APRIL 13, 2026

SECOND AMENDED SSDA ARBORICULTURAL IMPACT ASSESSMENT

24,26 & 28 MIDDLE HARBOUR ROAD, LINDFIELD

PREPARED BY LEE HANCOCK CONSULTING ARBORIST AQF LEVEL 5

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Addendum Response to Request for Further Information (RFI)

Project: State Significant Development 24,26,28, Middle Harbour Road, Lindfield

Prepared by: Lee Hancock Consulting Arborist AQF Level 5

DA/Reference Number SSDA-82548708

Date: 13.04.2026

Addendum Number: **Addendum 03**

1. Purpose of this Addendum

This addendum has been prepared to specifically address the matters raised in Further Information (RFI), Conservation programs, Heritage and Regulation (CPHR) Group. Refer to Item 1,2,3,4,&5.

The intent of this addendum is to clarify the information requested, provide additional technical detail, and confirm how the revised documentation satisfies RFI requirements. The Proponent has received feedback from Conservation Programs Heritage and Regulation (CPHR) Group following the submission of the Updated AIA as part of the EIS submission for the SSD (SSD-82548708). The responses are identified in red and references are provided to show where they are addressed in this Second Amended AIA. DATE 13.04.2026

1.04.2026

ITEM 1	Matters of Concern	Requests	Comments Recommended Actions
CPHR	The AIA concludes that Tree 18 cannot be viably retained under the current design. CPHR notes that this tree forms part of a critically endangered ecological community and was originally proposed for retention. In line with the requirement to avoid and minimise impacts under Clause 6.2 of the *Biodiversity Conservation Act 2016* and Section 7 of the *Biodiversity Assessment Method 2020* (BAM, 2020), the viable retention of this tree should be prioritised. At present, no clear justification has been provided to demonstrate why the design cannot be amended to facilitate its retention. **Recommended actions:** • Review and amend the proposal, in consultation with a suitably experienced AQF Level 5 Arborist, to explore whether viable retention of Tree 18 can be achieved. • Address both root-zone and canopy impacts, ensuring the design avoids unacceptable encroachment into the Tree Protection Zone (TPZ). • Provide an updated AIA demonstrating that Tree 18 can be retained viably, including: • updated Tree Protection Specifications (TPS) • updated Tree Protection Plan (TPP). ·		• The retention of Tree 18 has been reviewed the tree is nominated for retention at the insistence of CPHR. • Refer: Amended Appendix C Root Mapping Investigation. Complete Arbor Care Level 5 Arborists Refer Item 3. • Refer: Section 4. Discussion Tree 18. • Refer: Updated Tree Protection Specifications • Refer: Updated Tree Protection Plan. • Canopy impacts have been amended to remove one out reaching branch over roof of residence, resulting in a 10% removal of canopy Compliant with AS 4373 - 2007. Refer: Appendix D. Amended Pruning Application
ITEM 2	Matters of Concern	Requests	Comments
CPHR	Tree 37		The civil engineering plans prepared by Xavier Knight require stormwater in the locations shown that are designed to meet the required function, a realignment cannot be made to these elements. It is proposed in the location of tree 37 that use of vacuum suction truck be used to carefully excavate this area, the works will be undertaken under the supervision of a suitable qualified AQF Leve 5 Arborist as a condition of consent.

ITEM 3			
	The AIA States that Trees 16, 18 &18A are within 3m of each other the root mapping findings, it is assumed that roots 1 4 belonged to Tree 16, Roots 5 -8 belonged to Tree 18.		Root mapping was undertaken by a Suitably qualified AQF Level 5 Arborists of Complete Arbor Care to determine the extent of the subject tree's root system within the proposed impact area. At the time of initial assessment, it was the professional opinion of 3 Arborists Consulting Arborists that the tree would be unlikely to remain viable throughout the proposed construction works due to anticipated root disturbance. However, following further review of current arboricultural research, including adjustments made to the balconies, and further analysis of the site levels in relation to the majority of the root zones and the building, in conjunction with current arboricultural research it has been reevaluated to acknowledged that certain tree species possess the capacity for root grafting, enabling the transfer of water, nutrients and photosynthates between interconnected root systems. The process , known as inosculation, may improve trees' tolerance to partial root loss. Inconsideration of the updated understanding, and the requirement by CPHR to retain the subject tree, and with adjustments made to balconies and levels in majority of the root zone the tree is now assessed as capable of remaining viable throughout the proposed works, subject to strict implementation of all recommended tree protection measures in accordance with AS4970-2025. Reference Wikipedia *Grafting*. • Refer: Appendix D. Amended Pruning Application

ITEM 4.	The AIA identified the need for Pier and Beam construction to facilitate retention of several trees.		Extensive excavation (some shallow will be required) and no load will be applied to the portion of the balconies within the TPZ/SRZD condition to signoff of engineering details and statement for relevant CC.
ITEM 5	The AIA has been corrected with the TPS and TPP AS DEFINED IN as 4970:2025. The TPS section captures all tree protection measures referenced throughout the AIA.		The AIA has been corrected with the TPS and TPP as defined in AS 4970:2025. The amended TPS captures all tree protection measures.

2. Summary of RFI Items and Responses Kuringai Council

Item 1	Arborist Reply
The submitted AIA does not calculate proposed encroachments	Trees SRZ and TPZ encroachments have been calculated in Appendix A. Tree Protection Specifications (TPS)and Table 5 SRZ and TPZ Impact Assessment encroachment percentages
Fails to demonstrate how trees nominated for retention can be viably retained.	Refer: Appendix B. Tree Protection Plan
Does not include a Tree Protection Plan	A Tree Protection Plan has been included in amended report. Refer Appendix B. Refer: Appendix B. Tree Protection Plan
Includes a Tree Location Plan that is illegible	A tree location plan has been prepared in conjunction with Land + Form Landscape Architects Refer Plan LD-DA002 Scale A1
The updated AIA should	• Assess the entire development, including Buildings and basements. • Stormwater infrastructure Refer: Drawing SKC030 Refer :Section 6.5 • Retaining walls, excavation and grade changes Drawing SKC030 Refer :Section 6.5 • Removal of hard stand areas. Refer Section 6.6 Appendix B. TPP. • Reference all documentation relied upon in the assessment. • Include a detailed tree schedule containing: Refer: Table 3 Impact Assessment Schedule & Table 5 Tree Impact Assessment
Botanical name/common names, age class, height, canopy spread, DBH	Refer: Section 4. Discussion Table 3.Assessment Schedule

Calculated TPZ & SRZ	Refer: Section 9. Methodologies Table 5.SRZ and TPZ Impact Assessment
Any calculated incursion	Refer: Table 5.SRZ and TPZ Impact Assessment
Health structure and condition of each tree	Refer: Section 4. Discussion
Identify and describe all specific impacts within each tree TPZ.	Tree 9 root severance, compaction. Trees 11,15,16,18A root severance, compaction, canopy damage Tree 37 Root severance, compaction, canopy damage

Demonstrate avoidance or minimisation of TPZ impacts through	Refer: Appendix B. Tree Protection Plan (TPP)
Relocating structures away from TPZ s	The amended 6m setback has eliminated encroachments on some trees or has minimised the percentage of incursion on others such as STIF trees 11,15,16,&18A, minimising the removal of the trees. By implementing non-destructive investigations in the form of Root Mapping.
Adjusting design to limit grade changes	The trees retained will not experience any adverse grade changes at the most 100mm, which is an acceptable change in grade without restricting nutrient uptake, water or loss of microbiological organisms, bacteria and fungi in the soil.
Using suitable fill materials for shallow fills.	Placement of fill material within tree protection zone of trees to be required should be avoided wherever possible. Where placement of fill is unavoidable ,the material should be a well-drained friable material, equivalent in texture to the existing site topsoil material complying with AS4419:2003 *Soils for Landscaping and Garden use*.
Hand excavation under Arborist supervision	Hand excavation for the reconstruction of stormwater pits, perimeter of crossover and driveway construction. Refer: Appendix B. Tree Protection Plan (TPP)
Careful removal of hard stand	Project Arborist to supervise the removal of hard stand areas within the TPZs of trees 11 & 18 A. Refer: Appendix B. Tree Protection (TPP)

areas and use of tree sensitive techniques.	
Demonstrate compliance with AS4970 – 2025	No encroachment into the retained trees structural root zone has occurred. Refer: Appendix A. Tree protection Specifications
Include Root Mapping if required	• *per SEARS point 14 and AS4970 Section 3.3.2 Table 1* Secretary's Environmental Assessment Requirements relevant to this Report *Refer: Appendix C. Root Mapping Investigation*

Provide tree and site-specific mitigation measures for demolition and construction	Refer: Appendix B. Tree Protection Plan (TPP)
Include diagrams/specifications Where required (E.G.Scaffoling clearance) .	A pruning specification has been prepared to allow for scaffolding clearance in accordance with AS4373 (2007) *Pruning of Amenity Trees* Refer: Appendix D. Pruning Specifications.
The updated TPP should: • be prepared at a scale of 1:100 or 1:200. • Show all trees with TPZ extending into the development impact area. • Identify all proposed works, above and below ground, including services • Clearly indicate: • Tree protection areas and fencing • Areas of hand excavation and arborist supervision • Percentage of TPZ /canopy encroachment • Include survey details showing existing ground levels, DBH and tree numbering. • Plot tree locations with survey accuracy (by a registered surveyor)>	The Tree Protection Specification plan (TPS) shows all trees extending into the development impact area. Proposed works above and below ground are included in Appendix B. Tree Protection TPP Section 4 Discussion shows each Trees RL included with Botanical and Common names of each tree. Tree Protection fence Areas are included in plan , areas of hand excavation and arborist supervision. Canopy encroachment is included in Appendix. D Pruning Specifications for Scaffolding clearance. Refer Appendix A. Tree Protection Specifications Fencing along northeast boundary. Refer Appendix A. Tree Protection Specifications hand excavation tree 9 perimeter of proposed driveway within tree 9. Tree 9 and 37 for stormwater pipe reconstruction. RLS included in Discussion 4. Tree numbering included on plan. DBH is not included difficult to read on plan. Trees plotted with CMS Surveyors Pty Ltd

