



Martin Peacock Tree Care  
Arboricultural & Horticultural Consultancy

## Arboricultural Impact Assessment Report

142-146 Pitt Road  
Curl Curl  
NSW

Prepared by: Martin Peacock Tree Care

Date: 4<sup>th</sup> April 2024

Phone: 0405 221 056

Email: [martin@martinpeacocktreecare.com.au](mailto:martin@martinpeacocktreecare.com.au)

Web: [www.martinpeacocktreecare.com.au](http://www.martinpeacocktreecare.com.au)

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## **1.0 Summary**

- 1.1 This report provides an assessment of five (5) trees growing adjacent to 142-146 Pitt Road, Curl Curl, NSW (the site).
- 1.2 The development proposal for the site includes demolition of existing buildings, and construction of a mixed use (retail, commercial, residential) building over three levels, plus basement parking and associated stormwater management and landscaping works.
- 1.3 The development proposal has been designed to minimise the impact of development upon the trees growing within the neighbouring properties. As part of the stormwater management design process, root mapping investigations have been undertaken for one (1) tree.
- 1.4 To provide canopy cover and enhance amenity at the site the Landscape Plans include the planting of fourteen (14) advanced size trees and palms, plus an additional three (3) street trees in the footpath to the front of the site.
- 1.5 The recommendations of this report are subject to approval by Northern Beaches Council.

## **2.0 Introduction**

- 2.1 This Arboricultural Impact Assessment Report has been prepared for Balito Investments in relation to the Development Application for 142-146 Pitt Road, Curl Curl, NSW, (the site).
- 2.2 This report provides an assessment of five (5) trees growing within neighbouring properties.
- 2.3 The development proposal for the site includes demolition of existing buildings, and construction of a mixed use (retail, commercial, residential) building over three levels, plus basement parking and associated stormwater management and landscaping works.
- 2.4 Martin Peacock (Martin Peacock Tree Care) visited the site on the 25<sup>th</sup> of May 2023 and assessed the trees and their growing environment. Selected images showing a number of the trees are contained within Appendix B – Photographs.

## **3.0 Scope of The Report**

- 3.1 This report has been prepared to meet the following objectives:
- Conduct at ground level, a visual inspection of the subject tree(s) and their growing environment.
  - Assess the physiological and structural condition of the subject tree(s).
  - Determine the useful life expectancy, quality and value(s) of the subject tree(s).
  - Award a retention category for the subject tree(s).
  - Assess relevant plans and documentation to determine the potential impacts of the proposed development upon the subject tree(s).
  - Make recommendations for retention, removal or remedial works to the subject tree(s), and/or implementation of tree protection measures as appropriate.
- 3.2 The following plans/documentation were referenced in the preparation of this report:
- Detail Survey, dated 31.05.23 – prepared by Peak Surveying Services
  - Architectural Plans A00.004 –SK.305 (Rev A), dated 02.04.24 – prepared by Warren and Mahoney
  - Landscape Plans Sheets 1-3 (Issue E), dated 02.04.24 – prepared by Paul Scrivner Landscape
  - TPZ Encroachment Calculations – B01, dated 25.03.24 – prepared by Warren and Mahoney
  - Root Mapping Report, dated 80.0.23 - prepared by Arbor Express

## **4.0 Caveats & Limitations**

- 4.1 The subject trees were inspected from the ground only. The findings of this report are based on the observations made at the time of inspection (25/05/23), and from the information contained within the supplied plans/documentation.
- 4.2 The report reflects the subject trees as found on the day of inspection. There is no warranty or guarantee, expressed or implied, that problems or deficiencies with the site or the subject trees may not arise in the future. Any changes to development proposals or tree management works beyond those recommended in this report may alter the findings of the report.

## 5.0 Methodology

### 5.1 Data Collection:

The methodology used in this report follows the procedures detailed in *Australian Standard: AS 4970—2009. Protection of Trees on Development Sites*. This report also references the *British Standard BS: 5837 (2005) Trees in Relation to Construction – Recommendations*.

