REVISION: E. (previous revision D: dated 26.09.25)

PROJECT: **Consulting Arboricultural**

Tree Protection Specification

Parramatta Civic Link Block 3.

Horwood Place (between George & Phillip Street, Parramatta).

BACKGROUND AND SUMMARY:

i. This Consulting Arboricultural Tree Protection Specification (**TPS**) report and Tree Protection Plan (**TPP**) is to accompany the proposed street upgrade, through ARCADIS Civil Engineering as the Project Lead, Oculus Landscape Architects, for Parramatta City Council as the project client.
ii. This arboricultural TPS with TPP outlines the methodology around the suitable protection during construction for the five (5) trees to be retained as part of this design.
iii. Streetscape upgrade works include upgrades to the public landscape amenity and including new pavement, landscape and landscape features including hardscape elements and furniture and approximately 31 new trees. As well, new services and stormwater works are proposed.
iv. The trees and their context were assessed by Elke Haege Thorvaldson on 4 August 2023.

PREPARED FOR: **ARCADIS Civil Engineering as the Project Lead, Oculus as the landscape architect, for Parramatta City Council as the Client.**

PREPARED BY: **ELKE** - Consulting arborist AQF Level 5:
Elke Haege Thorvaldson AILA FRLA, MAIH

Elke Haege Thorvaldson
ELKE Landscape Architect + Consulting Arborist + Horticulturist.
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ASSESSMENT AND REPORT PREPARED BY: Elke Haege Thorvaldson AILA FRLA, MAIH

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Registered Horticulturist. Australian Institute of Horticulture. MAIH #EHT0423

GLOSSARY AND ABBREVIATIONS:

Reference	Description
AIA	Arboricultural Impact Assessment
AS4970-2009 & AS4970-2025	Australian Standard for the Protection of Trees on Development Sites.
CC	Construction Certificate
AS 4373 – 1996	Australian Standard AS 4373 – 1996, Pruning of Amenity Trees, Standards Australia.
AS 4454 – 2003	Australian Standard AS 4454 – 2003, Composts, soil conditioners and mulches
Council	The City of Parramatta Council Local Government Area
DA	development application
DD	Design Development
Project Arborist	project consulting arborist
SRZ	Structural Root Zone AS 4970:2025 . The SRZ is the innermost zone critical for tree stability, encompassing the woody roots and associated soil cohesion necessary to support the tree. Any encroachment into the SRZ is generally considered highly impactful and requires rigorous assessment and mitigation strategies.
TPS	Tree Protection Specification - AS 4970:2025 separates TPS and TPP This is the written documentation. It contains all the detailed instructions, a schedule of works, and compliance requirements for protecting the trees. It specifies the type of fencing to be used, the timing of different works, the role of a project arborist, and other critical details.
TPZ	Tree Protection Zone 4970-2025 (refined definition) With the introduction of the NRZ, the term Tree Protection Zone (TPZ) now specifically refers to the physical area on a development site that is protected during development activities. This protection is typically achieved through physical barriers, site management measures, and specific construction controls. Essentially, the NRZ is the calculated ideal area, while the TPZ is the practical, implemented protected area on site. This clarification aims to avoid ambiguity in planning and on-site implementation. It emphasises that while the NRZ is the biological requirement, **the TPZ is the actionable zone of protection.**
NRZ	Notional Root Zone 4970-2025 (standard) standard introduces the term Notional Root Zone (NRZ). This term replaces what was previously

	largely understood as the Tree Protection Zone (TPZ) in the 2009 standard, in terms of its theoretical calculation. The NRZ represents the theoretical area required to sustain a tree's health and long-term viability. Importantly, the calculation method for the NRZ remains the same as the previous TPZ calculation (Diameter at Breast Height* (DBH) x 12). This area is considered essential for the tree's physiological processes, including the uptake of water and nutrients to sustain its health. The NRZ can be categorized into a more nuanced framework (including recent NRZ encroachments) Minor, Moderate (10-20%) and Major Encroachments. DBH is now DSH (Diameter at Standard Height, measured at 1.4m from the ground).
TPZ	Tree Protection Zone 4970-2025 (refined)
TPP	Tree Protection Plan - **AS 4970:2025** separates TPS and TPP. **TPP):** This is the **drawing or site plan**. Its purpose is to visually show the location of the Tree Protection Zone (TPZ), fencing, and other on-site protective measures. It's the "blueprint" for where and how protection will be implemented on the site.

Reference	Description
Tree, Protected Tree	Applies to any tree or palm, whether it is a native or an exotic species that is 5m in height, or if the tree is 3m in height or greater and is located on public land (irrespective of size), forms part of a heritage item or is within an HCA, or forms part of an Aboriginal object or within an Aboriginal place of heritage significance, is listed on the NSW Heritage Register, or is identified as part of an ecological community
DCP	Parramatta Development Control Plan (DCP) 2023[1]. Part 5.3.4 Environmental Management, Control C.12 Publicly Owned Land
Pruning control	Permit /approval required for any pruning or removal of roots (greater than 30mm in diameter
Arborist Report	Arborist report requirements https://www.cityofparramatta.nsw.gov.au/environment/city-in-nature/urban-forest/trees-and-development
Greening Parramatta	Greening Parramatta Tree Map: Interactive Map. No Planned tree planting under the Greening Our City grant program is planned near the site according to this map. Date accessed: 10 October 2024 https://parracity.maps.arcgis.com/apps/webappviewer/index.html?id=2ee535b6b6f74471973ed2f24008bafe

[1] Parramatta_DCP_2023_05_As_published_23_November_2023_Part_5_Environmental_Management.pdf (nsw.gov.au)

CONTENTS

1 Introduction and updates since the last revision

1.1 In November 2024, the arboricultural impact assessment (AIA) report package was prepared by Elke Haege Thorvaldson, AQF Level 5 Consulting Arborist.

1.2 Since that time, the project lead and landscape architect have changed with updated layout plans, however the overall impact to the trees remained largely the same. The project lead is ARCADIS Civil Engineering and Oculus is the landscape architect, with the site and client being Parramatta City Council.

1.3 An increased site area onto Phillip Street has occurred since the last arborist impact assessment (AIA) report (revision C) which encompasses three additional trees on the northern part of the subject site along Phillip Street.

1.4 Two of the three trees on Phillip Street (T1 and T2) are proposed for removal with replacement due to the mains stormwater being close to the surface directly under these two trees. T3 is largely outside the scope of works, however tree protection fencing is recommended.

1.5 The two trees are proposed to be replaced with two new trees as shown on the Oculus landscape plan (located further south from the stormwater mains, but in close proximity to the exiting trees to be removed).

1.6 This Consulting Arboricultural Tree Protection Specification (**TPS**) report and Tree Protection Plan (**TPP**) is to accompany the proposed street upgrade Design Development (DD) package, through ARCADIS Civil Engineering as the Project Lead, Oculus Landscape Architects, for Parramatta City Council as the project client. This TPS and TPP is intended to be used for DD, Tender and during the construction phase. For a the full AIA Report, refer to revision C, November 2024.

2 Trees Requiring Retention and Protection

2.1 The following trees have been identified on the DA consent as requiring protection.

Table A:

Tree Number	Botanical / Common Name	Tree Protection Zone Fencing dimensions 'No Go Zone' ATF Style 2.1m High panels.	Notional Root Zone (NRZ[2]) (radius from centre of tree)	Structural Root Zone (SRZ) (radius from centre of tree)
3	*Flindersia australis (Crow's Ash)*	1.8m x 1.8m as shown on the TPP Arb_602.	1.68 m	1.75 m
7	*Platanus x acerifolia (Plane Tree)*	1.6m x 4m as shown on the TPP Arb_602	2.64 m	2.13 m
10	*Platanus x acerifolia (Plane Tree)*	1.6m x 4m as shown on the TPP Arb_602	3.00 m	2.08 m
12	*Platanus x acerifolia (Plane Tree)*	1.6m x 4m as shown on the TPP Arb_602	2.28 m	1.91 m
13	*Platanus x acerifolia (Plane Tree)*	1.6m x 4m as shown on the TPP Arb_602	3.12 m	2.25 m

[2] Notional Root Zone (NRZ)– formerly known as Tree Protection Zone (TPZ)

2.2 The site, a streetscape, being Horwood Place runs North/South with Parramatta River to the north just beyond the Parramatta Powerhouse Museum. The site has a crest in the centre and slopes towards the north. The trees are all planted within urbanized settings, typically with pavement, kerb and road surrounding. Refer to Figure 1 below.

Figure 1. *The study area approximately outlined in yellow showing Horwood Place with Phillip Street to the north and George Street, Parramatta to the south. Source: Google Earth. Date of sattelite imagery: 30.03.2024. Date accessed: 01.10.2025*

3 Australian Standards and Data Collection Documents

3.1 The Australian Standard, *AS 4970-2025 and 2029* "*The Protection of Trees on Development Sites"* has been used as the guiding standard reference to provide recommendations of the assessed trees.

3.2 The Australian Standard, *AS 4373-2007 "Pruning of Amenity Trees"* has also been referred to in this assessment report within the recommendations section.

4 Tree Protection Plan (TPP).

4.1 Arborist Plans have been created on A1 sized sheets :

- Arb 600, Key Plan and Site Context Plan (1:500 at A1)
- Arb_601: Arboricultural Tree Retention Values Plan (1:200 at A1)
- Arb_602: Arboricultural Tree Protection Rating Plan (1:200 at A1)

Reference		(m)	(m)	AREA (m)										Refer to Appendix 4a and 4b				Refer to report.	
Id #	*Species*, Common Name	Age class	Estimated Height (m)	Trunk Diameter 1.4m above ground level	Proposal to: retain and protect or remove	Canopy spread (m) N	E	S	W	Diameter above root crown (RCB)	Health and Structural Condition	SULE (Appendix 2)	Landscape Rating (Appendix 1)	Retention Rating (Appendix 5)	Site Location	NRZ (m) Radius	NRZ (m2) Area	SRZ Radius (m)	SRZ (m2) Area zone	NRZ Encroachment	SRZ Encroachment
Phillip Street - North of site																					
1	*Flindersia australis* / Crow's Ash	SM	8.5	0.22	Proposal to remove (with approval)	2	3	3	3	0.3	Nearby the construction of the Powerhouse Museum. Slightly more open habit and larger height than T2, however likely planted at the same time. Overall form appears visually sound.	M - L	M	M / 3	OB, Phillip St North	2.64	21.90	2.00	12.51	over / full impact	over / full impact
2	*Flindersia australis* / Crow's Ash	SM	7	0.15	Proposal to remove (with approval)	1.5	1.5	1.5	1.5	0.22	Species appropriate: Visual appearance: suitable, semi-shaded, evergreen native tree form for an urbanised street verge with compact canopy and dense foliage cover and clear trunk. Zone around tree pit has sunken (a depression), possibly due to slumping subgrade. T1 and T2 are to be removed and replaced, it is understood to be due to close proximity to near to the surface underground sewer.	M - L	M	M / 3	OB, Phillip St North	1.80	10.18	1.75	9.64	over / full impact	over / full impact
3	*Flindersia australis* / Crow's Ash	SM	7.1*	0.14	Retain and Protect	1.5	2	1.5	2	0.22	Slight lifting of pavers at base of tree pit surround. Small specimen which is not providing much by way of shade; nonetheless is evergreen and native. Compact form. Location lends itself for a larger specimen. Outside scope of works	M - L	M	M / 4	OB, Phillip St North	1.68	8.87	1.75	9.64	nil	nil
Parramatta Civic Block 3. Along Horwood Place																					
4	*Liquidambar styraciflua* / Liquidambar	M	15.4*	0.46	Proposal to remove (with approval)	6	5	6	6	0.62	Buttress roots flare at Root Crown Base. Measurement at RCB with buttress rooting is: 1.1m. Exposed roots visibly girdling and asphalt surround is lifting particularly on east side of T4. Stature of tree is established and likely provides good summer shade and allows winter afternoon sun. Many services located within/under tree pit zone. Crown lifted and first branch at 2.8m high and canopy extend over the road (west) as a favourable attribute.	M	M	M / 3	Street Verge. WP	5.52	95.73	2.71	23.03	over / full impact	over / full impact
5	*Platanus x acerifolia* / Plane Tree	M	21.8*	0.44	Proposal to remove (with approval)	9	6	9	7	1	Like T4, T5 also has a large asphalted zone around its base. Tree roots appear to have lifted and cracked asphalt in approximately 4 locations. Canopy tends west as well as extending over the fixed awning to the east. Established scale and canopy. A light pole is within the canopy and <1m from the base of the tree. Whilst the tree form appears visually sound, exposed roots are visible at the Root Crown Base. First branching is at 3.5m	M	M	M / 3	Street Verge. WP	5.28	87.58	3.31	34.41	over / full impact	over / full impact
6	*Platanus x acerifolia* / Plane Tree	M	20.3*	0.77	Proposal to remove (with approval)	5	5	8	8	0.72	co-dominant form at 1.5m high and tri-dominant form at 2m high, else the main trunks are clear /crown lifted of cars and fixed awning. Mistletoe present in canopy on west side. Form is established and tending slightly to the west (as would be expected). Some kerb lifting/shifting adjacent tree.	M	M	M / 3	Street Verge. WP	3.00	28.27	2.88	26.11	over / full impact	over / full impact

Age Class
ST (Senescent)
OM (Over Mature)
M (Mature)
SM (Semi-Mature)
J (Juvenile)

Tree diameter at 1.4m H above ground level is used in the Notional Root Zone (NRZ) calculation.