Flood Proof Retaining Wall	The flood proof retaining does not and will not impact the structural root zones of the STIF trees retained.
KIL-24 The KIL asks for the existing tree canopy coverage figure (sqm/%) not the proposed. Provide the as-existing figure.	Existing canopy coverage 44%

3. Summary of RFI Items and Responses DPHI

	Matters of Concern	Requests	Comments
DPHI	Biodiversity of Trees	Update the Biodiversity Assessment Report (BDAR) assessment to avoid impacts on the Sydney Turpentine Ironbark Forest (STIF). In particular: a} address the comments and informational requirements raised by CPHR and Council. b}address direct and indirect impacts on the onsite STIF community (trees 11, 15, 16 and 18). c}address the requirements of the Biodiversity Assessment Method (BAM), and identify appropriate avoidance, mitigation and offset measures associated with all i consider the impacts of landscaping works as outlined in this letter.	Lee Hancock Arborist and Ecological Australia Will assist with the BDAR by addressing the trees to be removed/retained, in both the Ecological report and AIA.
	Matters of Concern	Requests	Comments
DPHI		Avoid the removal of significant trees 1, 9, 10, 11, 12, 15, 16, 18 and 37 via design amendments and increased setbacks	The amended setback 6m has assisted in the retention of trees 9,10,11,12,15 16,18,18A and 37. However, Tree 1 will be significantly encroached upon by the proposed building, the removal of the T 25 will having grafted onto each other's roots. Tree 1.is physiologically and structurally dependent on the roots. Not feasible to retain due to destabilisation tree root system.

	Matters of Concern	Requests	Comments

DPHI	Landscape drawing LD-DA400 Section 3 appears to show the provision of a 'grass swale' eastern side of building and adjacent to retained STIF.		The updated landscape plan shows a Swale on the southern boundary of the site. No trees are nominated for retention in this area.
CPHR	Civil drawing CO50101shows extensive impervious areas in the location of retained trees and proposed deep soil areas (eastern and southern boundaries)		The civil drawing CO50101 shows on eastern and southern boundaries a grass swale is proposed to eliminate the previous impervious areas. However, there are no trees retained in these areas, under the current plans.

1.Introduction

The Arboricultural Impact Assessment report was appointed by MHR Lindfield Investments Pty Ltd ATF MHR Lindfield Trust to accompany a State Significant Development Application that comprises the construction and operational use of a nine (9) storey residential flat building (RFB) and ancillary land uses to support the functions intended for the Site.

1.1 The Proposal

The Proposal comprises the construction and operational use of a nine (9) storey residential flat building (RFB) and ancillary land uses to support the functions intended for the Site. The Proposal will exemplify and showcase a State-of-the-Art and modernised residential development that complements the desired future streetscape character; and builds on the fundamental necessities required to achieve local, regional and state planning/strategic objectives with respect to the shortage of housing opportunities and housing affordability.

1. 2 This Arboricultural Impact Assessment has been prepared in response to the Secretary's Environmental Assessment Requirements (SEARs) dated 27 November 2025 Specifically, this report has been prepared to respond to those SEARs outlined below.

- *Table 2 Secretary's Environmental Assessment Requirements relevant to this Report*

SEAR	SEAR description	Report name and section
Trees and Landscaping	If the proposal involves impacts to trees, provide an Arboricultural Impact assessment that assesses the number, location, condition and significance of trees to be removed and retained including of any existing canopy coverage to be retained on-site. o tree root	*Arboricultural Impact Assessment* Section 14

	mapping. if the proposal involves significant impacts to tree protection zones of retained trees identified as being significant

1.3 Sites Identification

Street Address	Legal Description
• 24 Middle Harbour Road	Lot 14 DP5374
• 26 Middle Harbour Road	Lot 1 DP119944 Lot 14 DP5374
• 28 Middle Harbour Road	Lot 1 DP1192386 Lot 1 DP312386 Lot 16 DP5374 Lot 768 DP752031

2. Aim

The aim of the Arboricultural Impact Assessment (AIA) is to undertake a Visual Tree Assessment (VTA), to determine the impact of the proposed development on trees, and where appropriate, provide guidance and recommend tree sensitive protection methods to minimise adverse impacts.

2.1 All trees included in the site survey are numbered and assessed by the Author as the basis for deciding which trees are suitable for retention.

For each tree they have been assessed for.

a) Correct botanical identification and common name.
b) Health and vigour
c) Structure
d) Dimensions, height, crown spread and DBH.
e) Age class
f) Estimated life expectancy
g) Heritage and /or cultural matters
h) Ecological and habitat matters
i) The location relative to existing site features
j) Other matters to the site
k) Retention value

2.2 Tree protection controls for Kuringai Council Local Government Area apply to any tree or palm, whether it is a native or an exotic species that:

- has a height equal to or exceeding four meters.

- any tree or mangrove vegetation located on public land, irrespective of size.
- forms part of a heritage item, or that is within a heritage conservation area.
- forms part of an Aboriginal object, or that is within an Aboriginal place of heritage significance.
- is listed on the NSW Heritage Register.

The author is aware of and will comply with the determining authorities Kuringai Council,'KLEP - 2015' = Ku-ring-gai Local Environmental Plan 2015,'KLEP LC 2012' = Ku-ring-gai Local Environmental Plan (Local Centres) 2012,'KPSO' = Ku-ring-gai Planning Scheme Ordinance, Tree Preservation Order.

2.3 *Wildlife Habitat*

Some of the trees are local native species.

2.3.1 *Noxious Plants and Environmental Weeds*

One of the trees assessed are scheduled as weeds by the Biosecurity Act 2015.

2.3.2 Terrestrial Biodiversity LEP

Lot 28 is mapped on the Terrestrial Biodiversity LEP layer.

2.3.3 *Threatened species& Ecological Communities*

Some of the subject trees are listed as NSW Threatened Species Scientific Committee or form part of Endangered Ecological Communities (EEC's) under the provisions of the Biodiversity *Conservation Act 2016*.

2.3.4 Heritage Conservation Area

The site is partially in Trafalgar Avenue Heritage Conservation Area.

2.3.5 *Significant Tree Register*

None of the trees are nominated on Kuringai Councils Register of Significant Trees

Table 1. Documents Provided

PLAN/DOCUMENT	PREPARED BY	DWG/REF NO	DATED

Architectural Drawings	DKO Architects	SSDA 001,002,100,101,102,103,200,201, 202,203,204,205,206,207,208,209, 210,211,212.	8th December 2025
Surveyor	CMS Surveyors Pty Ltd	23693	13.08.2024
Landscape Architect	Landform	LD- DA 000,001,002 ,003, 100, 101, 102,200,201,202,400,401,900	December 2025
Ecologist	Ecological Australia	Belinda Failes	December 2025
Civil Engineer	Xavier Knight	250213 C000 00-1, CO2001-1,30.01-1,30.02 -1,30.02-1, 30.03-1,5101-1,52.01-1,53.01-1 9001-1	December 2025

3. Site Analysis

The Site comprises a total area of 4,757m2. The site is square in shape and is 65m wide, with a depth between 70 -80m.The site is zoned as R2 Low Density Residential under KLEP2015. There is a Riparian Corridor Category 3A. Middle Harbour South Flood overland. Middle Harbour North Draft overland flow.

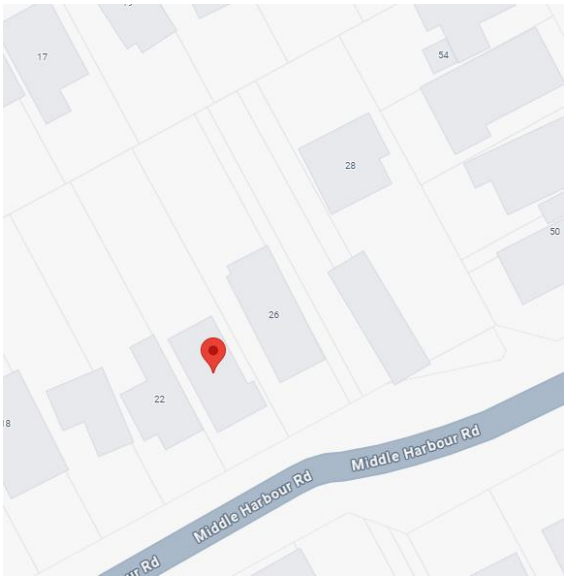
3.1 To the south, east, north and west are residential properties similar in scale and design to the residential properties located within the Site, with the immediate surrounding area also being zoned as R2 Low Density Residential.

3.2 Further north and west is Lindfield Town Centre, which includes a variety of uses and a higher density of development, including further height, comprising R3 Medium Density Residential, R4 High Density Residential and E1 Local Centre zones. Lindfield railway station is approximately 500m to the northwest of the Site, which offers regular services to the Sydney Central Business District (CBD).

3.3 The Site is located approximately 330m east of the Pacific Highway, which is a major arterial route, providing regular buses servicing the Lindfield Learning Village, Killara, Gordon and Chatswood. The Site is approximately 15km from the Sydney CBD.

3.4 The soils and geology are formed from Glenorie soil landscape occurs north of the Parramatta River on the Hornsby Plateau in Baulkham Hills, Hornsby, Ku-ring-gai, and Ryde local government areas. The soil landscape is underlain by Wianamatta Group Ashfield Shale and Bringelly Shale formations.

Figure 1. R2 Low Density Residential under KLEP2015. Figure 2. Existing site Context and Surrounding Area



Background

The proposed redevelopment of the Site will deliver essential housing supply, choice, and affordability to meet the needs of Ku-ring-gai's growing population. Strategically positioned near key transport links and services, the Proposal will provide convenient access to jobs while aligning with the locality's strategic goals. By redeveloping and renewing the existing land, the Proposal aims to revitalise the area, enhancing its contribution to the community's long-term growth and sustainability.

4. Discussion

An assessment of each tree was made using the Visual Tree Assessment (VTA) procedure. The subject trees were assessed from the ground. No aerial inspection has been undertaken as part of this assessment. The initial point of reference in assessing the impacts of the proposed development is AS4970 (2009) *'Protection of trees on development sites*.