The methodology used in this report provides the following information:

1. Tree species - botanical and common name.
2. Age class - Juvenile, semi-mature, mature, senescent.
3. DBH – Diameter at breast height (mm)\*
4. Height – estimated total height (m)
5. Crown spread – estimated, average radial crown spread in meters (m)
6. Physiological condition - good, fair, poor
7. Structural condition - good, fair, poor
8. Useful Life Expectancy - <5, 5–15, 15–40, >40 (years)\*\*
9. Quality & Value – A, B, C, D \*\*\*
10. Retention Category - Priority for Retention, Consider for Retention, Consider for Removal, Priority for Removal\*\*\*\*
11. SRZ – Structural Root Zone radius (m)
12. TPZ – Tree protection Zone radius (m)
13. Comments / Preliminary Management Recommendations

- 5.2 \*DBH (Diameter at Breast Height) - Stem /trunk diameter measured at 1.4m above ground level. On sloping ground, measurements will be taken at the mid slope point at the base of the tree. Where a tree stem / trunk begins to branch at a point that is less than 1.4m above ground, a combined stem diameter is calculated using the formula:  
$$\text{Total DBH} = \sqrt{\text{DBH}_1^2 + \text{DBH}_2^2 + \text{DBH}_3^2}$$

- 5.3 \*\*Useful Life Expectancy – The estimated lifespan of the tree over which it will positively contribute to the amenity of the area and to the local environment, in a safe, healthy condition.

- 5.4 \*\*\*Quality & Value – The quality of the tree when compared to an idealised example of the species and the values which the tree provides to the site and local area (see Appendix D – Cascade Chart for Assessment of Tree Quality & Value).

- 5.5 \*\*\*\*Retention Category – The subject tree is allocated one of four categories based on a combination of its Quality and Value and Useful Life Expectancy. A certain amount of flexibility may be allowed when allocating a Retention Category, to take into account tree species, significance and site/environmental conditions.

- 5.6 An assessment of the trees condition is made using the Visual Tree Assessment (VTA) method (Mattheck & Breoler, 1994).

- 5.7 Tree assessment results are recorded in the Tree Assessment Schedule (see section 6.0 Results). Note: for trees outside of the site only the species and DBH is recorded for the purposes of calculating the SRZ/TPZ.

## 6.0 Results

### 6.1 Tree Assessment Schedule

Site: 142-146 Pitt Road, North Curl Curl, NSW

Date of survey: 25.05.23

Tree ref. no.	Species	Age Class	DBH (mm)	Height (m)	Crown Spread (m)	Physiological Condition	Structural Condition	Useful Life Expectancy (years)	Quality & Value	Retention Category*	TPZ (m)	SRZ (m)
T1	<i>Araucaria columnaris</i> (Cook Pine)	Early Mature	425	18	3	Good	n/a-restricted access	40+	B	Consider for Retention	5.1	2.4
T2	<i>Persea americana</i> (Avocado)	Semi Mature	150 100	4	2	Good	n/a-restricted access	15-40	C	Consider for Removal	2.4	1.7
T3	<i>Sapium sebiferum</i> (Chinese Tallowwood)	Semi Mature	200	4	2	Fair	n/a-restricted access	15-40	C	Consider for Removal	2.4	1.7
T4	<i>Syzygium sp.</i> (Lilly Pilly species)	Mature	350	6	4	Good	n/a-restricted access	15-40	B	Consider for Retention	4.2	2.1
T5	<i>Ficus benjamina</i> (Weeping Fig)	Mature	550	9	6	Good	n/a-restricted access	15-40	C	Consider for Removal	6.6	2.6
Comments / Preliminary Management Recommendations												
T1	Early mature specimen with moderate landscape value. Growing in neighbouring property to the east.											
T2	Semi mature specimen with low landscape value. Growing in neighbouring property to the north. Heavily suppressed with poor form. <b>Not covered by NBC Tree Management Policy (&lt;5m in height)</b>											
T3	Semi mature specimen with low landscape value. Growing in neighbouring property to the north. Heavily suppressed with poor form. <b>Exempt species under NBC Tree Management Policy</b>											
T4	Mature specimen with moderate landscape value. Growing in neighbouring property to the northwest.											
T5	Mature specimen with moderate landscape value. Growing in neighbouring property to the north. <b>Exempt species under NBC Tree Management Policy</b>											