Dia. RCB is used in **SRZ** calculation

Proposal to Retain
Proposal to remove (with approval)
Proposal to transplant

* Heights measured with Nikon Pro II Forestry Pro Laser Rangefinder in 3 point mode to 0.1m accuracy

Crown Density PFC
Dense >90%
Normal 70-90%
Slightly thin'g 60-70%
Thinning 40-60%
SP sparse <40%
PFC = projected foliage cover

SULE
L ong(> 40 Years)
M edium(15-40 Years)
S hort(5-15 Years)
T (Transient < 5)
H (Hazardous/Dead)

LANDSCAPE RATING
S (Significant)
VH (Very High)
H (High)
M (Moderate)
L (Low)
VL (Very Low)
IN (Insignificant)
Ex (Exempt TPO)
T (Threatened S)

Retention Rating
H - high 1 to 3 Priority retain
M - moderate 4 to 5 Consider retain
L -low 6 Consider Removal
VL - very low 7 Priority Removal

Site Location
O Inconspicuous /obscured location
M Moderate location, not obscuring
P Prominent position
HV Highly Visible from street/surrounds
E (Edges) Periphery of site
WP Within Develoment Potential
OB Outside Boundary

Measured in CAD. Encroachment based on root zone encroached as a % of TPZ. Canopy incursion based on incursion as a % of canopy. Refer arborist report for details.

Reference			(m)	(m)	AREA (m)											Refer to Appendix 4a and 4b				Refer to report.	
						Canopy spread (m)															
Id #	*Species*, Common Name	Age class	Estimated Height (m)	Trunk Diameter 1.4m above ground level	Proposal to: retain and protect or remove	N	E	S	W	Diameter above root crown (RCB)	Health and Structural Condition	SULE (Appendix 2)	Landscape Rating (Appendix 1)	Retention Rating (Appendix 5)	Site Location	NRZ (m) Radius	NRZ (m2) Area	SRZ Radius (m)	SRZ (m2) Area zone	NRZ Encroachment	SRZ Encroachment
Parramatta Civic Block 3. Along Horwood Place																					
7	*Platanus x acerifolia* Plane Tree	J to SM	13	0.22	Retain and Protect	4.5	4	5	5	0.35	Smaller specimen than T5 and T6, and located at top of crest in road. Single trunk with light pole within the tree pit (<1m from tree). T7 has Softfall to surround.	M - L	M	M 3	Street Verge. WP	2.64	21.90	2.13	14.24	nil	nil
8	*Elaeocarpos reticulatus* Blueberry Ash	SM to M	8.5	0.18	Proposal to remove (with approval)	3	3	1.5	3	0.26	Located in low brick planter (approx. 450mm high), and T8 is approximately 1.2m away from T9. Canopy density and tree condition visually appears very good. Juniperus horizontalis and dwarf Nandina are within planter bed at base (and are successful).	M	M	M 3	In raised planter. WP	2.16	14.66	1.88	11.10	over / full impact	over / full impact
9	*Melaleuca styphelioides* Prickly Leaved Paperbark	M	7.5	0.33	Proposal to remove (with approval)	3.5	3.5	3.5	2	0.28	Tree size and form is very suitable for its context, providing shade and landscape separation for the adjacent café alfresco area. Brick planter has 2 locations where bricks have shifted/cracked. T9 has a small amount of dieback on end branches present with some yellowing of the leaves (which could be due to the winter conditions or an indication of soil needing some additional nutrients). If tree to be retained in planter, soil improvements and testing likely recommended along with light pruning of small amount of dieback.	M	M	M 3	In raised planter. WP	3.96	49.27	1.94	11.81	over / full impact	over / full impact
10	*Platanus x acerifolia* Plane Tree	J to SM	14.8*	0.25	Retain and Protect	6	4	5	6	0.33	Exposed and girdling roots at Root Crown Base. T10 appears to be the same planting age as T7 . Also with Softfall surrounding. Crown lifted canopy to 4m. Some cracking of asphalt pavement.	M	M	M 3	Street Verge. WP	3.00	28.27	2.08	13.56	nil	nil
11	*Platanus x acerifolia* Plane Tree	M	17.2*	0.37	Proposal to remove (with approval)	7.5	6	7.5	7	0.53	Tall straight bole, however there is much pavement lifting and cracking (of Softfall, asphalt and granite unit pavers). 5 pits present on the northern side of the tree and one pit on the south (sewer, Telecoms, and water). Opening in Softfall indicates extensive surface rooting and likelihood of shallow and/or little soil volume available to the tree.	S to M	M	M 4	Street Verge. WP	4.44	61.93	2.53	20.19	nil	nil
12	*Platanus x acerifolia* Plane Tree	SM	6.6	0.19	Retain and Protect	3	3	4	3	0.27	Both T12 and T13 appear to be from the same genetic stock and age with extensive crossing limbs which have likely caused rubbing and branch wounding at contact/crossing locations which show visual signs at the wound sites of branch damage. Both trees T12 and T13 have lifting and cracking asphalt cracking and visual indication of stunting, poor visual appearance with extensive scarring, and appearance of stunting (possibly with limited soil volume indicated with pavement lifting at semi mature age class). T13 shows more extensive pavement lifting at Root Crown Base. T12 has hanging dead branches due to branch arrangement.	S	M to L	L 5	Street Verge. WP	2.28	16.33	1.91	11.45	nil	nil
13	*Platanus x acerifolia* Plane Tree	SM	6.6	0.26	Retain and Protect	4	3	4	4	0.4		S	M to L	L 6	Street Verge. WP	3.12	30.58	2.25	15.94	nil	nil

Age Class
ST (Senescent)
OM (Over Mature)
M (Mature)
SM (Semi-Mature)
J (Juvenile)

Tree diameter at 1.4m H above ground level is used in the Notional Root Zone (NRZ) calculation.

Dia. RCB is used in **SRZ** calculation

Proposal to Retain

Proposal to remove (with approval)

Proposal to transplant

* Heights measured with Nikon Pro II Forestry Pro Laser Rangefinder in 3 point mode to 0.1m accuracy

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VH (Very High)
H (High)
M (Moderate)
L (Low)
VL (Very Low)
IN (Insignificant)
Ex (Exempt TPO)
T (Threatened S)

Retention	Rating
H - high Priority retain	1 to 3
M - moderate Consider retain	4 to 5
L -low Consider Removal	6
VL - very low Priority Removal	7

Site Location

O Inconspicuous /obscured location

M Moderate location, not obscuring

P Prominent position

HV Highly Visible from street/surrounds

E (Edges) Periphery of site

WP Within Develoment Potential

OB Outside Boundary

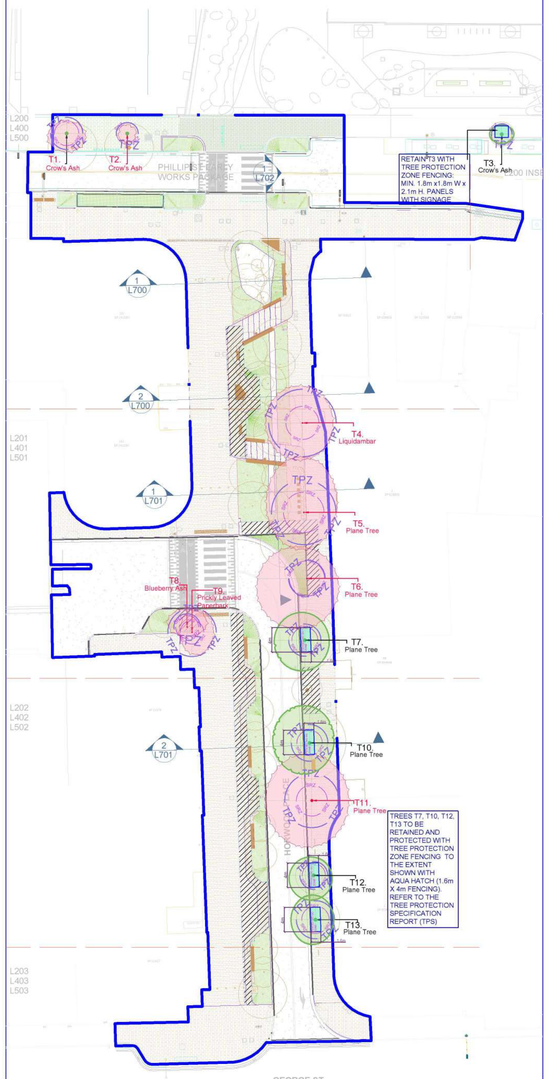
Measured in CAD. Encroachment based on root zone encroached as a % of TPZ. Canopy incursion based on incursion as a % of canopy. Refer arborist report for details.

PROJECT: Parramatta Civic Link Block 3. Consulting Arboricultural Package

The Arborist Tree Protection Plan and Tree Protection Specification packaes comprise the following:

- Arb_600 Consulting Arboricultural Key Plan + Cover Sheet (1:500 at A1)
- Arb_601 Consulting arboricultural Tree Retention Values Plan (with survey shown) (1:200 at A1)
- Arb_602 Consulting arboricultural Tree Protection Plan (with Oculus Site plan as underlay) (1:200 at A1)
- Consulting Arborist Tree Protection Specificaiton Report (A4)

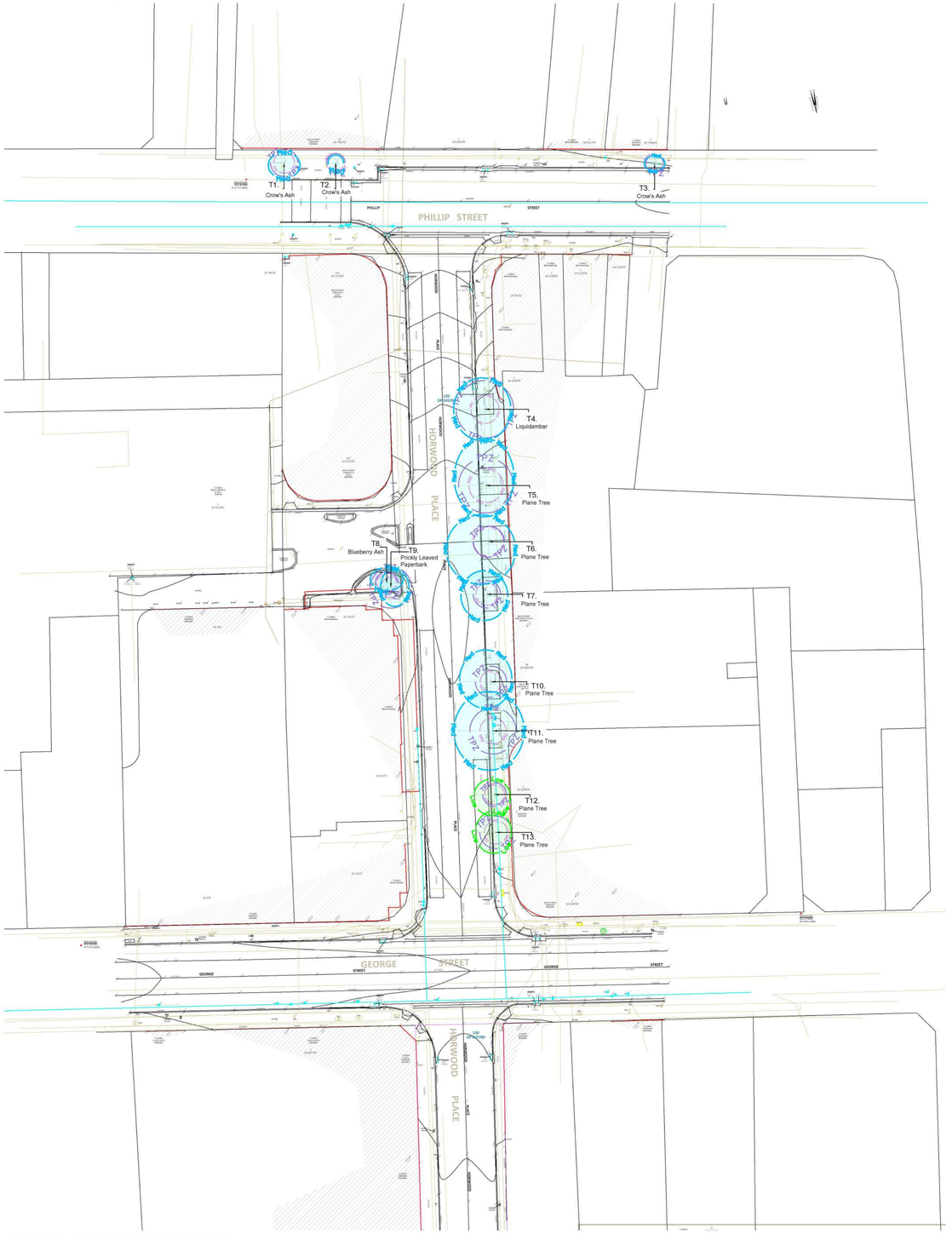
TREE IMPACT SITE PLAN.
REFER TO PLAN Arb_602 FOR DETAIL