4.1 Each tree has been provided with an identification number for reference purposes denoted on the Tree Protection Specifications (TPS). This discussion will focus primarily on the trees that will experience conflicts with the proposed development. This report will then guide the site layout and design process showing the spatial requirements and constraints the trees have imposed on the site.

28 Middle Harbour Road, Lindfield

Tree 1. *Liquidambar styraciflua* (Liquidamber) RL 81.10

Large mature exotic located boundary of 28 and 26 Middle Harbour Road, in good form and vigour, tree is in the footprint of the proposed development, it does not seem feasible to retain tree. Rated as moderate landscape significance and amenity value. Low retention value.

Tree 2. *Cupressus sempervirens* 'Stricta' (Italian Cypress) RL 80.84

Located front of site, mature to overmature exotic tree in fair form and vigour, this tree should not be considered a constraint to any future development. Rated as moderate landscape significance and amenity value. Low retention value.

Tree 3. *Cupressus sempervirens* 'Stricta' (Italian Cypress) RL 80.76

Located front of site, mature to overmature exotic tree in fair form and vigour, this tree should not be considered a constraint to any future development. Rated as moderate landscape significance and amenity value. Low retention value.

Tree 4. *Cupressus sempervirens* 'Stricta' (Italian Cypress) RL 80.72

Located front of site mature exotic tree in very poor form and vigour, this tree should not be considered a constraint to any future development. Rated as moderate landscape significance and amenity value. Low retention value.

Tree 5. *Cupressus sempervirens* 'Stricta' (Italian Cypress) No RL recorded

Located front of site large mature exotic tree not considered worthy of any special measures for its retention. Rated as moderate as moderate landscape significance and amenity value. Low retention value.

Tree 6. *Pittosporum undulatum* (Sweet Pittosporum) RL 80.38

Mature native tree located corner of northeast boundary; tree is nominated for removal not considered worthy of any special measures for its retention. Rated as moderate landscape significance and amenity value. Low retention value.

Tree 7. *Pittosporum undulatum* (Sweet Pittosporum) RL80.81

Located near Tree 6.native tree is nominated for removal not considered worthy of any special measures for its retention. Rated as moderate landscape significance and amenity value. Low retention value.

Tree 8. *Phoenix canariensis* (Canary Island Date Palm) RL80.87

Semi mature exotic Palm in good form and vigour, the proposed site design and placement of buildings and infrastructure should consider lessening any mitigating issues in relation to trees. Rated as high landscape significance and amenity value. High retention value.

Tree 9. *Syzygium paniculatum* (Magenta Lilly Pilly) RL 80.81

Mature native tree in good form and vigour, stormwater line to be hand dug to a depth of 800mm under the supervision of Project Arborist and proposed pit stormwater line shall not adversely affect the tree, when tree sensitive protection methodologies are implemented as discussed. Rated as high landscape significance amenity and ecological value. High retention value.

Tree 10. *Phoenix canariensis* (Canary Island Date Palm) RL 80.52

Semi mature exotic Palm in good form and vigour, the supplied concept plans show a 6m setback on the northeast boundary. Palm can be retained with little impact to the above and below ground parts of the Palm when tree sensitive protection methodologies are implemented. Rated as High landscape significance and amenity value. High retention value.

Tree 11. *Syncarpia glomulifera* (Turpentine) RL80.56

Mature native tree in good form and vigour, located northeast boundary. Rated as High landscape significance amenity and ecological value. The proposed decking shall be constructed using isolated pier and beam footings they will be hand dug using non-motorised machinery for pier footings any roots encountered greater than 40mm will be retained and piers to be offset by 100mm to allow for future root growth. Roots encountered less than 40mm shall be cut with a sharp pruning implement. Rated as High landscape significance amenity, ecological and heritage value. High retention value.

Tree 12. *Phoenix canariensis* (Canary Island Date Palm) RL 80.76

Semi mature exotic tree located northeast boundary in good form and vigour, Rated as high landscape significance and amenity value. High retention value.

Tree 13. *Livistona chinensis* (Chinese Cabbage Fan Palm)

Located offsite adjoining property exotic Palm in good form and vigour, the supplied plans show Palm is remote from any proposed works. Rated as high landscape significance and amenity value. High retention value.

Tree 14. *Livistona chinensis* (Chinese Cabbage Fan Palm)

Located offsite adjoining property exotic Palm in good form and vigour, the supplied plans show Palm is remote from any proposed works. Rated as high landscape significance and amenity value. High retention value.

Tree 15. *Syncarpia glomulifera* (Turpentine) RL 80.56

Large mature native tree with co-dominant stems *"Co-dominant stems with included bark is primarily a growth fault, it does not allow the total of the growth to provide support, commonly setting 2 or more branches against each other, rather than supporting each other in balance." "It occurs when the cambium turns inwards and is most common on co-dominant stems. Co-dominate stems with included bark and a downward stem bark have a weak union. This could allow splitting down the middle et.al. Fakes J. (1992).* The co-dominant stems have signs of cracking and splitting the trunks, the removal of the stem with large tear out northside is recommended for removal. The removal of the stem shall be above the existing hollow.

The stem will have a large enough wound to allow the development of extensive decay, remedial action in the form of bracing or crown reduction may be necessary. Otherwise, to encourage one member of the fork to become dominant this involves shortening the other member, so that it will eventually become over-topped.

A large wound north face of trunk extending from an existing hollow 3m to base of trunk, a nesting hollow, on the day of assessment there was no evidence the hollow was used as habitat. Trees will require pruning to accommodate scaffolding and dead wooding.

The proposed decking shall be constructed using isolated pier and beam footings they will be hand dug using non-motorised equipment for pier footings. Any roots encountered greater than 40mm will be retained and piers to be offset by 100mm to allow for future root growth. Roots encountered less than 40mm shall be cut with a sharp pruning implement. Rated as high landscape significance, amenity, ecological and Heritage value. High retention value. Refer: Appendix C. Root Mapping Investigation and Appendix D. Pruning Specifications.

Tree 16. *Syncarpia glomulifera* (Turpentine) RL 82.48

Mature native trees very close to existing residence, appear in good form and vigour, tree will require pruning to allow for scaffolding. The revised 6m setback from northeast boundary has decreased the incursion into the NRZ. The root mapping investigation revealed no woody roots greater than 10mm were encountered. The updated plans show cantilevered balconies over the tree protection zones of trees resulting in no load bearing or root disturbance within the TPZ. Rated as high landscape significance amenity, ecological and heritage value. High retention value. Refer: Appendix C. Root Mapping Investigation Appendix D. Pruning Specifications.

Tree 17. *Livistona chinensis* (Chinese Cabbage Fan Palm)

Semi mature exotic Palm located adjacent to existing building, appears in good form and vigour, The supplied plans show the 6 metres setback from boundary which will allow the Palm to be retained and protected throughout all stages of the development. Rated as High landscape significance and amenity value. High retention value.

ITEM 1. Addendum 3.

Tree 18. *Syncarpia glomulifera* (Turpentine) RL 83.15

The mature native tree located in the northeast boundary adjacent to existing buildings, appears in good form and vigour.

As stated in AS 4970 (2025) the proposed encroachment of Tree 18 is 22.2% into the NRZ .

The proposed encroachment is considered major if it is greater than 20% of the area of the NRZ or inside the SRZ. The encroachment is within the NRZ Clause 3.3.6 considers this a Major NRZ encroachment.

Relevant factors listed in Clause 3.3.2 have been considered.

a) *location and distribution of roots*: one root was encountered from Tree 18 measuring 200mm,

b) *Potential loss of root mass resulting from the encroachment* is minimal, the potential loss of one root if required, will not destabilase the structural integrity of the tree.

c) *Tree Species and tolerance to root disturbance*. *Syncarpia glomulifera* (Turpentine) *are widely used as street trees in the Kuringai Council areas and are proven to be tolerant of root disturbance*.

d) If works result in temporary or permanent loss of available soil volume. Loss of soils volume will be lessened due to updated plans.

e) *Age, health, current size and projected size of tree*. Tree is of mature age, in good health it has possibly reached its projected height.

f)

Root mapping was undertaken by a Suitably qualified AQF Level 5 Arborists of Complete Arbor Care to determine the extent of the subject tree's 16,18,,&18A root system within the proposed impact area. At the time of initial assessment, it was the professional opinion of 3 Arborists Consulting Arborists that the tree would be unlikely to remain viable throughout the proposed construction works due to anticipated root disturbance.

However, following further review of current arboricultural research, it is acknowledged that certain tree species possess the capacity for root grafting, enabling the transfer of water, nutrients and photosynthates between interconnected root systems. The process , known as inosculation, may improve trees' tolerance to partial root loss.

Inconsideration of the updated understanding, and the requirement by CPHR to retain the subject tree, the tree is now assessed as capable of remaining viable throughout the proposed works, subject to to strict implementation of all recommended tree protection measures in accordance with AS4970-2025. Reference Wikipedia *Grafting*.

g) *Proposed staging and timing of excavation or root-cutting*.
Where Roots greater than 30mm are encountered they will be cut with a sharp pruning implement by the Site Arborist.
h) *Proposed tree maintenance and tree care activities*.
Refer: Appendix A. Tree Protection Specifications Pre- Construction Treatments Heritage Trees 11,15,16,18 & 18A.

i) *Lean and stability of tree*
Tree is upright specimen with no lean.

j) *Soil characteristics and volume, topography and drainage*.
The soil landscape is underlain by Wianamatta Group Ashfield Shale and Bringelly Shale formations.

k) *Prescence of existing or past structures, obstacles affecting root growth or recent encroachments*.
The existing residence has been long standing over many years; the structure has possibly affected root growth.

l) *Proposed construction measures that reduce the impact on trees*.
Construction measures such as suspended slabs, cantilevered building sections and screw piles.