## 7.0 Observations

7.1 The trees have been assessed in accordance with *Australian Standard AS4970 (2009) Protection of trees on development sites* (AS4970) to determine their: condition, quality and value(s), Useful Life Expectancy and to allocate a Retention Category. Full details of the assessment are listed in 6.1 Tree Assessment Schedule.

7.2 **The allocation of a Retention Category is a requirement of AS4970** and provides and overview of the quality and value of trees on site. Retention Categories are a guide only and do not take into account design considerations/constraints relating to the development proposal. **It should be noted that Retention Categories are not a schedule for tree removal or retention.**

7.3 Tree T1 *Araucaria columnaris* (Cook Pine) is an early mature specimen with moderate landscape value, growing in the property to the east of the site. The tree is in good physiological condition as indicated by its crown density and colouration of foliage. The structural condition of the tree was not assessed due to restricted access.

The supplied plans show installation of a stormwater pipe, excavation to create an overland stormwater flow path and the installation of a retaining wall are proposed within the Tree Protection Zone (TPZ) area of the tree. The extent of the proposed works represents a Major Encroachment (as defined by AS4970).

7.4 Trees T2 *Persea americana* (Avocado) and Tree T3 *Sapium sebiferum* (Chinese Tallowwood) are small, semi mature specimens with low landscape value, growing in the property to the north of the site. The trees are in good to fair physiological condition as indicated by their crown densities and colouration of foliage. The structural condition of the tree was not assessed due to restricted access.

The supplied plans show installation of a stormwater pipe, is proposed within the TPZ areas of the tree. The extent of the proposed works represents a Minor Encroachment (as defined by AS4970).

7.5 Tree T4 *Syzygium sp.* (Lilly Pilly species) is a mature specimen with moderate landscape value growing in the property to the northwest of the site. The tree is in good physiological condition as indicated by its crown density and colouration of foliage. The structural condition of the tree was not assessed due to restricted access.

The supplied plans show driveway access to the basement level of the proposed units runs through the TPZ area. However, the existing driveway slab is to be retained and the proposed development should not impact the tree.

7.6 Tree T5 *Ficus benjamina* (Weeping Fig) is a mature specimen with moderate landscape value, growing in the property to the east of the site. The tree is in good physiological condition as indicated by its crown density and colouration of foliage. The structural condition of the tree was not fully assessed due to restricted access; However, multiple major bark inclusions are present in the lower crown.

The supplied plans show installation of a stormwater pipe, excavation to create an overland stormwater flow path and the installation of a retaining wall are proposed within the Tree Protection Zone (TPZ) area of the tree. The extent of the proposed works represents a Major Encroachment (as defined by AS4970).