SITE PLAY BY OCULUS DD AS UNDERLAY. SCALE: 1:500

AERIAL SATTELITE IMAGERY. APPROXIMATE STUDY AREA SHOW WITH YELLOW LINE.
SOURCE: Google Earth, Image date 30.03.2024. Date accessed: 01.10.2025

TREE RETENTION VALUES SITE PLAN AT 1:500 SCALE.
REFER TO PLAN Arb_601 FOR DETAIL



SURVEY PLAN USED AS BASE UNDERLAY.

elke LANDSCAPE ARCHITECT + CONSULTING ARBORIST. m: 0410 456 404 Level 1, Unit 2, 120 Oxford Street, Woollahra, NSW 2025 elke@elkeh.com.au www.elkeh.com.au

Registered Landscape Architect AILA (#001539)

The contractor shall check and verify all work on site (including work by others) before commencing the landscape installation. Any discrepancies are to be reported to the Project Manager or Landscape Architect prior to commencing work. Do not scale this drawing. Any required dimensions not shown must be referred to the Landscape Architect for confirmation. The Contractor must not construct from this drawing unless it marked 'Issue for Construction'. The Contractor acknowledges this drawing may be one of a number of drawings which together document the landscape design and works.

NOT FOR CONSTRUCTION

Issue	Revision Description	Date
D	Tree Protection Plan	01.10.25
C	Tree Protection Plan	26.09.25
B	100% Design Development	11.10.24
A	Preliminary information - for internal co-ordination only.	10.08.23

MN
TN
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Tree Protection Plan 1 of 3

Client: Parramatta City Council.
Project Lead: ARCADIS
Consulting Arborist: ELKE

Project: Parramatta Civic Link Block 3, Horwood Place, Paramatta. NSW (between Phillip & George Streets)

Drawing Name: Consulting Arboricultural Key Plan and cover sheet

This plan forms part of the consulting arboricultural Package

Scale: 1: 500 @A1
Scale bar: 0 2 5 10 15 25m
Drawn: EHT
Job Number: 2307_a
Drawing Number: Arb_600
Issue: D

A1

PROJECT: Parramatta Civic Link Block 3. Consulting Arboricultural Package

The Arborist Tree Protection Plan and Tree Protection Specification packaes comprise the following:

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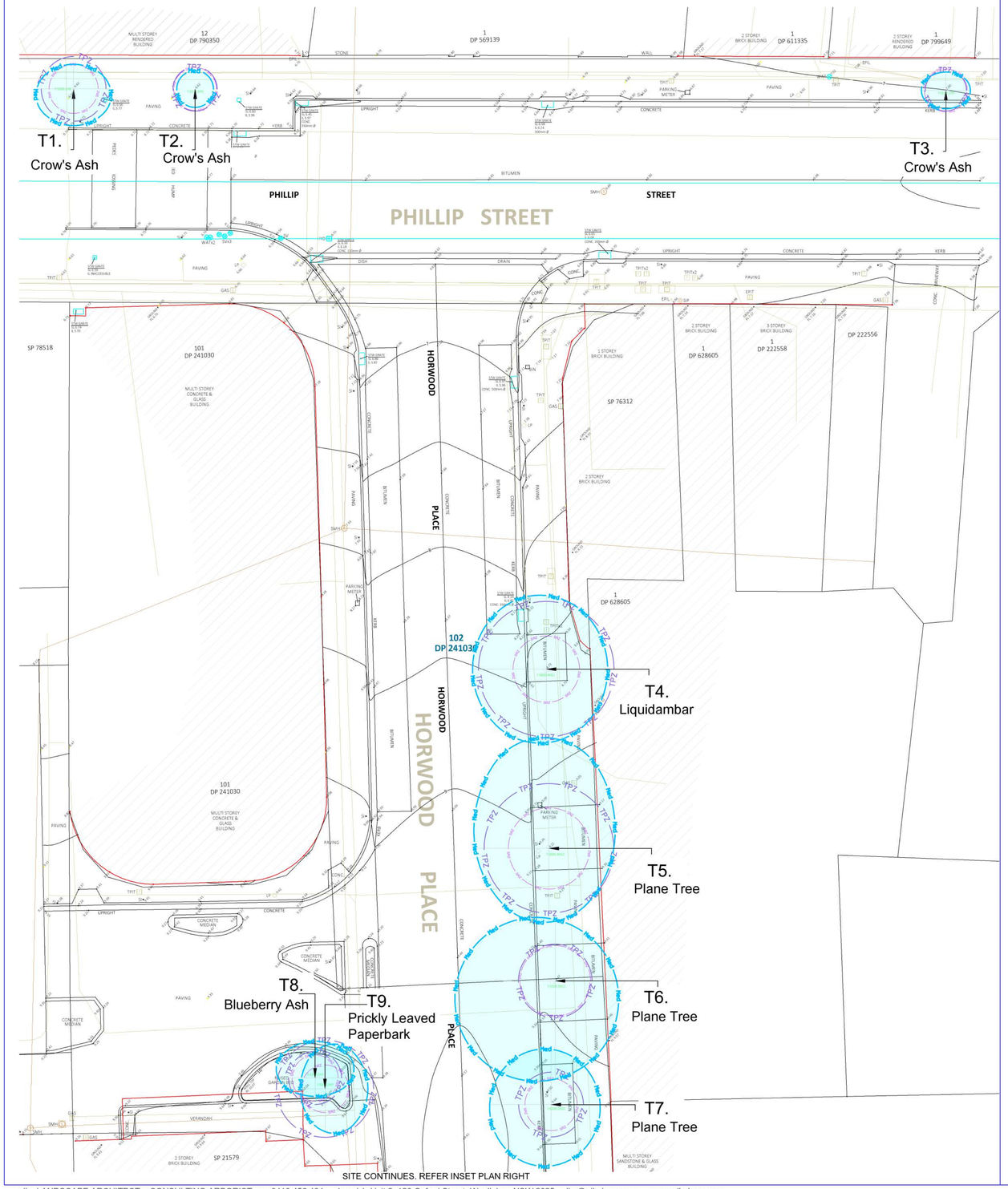
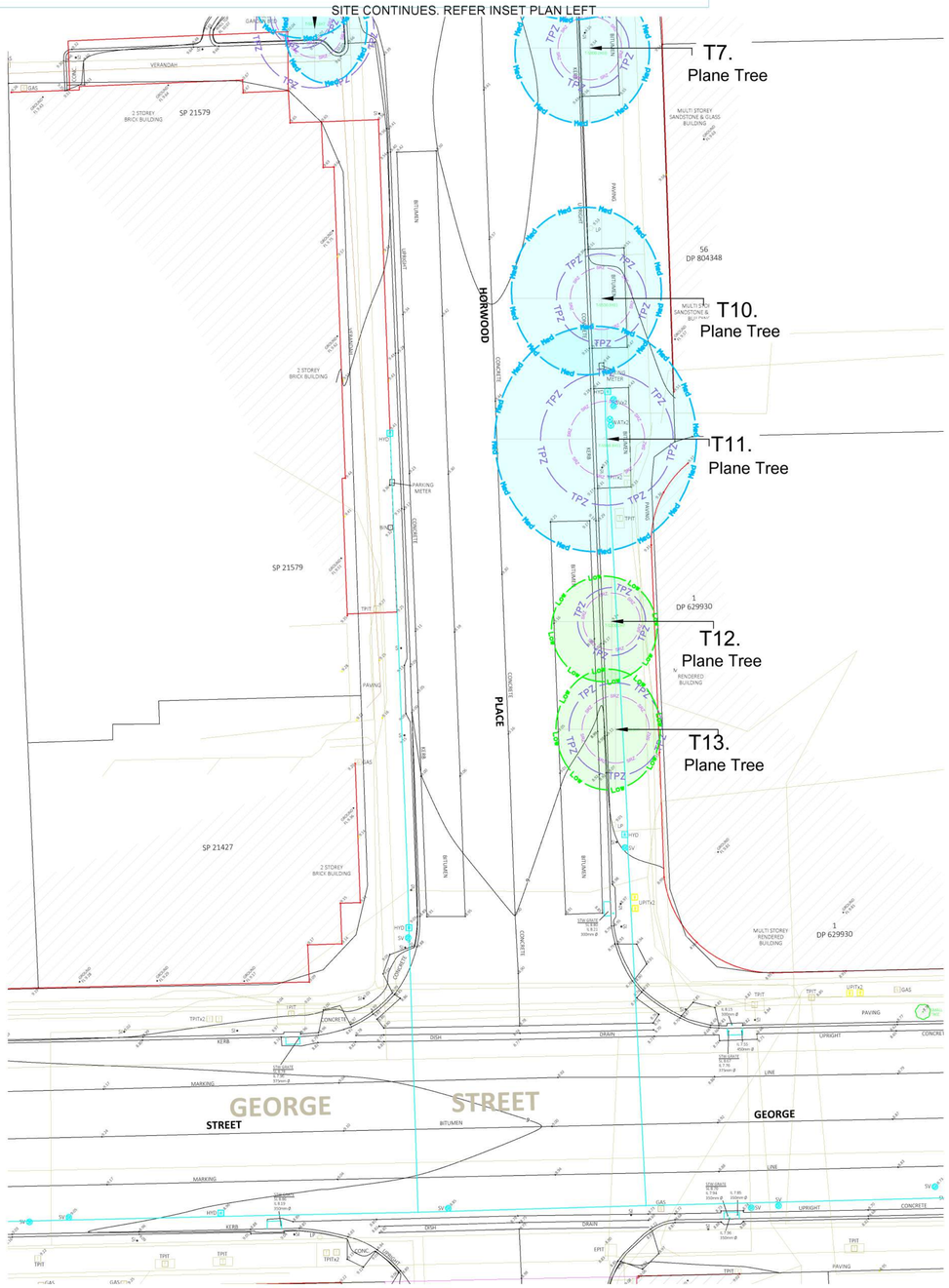
- Arb_601 Consulting arboricultural Tree Retention Values Plan (with survey shown) (1:200 at A1)
- Arb_602 Consulting arboricultural Tree Protection Plan (with Oculus Site plan as underlay) (1:200 at A1)
- Consulting Arborist Tree Protection Specificaiton Report (A4)





SURVEY PLAN USED AS BASE UNDERLAY.

elke LANDSCAPE ARCHITECT + CONSULTING ARBORIST. m: 0410 456 404 Level 1, Unit 2, 120 Oxford Street, Woollahra, NSW 2025 elke@elkeh.com.au www.elkeh.com.au

Registered Landscape Architect AILA (#001539)

The contractor shall check and verify all work on site (including work by others) before commencing the landscape installation. Any discrepancies are to be reported to the Project Manager or Landscape Architect prior to commencing work. Do not scale this drawing. Any required dimensions not shown must be referred to the Landscape Architect for confirmation. The Contractor must not construct from this drawing unless it marked 'Issue for Construction'. The Contractor acknowledges this drawing may be one of a number of drawings which together document the landscape design and works.

