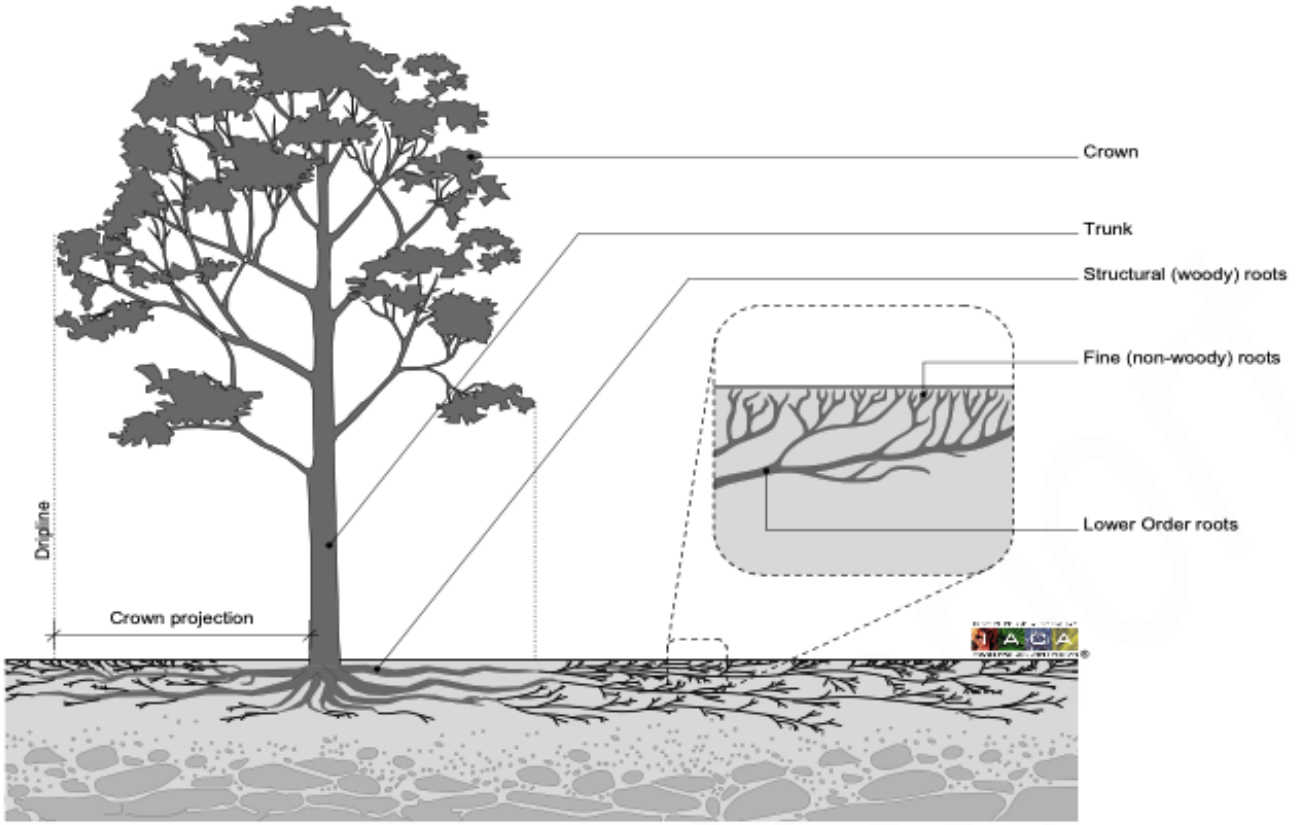


Appendix A4i

Indicative* Tree Protection Plan

overlaying enlarged section of plan by Mason Projects, Project No: 2520, Sheet No: C.03, Dated Sept 2025





- Most tree roots are in the top 30cm of soil and are easily damaged by compaction and the loss of air spaces necessary for healthy survival. Soil compaction is a common cause of tree decline on development sites.