I) Removal of hard stand areas. Appendix A.(TPS)

The removal of hard stand areas within the TPZs of trees numbered 16,18 and 18A trees nominated for retention, removal of the existing hard stand areas shall be undertaken under the supervision of the Site Arborist. The bitumen surface and sub-base within the TPZ shall be gradually removed in layers of no greater than 50mm thick using a small rubber tracked excavator or alternative approved method to avoid damage to underlying roots and minimise disturbance and compaction of the underlying soil profile. The machine shall work within the footprint of the existing paved surfaces to avoid compaction of the underlying soil. The final layer of sub -base material shall be removed using hand tools
m) Root Mapping was undertaken Refer: Appendix C. Root Mapping Investigating

Nominated for retention . Refer: Appendix C. Root Mapping Investigation Appendix D. Pruning Specifications.

Retain Tree 18

Root mapping was undertaken by a Suitably qualified AQF Level 5 Arborists of Complete Arbor Care to determine the extent of the subject tree's root system within the proposed impact area. At the time of initial assessment, it was the professional opinion of 3 Arborists Consulting Arborists that the tree would be unlikely to remain viable throughout the proposed construction works due to anticipated root disturbance.

However, following further review of current arboricultural research, it is acknowledged that certain tree species possess the capacity for root grafting, enabling the transfer of water, nutrients and photosynthates between interconnected root systems. The process , known as inosculation, may improve trees' tolerance to partial root loss.

Inconsideration of the updated understanding, and the requirement by CPHR to retain the subject tree, the tree is now assessed as capable of remaining viable throughout the proposed works, subject to to strict implementation of all recommended tree protection measures in accordance with AS4970-2025.

Reference Wikipedia *Grafting*.

Item 2. ADDENDUM 3 Further information request T 37

Item 3. Root Mapping trees 16, 18 &18a

Root mapping was undertaken by a Suitably qualified AQF Level 5 Arborists of Complete Arbor Care to determine the extent of the subject tree's root system within the proposed impact area. At the time of initial assessment, it was the professional opinion of 3 Arborists Consulting Arborists that the tree would be unlikely to remain viable throughout the proposed construction works due to anticipated root disturbance.

However, following further review of current arboricultural research, it is acknowledged that certain tree species possess the capacity for root grafting, enabling the transfer of water, nutrients and photosynthates between interconnected root systems. The process, known as inosculation, may improve trees' tolerance to partial root loss.

In consideration of the updated understanding, and the requirement by CPHR to retain the subject tree, the tree is now assessed as capable of remaining viable throughout the proposed works, subject to strict implementation of all recommended tree protection measures in accordance with AS4970-2025.

Reference Wikipedia *Grafting*.

Item 4. Extensive excavation (some shallow will be required) and no load will be applied to the portion of the balconies within the TPZ/SRZD condition to signoff of engineering details and statement for relevant CC.

Item 5

The AIA has correctly interchanged The TPS and TPS have been changed in relation to AS4970 2025. The amended TPS captures all tree protection measures.

Tree 18 A. *Syncarpia glomulifera* (Turpentine) RL 83.50

Mature native tree located northeast boundary adjacent to existing building, appears in good form and vigour. The root mapping investigation found no woody roots greater than 5mm in diameter, tree will remain viable during construction and into the future. The proposed balconies to be cantilevered over will have no load bearing inside tree protection zone. Rated as high landscape significance and amenity value. High retention value.

Tree 19. Jacaranda mimosifolia (Jacaranda)

Located offsite northeast boundary exotic tree in good condition appears healthy and structurally stable, the supplied plans show the six-metre setback will not adversely affect the long- term viability of the tree. Rated as High landscape significance and amenity value. High retention value.

Tree 20. *Ulmus parvifolia* (Chinese Weeping Elm)

Located northwest boundary exotic tree with two stems are visible from adjacent rear yard, the six-metre setback proposed will not adversely impact the long-term viability of the trees. Rated as high landscape significance and amenity value. High retention value.

Tree 21. *Lophostemon confertus* (Brush Box) RL83.23

Mature native tree located western boundary smothered by vine, near to existing residence, the supplied concept plans show tree will be adversely impacted upon by the proposed development. Rated as high landscape significance amenity and ecological value. Low retention value.

Tree 22. *Phoenix canariensis* (Canary Island Date Palm) RL 81.77

Mature exotic Palm in good form and vigour, located western boundary, the supplied concept plans show Palm is in the footprint of the proposed development. Rated as moderate landscape significance and amenity value. Low retention value.

Tree 23. *Lophostemon confertus* (Brush Box) RL 81.65

Mature native tree located western boundary, in good form and vigour, the supplied concept plans show Palm is in the footprint of the proposed development. Rated as moderate landscape significance and amenity value. Low retention value.

Tree 24. *Syzygium paniculatum* (Magenta Lilly Pilly) RL 81.80

Mature native tree located western boundary appears structurally stable and in good health, the supplied concept plans show Palm is in the footprint of the proposed development. Rated as moderate landscape significance and amenity value. Low retention value.

Tree 25. *Ficus macrocarpa* var. hilli (Hills Weeping Fig) RL 82.08

Large exotic mature tree showing large prop roots travelling 14 metres to Middle Harbour Road, Ficus spp. especially the Ficus macrocarpa is extremely invasive. They damage not only sewer pipes and drain but also paths, walls, and building foundations. Tree should not be considered a constraint to any future development. Moderate landscape significance and amenity value. Low retention value.

Tree 26. *Cupressus* spp. RL81.79

Located onsite near Tree 1. Exotic tree is in fair form and vigour, the supplied plans how tree is in the footprint of the proposed development. Rated as moderate landscape significance and amenity value. Low retention value.

26 Middle Harbour Road, Lindfield

Tree 27 *Malus* spp. (Crab Apple) RL 82.30

Located front entrance to subject site, exotic small tree in good form and vigour, the supplied plans show small tree will be adversely affected by the proposed development. Rated as moderate landscape significance and amenity value. Low retention value.

Tree 28. *Lagerstroemia indica* (Crepe Myrtle) Not recorded

Mature exotic tree located growing within a form hedge of *Murraya paniculata* (Sweet Jesamine) northern boundary, the supplied plans show tree will be adversely impacted upon by the proposed development. Rated as moderate landscape significance and amenity value. Low retention value.

Tree 29. *Sasanqua camellia* (Camellia)

Small exotic tree located on Northern boundary of 24 & 26 Middle Harbour Road; tree is in the footprint of the proposed development. Rated as moderate landscape significance and amenity value. Low retention value.

Tree 30. *Jacaranda mimosifolia* (Jacaranda) RL83.14

Located on western boundary of subject site, exotic tree in good form and vigour, the supplied plans show tree is in the footprint of the proposed development. Rated as moderate landscape significance and amenity value. Low retention value.

Tree 31. *Prunus* spp. (Ornamental Cherry) RL 83.28

Small ornamental exotic tree located rear yard of subject site; tree is in the footprint of the proposed development. Rated as moderate landscape significance and amenity value. Low retention value.

Tree 32. X *Cupressocyparis leylandii* (Leylandii) RL Not recorded

An informal screening exotic hedge round the existing Gazebo, in good form and vigour. The supplied concept plans hedge is in the footprint of the proposed development. Rated as moderate landscape significance and amenity value. Low retention value.

Tree 33. *Sasanqua camellia* (Camellia) Not recorded

Informal exotic tree hedge growing northeast boundary for screening purposes, the supplied concept plans hedge is in the footprint of the proposed development. Rated as moderate landscape significance and amenity value. Low retention value.

Tree 34. *Ligustrum lucidum* (Large leaf Privet)

Tree is located rear of existing shed; Biosecurity Weed is recommended for removal.

Tree 35. *Syzygium* spp. x7 RL 83.76

Located offsite rear northwest boundary, overhanging existing swimming pool, a 1.5m high sandstone retaining wall separates the native trees offsite, it is considered the existing levels are above the existing ground level, will not be adversely affected by the six-metre setback for the proposed development. Rated as high landscape significance amenity and ecological value. High retention value.

Tree 36. *Cyathea australis* (Rough Tree Fern) RL 83.42

Semi mature native Tree Fern in good form and vigour the Palm is in the existing retaining wall rear of subject site. The supplied plans show pool and retaining wall will be removed to accommodate new plantings in six metres setback. Rated as moderate landscape significance amenity and ecological value. Low retention value.

24 Middle Harbour Road, Lindfield

Tree 37. *Waterhousia floribunda* (Weeping Lily Pilly) RL 84.21 Addendum 3 Item 4

Mature native tree located in rear northwest boundary site, appears in good from and vigour, rated as high landscape significance amenity and ecological value. High retention value.

The proposed stormwater pit shall be installed outside the tree protection zone of the subject tree, as stated in Clause 4.5.5. *All services should be routed outside the TPZ*. If under underground services need to be routed within the TPZ they should be installed by hand excavated pits on retained trees. Proposed pit structure is within the TPZ of tree 37, it will need to be reconstructed due to tree roots. The project arborist will supervise the hand digging of the reconstructed pipe and pit, will advise the diameter of roots that can be cut and roots to be retained. The proposed flood proof retaining wall shall be constructed on isolated pier footings to minimise root damage to Tree 37. The civil engineering plans prepared by Xavier Knight require stormwater in the locations shown that are designed to meet the required function, a realignment cannot be made to these elements. It is proposed in the location of tree 37 that use of vacuum suction truck be used to carefully excavate this area, the works will be undertaken under the supervision of a suitable qualified AQF Level 5 Arborist as a condition of consent.

Tree 38. *Pittosporum undulatum* (Sweet Pittosporum) RL 84.20

Mature native tree located northwest rear boundary, in good form and vigour, Rated as high landscape significance amenity and ecological value. High retention value.

Tree 39. *Pittosporum undulatum* (Sweet Pittosporum) RL 84.25

Mature native tree adjacent to Tree 38 northwest rear boundary, in good form and vigour, the supplied plans show tree is in the footprint of the proposed development. Rated as moderate landscape significance amenity and ecological value. High retention value.

STREET TREES

24 Middle Harbour Road, Lindfield

Tree 40 *Polyspora axillaris* (Fried Egg Plant)

Mature tree in fair form and vigour, the tree is nominated for retention and protection throughout all stages of the proposed development.

Tree 41. *Jacaranda mimosifolia (Jacaranda)*

Mature tree in fair form and vigour, the tree is nominated for retention and protection throughout all stages of the proposed development.