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C	Tree Protection Plan	26.09.25
B	100% Design Development	11.10.24
A	Preliminary information - for internal co-ordination only.	10.08.23

LEGEND

T1. Tree Reference number (Refer to Arborist Report)

Calculated Tree Protection Zone (TPZ) and Structural Root Zone (SRZ)

Informed Tree Retention Rating as assessed by arborist (refer to arborist report).

- High
- Moderate
- Low
- Very Low
- Exempt

MN TN N

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Tree Protection Plan 2 of 3

Client: Parramatta City Council.
Project Lead: ARCADIS
Consulting Arborist: ELKE

Project: Parramatta Civic Link Block 3, Horwood Place, Paramatta. NSW (between Phillip & George Streets)

Drawing Name: Consulting Arboricultural Tree Retention Values Plan. (with survey as base).

This plan forms part of the consulting arboricultural Package

Scale: 1: 200 @A1

Scale bar: 0 1 2 4 6 10m

Drawn: EHT

Job Number: 2307_a

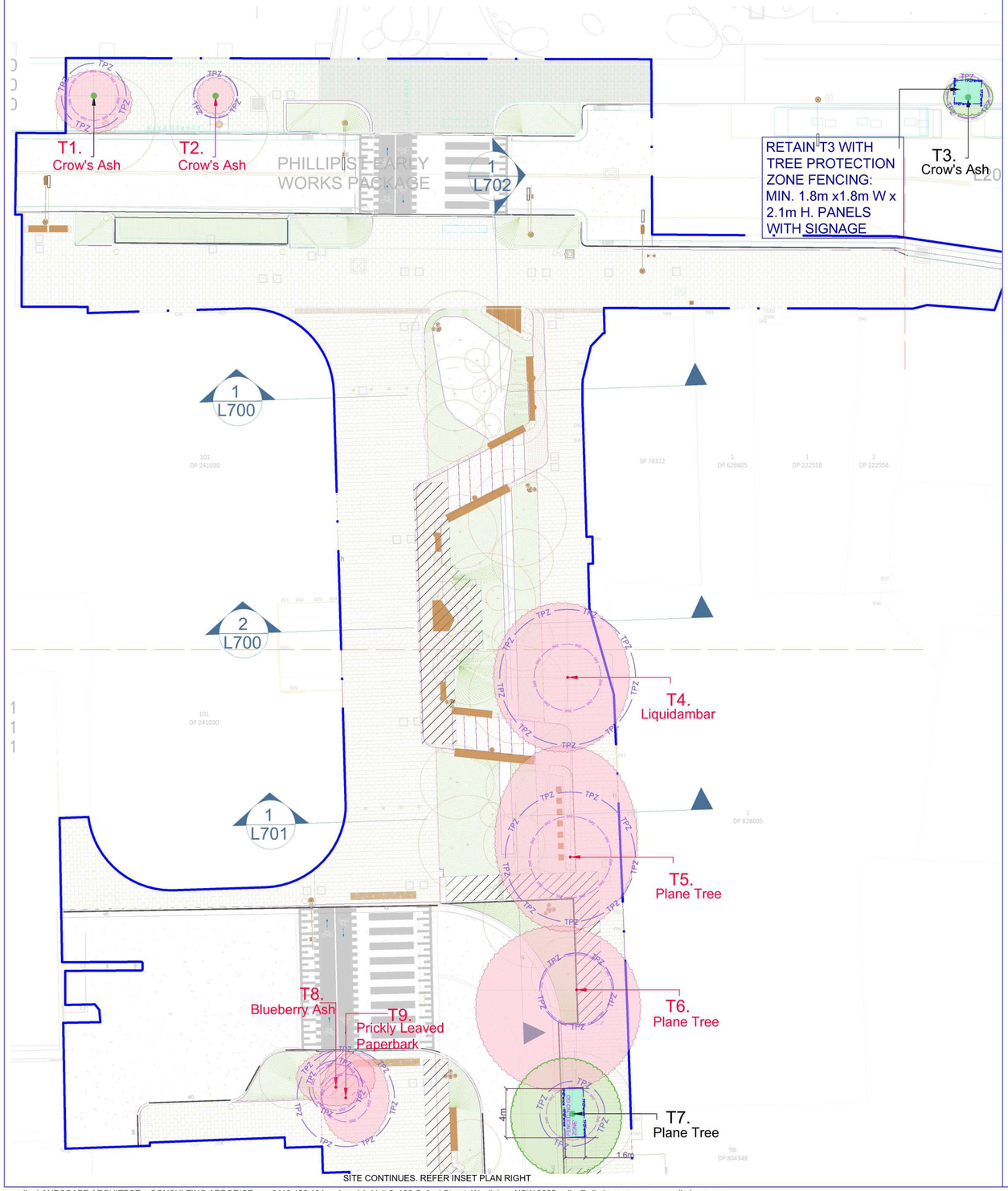
Drawing Number: Arb_601 Issue: D

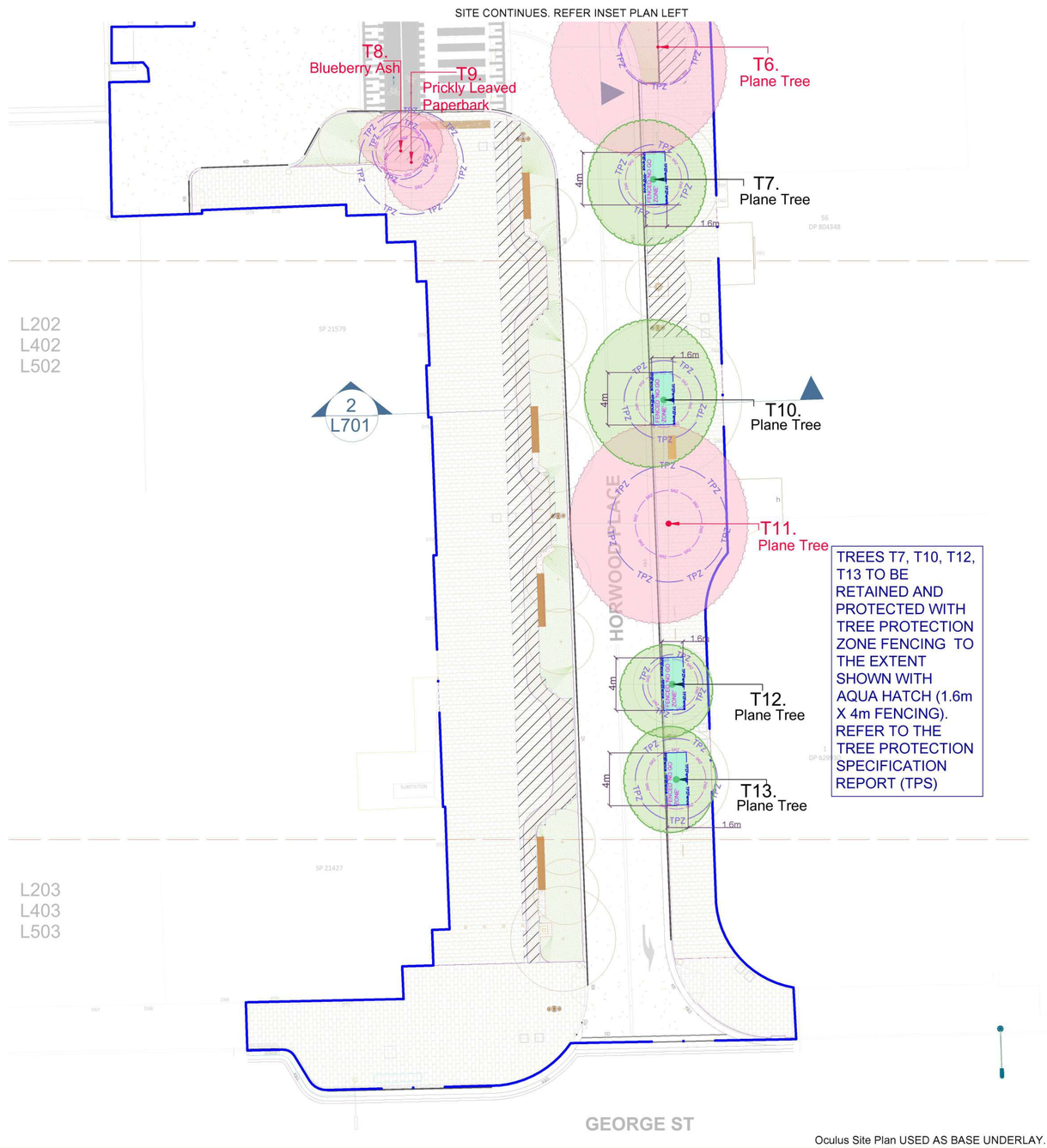
A1

PROJECT: Parramatta Civic Link Block 3. Consulting Arboricultural Package

The Arborist Tree Protection Plan and Tree Protection Specification packaes comprise the following:

- Arb_600 Consulting Arboricultural Key Plan + Cover Sheet (1:500 at A1)
- Arb_601 Consulting arboricultural Tree Retention Values Plan (with survey shown) (1:200 at A1)
- Arb_602 Consulting arboricultural Tree Protection Plan (with Oculus Site plan as underlay) (1:200 at A1)
- Consulting Arborist Tree Protection Specificaiton Report (A4)





Oculus Site Plan USED AS BASE UNDERLAY.

elke LANDSCAPE ARCHITECT + CONSULTING ARBORIST. m: 0410 456 404 Level 1, Unit 2, 120 Oxford Street, Woollahra, NSW 2025 elke@elkeh.com.au www.elkeh.com.au

NOT FOR CONSTRUCTION

Issue	Revision Description	Date
D	Tree Protection Plan	01.10.25
C	Tree Protection Plan	26.09.25
B	100% Design Development	11.10.24
A	Preliminary information - for Internal co-ordination only.	10.08.23

LEGEND

T1. Tree Name — Tree Reference number

Calculated Notional Root Zone (NRZ) and Structural Root Zone (SRZ)

Existing Tree recommended for Retention and Protection

Existing Tree proposed to be removed.

Trunk Protection + signage Refer specification in Arborist report.

Encroachment by proposed development into the TPZ.

Tree Protection Zone signage & fencing 1.8m H Chainlink on pad footings. (to AS 4970-2007) Refer specification in Arborist report.

MN TN N

LANDSCAPE ARCHITECT CONSULTING ARBORIST HORTICULTURIST
m: 0410 456 404
elke@elkeh.com.au www.elkeh.com.au

Tree Protection Plan 3 of 3

Client: Parramatta City Council.
Project Lead: ARCADIS
Consulting Arborist: ELKE

Project: Parramatta Civic Link Block 3, Horwood Place, Paramatta. NSW (between Phillip & George Streets)

Drawing Name: Consulting Arboricultural Tree Protection Plan. (with Oculus base underlay).

This plan forms part of the consulting arboricultural Package

Scale: 1: 200 @A1

Scale bar: 0 1 2 4 6 10m

Drawn: EHT

Job Number: 2307_a

Drawing Number: Arb_602

Issue: D

A1

5 Outstanding items requiring confirmation prior to issuance CC

5.1 The following items need to be confirmed and/or met in order to meet the tree protection requirements.

5.2 The project consulting arborist is to review the final documentation and have written confirmation from the project lead (Arcadis) prior to construction.

Table 1 – Arborist – Outstanding items prior to construction certificate sign off.

Items requiring confirmation	**To be confirmed prior to Construction Certificate**
5.3 **Development consent**: This Tree Protection Specification (**TPS**) has been put together **prior** to development consent conditions, therefore: 5.4 Prior to any construction starting on site, the consulting arborist is to outline any additional or modified tree protection measures needed for tree protection that may have been included in the Parramatta City Council's development consent conditions. 5.5 No new stormwater pits, trenches, grated drains or other new underground services are to be located within the TPZ fenced areas. No earthworks within the TPZ fenced areas.	❍ project arborist to review final services and any updated plans prior to issue of construction certificate (engineer plans structural and hydraulic, landscape, earthworks). ❍ project arborist to issue written confirmation of Tender and Construction documentation review and provide additional recommendations if required.
5.6 Meet with the site foreman prior to commencement of work and prior to issuing CC sign off.	❍ project arborist to coordinate and meet with the site foreman to provide instruction (induction) per tree protection along with inspection of tree protection measures (fencing and signage). ❍ project arborist to provide written sign off. ❍ project arborist to provide tree condition report prior to works starting on site ❍ project arborist to tag trees approved for removal.