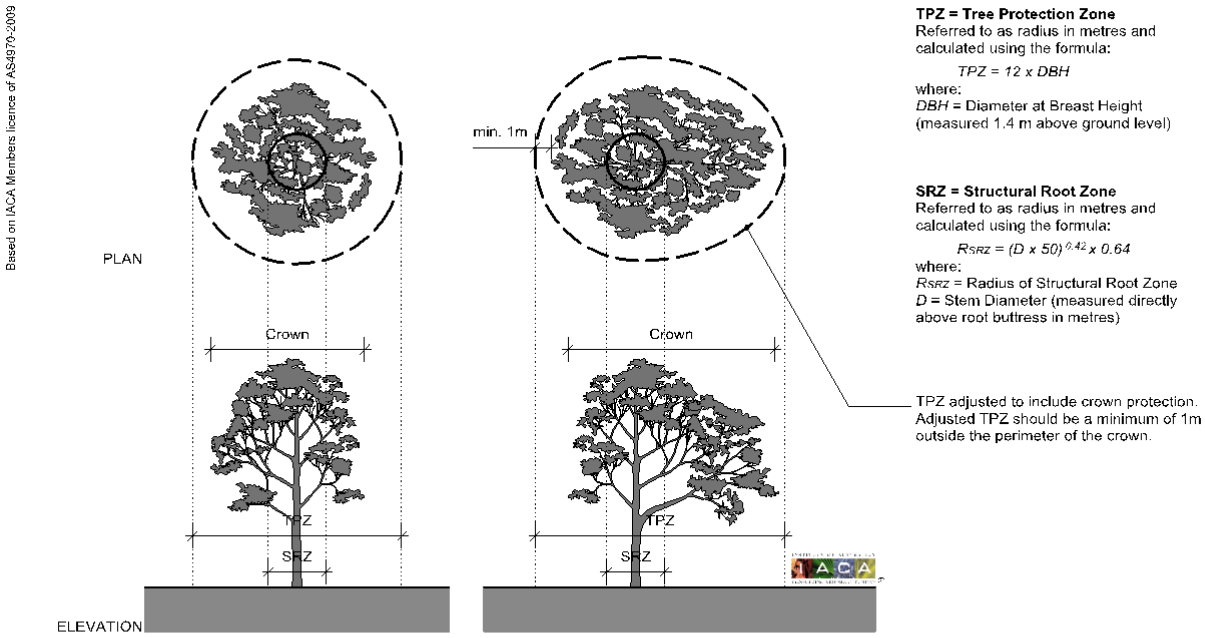
- Protection of tree roots requires that all activity be managed (and preferably eliminated within the Tree Protection Zone) with fencing (i.e. 12 times trunk diameter or as otherwise specified in the report).

- Roots fall into two main categories:
    - **Structural woody/Critical roots (SRZ):** These roots are instrumental in tree anchorage and structural support, nutrient storage and nutrient transport.
    - **The** fine/smaller **non-woody roots (TPZ & NRZ)** are important in water and nutrient absorption as well as other functions important to tree health and survival.

- During site works demolition teams, builders and other workers on site will gravitate towards these green shady “different” areas, unaware of the damage they can cause, by compacting or contaminating the soil.

- Damaged trees are a liability and ongoing expense.

- Existing vegetation, particularly trees, are valuable assets that can continue to contribute to the property value long after new works have been completed.
- If well managed and protected trees provide an amenity to the immediate area and an environmental benefit to the wider community.



Indicative Tree Protection Zone (TPZ) Scale 1:500 @ A4

The theoretical Notional Root Zones (NRZ) of trees being retained, are given in the appended Tree Protection Calculations section of the report (Appendix E).

Works within the area of small roots Notional Root Zone (NRZ)

- Minimising soil compaction, by isolating most of the NRZ from works is important in the early stages of site works. Heavy equipment (such as those used in the demolition and the site preparation process) passing over the roots (or materials stockpiling) is detrimental to both the tree as well as the soil proposed for future plant growth (later landscaping).