26 Middle Harbour Road

Tree 42 *Jacaranda mimosifolia* (Jacaranda) 28 Middle Harbour Road

Semi mature exotic tree in poor form and vigour, tree has less than 5% foliage, it appears to be dying. Rated as low landscape significance and amenity value. Low retention value.

Tree 43 *Robinia pseudoacacia* (Black Locust)

Mature tree in poor form and vigour, the tree is nominated for retention and protection throughout all stages of the proposed development.

28 Middle Harbour Road

Tree 44 *Jacaranda mimosifolia* (Jacaranda) 28 Middle Harbour Road

Semi mature exotic tree in poor form and vigour, tree has less than 5% foliage, it appears to be dying. Rated as low landscape significance and amenity value. Low retention value.

Tree 45 *Syncarpia glomulifera* (Turpentine) RL 80.79

Large mature native multi stemmed tree located northeast corner of 28 Middle Harbour Road, in good form and vigour, the supplied plans show a proposed new crossover and driveway, exploratory excavation using non-destructive techniques shall be taken along the perimeter of the proposed crossover and driveway. Non -destructive excavation techniques may include the use of hand -held implements, air pressure or water pressure. To a maximum depth of 800mm below surface levels, to locate and expose any woody roots prior to mechanical excavation. Where large woody roots greater than 40mm are encountered further advice from Project Arborist shall be sought. Where woody roots less than 40mm are encountered they shall be cleanly severed with a sharp pruning implement. Tree is nominated for retention and protection throughout all stages of the proposed development.

28 Middle Harbour Road, Lindfield

Table 3. Tree Assessment Schedule

Tree no.	Genus & species	Height	Canopy Spread	DBH/DAGL	SRZ	TPZ	Landscape significance	Retention value
1	Liquidambar styraciflua (Liquidamber)	23m	45m2	920/ 1110 mm	3.5mR	11.04mR	Moderate	Low
2	*Cupressus sempervirens "stricta"* (Italian Cypress)	10m	15m	370/ 380mm	2.2mR	4.44mR	Moderate	Low

3	*Cupressus sempervirens "stricta"* (Italian Cypress)	11m	15m	330/ 300mm	2.0mR	3.96mR	Moderate	Low
4	*Cupressus sempervirens "stricta"* (Italian Cypress)	8m	10m	170/ 200mm	1.7mR	2.04mR	Moderate	Low
5	*Cupressus sempervirens "stricta"* (Italian Cypress)	19m	20m2	600/ 600mm	2.7mR	7.2mR	Moderate	Low
6	*Pittosporum undulatum* (Sweet Pittosporum)	14m	20m2	240/220/ 490mm	2.5mR	5.4mR	Moderate	Low
7	*Pittosporum undulatum* (Sweet Pittosporum)	16m	20m2	340/ 420mm	2.3mR	4.08mR	Moderate	Low
8	*Phoenix canariensis* (Canary island Date Palm)	6m	15m2	560/ 560mm	2.0mR	2.0mR	High	Retain
9	*Syzygium paniculatum* (Lilly Pilly)	22m	40m2	570/ 840mm	3.1mR	6.84mR	High	Retain
10	*Phoenix canariensis* (Canary island Date Palm)	7m	15m2	560/ 560mm	2.0mR	2.0mR	High	Retain
11	*Syncarpia glomulifera* (Turpentine)	23m	40m2	850/ 950mm	3.2mR	10.2mR	High	Retain
12	*Phoenix canariensis* (Canary island Date Palm)	6m	15m2	650/ 650mm	2.0mR	2.0mR	High	Retain
13	Livistonia chinensis (Chinese Cabbage Palm)	11m	10m2	No Access	2.0mR	2.0mR	High	Offsite Retain

Tree no.	Genus & species	Height	Canopy Spread	DBH/DAGL	SRZ	TPZ	Landscape significance	Retention value
14	*Livistonia chinensis* (Chinese Cabbage Palm)	11m	10m2	No Access	2.0mR	2.0mR	High	Offsite Retain
15	*Syncarpia glomulifera* (Turpentine)	23m	40m2	660/ 760mm	2.9mR	7.92mR	High	Retain
16	*Syncarpia glomulifera* (Turpentine)	23m	40m2	670/ 770mm	3.0mR	8.04mR	High	Retain

17	Livistonia chinensis (Chinese Cabbage Palm	8m	10m2	180/ 200mm	2.0mR	2.0mR	High	Retain
18	*Syncarpia glomulifera* (Turpentine)	24m	40m2	760/ 860mm	3.1mR	9.12mR	High	High Retain
18A	*Syncarpia glomulifera* (Turpentine)	24m	35m2	750/ 860mm	3.1mR	9.0mR	High	Retain
19	*Jacaranda mimosifolia* (Jacaranda)	10m	25m2	No access	_____	_____	High	Retain
20	*Ulmus parvifolia* (Chinese Weeping Elm)	12m	25m2	No access	_____	_____	High	Retain
21	*Lophostemon confertus* (Brush Box)	16m	30m2	910/ 1110mm	3.5mR	10.92mR	Moderate	Low
22	*Phoenix canariensis* (Canary island Date Palm)	7m	20m2	430/ 530mm	2.0mR	2.0mR	Moderate	Low
23	*Lophostemon confertus* (Brush Box)	18m	30m2	730/ 830mm	3.1mR	8.76mR	Moderate	Low
24	*Syzygium paniculatum* (Lilly Pilly)	18m	40m2	790/ 890mm	3.2mR	9.48mR	Moderate	Low
25	*Ficus macrocarpa var.hillii(Hills Weeping Fig)*	18m	50m2	1091/ 1500mm	3.9mR	13.92mR	Moderate	Low
26	*Cupressus spp.*	15m	20m2	360/ 400mm	2.3mR	4.32mR	Moderate	Low

26 Middle Harbour Road, Lindfield

Table 3. Tree Assessment Schedule

Tree no.	Genus & species	Height	Canopy Spread	DBH/DAGL	SRZ	TPZ	Landscape significance	Retention value
27	Malus spp.	5m	15m2	Multi stem	_____	_____	Low	Low
28	*Lagerstroemia Indica* (Crepe Myrtle)	6m	15m2	Multi stem	_____	_____	Low	Low
29	Camellia spp.	5m	10m2	Multi stem	_____	_____	Low	Low
30	*Jacaranda mimosifolia*	16m	25m2	500/ 600mm	2.7mR	6.0mR	Moderate	Low

	(Jacaranda)							
31	*Prunus pendula* (Pendula Rosea)	5m	8m2	220/ 320mm	2.1Mr	2.64mR	Moderate	Low
32	X Cupressocyparis leylandii (Leyland Cypress)	8m	20m2	Multi stem	_____	_____	Low	Low
33	Sasanqua Camellia (Camellia)	4m	Hedge 40m2	Multi stem	_____	_____	Low	Low
34	Ligustrum Lucidum (Large Leaf Prive)	_____	_____	_____	_____	_____	Low	Biosecurity Weed
35	Syzygium spp.	12m	25m2	Multi stem	_____	_____	Low	Low
36	*Cyathea australis* (Rough Tree Fern)	4m	6m	150/ 200mm	2.0mR	2.0mR	Low	Low

24 Middle Harbour Road, Lindfield

Table 3. Tree Assessment Schedule

Tree no.	Genus & species	Height	Canopy Spread	DBH/DAGL	SRZ	TPZ	Landscape significance	Retention value
37	*Waterhousia floribunda* (Weeping Lilly Pilly)	17m	25m2	830/ 900mm	3.2mR	9.96mr	High	Retain
38	*Pittosporum undulatum* (Sweet Pittosporum)	15m	20m2	220/ 250mm	1.8mR	2.64mR	High	Retain
39	*Pittosporum undulatum* (Sweet Pittosporum)	14m	25m2	430/ 460mm	2.4mR	4.1mR	High	Retain

Table 3. Tree Assessment Schedule Street Trees 24,26 & 28 Middle harbour Road

Tree no.	Genus & species	Height	Canopy Spread	DBH/DAGL	SRZ	TPZ	Landscape significance	Retention value
40	*Polyspora axillaris* (Fried Egg Plant)	5m					High	High

41	*Jacaranda mimosifolia* (Jacaranda)	5m					High	High
42	*Melaleuca viminalis* (Bottle Brush)	6m					High	High
43	*Robinia pseudoacacia* (Black Locust)	5m					Moderate	Low
44	*Jacaranda mimosifolia* (Jacaranda)	6m	Poor Health				Moderate	Low
45	*Syncarpia glomulifera* (Turpentine)	23m					High	High

5. Conclusion

The site analysis has collected all relevant data in assessing the condition of 45 trees on and offsite, an assessment of their health and vigour, estimated life expectancy, significance in the landscape and amenity value have been recorded. One tree will require

5. Conclusion

The site analysis has collected all relevant data in assessing the condition of 45 trees on and offsite, an assessment of their health and vigour, estimated life expectancy, significance in the landscape and amenity value have been recorded. One tree will require

Table 4.

Trees retained Trees removed.

Trees retained	Landscape Significance	Retention value.	Trees removed	Landscape Significance	Retention Value.
8, 9,10,11,12, 13, 14,15, 16, 17,18,18A, 19, 20, 37, 38 & 39	High	High	1, 2, 3, 4, 5, 6, 7, 21,22, 23, 24, 25, 26, 27,28, 29, 30, 31, 32, 34, 35 & 36.	Moderate	Low

6. Recommendation

The proposed development will necessitate the removal of trees numbered 1, 2, 3, 4, 5, 6, 7, 21,22, 23, 24, 25, 26, 27,28, 29, 30, 31, 32, 34, 35 & 36.

Approved tree removal shall be carried out prior to site establishment. Tree removal work shall be carried out by an experienced Certified AQF Level 3 Arborist in accordance with Safe Work Australia Code of Practice 'Guide to Managing Risks of Tree Trimming and Removal Work'.

6.1 Trees that are nominated for retention are 8, 9,10,11,12, 13, 14,15, 16, 17,18,18A, 19, 20, 37, 38 & 39 located northeast boundary that could be retained under the current Plans. The remaining trees are located offsite 13,14, 19, 20, 35. The proposed plans show trees will not be adversely affected by the proposed development given their setbacks from the boundaries.