6 Checklist – Specification for Tree Protection – including Hold Points

6.1 To ensure compliance, the Tree Protection Schedule with relevant hold points as outlined below is to be adhered to (to ensure tree viability of retained trees).

Table 2 – Tree Protection Checklist

Hold Point	Task	Responsibility	Certification (written sign off)	Timing of project arborist inspection.
1	Indicate clearly (with spray paint or tape on trunks) trees **approved** for removal only (done by the appointed project arborist only).	Principal Contractor	❍ Project arborist	❍ Prior to demolition and site establishment and prior to tree removal.
2	Establishment and sign off of Tree Protection fencing and signage	Principal Contractor	❍ Project arborist	❍ Prior to demolition and site establishment.
3	Supervise All excavation works, services trenching, or other digging or under-boring works proposed within the NRZ's of trees to be retained.	Principal Contractor	❍ Project arborist	❍ As required prior to the works proceeding adjacent to the tree(s). No excavation/digging within the TPZ fenced zones permitted.
4	Installation of the steel edge and Filtapave© within the TPZ fenced areas. (1.6 x 4m zones) for the 4 trees to be retained on Horwood Place only.	Principal Contractor	❍ Project arborist	❍ Supervision required during approved works within the TPZ fenced zones with sign off
5	Branch pruning or root pruning	Principal Contractor	❍ Project arborist	❍ Supervision required during pruning works with sign off
5	Inspection of trees by project arborist	Principal Contractor	❍ Project arborist	❍Seasonally during the construction period
6	Final inspection of trees by project arborist	Principal Contractor	❍ Project arborist	❍ Prior to issue of Occupation Certification.

The above table provides a checklist of hold points that are to be signed and dated by the project arborist and to be completed progressively and included as part of the final certification and provided to the Parramatta City Council on completion of the project.

6.2 Regarding the proposed tree surround of Filtapave © , where this is to be installed, ensure surface roots are kept exposed similar to the below image. Note: the project arborist will supervise during these works (per the above checklist table 2) and will remind the installer of this and other parameters. The removal of the existing hard pave (pavers and asphalt) within the new tree pit zone, and the installation of the steel edge including hand excavation for this edge is all to be is to be done using hand tools and under the project arborist supervision and sign off.

Figure 2. Example image of Filtapave © around existing tree (source: [Sustainable, Lightweight FiltaPave Manufacturers | Sydney])

Figure 3. Example image of hand excavation, retaining and not damaging roots 30mm in dia or greater - prior to install of Filtapave © around existing tree (source: Sustainable, Lightweight FiltaPave Manufacturers | Sydney)

6.3 Refer to Chapter 7 below for the TPZ Fence and TPZ signage specification

6.4 Generally, it is assumed and recommended that all TPZ fenced areas (both above and below ground zones of the trees) are "**No Go Zones**". This includes:

no earthworks or trenching beneath the ground that could compact or damage tree roots, and
no excavators that could compact or dig within the NRZs (Notional Root Zones), and
no cranes or other machinery above the ground that could damage tree branches

6.5 **Pruning**:, should the need for pruning of branches arise, contact the project consulting arborist for direction and advice. Generally, pruning is only to be done by an AQF Level 3 field arborist, under the supervision and sign off by the project consulting arborist (who is to be AQF Level 5 in arboriculture). Pruning works must comply with the Australian Standard *AS 4373 – 1996, Pruning of Amenity Trees, Standards Australia*.

6.6 **Parramatta City Council** states under the pruning control that a branch or root diameter of **30mm** or greater requires permit and is to be avoided. During demolition and earthworks, there may be instances where the project arborist is to be contacted for prior written advice and/or supervision around tree roots and possible tree root pruning. Given the TPZ areas of trees to be retained are all under hard paved areas, it is not possible to ascertain if tree root pruning will be required until the works commence.

6.7 It is advised that no stormwater or other services or other trenches or associated works be located within the TPZ of trees to be retained. Contact the project arborist prior to any works within the TPZ of retained trees for written instructions. This may include bridging, under - boring, or other action as advised in writing by the project arborist.

6.8 Refer to the arborist Tree Protection Plans Arb_600 – Arb_602.

7 Tree Protection Zone Fencing and TPZ signage

7.1 **Install compliant Tree Protection Fencing**: Prior to any construction and as soon as possible in the site set up phase, Tree Protection Zone fencing (TPZ fencing), and TPZ signage is to be installed in the locations shown on Arb_602 (**5 locations**).

7.2 **17 signs in total.** For this project, there are 4 trees on Horwood Place and 1 tree on Phillip Street to be retained with TPZ fencing and signage.

7.3 For the 4 trees on Horwood Place, install TPZ fencing panels 1.6m x 4m (as shown on the arborist plan Arb_602 and Table A page 6). Install a TPZ sign on each fencing panel for the 4 trees in Horwood Place and one sign for tree T3 on Phillip Street .

7.4 The TPZ signage is to be attached onto each fence panel facing outwards. TPZ fencing dimensions for T3 are 1.8m x 1.8m wide panels in rectangular formation (as shown on the Arborist plan Arb_602). T3 is outside the scope of works zone and less likely to be impacted by the works.

7.5 TPZ fencing is to protect the retained trees and their above and below ground parts (roots and canopy) by limiting the construction footprint that may otherwise unduly compact, damage, or disturb the tree soil zone and the tree root growing zone of trees. Therefore, TPZ fencing and signage must stay in place and not be entered into for the duration of the works (unless under project arborist supervision, direction and sign off).

7.6 **Type of Fence**: Tree protection fences (TPZ Fences) are to comply with AS *4970-2025* and are recommended to be a minimum **2.1 m high**. This can be achieved with a 2.1 m high **(ATF) or chain link fence with non-penetrable footings. E.g., temporary site or event fencing with plastic or concrete pad footing pads (that do not penetrate the ground**). The fencing panels are to be **bolt cleated** together so they cannot be easily/readily lifted out of place without the use of a wrench or other tools.

7.7 The TPZ signage is to be firmly fixed on each of the TPZ fenced sides, outwardly facing. An example of the TPZ fencing and TPZ signage is in Figures 4 and 5 and a printable version is in Appendix 7 (for printing onto core flute or laminated).

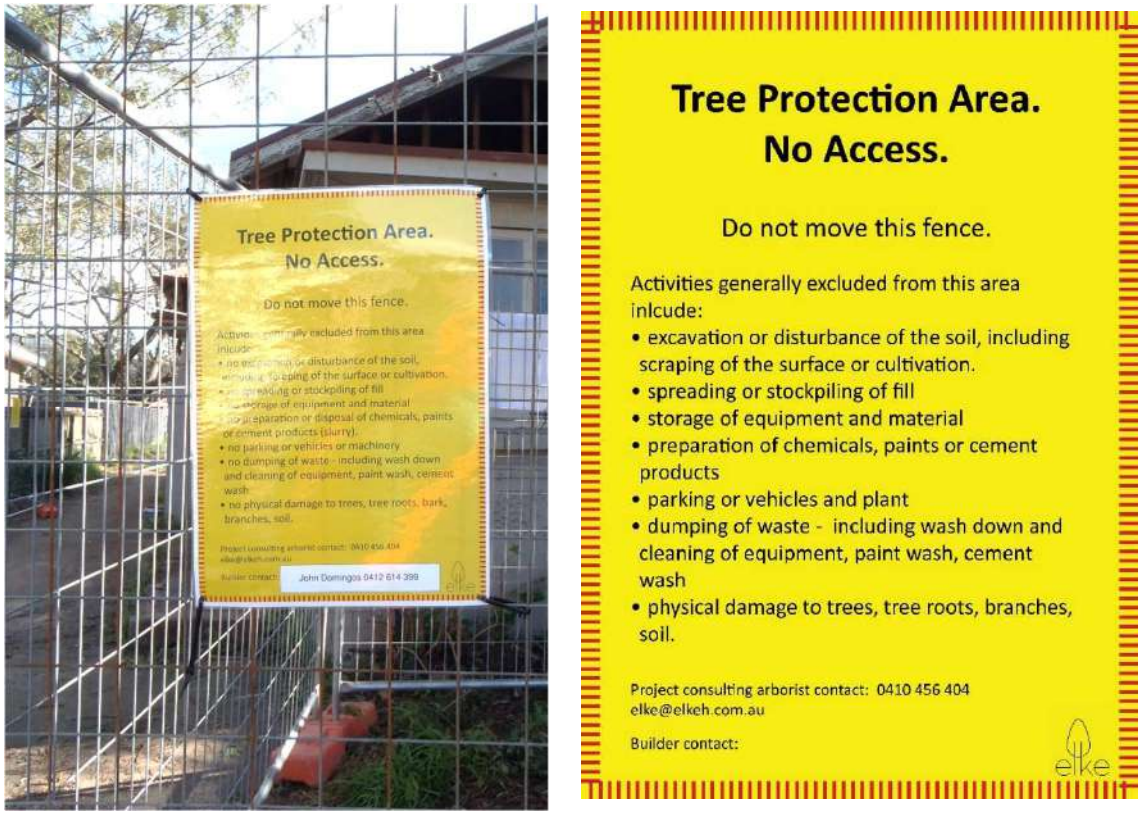


Figure 4 Example TPZ signage, printed at A3 or A2 and fixed to the TPZ fence. A printable TPZ sign is available in the Appendix of this report.

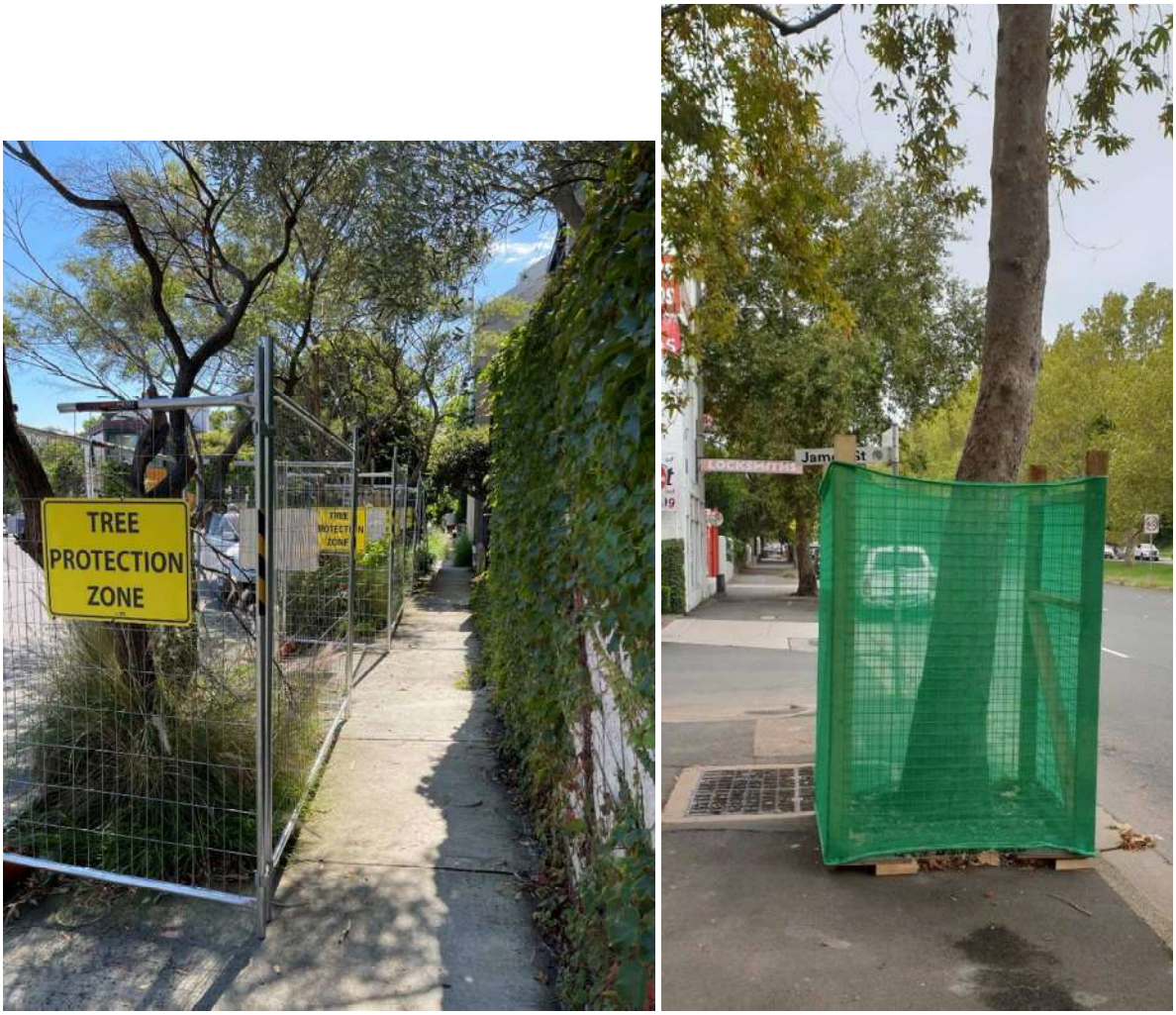


Figure 5 Examples of TPZ fencing. Note: shade cloth is not required for this proejct.