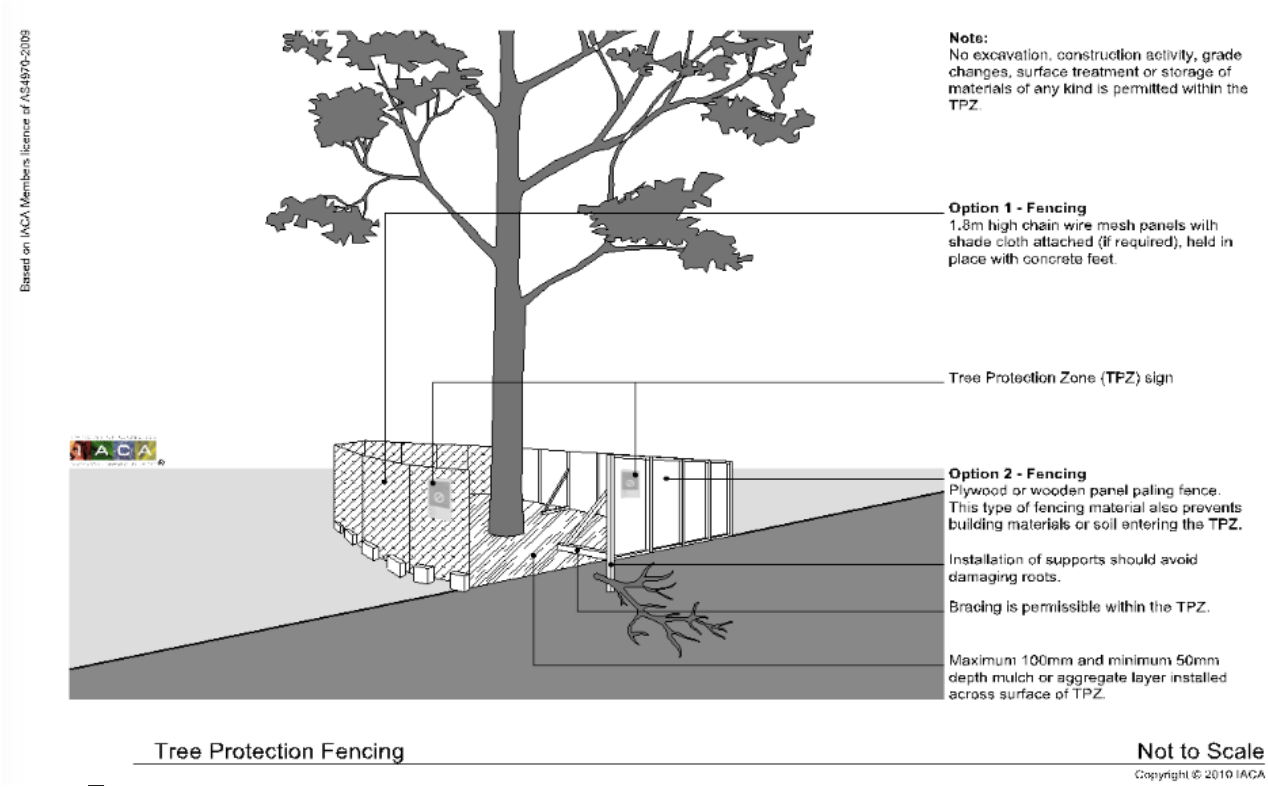
- If works are proposed within the NRZ by and area of greater than 10%,

Works within Structural Root Zone SRZ

- Where works are required near large roots i.e. those within the SRZ, it is essential to avoid damaging these roots that are providing tree anchorage. Failure to do so is likely to create a dangerous tree that could fall.
- All works within SRZ should be above ground and to specific arboricultural specifications (provided by your AQF Level 5 arborist and preferably with them on site).
- Consideration may be required such as root mapping (careful exploratory digging using hand tools) to locate any large roots - 3cm or greater in diameter) and to find suitable locations. Piers for pier and beam construction are the only work possible.
- Piers must avoid roots with 20 – 30mm plus diameters.

"*The Tree Protection Zone is the area around the tree or group of trees in which no grading or construction activity may occur. This area should be large enough to retain sufficient root or crown area to maintain tree health and stability.* "[5]

* The acronym SULE was originally devised by Jeremy Barrell and although superseded is still acknowledged by the NSW Land & Environment Court as a tree rating. ** The original category of Safe is considered inappropriate and is no longer used.



Tree Protection should be the first works on site: Protecting trees and vegetation being retained by isolating it with fencing is easier and far less expensive than later replacement or re-establishment.

