

ARBORICULTURAL IMPACT ASSESSMENT.

On: Tree Specimens At 1 White St. Lilyfield
NSW 2040

TREEHAVEN ENVIRONSCAPES.
128 Showground Road Castle Hill. NSW 2154
smcl2666@bigpond.net.au

For Mr. D. Cohen
On. 21/8/2018

CONTENTS

1	Introduction.....	Pg 3
2	Site Description.....	Pg 4
3	Methodology.....	Pg 5
4	Description of Trees.....	Pg 6
5.	Discussion.....	Pg 7
6.	Conclusions and Recommendations.....	Pg 7
7.	The Author's Qualifications and Experience.....	Pg 8
8	References.....	Pg 9
	Appendix 1a - Table of Trees on the Site.....	Pg 10
	Appendix 1b – Figures 2 to 9. Photos of Trees on Site.....	Pg 12
	Appendix 2a, 2b– Plans of site showing position of trees and the location of proposed landscape plantings.....	Pg 16
	Appendix 3 SULE ratings schedule.....	Pg 18

DISCLAIMER

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Whilst every attempt is made to be accurate and factual with regard to references used in this document no liability is assumed for the work done by others.

Please note that trees are living organisms which are subject to natural growth, change and also to 'Acts of God' such as storms and lightning strikes. This report contains empirical data gathered on the day for the purpose of tree assessment in terms of their health and long term viability. Given the transitory nature of living things such data only gives a 'snapshot' of the organism on the day and cannot be applied to future events, 'Acts of God', mechanical, pathogen attack or chemical damage to the organism after that time.

The information supplied herein is given in good faith and to the best available scientific and industry standards which apply to the Author's level of education and experience.

1 INTRODUCTION

1.1 The Property at 1 White St. Lilyfield, henceforth referred to as the Site, is being considered for a development by Mr. Daniel Cohen who intends to demolish the existing structure on the property and proposing to replace them a set of low cost housing units (See Appendix 2a and 2b).

There are at several trees growing on or near the property which will be affected by the proposal.

1.2 The property is within the jurisdiction of Inner West Council (IWC), formally Marrickville Council, which have Tree Management Provisions (TMP) which prohibit the pruning, removal, ringbarking, topping, lopping, injury or wilful destruction of trees over 5m in height and 300mm or greater in girth at ground level without Council's consent. As a part of the DA an Arborist report is required to examine any trees on and near the site which are likely to be affected by the development. Consequently Mr. Cohen has engaged, Mr. Stephen McLoughlin of Treehaven Environmentscapes, to visit the site examine 24 specimens growing on or near the site, which have a potential to be affected by the development, and prepare this report.

1.3 This report details my site visit on 17/8/2018 and the examination of 24 trees growing on the site designated **T1** to **T24** inclusive (See Fig. 1). Also a follow up visit on

1.4 This report contains empirical data collected regarding the tree specimens supported by digital photos, a Discussion regarding the relevance of the specimens and presents Conclusions and Recommendations as to the future treatment of the trees. Tables and plans relating to this report are included as Appendix 1 & 2 at the end of the document. This document pays heed to IWC's TMP and utilizes the Australian Standards 4790-2009 *Trees on development sites* and 4373-2007 *Pruning of Amenity Trees* as a set of guiding principles.

2. SITE DESCRIPTION

2.1 The land on which the trees are growing is a rectangular shaped block with Northerly facing slope on a slight gradient heading down towards the White Creek catchment. (See Fig 1).

2.2 Figure 1, an aerial photo from Six Maps shows the position of the trees examined in this document.



Fig1. Aerial photo of the site from six maps showing position of the trees (in red Circles).

3. METHODOLOGY.

3.1 The tree specimens were visually assessed using non-destructive means by employing the Visual Tree Assessment (VTA) as developed by Matteck and Broeler (2006).

The information gathered was used to

- i) Calculate Tree protection Zones (TPZ) and Structural Root Zones (SRZ) with reference to the Australian Standard (AS) 4970-2009 and
- ii) Provide a qualitative assessment of the tree utilizing Jeremy Barrell's Safe Usable Life Expectancy (SULE) of which a table outlining the different categories appears in Appendix 3 of this document.

3.2 No invasive procedures, such as coring or drilling, were used in the examination of the specimen.

3.3 Structural Root Zone (SRZ) calculations provided in section **3.3.5** of Australian Standard 4970 -2010 are given as

$$SRZ = (D \times 50)^{0.42} \times 0.64$$

Where D is the diameter of the tree as measured just above the root buttress and the result is the radius of a circle enclosing the tree. This is referred to as the tree's Diameter at Ground Level (DGH) in the table in Appendix 1.