7.8 TPZ fenced zones are **'No Go Zones'.** The site manager/builder is to ensure that all people and contractors on site know **not to enter** inside the tree protection fencing zone, **not to shift** the fence, **not to store** any materials inside the TPZ, and **not to damage, cut, crush, or sever any foliage**, **branches** or tree **roots** (30mm diameter or greater) within the TPZ, nor remove, disturb or contaminate soil within the TPZ.

7.9 Should access into the TPZ fenced zone be required, contact the project consulting arborist prior and obtain prior written permission or advice. Failure to do so will result in non-compliance. Contact the project consulting arborist for prior written instructions/permission or to book in supervisions/inspections including for any approved works within the TPZ fenced zone as outlined in the TPS. Failure to do so, will result in non-compliance.

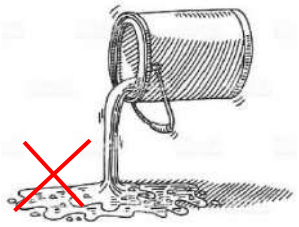
7.10 No cutting, shaving, or removing of any tree parts may occur, including **tree roots >30mm**, any trunk, branches, or foliage without the prior written consent of the project arborist.

7.11 Should **tree roots >30mm** be exposed or uncovered, contact the project arborist for instructions (which may include root protection measures, root severance, tree removal, or other by the project consulting arborist instructions only).

7.12 The project consulting arborist is to advise on recommendations and implications at time of site inspection and make a record of the site visits which will be provided to the certifier, council/authority and client.

8 Quick Reference List:

- Contact consulting arborist when in doubt, and when supervision / sign off is needed (such as when digging pier footings, stormwater or services within the TPZ's or if entry is needed into the fenced off areas).



- The builder is to induct and manage all sub-contractors and staff so that they know not to enter into the TPZ fenced area and not to disturb, contaminate, dig into the area with 'Ground Protection' installed.

- Do not wash out paint, concrete slurry, or other building waste into the '**Ground Protection'** area or in the **TPZ fenced areas** (as this will contaminate and impact the trees and groundwater).

- Keep tree protection fencing and TPZ signage in place at all times (do not move fencing or signs) for the whole duration of the project – do not remove or move fencing or ground protection without prior written permission by the project arborist.

9 *Select Site Tree Photos.*

9.1 Site photos below were taken on 4 August 2023 by Elke Haege Thorvaldson, consulting arborist, during the site / tree assessment. At each inspection / supervision, a record of the tree condition and photographs will be taken and dated to provide a documented tree condition report in the final completion report. This is a reduced number of photos originally provided in the AIA report and is mostly of the retained trees, plus the trees on Phillip Street (due to the increased area of works since the AIA).

Figure 6. Trees along the eastern side of Horwood Place. The trees labelled with the red box are propsoed for removal and the trees with the green boxes are to be retained and protected.

*Figure 7. View looking south towards **T7,** proposed for retention. Tree T6 is in the foreground. Date: 8 August, 2023. Source: ELKE*

*Figure 8 View looking south towards **T7**, proposed for retention. Date: 8 August, 2023. Source: ELKE*

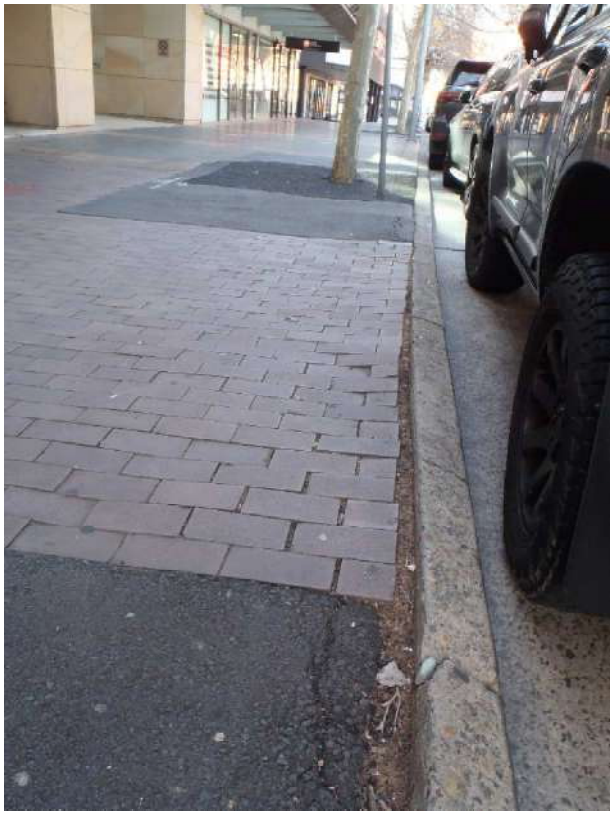


*Figure 9 View looking south towards **T7,** proposed for retention and showing the ground conditions of both T6 (foreground) and **T7** in the distance with sign post installed within the SRZ. Date: 8 August, 2023. Source: ELKE*

*Figure 10. Base condition of **T10**. Proposed for retention. Root girdling present at base of trunk. Date: 8 August, 2023. Source: ELKE*

*Figure 11. Base condition of **T10**. Proposed for retention. Surface cracking in asphalt visible. Date: 8 August, 2023. Source: ELKE*

*Figure 12. View looking south showing the base condition of **T11** with tree **T12** and **T13** in the backgrouns. Surface mounding and cracking and multiple services pits within close proximity of the tree. Date: 8 August, 2023. Source: ELKE*

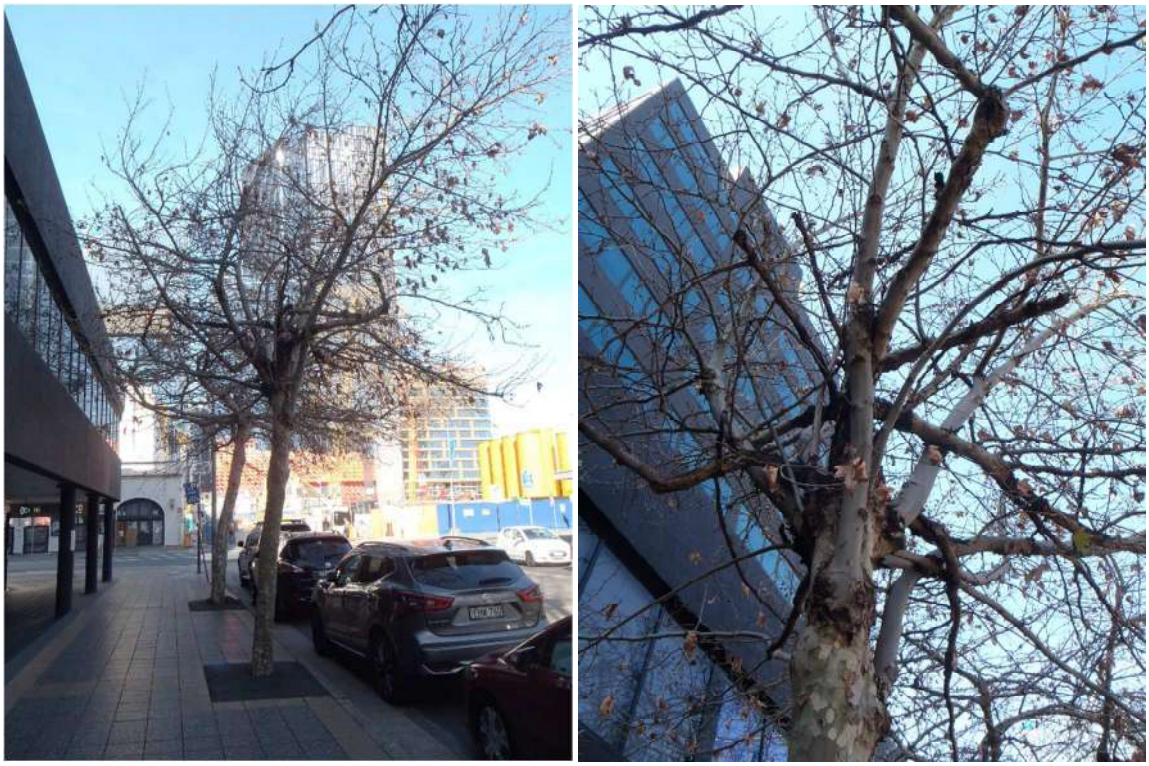


*Figure 13. Photos showing **T12** and **T13** proposed for retention. These photos were taken on 8 August, 2023. It is understood these trees have since had formative pruning. Source: ELKE Date: 8 August, 2023. Source: ELKE*

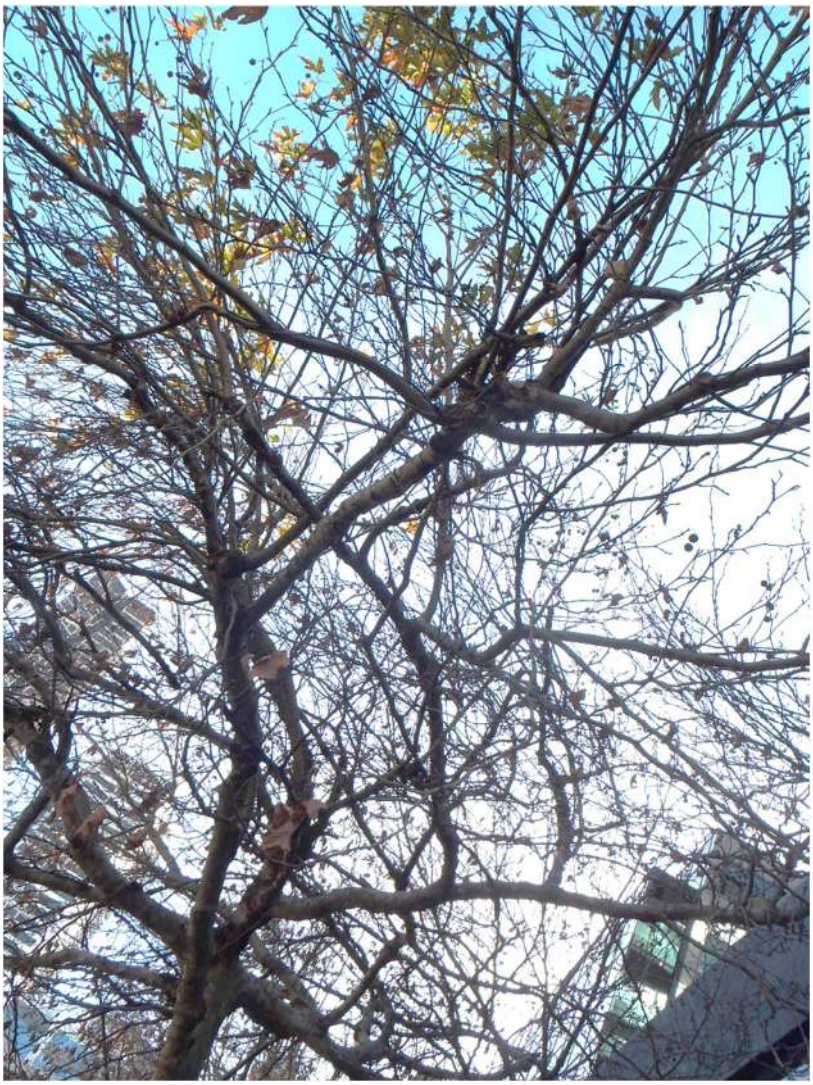


*Figure 14. Photos showing **T12** and **T13** proposed for retention. Date: 8 August, 2023. Source: ELKE*

*Figure 15. Photos showing **T12** and **T13** proposed for retention. Photo at the bottom shows displacement of asphalt indicating root zone upheaval indicating inadequate soil volume. Date: 8 August, 2023. Source: ELKE*