## 8.0 Discussion

- 8.1 The development proposal includes the installation of a 750mm diameter stormwater pipe located on the northern and eastern boundaries of the site within a 3m wide easement. The pipe runs through the Structural Root Zone (SRZ) areas of Trees T1 and T5. The SRZ is defined as the 'minimum area required for the stability of the tree'; therefore, tree sensitive methods will be required when installing the storm water pipe.
- 8.2 A proposed overland flow path has been designed to minimise excavation within the TPZ areas of Trees T1 and T5. The overland flow path will run around the northern and eastern side of the proposed basement level and will encroach into the TPZ areas of Trees T1 and T5 by 12.3% and 15% respectively (refer: Appendix C – TPZ Encroachment Calculations). Both trees are in good health and the proposed excavation is located on one side of the TPZ only; therefore, the extent of encroachment should not significantly impact the trees. To further minimise the impact of the works a temporary drip irrigation system should be installed during the construction stage of the project to maintain soil moisture levels and promote the development of new root growth following root pruning.
- 8.3 To determine the impact of the Major Encroachment from stormwater pipe installation, root mapping investigations were undertaken by Arbor Express (08.08.23) within the TPZ of Tree T1. Three (3) trenches were excavated parallel to the eastern site boundary using an air spade and all woody roots were retained, measured and documented (refer: Appendix D – Root Mapping Report).
- 8.4 Root mapping results identified large diameter roots within the SRZ. These roots are critical in maintaining the health and structural stability of the tree and should be retained and protected as part of the stormwater pipe installation works. It can also be assumed that large diameter roots will be present within the SRZ of Tree T5, that will also need to be retained and protected.
- 8.5 To minimise the impact of stormwater pipe installation within the TPZ areas of Trees T1 and T5 the trench should be excavated using tree sensitive methods. All roots >25mm diameter should be retained (unless root pruning is approved by the Project Arborist), and the stormwater pipe installed below these roots. The use of tree sensitive methods will also minimise root impacts to Trees T2 and T3, as the TPZ areas of these trees fall within the larger TPZ area of Tree T5.
- 8.6 When excavating for the overland flow path within the TPZ areas of Trees T1 and T5, ground levels should be lowered in small increments and all woody roots pruned by the Project Arborist. To maintain existing ground levels with the TPZ areas between the overland flow path and the site boundary, a lightweight retaining wall (e.g. timber or concrete sleepers) should be installed. The supporting posts of the retaining wall should be located to avoid significant roots (as determined by the Project Arborist).
- 8.7 Minor increases to finished landscape levels (outside of the overland flow path) in TPZ areas is permissible to allow for the installation of soil conditioners and turf underlay. Amelioration of the growing environment within the site and the installation of a permanent irrigation system to support the establishment of new plantings should also benefit the health of Trees T1-T3 and T5.



- 8.8 A number of large shrubs (not covered by Councils Tree Management Policy) growing in neighbouring properties overhang the site boundary. If required for site/development access, these shrubs should be pruned back by a qualified Arborist or Horticulturalist.

- 8.9 To enhance the amenity and canopy cover at the site the Landscape Plans include the planting of fourteen (14) advanced size trees, plus an additional three (3) street trees in the footpath to the front of the site.

Two (2) of the proposed trees within the site will be planted in on-structures planter boxes with a minimum depth of 800mm, which is sufficient to support the growth of the trees. The proposed street trees are to be planted in below ground strata vaults which will provide optimum growing conditions for the establishment and long-term viability of the trees.

## 9.0 Recommendations

- 9.1 The stormwater pipe within the TPZ areas of Trees T1 and T5 shall be installed using tree sensitive methods under the supervision of the Project Arborist. Tree sensitive methods include hand excavation, hydrovac excavation, or a combination of compact excavator (<3.5T) and hand excavation.

When undertaking hydrovac excavation, to avoid bark damage low water pressures shall be used and the lance shall not be pointed directly at roots.

When undertaking compact excavator/hand excavation the excavator shall be fitted with a flat bladed bucket and soil levels lowered in small increments. The excavator operator shall be guided by a spotter at all times to identify and carefully expose all roots >25mm diameter using hand tools. The excavator shall work from areas of ground protection (plywood sheeting or HDPE ground mats) at all times.

On completion of the trench, the stormwater pipe shall be installed under significant roots (as determined by the Project Arborist). Root pruning is permissible only where approved and undertaken by the Project Arborist.

- 9.2 Excavation for the overland flow path within the TPZ areas of Trees T1 and T5 shall be undertaken using a compact excavator (<3.5T) working from areas of ground protection (plywood sheeting or HDPE ground mats) at all times. The excavator shall be fitted with a flat bladed bucket and ground levels shall be lowered in small (25mm) increments under the supervision of the Project Arborist. All woody roots shall be pruned by the Project Arborist.