Also section **3.2** Tree Protection Zones (TPZ) is given as,

$$TPZ = DBH \times 12$$

Where DBH is the diameter of the trunk of the trunk measured at 1.4m from the ground.

In the case of trees T2 and T4, both of which have multiple stems at 1.4m from the ground, DBH was determined by using the following formula as advised in AS4970-2009

$$\text{Total DBH} = \sqrt{(DBH1)^2 + (DBH2)^2 + (DBH3)^2}$$

3.4 The position of the trees has been determined by survey plans as forwarded from G & G holdings and best guess estimates based on aerial view of the Site.

3.5 AS4790-2009 advises that a Major Encroachment is <10% of a tree's TPZ and a Minor Encroachment is = to of >10% of a tree's TPZ.

3.6 A tree root investigation was undertaken on 12/10/2018 where two trenches were excavated along the proposed building footprint

4. DESCRIPTION OF THE TREES (See Appendix 1).

4.1 Trees **T1, T2, T4, T5, T7, T9 & T11** are all *Syagrus romanzoffianum* which is an exotic palm tree that is considered a pest species and is exempt from the TPM. (See Figs. 2, 3, 5, 6, 8, 10 & 12). The species is listed as exempt from protection under IWC's "Tree Works that don't need approval". These trees are scheduled to be removed in plans for the development (See Appendix 2a & 2b). Consequently these specimens can be removed without Council's approval. The specimens are growing in a confined situation being a narrow garden bed beside the carpark to the South West of the Site (See Fig.12).

4.2 Trees **T3, T16, T17 & T19** are all *Eucalyptus saligna* which is an endemic species common to the Sydney region and the Inner West LGA. All of these trees are planted specimens which were in good health and condition at the time of my inspection.

Of these trees it is noted:

- **T3** has been planted on the site in a confined situation being the narrow garden bed to the South of the car park servicing the building. The tree has had limbs and branches removed up to 5m from the ground (See Fig 3).
- **T16** is growing in the nature strip to the South East of the Site and was in good health and condition (See Fig. 17). The tree is a Council asset and is suppressed in its growth by surrounding vegetation. Consequently the tree is fairly small and would only receive a Minor Encroachment into its TPZ from the proposed building footprint
- **T17** is growing in the nature strip to the South East of the site and was in good health and condition. The tree is also a IWC asset and a planted specimen (See Fig. 18). The tree is quite large and will be subjected to a Major Encroachment into its TPZ from the proposed building footprint. Subsequently a tree root investigation has been undertaken which indicates that there are no structural roots in the building footprint within 200mm of the existing surface levels (See Figs. 31, 32 & 34).
- **T19** is growing in the nature strip to the South East of the site and was in good health and condition. The tree is also a IWC asset and a planted specimen. The tree is quite large and will be subjected to a Major Encroachment into its TPZ from the proposed building footprint. Subsequently a tree root investigation has been undertaken which indicates that there are no structural roots in the building footprint within 200mm of the existing surface levels (See Figs. 31, 32 & 34).

4.3 Trees **T5, T7, T9 & T11** are all *Eucalyptus microcorys* or “Tallowood” which is a native tree common to Northern NSW and Queensland. are growing in confined conditions in the garden bed to the South East of the Site (See Figs. 7, 9, 11 & 13).

These trees are scheduled to be removed in plans for the development (See Appendix 2a & 2b).

Of these specimens it was noted;

- All these specimens were in good health and condition at the time of inspection.
- These specimens are assumed to have planted at similar times as they are of similar dimensions and style.
- These trees will be subjected to Major Encroachments into their respective TPZs to the extent that it would be unviable to retain them.

4.4 Tree **T12** is a *Eucalyptus robusta* or “Swamp Mahogany” which is growing in confined conditions adjacent to the Southern border of the Site (See Fig. 13). The tree is suppressed in its growth being in the shade for most daylight hours. Consequently it is quite stunted in its habit with a bias in its canopy to the South.

This tree will be subjected to a Major Encroachment into its TPZ to the extent that it would be unviable to retain it (See Appendix 2a & 2b).

4.5 Tree **T13** is an *Allocasuarina cunninghamiana* or ‘River Sheoak’ is a native tree specimen which has been planted in the Site towards the North East of the property. The tree was in good health and condition at the time of inspection (See Fig. 14).

The specimen is growing on hard packed subgrade and has a shallow root system (See Fig. 30).