6.2 Heritage Trees 11,15,16, 18 & 18A Root mapping conducted 8th September 2025. Refer: Appendix C. Root Mapping Findings

6.3 Trees 19 & 20 were not able to be assessed no access was provided on the day of assessment. Their Structural Root zones and Tree Protection Zones could not be measured.

6.4 Tree 45 *Syncarpia glomulifera* (Turpentine) Street Tree the proposed new driveway and crossover, may encroach into the tree protection zone of Tree 45. It is recommended that prior to construction for crossover and driveway, that non-destructive excavation techniques may include the use of hand -held implements, air pressure or water pressure along the perimeter of crossover and drive to locate any woody roots to a maximum depth of 800mm below surface levels, to locate and expose any woody roots prior to mechanical excavation.

Where large woody roots greater than 40mm are encountered further advice from Project Arborist shall be sought. Where woody roots less than 40mm are encountered they shall be cleanly severed with a sharp pruning implement. Tree is nominated for retention and protection throughout all stages of the proposed development.

Shall be constructed at existing soil levels to mitigate any issues with root damage, the driveway will be constructed compliant with Councils specifications. Refer: Appendix B. Tree Protection Plan

6.5 Proposed stormwater line is within the TPZ of tree 37 northwest boundary of the subject site, it will need to be reconstructed due to tree roots. The stormwater pit shall also be reconstructed, to enable this process to occur. The project arborist will supervise the hand digging of the reconstructed pipe and pit, will advise the diameter of roots that can be cut and roots to be retained.

6.6 Trees 16, 18 & 18A *Syncarpia glomulifera* (Turpentine)

The removal of hard stand areas within the TPZs of trees numbered 16, 18 and18A trees nominated for retention, shall be undertaken under the supervision of the Site Arborist. The pavement surface and sub-base within the TPZ shall be gradually removed in layers of no greater than 50mm thick using a small rubber tracked excavator or alternative approved method to avoid damage to underlying roots and minimise disturbance and compaction of the underlying soil profile. The machine shall work within the footprint of the existing paved surfaces to avoid compaction of the underlying soil. The final layer of sub -base material shall be removed using hand tools.

Tree 37

6.7 Recommended removal of street trees numbered 43 and 44 due to their current poor health and vigour, the applicant has no issue in replacement planting of species recommended by Council.

6.8 Replacement Planting

To improve the urban forest values of the site ensuring the new tree planting will provide sustainability into the foreseeable future.

- The trees should have a minimum 10m height at maturity to compensate for the loss of existing trees.
- The planting size shall be 75 litres and compliant with the AS2373 *Tree Stock and Specifications for Landscape Use*.
- Planted by a qualified horticulturalist or arborist AQF Certificate 3.
- The replacement plantings must be planted in such a manner as to promote good health during the establishment period, and must be maintained, as far as practicable to ensure tree growth into maturity.

7. Images

28 Middle Harbour Road

Plate 1. Tree 1. *Liquidambar styraciflua* (Liquidamber) Trees 2. *Cupressus sempervirens* 'Stricta' (Italian Cypress)

8. References

AS 4970 *'Protection of trees on development sites.* (2025)

Mattheck, C. & Breloer, H. (1994) *The Body Language of Trees*.

Morton, A. Earthscape Horticultural Services -Tree Retention Values

N. Matheny and James R. Clark, '*Trees and Development A technical Guide to Preservation of Trees During Land Development'*.

Wikipedia *Grafting*.

www.KuringaiCouncil.nsw.gov.au

Disclaimer

The author, Lee Hancock Consulting Arborist takes no responsibility for actions taken and their consequences, contrary to those expert and professional instructions given as recommendations pertaining to safety by way of exercising our responsibility to our client and the public as our duty of care commitment to mitigate or prevent hazards from arising, from a failure moment in full or part, from a structurally deficient or unsound tree or a tree likely to be rendered thus by its retention and subsequent modifications to its growing environment either above or below ground contrary to our advice.

This report is a recommendation only. In no way does it guarantee any actions by the determining authorities.

9. Methodologies

9.1 Visual Tree Assessment (VTA)

A technique developed by (Mattheck & Breloer) was conducted on all trees from the ground. The technique involves identification of the Genus and Species of trees on the site. The Diameter at Breast Height (DBH) 1.4m above ground level determined from the circumference of the trunk divided by *pi* (π).

Tree height (m) Diameter at Ground Level (DAGL), Canopy spread (m) in four cardinal points (north, south, east, west) Structural integrity, Amenity value, Indigenous/ Endemic value, Health, and vigor of trees.

9.2 Useful Life Expectancy (ULE)

An assessment procedure has been developed by (Barrell, J.D.) 1993 'by which trees on a site are accurately recorded and designated according to their suitability for retention in the short, medium or long term'. This methodology is a measure of the "sustainability" of the remaining contribution in years that the tree can provide in the context of the site.

93 Landscape Significance

The significance of trees in the landscape is assessed in determining their retention values in three categories. Heritage Value reflects Historical significance; Ecological Value maintains biodiversity values and Amenity values contributes to the character of the landscape.

9.4 Tree Retention Values

A rating was given to each tree on site; the information gathered was then processed by evaluating the health and vigour, the remaining useful life expectancy (ULE), plus their significance in the landscape. A retention value for each tree was then evaluated ranging from High, Moderate, Low and Very Low.

9.5 Tree Protection Zone (TPZ)

Clause 3.1 AS 4970 *Protection of Trees on Development Sites* 2025

Establishing and maintaining a TPZ is the most important part of protection trees during site the onsite stages of work (e.g. site establishment, demolition, construction). The TPZ is the zone determined by the project arborist using the process set out below. It shall be shown on the TPP to be isolated or managed so that the tree remains viable.

The NRZ is the starting point for determining the TPZ along with the considerations in Clause 3.1 Alternatively, the TPZ may be specified by the consent authority.

9.6 Calculating the Notional Root Zone (NRZ) Clause 3.2

The radius of the NRZ is calculated for each tree by multiplying its diameter at standard height (DSH) by 12.

Radius of the NRZ = DSH x12

Where DSH =trunk diameter measured at 1.4m above ground. The radius of the NRZ is measured from the centre of the stem.

The NRZ for palms, tree ferns and the like, is not calculated by shall not be less than 2m.

9.7 Minor NRZ encroachment

Clause 3.3.4 The proposed encroachment is considered minor if it is less than or equal to 10% and less than or equal to 20% of the area of the NRZ and is outside of the SRZ. A project arborist shall be engaged to review the proposed impact and undertake any other necessary investigation to address the factors listed in Clause 3.3.2 to demonstrate how the tree will remain viable. This may be through the implementation of suitable design measures and construction controls to mitigate impacts during the development process as part of a TPS and TPP. To avoid a net loss of soil area and volume, an area equivalent to the encroachment shall be incorporated into the TPZ, unless the project arborist otherwise demonstrates the tree will remain viable.

9.8 Moderate NRZ encroachment

Clause 3.3.5 The proposed encroachment is considered moderate if it is greater than 10% and less than or equal to 20% of the area of the NRZ and is outside of the SRZ. A project arborist shall be engaged to review the proposed impact and undertake any other necessary investigation to address the factors listed to demonstrate how the tree will remain viable. This may be through the implementation of suitable design measures and construction controls to mitigate impacts during the development process as part of a TPS and TPP. To avoid a net loss of soil area and volume, an area equivalent to the encroachment shall be incorporated into the TPZ, unless the project arborist otherwise demonstrates that the tree will remain viable.

9.9 Major NRZ encroachment

Clause 3.3.6 The proposed encroachment is considered major if it is greater than 20% of the area of NRZ or inside the SRZ. The project arborist shall be engaged to explore alternative designs with the design team and /or demonstrate that the tree will remain viable.

For assessment of major encroachment, a more detailed investigation is necessary. This can include research such as root investigation, soil analysis, historical records of the tree or site, relevant literature and examples of similar encroachments. A TPS and TPP should be prepared to support the retention of the tree. To avoid a net loss of soil area and volume, an area equivalent to the encroachment shall be incorporated into the TPZ, unless the project arborist otherwise demonstrates that the tree will remain viable into the future.

9.10 Structural Root Zones

Clause 3.4 The SRZ is a notional area required for tree stability. A larger area is required to maintain a viable tree.

The SRZ shall be calculated when major encroachment (Greater than 20%) into an NRZ is proposed.

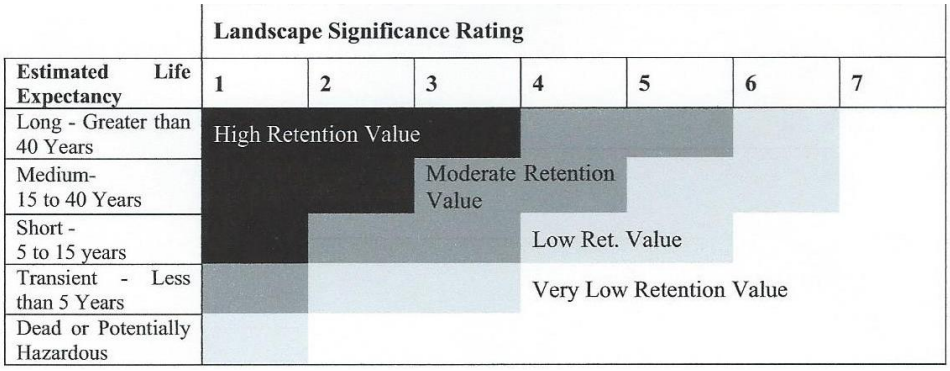
SRZ locations and dimensions may be included on arboriculture documentation.

SRZ radius = (d x50) 0.42 x 0.64

Where *D* = trunk diameter, in m, measure above the root buttress flare.

Where the tree is multi-stemmed, the project arborist should determine if they will measure around all stems or work out the cross-sectional area, as noted in Figure A.1,and provide their reasons for the method selected. The SRZ calculation does not apply to palms, cycads, tree ferns and the like.