A lightweight retaining wall (e.g. timber or concrete sleepers) shall be installed along the edge of the overland flow path to maintain existing ground levels between the retaining wall and site boundary. The locations of retaining wall posts shall be excavated by hand and where roots >25mm diameter are encountered the post location shall be adjusted (unless root pruning is approved by the Project Arborist). Where required, post holes shall be sleeved to prevent contact between roots and freshly poured concrete. No over excavation to the rear of the retaining wall is permissible.

On completion of retaining wall installation a temporary drip irrigation system shall be installed within the landscape area between the retaining wall and the site boundary. The irrigation system shall comprise of drip lines running parallel to the boundary at 600mm centres. The irrigation system shall be operated via an automated timer with the duration and interval of operation to be determined by the Project Arborist at the time of installation.

- 9.3 Mechanical cultivation of landscape areas within the TPZ areas of Trees T1 and T5 shall be avoided. When installing advanced size trees within the TPZ areas the planting hole shall be excavated by hand and where roots >25mm diameter are encountered the location of the planting hole shall be adjusted.
- 9.4 New trees shall be grown and supplied in accordance with *AS:2303 2018 Tree stock for landscape use*. The planting and aftercare of the trees shall be undertaken by a qualified horticulturalist (minimum AQF level 3).
- 9.5 The recommendations of this report are subject to approval by Northern Beaches Council.



Martin Peacock  
(Consultant Arborist - AQF Level 8)

BSc (hons.) Arboriculture (UK)  
Higher National Diploma Arboriculture (UK)  
National Diploma Horticulture (Arb.) (UK)  
Diploma Horticulture (Landscape Design) (AUS)