The tree will experience a Major Encroachment into its TPZ however the tree root investigation indicates that only two roots, one 60mm Ø and one 80mm Ø, would need to be cut to accommodate the new building footprint and so the tree could be retained.

4.6 Trees **T14 & T15** are both *Ligustrum lucidum* or ‘Large Leaved Privet’ which is a declared noxious weed in the IWC Local Government Area and their removal is highly desirable (See Figs. 15 & 16). These trees are not protected by the Tree Management Provisions and can be removed without Council approval

4.7 Tree **T18** is a *Corymbia eximia* or ‘Yellow Bloodwood’ which is a planted specimen that is endemic to the Sydney region usually found on Sandstone outcrops. The tree has been planted in the nature strip to the East of the Site and is an IWC asset. The tree was in suppressed condition at the time of inspection and has a strong bias in its main stem to the North (See Fig. 19).

The tree has a relatively small TPZ and would only experience a Minor encroachment into its TPZ (See Appendix 2a & 2b). Some outer branches will need to be pruned from this tree to allow for the new building walls.

4.8 Trees **T20** and **T21** are both *Melaleuca styphelioides* or 'Prickly leaved Paperbark' which is a native species endemic to the Sydney region which has been planted in the nature strip to the South of the Site and are IWC assets (See Figs. 21 & 22).

Both trees were in good health and condition at the time of inspection and won't be encroached by the proposed site works (See Appendix 2a & 2b).

4.9 Trees **T22, T23 & T24** are all *Morus nigra* or 'Mullberry' which is an exotic fruit tree from Africa (See Figs. 23, 24 & 25). These trees are listed as exempt from protection in IWC's 'Tree works that don't need approval' and can be removed without Council approval.

Conversely they will not be directly affected by the development and could be retained as a forage tree for urban birds and mammals (See Appendix 2a & 2b).

5. DISCUSSION

5.1 There were no naturally occurring endemic nor heritage listed trees on the site nor on the adjacent properties. All the trees examined in this report are planted specimens.

5.2 The plans for the Site at present indicate that trees **T1, T2, T4, T5, T6, T7, T8, T9, T10, T11, T12, T14 & T15** are scheduled to be removed for the development to proceed as planned. In regard to the tree specimens I note that;

- **T1, T2, T4, T5, T7, T9 & T11** all *Syagrus*, and trees **T14 & T15**, both *Ligustrum*, are exempt species and can be removed without Council approval
- **T5, T7, T9 & T11**, all *E. microcorys*, are planted in very confined conditions and will be encroached by the proposed building footprint to the degree where they will be unviable to retain.
- Tree **T12**, a *E. robusta* will be heavily impacted by the demolition of the existing structure and also encroached by the proposed building footprint to the degree where it will be unviable to retain.

5.3 Plans for this Site indicate that trees **T3** and **T13** could be retained with careful tree management during the construction. Tree **T13** has been subjected to a tree root investigation which revealed 2 roots, 1 x 60mm Ø and 1 x 80mm Ø, will need to be cut by hand sawing for the building to proceed as planned. Some foliage may also need to be removed on this tree's Western side to allow for the new walls of the proposed structure.

T3 is located in the South East corner of the Site and has a relatively small TPZ for its species and will be subjected to a Major Encroachment by the deep excavation for the new subterranean car park (See Appendix 2b). It is considered however that the existing carpark would be inhibiting roots from this tree on its North East side where the proposed deep excavation is to be undertaken. A tree root investigation at this time is not possible as the existing car park is in use.

- 5.4** Trees **T22, T23 & T24** are exempt species but they are located well away from the proposed building works and could be retained.
- 5.5** Trees **T16, T17, T18, T19, T20 & T21** are all IWC assets growing in the nature strip to the South of the Site. Of these trees it is noted;
- Trees **T17** and **T19** have comparatively large TPZs and will experience Major encroachments into their respective protection zones. A tree root investigation conducted on the 13/10/2018 indicated that there are no large structural roots along the proposed building line from these trees (See Figs. 31, 32, 33, 34 & 35). Both these specimens have branches which overhang the site and will conflict with the new walls on the Southern side of the new structure. These will need to be pruned back to allow for the new walls to be constructed (See Appendix 2b)
 - Trees **T16 & T18** will be subjected to Minor encroachments into their relative TPZs and should be unharmed by the proposed construction activities.
 - Trees **20 & T21** are well outside the proposed construction area and should suffer nil encroachment into their TPZs
- 5.6** In compensation for the removal of the existing vegetation on the Site it is proposed that compensatory plantings of 4 trees in the new landscaping for the Site (See Appendix 2c). Suggested species include *Tristainiopsus laurina*, *Syzygium australe*, *Hymenospermum flavum* *Syncarpia glomulifera*, and *Eliocarpus reticulatus*. There is a need for medium sized trees be planted in the rear of the property to the West of the Site to act as screen in order create a leafy barrier between the existing apartments and the proposed structure (See Appendix 2b).