Exclusion of Activity Inside the NRZ

- Each tree to be retained should be fenced off to the extent of the Notional Root Zone excluding all activity unless otherwise indicated in the report. The fencing is to exclude storage of materials, site sheds, machinery, run off (e.g. concrete, or chemical treatments), the movement of pedestrian or vehicular traffic, the temporary, location of services, e.g. trenches, pits or canals.

- No works should be performed within the fenced area without specific consideration given. This includes mechanical scouring of existing vegetation and changes of soil levels (either the addition or removal).

- Where access is required adjacent to a tree e.g. along a driveway trunks and branches will require protection (see Appendix C2).

FENCING

- **For large significant trees** fencing should be 1.8m in height of cyclone chainmesh Hire from - temporary fencing companies or similar. Other vegetation can be isolated using star pickets and orange parra-webbing. Available at local hardware outlets

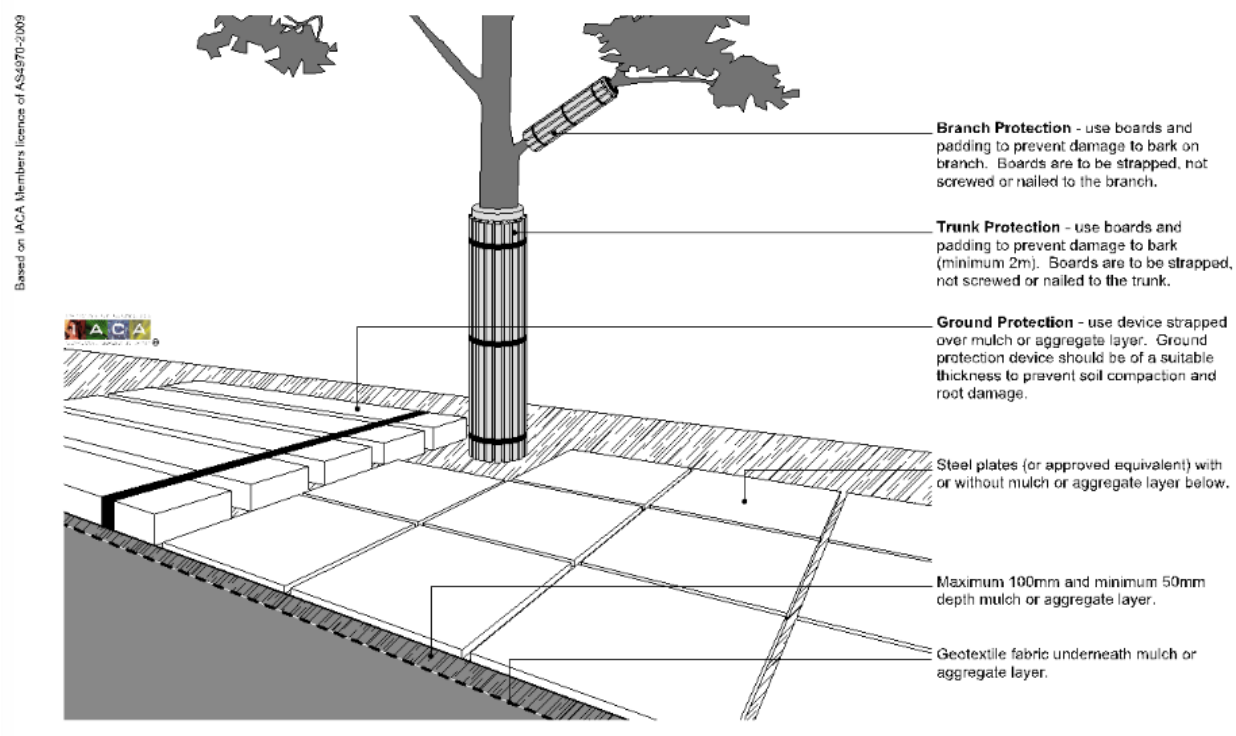
Site Signage on the fencing reminds workers of specific reasons for the fencing – for example:

'This fencing is not to be moved'.

'This Tree Protection Zone is to isolate vegetation from the building process'.

No equipment or materials are to enter or be stored within the fenced area and no chemicals or run off enter this protected zone.