Landscape Signifcance Rating



Tree Retention Value

RETENTION VALUE	RECOMMENDED ACTION
"High"	1. These trees considered worthy of preservation; as such careful consideration, should be given to their retention as a priority. 2. Proposed site design and placement of buildings and infrastructure should consider lessening any mitigating issues in relation to trees. 3. In addition, the extent of the canopy (canopy dripline) should also be considered, particularly in relation to high rise developments. Significant pruning of the trees to accommodate the building envelope or temporary scaffolding is generally not acceptable.
"Moderate"	1. The retention of these trees is desirable. 2. These trees should be retained as part of any potential development if possible, however the trees are considered less critical for retention. 3. If these trees must be removed, replacement planting should be considered in accordance with Council's Tree Replacement Policy to compensate for loss of amenity.
"Low"	4. These trees are not considered to worthy of any special measures to ensure their preservation, due to current health, condition, or suitability. They do not have any special ecological, heritage or amenity value, or these values are substantially diminished due to their ULE. 5. These trees should not be considered as a constraint to the potential development of the site.
"Very Low"	1. These trees are considered potentially hazardous or very poor specimens or may be environmental or noxious weeds. 2. The removal of these trees is therefore recommended regardless of the implications of any proposed development.

Appendix A. Tree Protection Specifications (TPS)

The Tree Protection Plan outlines and provides guidance on the principles of tree protection measures, to assist in protecting Trees onsite and offsite throughout all stages of the development. This information follows the Standards Australia AS4970-2025 *Protection of Trees on Development Sites*.

HOLD POINT: Approved Tree Removal

A) Prior to site establishment, approved tree removal works shall be undertaken by AQF Level 3 Arborist. Trees numbered 1, 2,3, 4, 5, 6, 7, 21,22, 23, 24, 25, 26, 27, 28, 29, 30, 31,32, 34, 36.

Tree removal work shall be carried out by an experienced Certified AQF Level 3 Arborist in accordance with Safe Work Australia Code of Practice 'Guide to Managing Risks of Tree Trimming and Removal Work'.

HOLD POINT: Tree Protection Fencing Trees numbered 8, 9,10,11,12,15,16,17 18,18A, 37, 38 & 39

B) Prior to the commencement of any works Tree protection zone of the listed trees above are to be fenced off at the specified radius from the centre of trunk to prevent damage from plant and equipment, no activities or material stored within fenced areas. Tree protection fence to be installed edge of TPZ trees northeast boundary.

Pre- Construction Treatments Heritage Trees 11,15,16,18 & 18A.

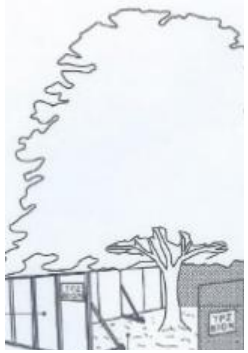
Prior to approved construction a number of activities may be implemented to invigorate the trees and there increase its tolerance of construction impacts. The goal is to maximise stored carbohydrates and the effectiveness of growth regulators in the tree. To quickly produce new, root shoot and adaptive growth and to compartmentalise wounds. Appropriate treatments well before construction begins such as irrigation, fertilisation, required pruning and dead wooding.

- Fertilisation and the addition of good quality organic mulch.
- Supplementary irrigation or deep infrequent watering.

- Pruning should be performed to clean the crown of deadwood, diseased, crossing, weak attachments to provide adequate clearance for equipment and construction. Pruning works undertaken by AQF (Australian Qualification Framework) Level 3 Arborist and as specified in AS 4373 'Pruning of Amenity Trees'.

Tree Protection Zone 8, 9,10,11,12,15,16,17, 18, 18A, 37, 38 & 39

Unless otherwise stated, the following activities must not be carried out within the TPZ:



- Modification of existing soil levels
- Cultivation of soil
- Storage of materials, plant, or equipment
- Preparation of chemicals, including preparation of cement products
- Parking of vehicles and plant
- Refuelling
- Wash down and cleaning of equipment
- Physical damage to tree

Mulch Tree Protection zones

C) To be applied in TPZ minimum 75 -100mm using material that complies with Australian Standard® 4454-2003 Composts, soil conditioners and mulches. Refer: to Tree Location Plan for areas for mulch application Indicative Trunk protection Tree

HOLD POINT: Trunk Protection installed prior to site establishment Street Trees

D) Trees prior to the commencement of any works Trunk protection installed to Street Trees 40,41,42,43,44,45.

Trunk Protection by way of Timber planks (50mmx 100mm or similar) shall be placed around tree trunks.

The timber planks shall be spaced at 100mm intervals,

and must be fixed against the trunk secured together with 2mm galvanised wire.

These shall be strapped around the trunk (not fixed in anyway) to avoid mechanical injury or damage.

Trunk protection should be installed prior to any site works and maintained in good condition for the duration of the construction period.

Ground protection: Heritage Trees and retained Trees

E) Tree sensitive surface installations need to be installed above the current grade levels and involve no excavations or any root pruning. This is primarily done by using some form of load bearing material e.g. rumble boards over crushed aggregate that can be installed above the current grade without needing to compact the soil surrounding the existing root system. The materials above will also need to be permeable to allow water infiltration and gaseous exchange for the root system.

Appropriate treatments well before construction begins such as irrigation, fertilisation, required pruning and dead wooding.

1. **Construction/Excavation (Operational Phase)**
    - **Hand Digging:** Within the TPZ, excavation should be done by hand or with equipment that does not damage roots (e.g.vacuum excavation).
    - **Install Fencing:** Erect tree protection fencing immediately after tree pruning and before any site clearing or heavy machinery arrives.
    - **Minimize Exposure Time:** Keep excavations within the root zone open for as short a time as possible.
2. **During Excavation (Protection Phase)**
    - **Clean Cuts:** Roots exposed during excavation must be immediately cut back to a clean edge.
    - **Desiccation Protection:** Cover exposed roots immediately with damp hessian or jute mesh and keep it moist until backfilled.

Irrigation: Increase watering in the root zone before, during, and after construction, especially if work occurs during spring or summer

F) **Pruning trees retained for scaffolding clearance.**

Undertaken prior to site establishment Trees 15,16,18,18A . Tree pruning work shall be carried out by an experienced Certified AQF Level 3 Arborist in accordance with Safe Work Australia Code of Practice 'Guide to Managing Risks of Tree Trimming and Removal Work'.

Site Management

G) Materials and Waste storage, site sheds and temporary services shall not be located within the TPZ.

H) **Fill Material**

Placement of fill material within tree protection zone of trees to be required should be avoided wherever possible. Where placement of fill is unavoidable ,the material should be a well-drained friable material, equivalent in texture to the existing site topsoil material complying with AS4419:2003 *Soils for Landscaping and Garden use*.

HOLD POINT: Project Arborist to supervise demolition of hard stand surfaces within the TPZs of tree 16,18 & 18 A.

I) Removal of hard stand areas.

The removal of hard stand areas within the TPZs of trees numbered 16,18 and 18A trees nominated for retention, removal of the existing hard stand areas shall be undertaken under the supervision of the Site Arborist. The bitumen surface and sub-base within the TPZ shall be gradually removed in layers of no greater than 50mm thick using a small rubber tracked excavator or alternative approved method to avoid damage to underlying roots and minimise disturbance and compaction of the underlying soil profile. The machine shall work within the footprint of the existing paved surfaces to avoid compaction of the underlying soil. The final layer of sub -base material shall be removed using hand tools.

J) Tree Protection Signage

Prior to commencement of any works, tree protection signage is to be attached to the tree protection fencing, displayed in a prominent position. The name and address of Developer and Project Arborist.

k) Scaffolding where any branches conflict with scaffolding they shall be tied back and protected as deemed necessary by the Project Arborist.

Works within the Tree Protection Zones Tree 9, 11, 15, 16, 18, 18A, 37, 38 & 39.

l) Root Mapping undertaken to locate any woody roots to determine location of tree roots that may be damaged by the proposed development.

Refer: Appendix C. Root Mapping Investigation.

Hold Point: Stormwater connection within retained trees 9 & 37

M) Stormwater reconstruction

The proposed stormwater line shall be installed outside the tree protection zone of the subject trees 9 & 37, as stated in Clause 4.5.5 All services should be routed outside the TPZ. If under underground services need to be routed within the TPZ they should be installed by hand digging, hand excavated pits on retained trees should be undertaken. Proposed stormwater line is within the TPZ of trees 9 & 37 northwest boundary of the subject site and tree 9 to be reconstructed due to tree roots. The project arborist will supervise the hand digging of the reconstructed pipe and pit, will advise the diameter of roots that can be cut and roots to be retained. Roots encountered less than 40mm shall be cleanly severed with a sharp pruning implement (secateurs) where roots greater than 40 mm are encountered, the roots will be retained and intact.

Hold Point – Project Arborist to supervise OSD Installation

N) OSD Tank installation.

The proposed OSD tank is situated outside the root zones of the offsite trees. RLs 83.52 rear boundary trees proposed OSD tank is RL83.28. trees are remote from the installation of OSD tank and shall remain viable into the future.

Hold Point – Project Arborist Tree 45. Excavations within Tree Protection Zone Crossover and Driveway.

O) Crossover and Driveway installation.