6. CONCLUSIONS & RECOMENDATIONS

- 6.1.** Recommendations for this development in regard to trees on the property are as follows;
- Remove all trees **T1** to **T13** and **T15 & T16** as indicated in site plans
 - Retain and protect trees **T17, T18, T19, T20, T21, T22, T23, T24, T25, T26** as they are Council assets. Trees T18, T19 and T20 will need limbs removed to accommodate new structure and scaffolding.
 - Replace with compensatory plantings as indicated in Appendix 2b,
 - Screenage planting is be provided along the Western border as advised in section **5.3**.

6.2 Removal of trees constitutes a loss of amenity for the area and it is

recommended that any tree scheduled for removal be replaced with suitable specimens placed in a more accommodating space on the Site as indicated in the landscape plans for the site in Appendix 2b.

7. THE AUTHOR'S QUALIFICATIONS AND EXPERIENCE.

Stephen McLoughlin obtained a Horticultural Certificate (1982) with Arboriculture as the third year elective whilst an employee of 10 years service with Baulkham Hills Shire Council (BHSC) now The Hills Council. Most of this time employed in the Council's Parks and Gardens and street tree plantings and, later, managing the Council's Nursery. This was augmented with a Bush Regeneration Certificate (1987) where he studied native plant communities, the means necessary to protect and restore them and the identification and eradication of weed species. Additional to this he obtained a Bachelor of Environmental Science Degree (1997) involving the study of natural environments, Ecology, data collection, analysis and documentation, report writing as well studies in relevant Common Law, current Environmental and Heritage Legislation. Since obtaining his degree Stephen writes reports on a regular basis covering Environmental, Heritage and Horticultural / Arboricultural subjects.

Further to this he upgraded his qualifications to that of Arborist Qualification 5 (AQF5) having completed the Associate Diploma of Horticulture / Arboriculture, a standard of qualification which is currently expected by many Local Government and statutory bodies.

Stephen also has a current NSW Structural Landscaper's Licence and has been involved in regular landscape construction works as both Principle and Sub Contractor on many Public, Private and Commercial ventures since commencing his contracting business in 1989. He has many garden and estate maintenance contracts, and Bush Regeneration projects involving large scale properties with many trees under his care, including the providing of advice and practical solutions to the issues of Bush Fire Asset Protection Zones.

Consequently Stephen has well grounded experience in both Public and Private tree plantings, the care and maintenance of them as well as hands on experience of what occurs on construction sites and the results of mechanical disturbance to trees on such sites.

The Author is also an accredited Root Barrier Australia ® installer and has been involved with many excavations involving tree roots.

In 2014 Stephen completed his Diploma of Environmental Management at the Ryde campus of North Sydney TAFE involving studies with regard to Bushfire Management, Global Information Systems (GIS), Mapping, Managing Native Fauna (for which he obtained a distinction) and River Restorations.

Also he has recently completed the Quantified Tree Risk Assessment Course (QTRA)

Yours sincerely

S. McLOUGHLIN BSc.(Environ), Dip. Hort / Arb AQF5,Hort. Cert,
Dip. Conservation and Land Management
Conservation & Land Management.Cert.III

TREEHAVEN ENVIRONSCAPES –. Tree report at 1 White St. Lilyfield. NSW
2040. For Danial Cohen.- Page 10 of 39

Australian Arborist Member # 2158
Australian Association of Bush Regenerators Member
QTRA assessor

REFERENCES

Australian Standard 4373 1996 *Pruning of amenity trees*.

Australian Standard 4790 2009 *Trees on development sites*.

Barrell, J. 1996. '*Predevelopment tree assessment*'

Bodkin F. 1986 *Encyclopedia Botanica*

Six Maps. Aerial view of site (fig 1).

Inner West Council *Development Fact Sheet*

Matteck C and Breloer H. 2006 'The Body Language of Trees'

Websites Visited

Inner West Council "Tree Works that Don't need Approval"

www.innerwest.nsw.gov.au/live/information-for-residents/trees/tree-works-that-dont-need-approval

APPENDIX 1a. Schedule of trees identified on the site listing condition and physical dimensions of trees on the site.