Should fencing need to be moved for any reason first contact …Site Manager on 9999 9999 or Arborist on 0417 022 692'.



WORKS CLOSE TO A TREE

Trunk Protection

Where a tree trunk is likely to be knocked (e.g. site access along a driveway) it must be protected from possible damage.

Protection material may be hessian, carpet, underfelt (or similar breathable material) with timber planks attached with wire or rope, encircling the materials (not into trunk).

Protection material should cover from the base of the tree to 2m (or to a level that is likely to be damaged by passing equipment) branch protection may be required.

Where access or works within NRZ are required soil surface protection must be installed i.e. a platform (constructed of steel material or timber/rumble boards capable of supporting and distributing the weight over a layer of mulch) and geotextile fabric (see diagram above).

Branch & Foliage Protection

To accommodate works some pruning might be required.

All pruning should be performed by a Qualified Tree Surgeon to ensure pruning is to AS 4373- 1996 ‘Australian Standards for Pruning Amenity Trees, see Appendix D). (If greater than 10% council approval may be necessary).

MULCH

Mulch is a blanket of insulating material that helps maintain soil moisture reduces the effects of temperature fluctuation and assists in weed reduction. Organic mulch is preferable as it also improves soil condition. Mulch such as Eucalyptus Wood mulch is ideal for use on development sites and should be placed to a depth of 70-100mm within the Tree Protection Zone or drip zone. The area immediately around the trunk should be kept clear of mulch to ensure no moisture builds up at the base of the trunk. It is also a barrier used in exceptional circumstances to assist with reducing soil compaction with vehicular access.

Tree protection measures for tree/s being retained will include isolating each to the extent of NRZ/approved works **before any other works begin**. And, maintaining the soil area in its existing condition until the landscaping phase (see Appendices A4 and C1).

Both above and below-ground sections of each retained tree requires protection.
Install fencing (as shown in Appendix C1) around each tree or tree group to NRZ. Where this is not possible or where works or access are required near a tree, wrap trunk, and install mulch and rumble boards (Appendix C2) and isolate root zone as diagrammatically represented on plans in Appendix A4 (to distances in Table 1).

NRZ

To protect soil from compaction or contamination, storage of material must be outside the NRZ.
Where access is required within the NRZ the area should be mulched and rumble boards added (as per Appendix C2). Where there are difficulties isolating tree and tree root zones from works processes, please discuss this further with your project arborist for a tree sensitive solution.

Engineering, drainages, or services works must be outside SRZ and most of NRZ. Alternatively, they must be considered by your project arborist. If these are not discussed in the report; they have not been considered.

There must not be any level changes within the NRZ by an area greater than 10% (as per AS4970) unless specific arboricultural consideration is given to the works proposed.

Surfaces

Removal of surfaces, under trees being retained, must be performed with care using hand tools. Do Not mechanically scour, as this will detrimentally impact on roots, which are near the surface.

Installation of surfacing – paving/roadways/driveways and all associated works **must be above existing grade** - and performed with consideration of tree roots below. Allowance must be made for the depth of these new surfaces, **the base/framework /bottom of which must be above existing grade.**

SRZ

Any works within SRZ requires that specific and detailed arboricultural assessment be undertaken.
Where access is required within the SRZ the trunk must be isolated/wrapped, the area mulched, and rumble boards added as per Appendix C2.
Footings for works or boundary fencing within NRZ - **must be of pier and beam construction** - NOT strip footings – with exploratory investigation for a suitable location of piers that avoids roots ≥ 3cm in diameter.

Site Preparation

1. To ensure that adequate tree protection is in place, it is important that protection measures are the first works on site. Retained trees must be fenced to the extent of the NRZ or to specific distances given in the report (see Table 1).
2. Where access is required within the NRZ, wrap the trunk, and protect soil within NRZ with geotextile fabric, mulch, and rumble boards where fencing is not possible (this must be specifically discussed).
3. Consider branches that may interfere with works process and manage or prune (See Appendix D).
4. Consider where materials are to be stored and keep this outside tree protection zones.
5. Protect retained tree from works processes run-off, and particularly slurry or materials that can change soil chemistry, as this is detrimental to, particularly, native trees.