Non -destructive excavation techniques may include the use of hand -held implements, air pressure or water pressure. To a maximum depth of 800mm below surface levels, to locate and expose any woody roots prior to mechanical excavation. Where large woody roots greater than 40mm are encountered further advice from Project Arborist shall be sought. Where woody roots less than 40mm are encountered they shall be cleanly severed with a sharp pruning implement. Tree is nominated for retention and protection throughout all stages of the proposed development

Table 5. SRZ and TPZ Impact Assessment Trees Retained

Tree	Genus Species	SRZ	TPZ	Incursions	Tree Management
8	*Phoenix canariensis (Canary Island Date palm*	2.6mR	6.7mR	NRZ radius 2mR Nil Impact	Trunk and Ground protection prior to site establishment
9	*Syzygium paniculatum* (Magenta Lilly Pilly)	3.1mR	6.8mR	Nil incursion into SRZ and TPZ	Nil incursion into SRZ and NRZ. Stormwater lines to be hand dug within TPZ 150mm deep by 500mm wide stormwater line and proposed A8 pipe
10	*Phoenix canariensis (Canary Island Date palm*	2.6mR	6.7mR	NRZ radius 2mR Nil Impact	Trunk and Ground protection prior to site establishment
11	*Syncarpia glomulifera* (Turpentine)	3.2mR	10.2mR	26.6% major encroachment into NRZ	No woody roots greater than 20mm diameter were encountered. Tree will remain viable through construction and into the future. Refer Appendix C Root Mapping Findings
12	*Phoenix canariensis (Canary Island Date palm*	2.8mR	7.8mR	NRZ radius 2mR Nil Impact	Trunk and Ground protection prior to site establishment

Table 5 SRZ and TPZ Impact Assessment Trees Retained

Tree	Genus Species	SRZ	TPZ	Incursions	Tree Management
15	*Syncarpia glomulifera* (Turpentine)	2.9mR	7.9mR	Moderate NRZ 18.7% incursion	No woody roots were one root 25mm the remaining were feeder roots. Tree will remain viable during construction and into the future. Refer Appendix C Root Mapping Findings Appendix D. Pruning Specifications
16	*Syncarpia glomulifera* (Turpentine)	3.0mR	8.0mR	21% Major encroachment into NRZ	Woody roots less than 30mm were encountered. Tree will remain viable during construction and into the future .Refer Appendix C Root Mapping Findings Appendix D. Pruning Specifications
18	*Syncarpia glomulifera* (Turpentine)	3.2mR	9.1mR	Major encroachment into NRZ 22.2%	Nominated for retention.Refer: Appendix C Root Mapping Findings. Refer Appendix D. Pruning Specifications .
18A	*Syncarpia glomulifera* (Turpentine)	3.1mR	9.0mR	Major encroachment 26.7%	Woody roots less than 30mm were encountered. Tree will remain viable during construction and into the future .Refer Appendix C Root Mapping Findings Appendix D. Pruning Specifications

Table 5 SRZ and TPZ Impact Assessment Trees Retained

Tree	Genus Species	SRZ	TPZ	Incursions	Tree Management
37	*Waterhousia floribunda* (Weeping Lilly Pilly)	3.2mR	9.9mR	5.7% incursion into NRZ	Less than 10% of NRZ Unlikely to significant impact to tree health, longevity or structure
38	*Pittosporum undulatum* (Sweet Pittosporum)	1.8mR	2.6mR	Less than 10% of NRZ Unlikely to significant impact to tree health, longevity or structure.	Within the 6-metre setback Tree should remain viable, trunk protection installed prior to site establishment.
39	*Pittosporum undulatum* (Sweet Pittosporum)	2.6mR	5.1mR	Less than 10% of NRZ Unlikely to significant impact to tree health, longevity or structure.	Within the 6-metre set back Tree should remain viable, trunk protection installed prior to site establishment.

G) Scaffolding where any branches conflict with scaffolding they shall be tied back and protected as deemed necessary by the Project Arborist.

Works within the Tree Protection Zones Tree 9, 11, 15, 16, 18, 18A, 37, 38 & 39.

H) Root Mapping undertaken to locate any woody roots to determine location of tree roots that may be damaged by the proposed development.

Refer: Appendix C. Root Mapping Investigation.

Appendix B. Tree Protection Plan (TPP)

Construction/Excavation (Operational Phase)

Sucker Truck: Within the TPZ, T37 excavation should be done by hand or with equipment that does not damage roots (e.g. Vacuum excavation).

Install Fencing: Erect tree protection fencing immediately after tree pruning and before any site clearing or heavy machinery arrives.

Minimize Exposure Time: Keep excavations within the root zone open for as short a time as possible.

During Excavation (Protection Phase)

Clean Cuts: Roots exposed during excavation must be immediately cut back to a clean edge.

Desiccation Protection: Cover exposed roots immediately with damp hessian or jute mesh and keep it moist until backfilled.

Irrigation: Increase watering in the root zone before, during, and after construction, especially if work occurs during spring or summer

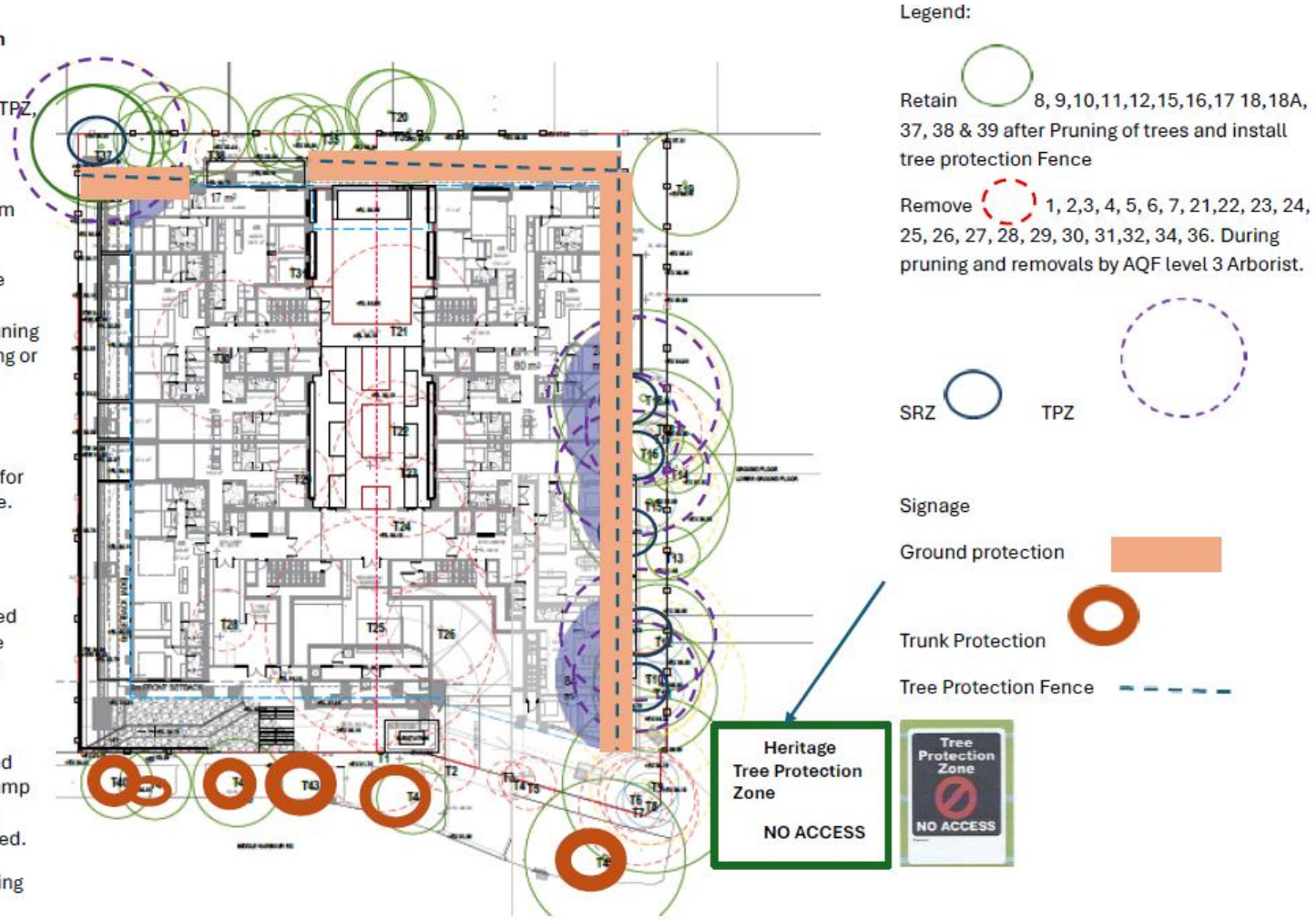


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Table 6. Construction Inspection Schedule

Arboricultural Action	Programming	Extent of Arboricultural Input	Signed Off (Project Arborist)
Pre-start meeting with Project Manager and Demolition Contractor team to discuss any emerging issues, tree removal , pruning works and tree protection Establishment	Before any activities start onsite.	• Meeting with relevant members of the project managers team to explain the Extent of tree constraints, i.e. Architect, Site Manager, engineer, landscape architect, contractor, etc • Review working space requirements to consider fencing and ground protection adjustments to improve site functionality. • REVIEW site setup i.e. site office equipment storage, plant, cranes. • Review post consent layout changes that may affect trees. • Confirm Tree protection measures acceptable.	
Tree removal and /or pruning works	Before tree protection established	• Project Arborist to provide pruning specification if required. • Project Arborist to supervise tree removal or pruning works undertaken by AQ F Cert 111 Arborist.	
Installation of tree protection measures as per this site specification for agreement with the consent authority	Post tree removal or tree pruning and prior to contractor site occupation	• Tree protection fence installed • Site fencing can be installed by the contractor as per this specification	

Table 6 Works Schedule and Responsibilities.

HOLD POINT 1	Programming	Extent of Arboricultural Input	Signed off (Project Arborist)
Tree Protection certification	Before hand over to contractor and site occupation	• Project Arborist to inspect all tree protection measures. • Conduct a VTA of all surveyed trees to assess and record health, vigour and condition. • Produce a certification document outlining observations and compliance.	
HOLD POINT 2.			
Pre- Demolition and construction meeting with contractor	Before hand over to contractor and site occupation.	• Meeting with Project managers team i.e. Architect ,site manager engineers landscape architect. • Review site setup i.e. site office, equipment storage, plant, cranes. • Review works proposed in TPZ's Review post consent layout changes that may affect trees.	
Site inspections	During the demolition or construction phases.	• Project Arborist shall conduct inspections of the site to conduct compliance checks as specified by the consent authority.	
Tree Protection Measures removed	Post demolition and prior to handing over the project completed and or occupation certificate.	Removal of tree protection to be approved by the Project Arborist	
HOLD POINT 3.			
Final Certification		• Project Arborist to conduct a final certification • Conduct a VTA of all surveyed trees to assess and record Health, Vigour and Condition. • Provide A certification document outlining observations and any recommendations.	