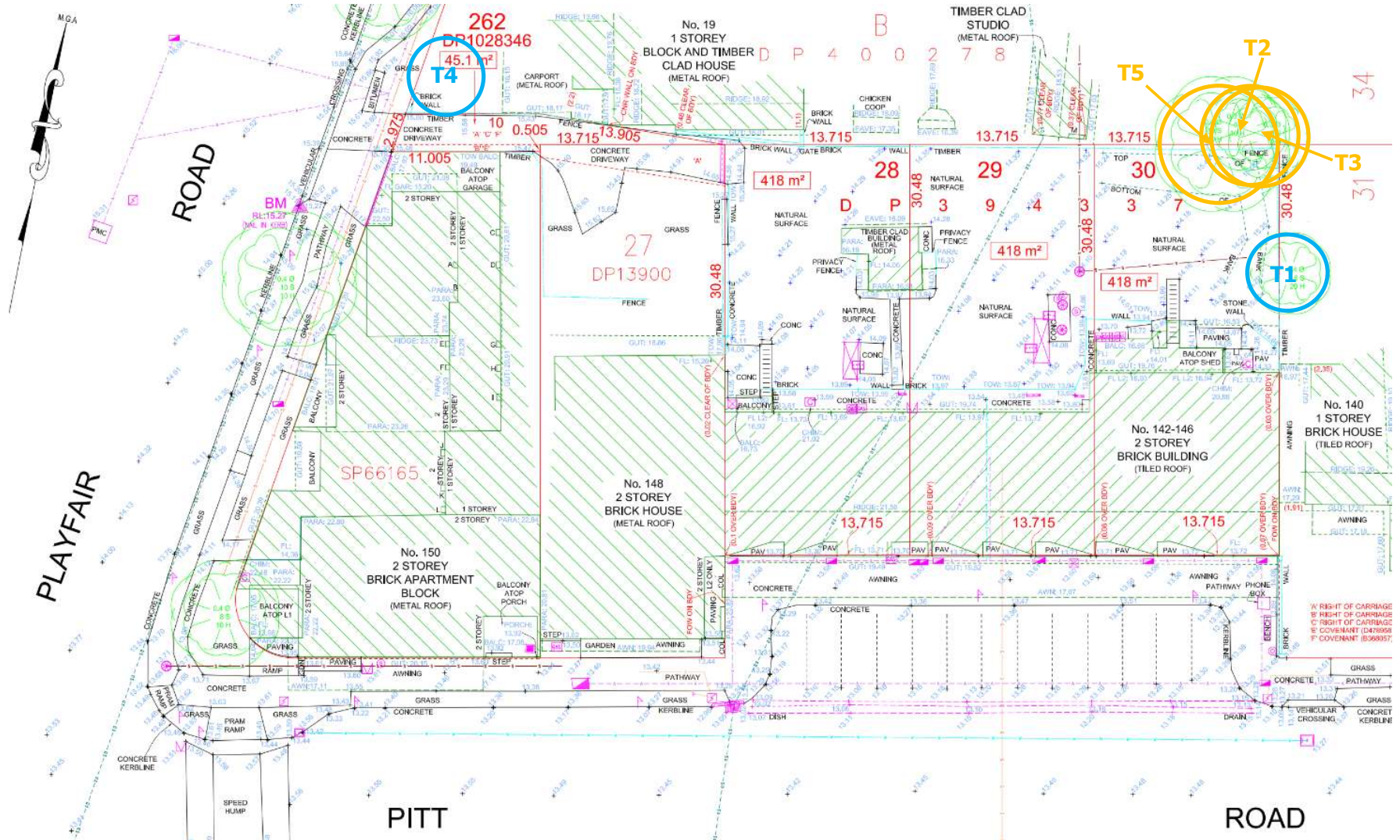
## References

Australian Standard: *AS 4970 - 2009 Protection of trees on development sites*. Standards Australia GPO Box 476, Sydney, NSW, 2001.

British Standard Institution (2005). *Guide for Trees in relation to construction*. BSI, 2 Park Street, London W1A 2BS.

Draper B.D. and Richards P.A. (2009), *Dictionary for Managing Trees in Urban Environments*, Institute of Australian Consulting Arboriculturists (IACA), CSIRO Publishing, Collingwood, Victoria, Australia.