   - DO NOT CHANGE SOIL LEVELS within NRZ without arboricultural advice (Tree roots are usually located in the top 30cm of soil and reductions in soil level can remove most of a tree's roots. Additionally, and increases in soil can reduce available air to roots and cause them to decline, increase maintenance costs or die).

Table 3: Tree Protection at Stages of Works

Works Phase	Protection Required	Solution
Site Preparation	Protect Tree canopy, trunk, and roots with clear separation from work processes	Install tree isolation fencing as per distances given in Table 2. (Protect soil where staged works are proposed within the SRZ). Install soil surface and run-off protection for NRZ.
Pruning	Canopy	Prune as/if discussed in report before tree is damaged by works. (See report for specification and Appendix D for method) Note that approval may be required.
Site Works	Protect tree canopy, trunk, and roots. Maintain soil in current condition. Protect soil and roots run-off	Maintain soil surface protection and retain fencing. All contractors must be made aware of the importance of retaining tree protection measures and avoiding damage to vegetation being retained.
Services	Maintain soil in current condition	Install all services outside tree protection area. No excavation below existing grade without specific arboricultural advice being provided.
Landscaping	Soil and tree roots zone Cut and Fill	No significant level changes **No reduction in soil level** within SRZ **No fill** over 10cm unless it is with ***structural soils***.

Do not perform works within SRZ without your arborist on site & specific information provided.

Pruning must be to perform by a suitably qualified arborist to *Australian Standard for Pruning of Amenity Trees* (AS4373-2007) as indicated in Appendix D*ii*.

Cut first order branch of northerly branch at 1.8m back to branch collar (about 20cm in diameter)

Poor pruning practices can lead to dangerous trees, introduce disease and cause a tree to decline in health. All tree works recommended in this report should comply with the **Australian Standard for Pruning of Amenity Trees AS4373-2007 and** be performed by a suitably qualified and experienced tree worker/surgeon, preferably with membership of a recognised organisation e.g. Arboriculture Australia (AA), Tree Contractors Association (TCA).

Tree works by unqualified, inexperienced or well-meaning cutters who do not perform works to AS 4373 can lead to many long-term and detrimental effects on the tree.

Tree Safety concerns:

- Topping, lopping and structural root removal (roots >3cm Ø) are inappropriate tree works, likely to create hazardous trees.
- Excessive pruning can lead to inappropriate growth such as the excessive development of epicormic shoots.
- Epicormic shoots are emergency growth to provide short-term nutrient supply, are not strongly attached and can fall as they become heavier.

Tree Health concerns include:

- Disease can be introduced onto a site or be transferred between trees by unclean equipment.
- **All equipment should be cleaned before use & between trees 10% bleach/ 90% water** or **70 % Metho / 30% water.**
- Where a tree is suspected of being diseases the wood should be disposed of with care and not used for mulch.
- Poorly maintained equipment such as unsharpened blades, promotes jagged or poor cuts, leading to unnecessary stress and greater chance of disease entry and insect attack.
- A tree's natural defence and protection systems can be weakened by inappropriate cutting
- Cutting to inappropriate points along a branch (i.e. lopping) encourages weakly attached regrowth that can fail.

Considerations Before Pruning

Trees in the urban area require management to fit in with our requirements. Trees do not in themselves require pruning. Removal of live wood (stored sugars) and foliage must be kept to a minimum.
A tree will naturally optimize its use of light (foliage) and space (particularly roots). When we interfere with this process by removing live foliage we interrupt or reduce the tree's ability to photosynthesise and produce the sugars required for health and vigour.
Where we cut branches, the tree must use stored sugars to manage the cut surface with defences to insect and disease.

Removal of deadwood as well as diseased and damaged wood are normal maintenance procedures to limit the impact on us.
Removal of deadwood in Urban Trees is necessary in high traffic areas as part of the maintenance regime. Excessive deadwood production needs investigation.