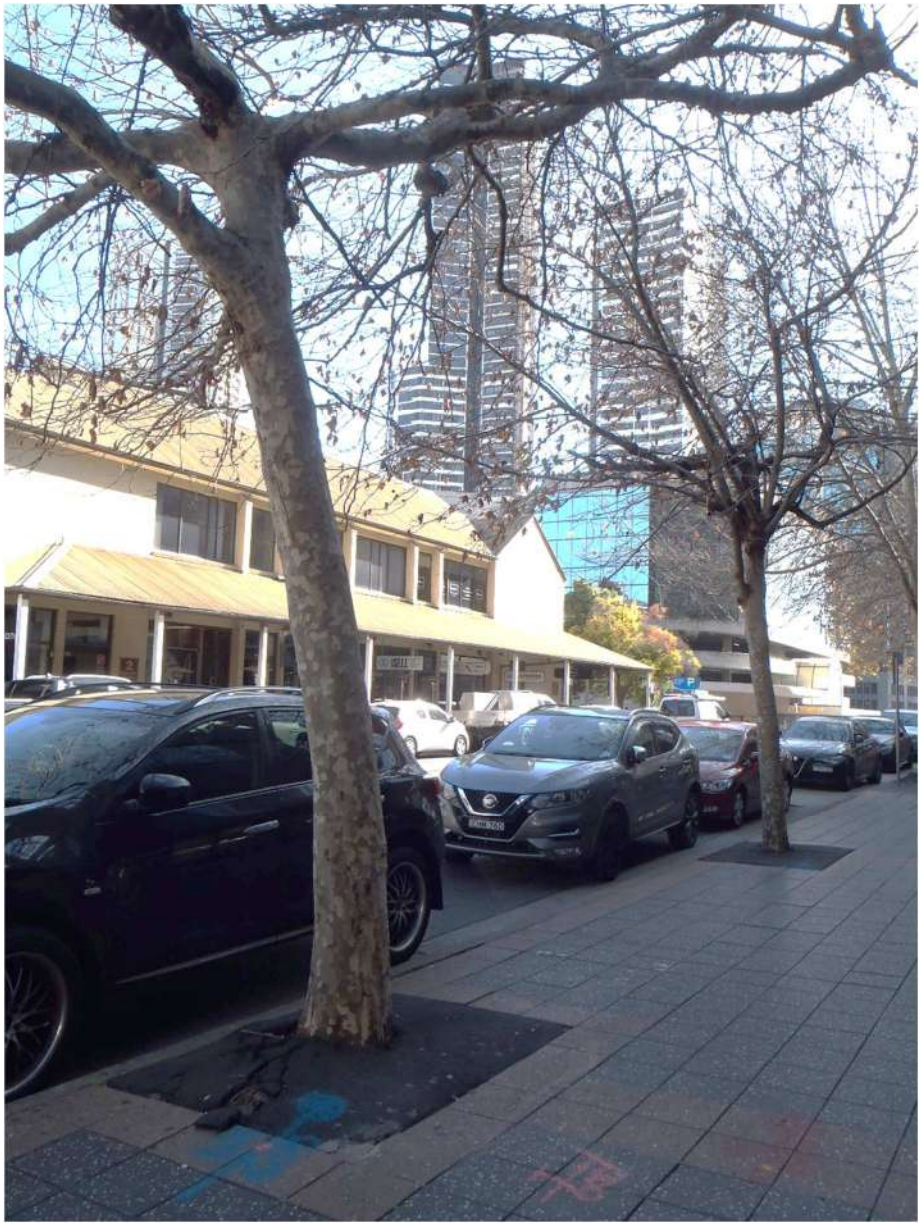


*Figure 16. Photo showing **T12** and **T13** proposed for retention. Date: 8 August, 2023. Source: ELKE*

Figure 17. View looking north along Horwood Place. Date: 8 August, 2023. Source: ELKE

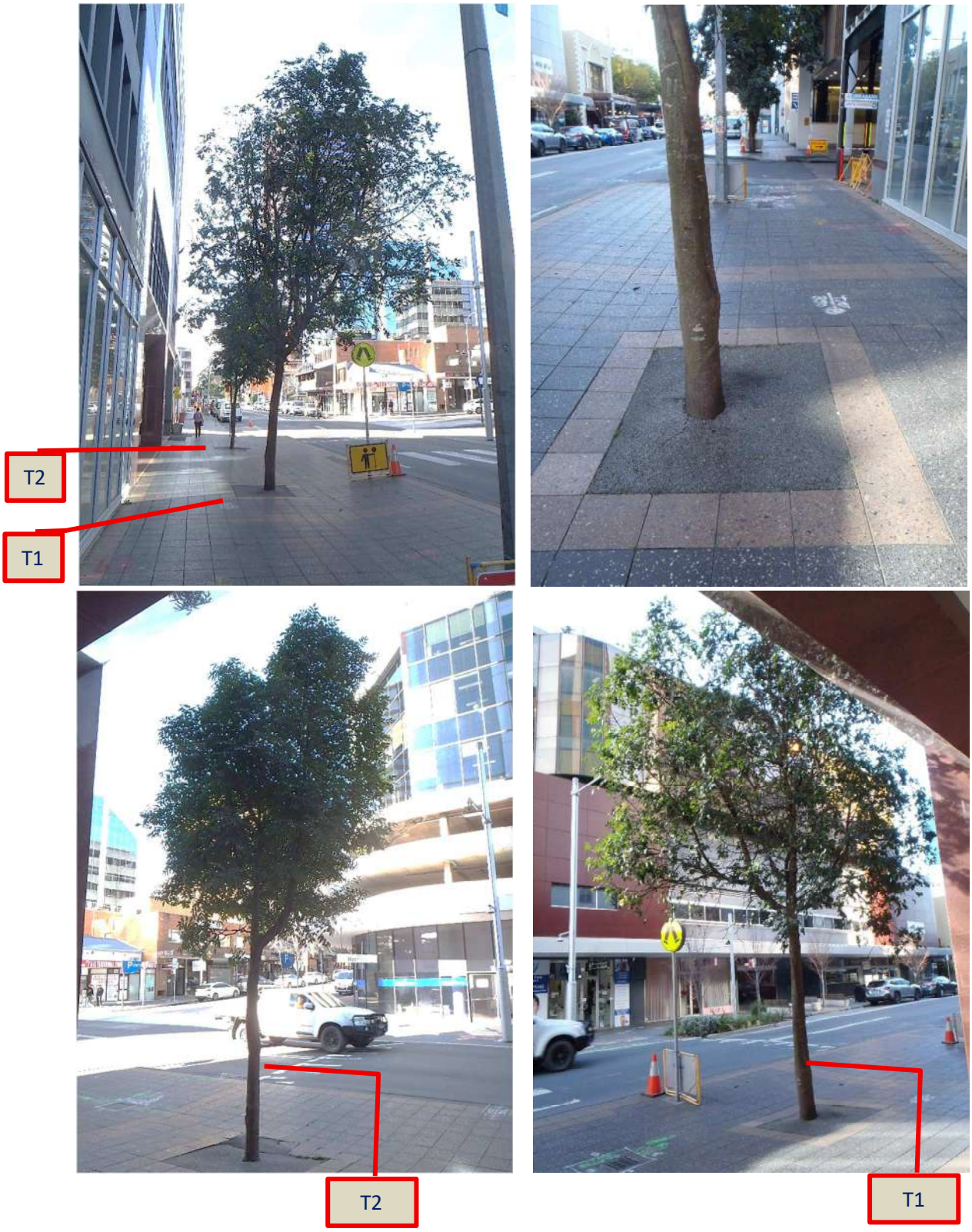


Figure 18. Flindersia australis trees T1 and T2 along Phillip Street proposed for removal with new tree replacement. Date: 8 August, 2023. Source: ELKE

Figure 19. Flindersia australis tree T3 along Phillip Street to be retained. Date: 8 August, 2023. Source: ELKE

10 Discussion and Conclusion

10.1 Regarding tree protection of the 5 trees in total (4 trees on Horwood Place and 1 tree on Phillip Street; provided the recommended tree protection measures and procedures are followed, as outlined in this TPS report, the retention of the trees as shown and proposed to be retained on the arborist tree protection plan (Arb_602) and the recommendations, the trees can be protected and retained with minimal and acceptable impact during construction.

10.2 Adherence to the hold points / checklist in , recommendations for protection and compliance to the tree protection schedule (Table 2) is the key mode of supporting suitable tree protection and compliance for the whole duration of the works.

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11 References

- *Australian Standard AS4970-2025 and 2009, Protection of trees on Development Sites. Standards Australia.*
- *Australian Standard AS 4373 – 1996, Pruning of Amenity Trees, Standards Australia.*
- *Australian Standard AS 4454 – 2003, Composts, soil conditioners and mulches.*
- *Barrell, Jeremy, 1996, Pre-development Tree Assessment, SULE Categories and Sub-Categories, Proceedings of the International Conference on Trees and Building Sites (Chicago), International Society of arboriculture, Illinois, USA.*
- *Barrell, J, 2009, Draft for Practical Tree AZ version 9.02 A+NZ, Barrel Tree Consultancy, Bridge House, Ringwood BH24 1EX*
- *Craul, P.J. 1985. A description of urban soils and their desired characteristics, Journal of Arboriculture 11(11):330-339.*
- *Draper and Richards, 2009, Dictionary for Managing Trees in Urban Environments, CSIRO Publishing.*
- *Leake S and Haege E, 2014, Soils for Landscape Development, Selection, Specification and Validation, CSIRO Publishing.*
- *International Society of Arboriculture, 2009, The Landscape Below Ground III, Proceedings for a Third International Workshop on Tree Rood Development in Urban soils, ISA, Champaign, Illinois, USA.*
- *Mattheck C. and Breloer H., 2001, The Body Language of Trees - A handbook for failure analysis – Sixth impression (2001), The Stationery Office, London, U.K. Fig 120, Page 196.*
- *Mattheck C., and Breloer H., 2010, The Body Language of Trees – A Handbook for Failure Analysis – 11th impression, The Stationery Office (TS0), London UK*

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12 Relevant Appendices

13 Appendix 1: Landscape Significance Rating

Refer to next page. As well this rating takes into consideration the context and relationship of the tree to its surrounds and contribution to the streetscape/site surrounds and character of the site.

14 Appendix 6: ISA Tree Risk Assessment

Methodology: ISA (International Society of Arboriculture, 2013)[3]. Hazard potential (Risk rating matrix)

Likelihood of Failure and Impact	**Consequences of Failure**			
	Negligible	Minor	Significant	Severe
Very likely	*Low*	*Moderate*	*High*	*Extreme*
Likely	*Low*	*Moderate*	*High*	*High*
Somewhat likely	*Low*	*Low*	*Moderate*	*Moderate*
Unlikely	*Low*	*Low*	*Low*	*Low*

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15 Appendix 2: Safe Useful Life Expectancy

Refer to next page.

The following worksheet template shows the categories for SULE as derived from the attached appendices.

Life expectancy (LE)				Safe Life Expectancy LE				Safe Useful Life Expectancy			Final SULE	SULE Category
Age of tree	Average Lifespan	Lifespan modified by local factors	Life expectancy	LE modified by health	structure	LE modified by location	SLE	expense	Interference	Space for planting		
1	2	3	4	5	6	7	8	9	10	11	12	

**The SULE categories and classifications are subjective and based on the knowledge, experience and expertise of the assessor.*

[3] http://www.isa-arbor.com/education/onlineresources/basictreeriskassessmentform.aspx

Sule Categories and Sub-Categories

	1	2	3	4	5
	Long SULE:	**Medium SULE:**	**Short SULE:**	**Remove:**	**Small, Young or regularly clipped:**
	Trees that appeared to be retainable at the time of assessment for more than 40 years with and acceptable level of risk	Trees that appeared to be retainable at the time of assessment for 15 to 40 years with and acceptable level of risk	Trees that appeared to be retainable at the time of assessment for 5 to 15 years with and acceptable level of risk	Trees that should be removed within the next 5 years	Trees that can be reliably transplanted or replaced
A	Structurally sound trees located in positions that can accommodate future growth	Trees that may only live for between 15 and 40 more years	Trees that may only live for between 5 and 15 more years	Dead, dying, supressed or declining trees through disease or inhospitable conditions	Small trees less than 5 metres in height
B	Trees that could be made suitable for retention in the long term by remedial Care	Trees that may live for more than 40 years, but would need to be removed for safety or nuisance reasons	Trees that may live for more than 15 years, but would need to be removed for safety or nuisance reasons	Dangerous trees through instability or recent losss of adjacent trees	Young trees less than 15 years old but over 5 metres in height
C	Trees of special significance for historical, commemorative or rarity reasons that would warrant extraordinary efforts to secure their long term retention	Trees that may live for more than 40 years, but should be removed to prevent interference with more suitable individuals or to provide space for new planting	Trees that may live for more than 15 years, but should be removed to prevent interference with more suitable individuals or to provide space for new planting	Dangerous trees through structural defects including cavities, decay, included bark, wounds or poor form	Trees that have been regularly pruned to arteficially control growth
D		Trees that could be made suitable for retention in the medium term by remedial Care	Trees that require substantial remedial care and are only suitable for retention in the short term	Damaged trees that are clearly not safe to retain	
E				Trees that may live for more than 5 years, but should be removed to prevent interference with more suitable individuals or to provide space for new planting	
F				Trees that may cause damage to existing structures within 5 years	
G				Trees that will become dangerous after removal of other trees for reasons given in 1A-1F	

Ref: Barrell, Jeremy (1996)
Pre-development Tree Assessment
Proceedings of the International Conference on Trees and Building Sites (Chicago)
International Society of arboriculture, Illinois, USA

16 Appendix 3. Retention Rating

Tree retention priority. Refer to Plan 2.