## Appendix A - Tree Location Plan





## Appendix B – Photographs



**1: Tree T1**

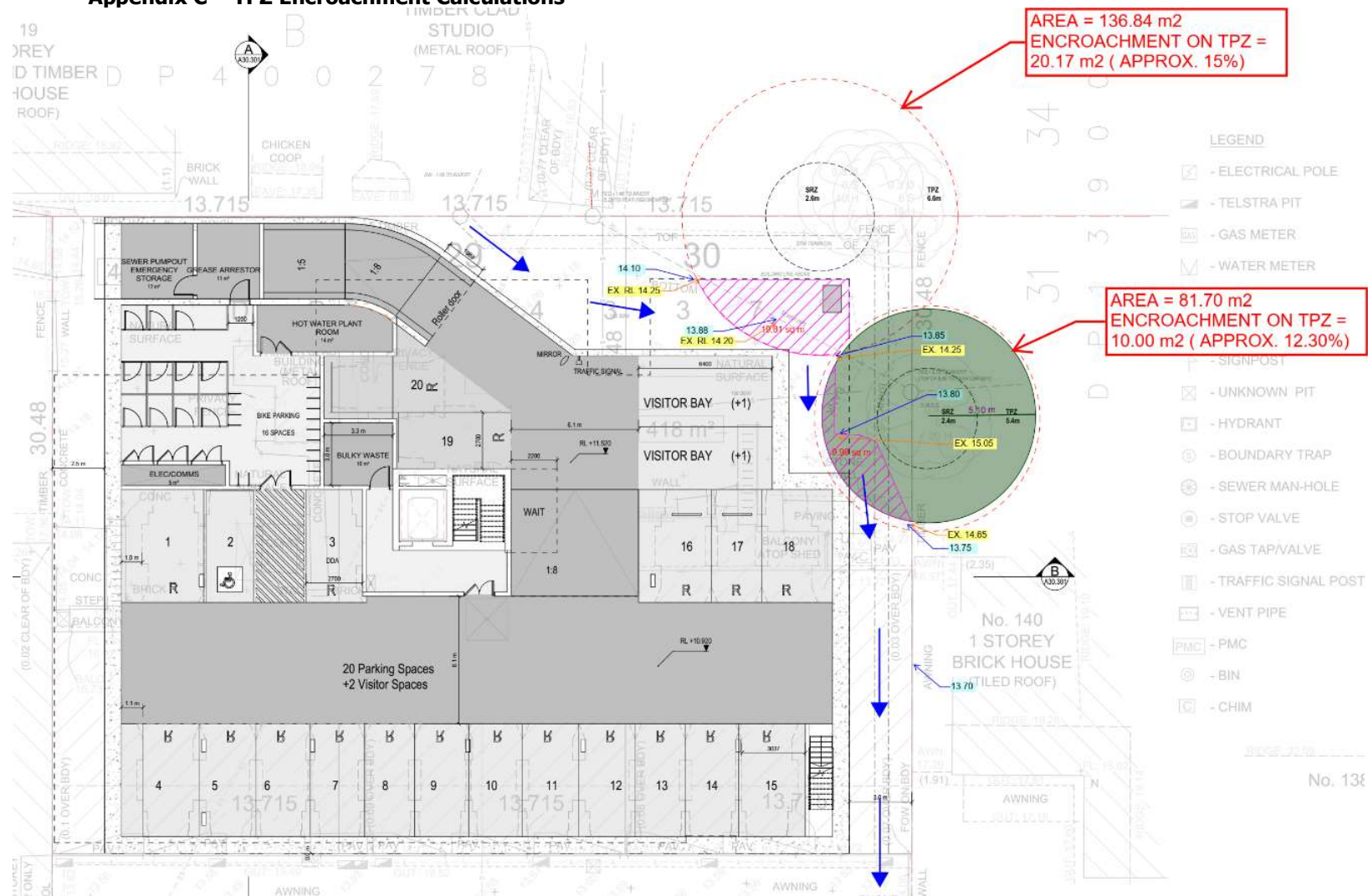


**2: Trees T2 and T3**



**3: Tree T5**

### Appendix C – TPZ Encroachment Calculations



Extract from TPZ Encroachment Calculations (25.03.24) – prepared by Warren & Mahoney

## Appendix D – Root Mapping Report



Grant Price  
142 Pitt Road  
North Curl Curl NSW 2099

8 August 2023

To whom it may concern

**Root Mapping Investigation**  
142 Pitt Road North Curl Curl NSW 2099

Root mapping using an air spade has been undertaken within the Tree Protection Zone (TPZ) of the *Araucaria columnaris* to determine the size of the tree roots prior to the excavation for the stormwater line.

I have outlined where the root mapping was conducted in the Figure 1 with a blue line. The depth of the trench was 500mm and 200mm wide. The location of the tree roots has been marked and numbered on the existing fence on site with spray paint. We have also followed the tree roots and detailed their diameter at 2.3m from the fence and 3.6m from the centre of the tree trunk going in a semi-circle from the tree.

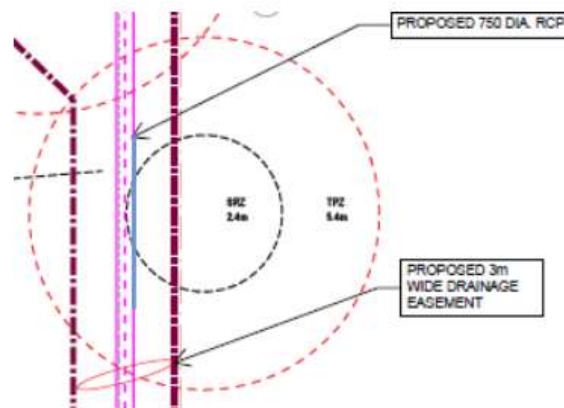


Figure 1 Extract from *Spatial\_Rev B\_31.07.23*

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ABN (44 664 406 599)





During the root mapping investigation, the following tree roots were identified.