From AS4373 - *The tree should not be adversely affected by pruning.*
Prior to pruning being prescribed or undertaken a thorough inspection of the tree should be carried out by a person competent in arboricultural assessment (minimum AQF Level 3). This should include an assessment of the tree's health, growth habit, structure, stability and growing environment. The need for pruning should be determined. If pruning is required, then the current and subsequent pruning requirements should be specified

Good Tree Management: Pruning is creating minimal adverse effects on the tree.
Pruning is defined as considered cutting to branch collars (the location of many tree defences) Not damaging the collar.

Poor / Inappropriate Tree works include:
Lopping – Random cutting at a point between branch unions (i.e. not to branch collars).
Topping - Removal of the upper part of a tree reducing its height by Lopping and
Flush Cutting – removal of or damage to the branch collar.

STANDARD OF WORKS
All pruning work must be undertaken in accordance with Australian Standard 4373–2007, Pruning of Amenity Trees.

All pruning works must be carried out by an experienced and qualified Arborist, with a minimum (AQF) of Level 3.

Choose a Professional Tree worker/surgeon who:

- Conducts their business according to The Code of Practice for The Amenity Tree Industry.
- Performs works to Australian Standard for Pruning of Amenity Trees, 4373–1996
- Carries CURRENT Public Liability Insurance – Check Certificate of Currency
- Is a member of a recognised, professional organisation such as: Tree Contractors Association (TCAA) or Arboriculture Australia (AA). Membership of these organisations requires that works be performed to appropriate standards. These members are monitored for compliance.
- www.safework.nsw.gov.au › Amenity-Tree-Industry-Code-of-Practice

About the Australian Standard: Pruning of Amenity Trees 4373–2007

This document outlines 'best practice' methods of tree work, written for compliance by arborists. Your chosen tree contractor must be familiar with and perform all works according to the standard.

Appendix E

Tree Protection Calculations as per AS 4970 - 2025

Tree No.	Species	DSH cm	Tree Protection Area	SRZ Radius	Intrusion into SRZ	NRZ Radius	Intrusion into NRZ Area	TPZ	Works nearby/Tree Protection Measures
A	*Melaleuca spp.* (Paperbark / Honey Myrtle)	40cm	72m^2	2.4m	Works processes.	4.8m	17% Works processes.	3m	All nearby works must be entirely above existing grade. Any level reductions must consider roots from this tree to the SRZ of 2.4m. Any new footings must include hand digging to locate and avoid roots 2cm or greater. Consult arborist if roots found.
B	*Camellia japonica* Japanese Camellia	30cm Est.	41m^2	2.0m	Works processes.	3.6m	Paving	2.5m	Any level reductions must consider roots from this tree to the SRZ of 2.0m. Removal and replacement of paving must be performed with care and above existing grade. Consult arborist if roots found.
C	Unidentified species	50cm Est.	113m^2	2.6m	Works processes.	6.0m	Drainage	3.5m	Drainage must be above existing grade. Any level reductions must consider roots from this tree to the SRZ of 2.6m. Consult arborist if roots found.
	Street Tree								
D	*Lagerstroemia indica* Crepe Myrtle	15cm arb	4.5m^2	1.5m	Works access	2.0m	Works access	1.5m	No access within mulched area. Ensure drainage does not impact on tree roots

Appendix F

Tree Data Schedule

#	Species	DSH/ Ø arb	Height x Spread	Heath/ Structure	Amenity Value	ULE	Comments
A	*Melaleuca spp.* Paperbark / Honey Myrtle	40cm Est.	9 x12m	Good/ Good	High	M	Northerly lowest branch may impact on building process. Pruning specifications provided if required. Lowest branch at 1.5m growing to north 18cm diameter at collar.
B	*Camellia japonica* Japanese Camellia	30cm Est.	6m	Good/ Good	High	Long	Roots evident lifting brick paving on site. Any level reductions must consider roots from this tree.
C	Unidentified species	50cm Est.	8m	Good/ Poor	High	Long	Roots evident lifting brick paving on site. Any level reductions must consider roots from this tree.
	Street Tree						
D	*Lagerstroemia indica* Crepe Myrtle	10cm arb	2 x 2m	Good/ Good	High	M	Street tree pruned/lopped. Suckering at base.

Structure/Health: Good Fair Poor **Crown Class:** Dominant. Co-dominant, Intermediate, Suppressed **Useful Life Expectancy (ULE)** Long Medium Short Remove