	Landscape Significance Rating						
SULE	1	2	3	4	5	6	7
Long >40yrs	High Retention Value						
Medium 15-40 years			Moderate Retention Value				
Short 5-15 yrs				Low Retention Value			
Transient <5years				Very Low Retention Value			
Dead or Hazardous							

Reference modified from: Earthscape and Couston, Mark and Howden, Melanie, 2001, Tree Retention Values table, Footprint Green Pty. Ltd., Sydney Australia

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1. Appendix 4a. AS 4970. Development of Trees on Protection Sites:

Tree Protection Zone (TPZ)

The tree protection zone (TPZ) is the principal means of protecting trees on development sites. The TPZ is a combination of the root area and crown area requiring protection. It is an area isolated from construction disturbance, so that the tree remains viable. The TPZ incorporates the structural root zone (SRZ)

Determining the TPZ

The radius of the TPZ is calculated for each tree by multiplying its DBH × 12.

TPZ = DBH × 12 where DBH = trunk diameter measured at 1.4 m above ground
Radius is measured from the centre of the stem at ground level.

A TPZ should not be less than 2 m nor greater than 15 m (except where crown protection is required). Clause 3.3 covers variations to the TPZ. The TPZ of palms, other monocots, cycads and tree ferns should not be less than 1 m outside the crown projection.

Structural Root Zone (SRZ)

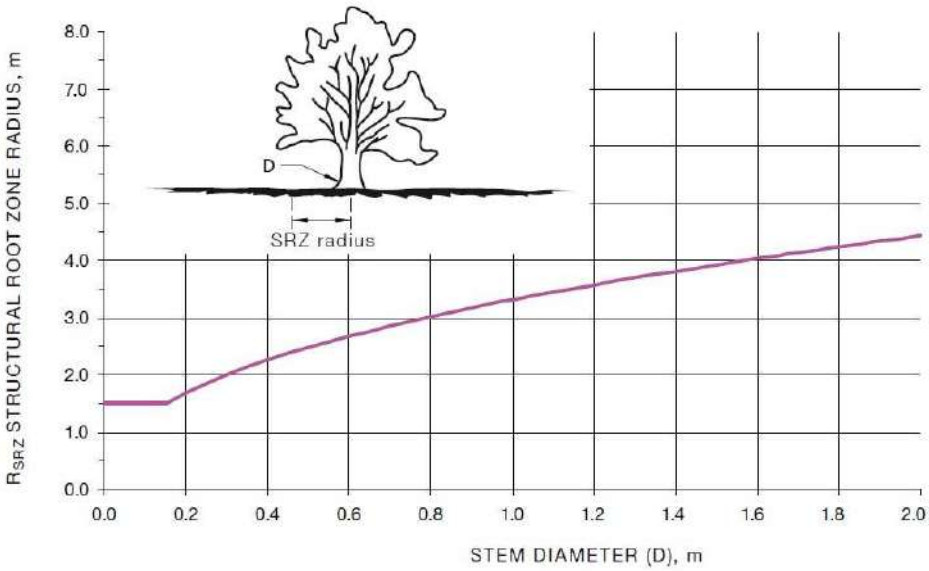
The SRZ is the area required for tree stability. A larger area is required to maintain a viable tree.

The SRZ only needs to be calculated when major encroachment into a TPZ is proposed.

There are many factors that affect the size of the SRZ (e.g., tree height, crown area, soil type, soil moisture). The SRZ may also be influenced by natural or built structures, such as rocks and footings. An indicative SRZ radius can be determined from the trunk diameter measured immediately above the root buttress using the following formula or Figure 1.

Root investigation may provide more information on the extent of these roots.

SRZ radius = (D × 50)0.42 × 0.64 where D = trunk diameter, in m, measured above the root buttress



The curve can be expressed by the following formula:
$R_{SRZ} = (D \times 50)^{0.42} \times 0.64$

NOTES:

1 R_{SRZ} is the calculated structural root zone radius (SRZ radius).
2 D is the stem diameter measured immediately above root buttress.
3 The R_{SRZ} for trees less than 0.15 m diameter is 1.5 m.
4 The R_{SRZ} formula and graph do not apply to palms, other monocots, cycads and tree ferns.
5 This does not apply to trees with an asymmetrical root plate.

FIGURE 1 STRUCTURAL ROOT ZONE CALCULATION

ISBN 978 0 7337 9447 6

NOTE: The SRZ for trees with trunk diameters less than 0.15 m will be 1.5 m (see Figure).

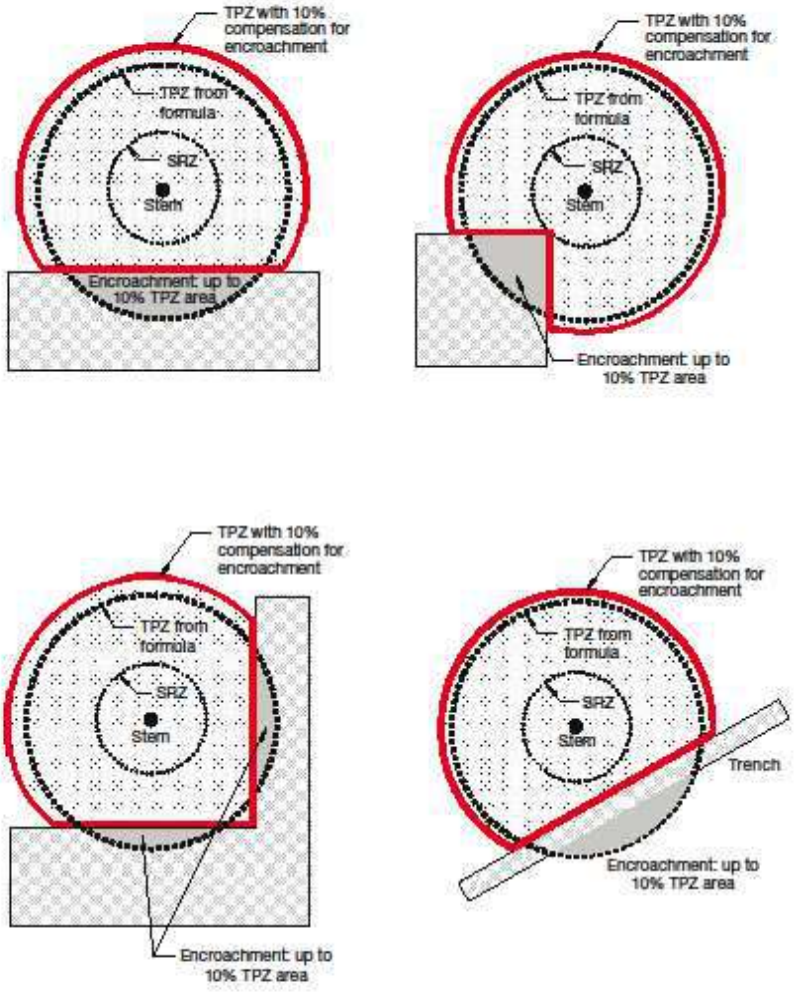
17 Appendix 4b AS 4970. Development of Trees on Protection Sites: Acceptable Incursions

APPENDIX D

ENCROACHMENT INTO TREE PROTECTION ZONE

(Informative)

Encroachment into the tree protection zone (TPZ) is sometimes unavoidable. Figure D1 provides examples of TPZ encroachment by area, to assist in reducing the impact of such incursions.



NOTE: Less than 10% TPZ area and outside SRZ. Any loss of TPZ compensated for elsewhere.

FIGURE D1 EXAMPLES OF MINOR ENCROACHMENT INTO TPZ

18 Appendix 5: Tree Retention Priorities

The following table describes the implications of the Retention Values on site layout and design.
Refer to Plan 2: Tree Retention Values for direct correlations to table below.

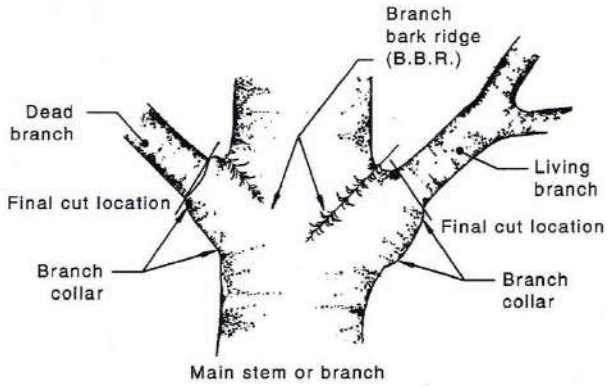
Appendix 5

	Tree Retention Priorities
Retention Value	Recommended Action
"High"	• These trees are considered worthy of preservation; as such careful consideration, should be given to their retention as a priority. • Proposed site design and placement of buildings and infrastructure should consider the Tree Protection Zones as discussed in the following section to minimise any adverse impact. • In addition to Tree Protection Zones, the extent of the canopy (canopy drip line) 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"	• The retention of these trees is desirable. • These trees should be retained as part of any proposed development if possible; however, they trees are considered less critical for retention. • 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"	• 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 SULE. • These trees should not be considered as a constraint to the future development of the site.
"Very Low"	• These trees are considered potentially hazardous or very poor specimens or may be environmental or noxious weeds. • The removal of these trees is therefore recommended regardless of the implications of any proposed development.

Source: Derived from: Earthscape Horticultural Services, December 2011

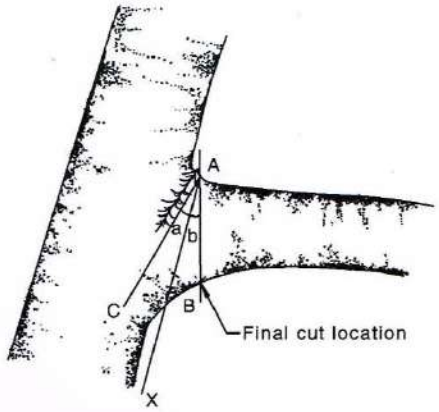
19 Appendix 6: Tree Pruning

Figure 1 from The Australian Standard 4373-2007 - Pruning of Amenity Trees.



(a) Up to but not including the branch collar

NOTE: When removing dead wood from a tree, make the final cut as close to the branch collar as possible. Do not damage living tissue. The branch collar is the best guide for the final cut when removing a living branch. However, if there is no branch collar use the branch bark ridge as depicted in Figure 1(b).



(b) In the absence of a collar using the branch bark ridge

NOTE: On living branches where the branch collar cannot be located, the branch bark ridge can be used as a guide. Line A–X is a line parallel to the stem or trunk occurring just outside the branch bark ridge. Line A–C indicates the angle of the branch bark ridge and Line A–B represents the angle and location of the final cut. Angle 'a' should equal angle 'b'.

FIGURE 1 FINAL CUT LOCATION

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20 Appendix 7: Tree Protection Fencing signage

The following page provides an A2 or A3 printable TPZ sign that can be laminated or printed onto core flute or other external suitable material for use on the tree protection fencing.

Tree Protection Area.
No Access.

Do not move this fence.

Activities generally excluded from this area inlcude:

- no excavation or disturbance of the soil, including scraping of the surface or cultivation.
- no spreading or stockpiling of fill
- no storage of equipment and material
- no preparation or disposal of chemicals, paints or cement products (slurry).
- no parking or vehicles or machinery
- no dumping of waste - including wash down and cleaning of equipment, paint wash, cement wash
- no physical damage to trees, tree roots, bark, branches, soil.

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