**2.0m from boundary**

Root Number	Diameter of root (mm)
1	190
2	220
3	130
4	300

**2.3m from boundary**

Root Number	Diameter of root (mm)
1	170
2	140
3	140
4	120
5	80
6	160
7	100

**3.6m from centre of tree going in a semi-circle from the tree**

Root Number	Diameter of root (mm)
1	60
2	120
3	60
4	120
5	50
6	95
7	60

For further information please contact Arbor Express via email at [info@arbor-express.com.au](mailto:info@arbor-express.com.au) or on 0466 586 842. A photolog has also been attached overleaf.

Yours sincerely

A handwritten signature in black ink that reads "Robert de Jong".

**Robert de Jong**  
Diploma of Arboriculture AQF Level 5  
Certificate No. 0451

Arbor Express Pty Ltd  
ABN (44 664 406 599)



**Photo Log**

Photo 1: Roots 1 and 2



Photo 2: Roots 3 and 4



Photo 3: Trench



Photo 4: Trench



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## Appendix E - Cascade Chart for Assessment of Tree Quality & Value

(Adapted from British Standard Institution (2005). Guide for Trees in Relation to Construction)

RETENTION CATEGORY & DEFINITION	CRITERIA - SUBCATEGORIES			IDENTIFICATION IF SHOWN ON A PLAN
	1. Mainly Arboricultural values	2. Mainly landscape values	3. Mainly cultural values, including conservation	
<b>Category A</b> <b>High Quality &amp; Value:</b> Those in such a condition as to be able to make a substantial contribution for a minimum of 40 years. Highly significant trees or trees listed on a significant tree register regardless of life expectancy (excluding hazardous trees). <b>Priority for retention.</b>	Trees that are particularly good examples of their species, especially if rare or unusual or essential components of groups or of formal or semi-formal Arboricultural features (e.g. The dominant and / or principal trees within an avenue). Trees that provide a definite contribution to the amenity of the locality.	Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. Avenues or other Arboricultural features assessed as groups).	Trees, groups, remnant bushland or forest of significant conservation, historical, Aboriginal, commemorative or other value.  Note: independent ecological/aboriginal/heritage assessment may be required.	GREEN
<b>Category B</b> <b>Moderate Quality &amp; Value:</b> Those in such a condition as to make a significant contribution for a minimum of 15 years. <b>Consider for retention.</b>	Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage).	Trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality or, trees present in numbers, usually as groups or woodlands, such that they from distinct landscape features, thereby attracting higher collective rating than they might as individuals but which are not, individually essential components of formal or semi formal Arboricultural features (e.g. trees or moderate quality within an avenue that includes better A category specimens).	Trees with clearly identifiable conservation or other cultural benefits.	BLUE
<b>Category C</b> <b>Low Quality &amp; Value:</b> Those in such a condition as to make a contribution for a minimum of 5 years. <b>Consider for removal.</b>	Trees not qualifying in higher categories. Juvenile, semi mature or small tree species which are considered easily replaceable.	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and / or trees offering low or only temporary screening benefit.	Trees with very limited conservation or other cultural benefits.	ORANGE
<b>Category D</b> <b>Not suitable for retention:</b> Those in such a condition that any existing value would be lost within 5 years, and which should in current context, be removed for reasons of sound Arboricultural management. <b>Priority for removal.</b>	Trees that have a serious, irremediable structural defect, such that their early loss is expected due to failure, including those that will become unviable after removal of other trees (i.e. where, for whatever reason the loss of companion shelter cannot be mitigated by pruning). Trees that are dead or are showing signs of significant, immediate and irreversible overall decline. Trees infected with a pathogen of significance to the health and/or safety of other trees nearby, or very low-quality trees suppressing adjacent trees of better quality. Trees causing significant damage to structures, where no viable alternatives exist for remedial tree management / modification of structures to enable tree retention. Trees considered a weed species or those listed as noxious weeds. <b>NOTE:</b> Dead or dying trees with hollows or cavities may be of ecological importance. These trees are to be identified and assessed independently of the criteria in this cascade chart. Where category D trees are removed habitat reinstatement may be appropriate.			RED