Specimen name	Est. Height	Diameter DBH* DGH**	Crown	Comments	SULE* **	TPZ	SRZ
T1 <i>Syagrus romazoffianum</i> Common name 'Cocos Palm' Age class 20 years See Fig. 2.	N/A	N/A	N 1m E 1m S 1m W 1m	The species is exempt from protection in the TMP	B3	N/A	N/A
T2 <i>Syagrus romazoffianum</i> Common name 'Cocos Palm' Age class 20 years See Fig. 2.	N/A	N/A	N 1m E 1m S 1m W 1m	The species is exempt from protection in the TMP	B3	N/A	N/A
T3 <i>Eucalyptus saligna</i> Common name 'Sydney Blue gum' Age class 20 years See Fig. 3	16m	52cm 56cm at the base	N 5m E 4m S 4m W 5m	An endemic specimen native to the Sydney region and the Inner West Council LGA which is growing near the Southern border of the Site. The tree was in good health and condition at the time of inspection with no significant pathogens nor defects apparent. Lower limbs and branches have been removed to 5m from the ground.	A1	6.24m	2.59m
T4 <i>Syagrus romazoffianum</i> Common name 'Cocos Palm' Age class 20 years See Fig. 4.	N/A	N/A	N 1m E 1m S 1m W 1m	The species is exempt from protection in the TMP	B3	N/A	N/A
T5 <i>Eucalyptus microcorys</i> Common name 'Tallowwood'	18m	48cm 63cm at the base	N 5m E 2m S 4m W 3m	A native species native to North Eastern NSW which is growing near the Southern border of the Site. The tree was in good health and condition at the time of inspection with no significant pathogens nor defects apparent.	A1	5.76m	2.73m

Age class 20 years See Fig. 5							
T6 <i>Syagrus romazoffianum</i> Common name 'Cocos Palm' Age class 20 years See Fig. 6.	N/A	N/A	N 1m E 1m S 1m W 1m	The species is exempt from protection in the TMP	B3	N/A	N/A
T7 <i>Eucalyptus microcorys</i> Common name 'Tallowwood' Age class 20 years See Fig. 7	18m	37cm 42cm at the base	N 4m E 2m S 3m W 3m	A native species native to North Eastern NSW which is growing near the Southern border of the Site. The tree was in good health and condition at the time of inspection with no significant pathogens nor defects apparent.	A1	4.44m	1.39m
T8 <i>Syagrus romazoffianum</i> Common name 'Cocos Palm' Age class 20 years See Fig. 8.	N/A	N/A	N 1m E 1m S 1m W 1m	The species is exempt from protection in the TMP	B3	N/A	N/A
T9 <i>Syagrus romazoffianum</i> Common name 'Cocos Palm' Age class 20 years See Fig. 9	N/A	N/A	N 1m E 1m S 1m W 1m	The species is exempt from protection in the TMP	B3	N/A	N/A
T10 <i>Syagrus romazoffianum</i> Common name 'Cocos Palm' Age class 20 years	N/A	N/A	N 1m E 1m S 1m W 1m	The species is exempt from protection in the TMP	B3	N/A	N/A

See Fig. 10							
T11 <i>Eucalyptus microcorys</i> Common name 'Tallowwood' Age class 20 years See Fig. 11	19m	53cm 59cm at the base	N 4m E 4m S 4m W 2m	A native species native to North Eastern NSW which is growing near the Southern border of the Site. The tree was in good health and condition at the time of inspection with no significant pathogens nor defects apparent.	A1	6.36m	2.65m
T12 <i>Eucalyptus robusta</i> Common name 'Swamp Mahogany' Age class 20 years See Fig. 13	19m	53cm 59cm at the base	N 4m E 4m S 4m W 2m	A native species native to North Eastern NSW which is growing near the Southern border of the Site. The tree was in good health and condition at the time of inspection with no significant pathogens nor defects apparent. The tree is suppressed due to the confined environment in which it is growing.	A2	6.36m	2.65m
T13 <i>Allocasuarina cunninghamiana</i> Common name 'She oak' Age class 40 years See Fig. 14	18m	42cm 47cm at the base	N 4m E 4m S 4m W 4m	A native species native to creeks and rivers of NSW which is growing near the Eastern border of the Site. The tree was in good health and condition at the time of inspection with no significant pathogens nor defects apparent.	A1	5.04m	2.41m
T14 <i>Ligustrum lucidum</i> Common name 'Large leaved privet' Age class 20 years See Fig. 15.	N/A	N/A	N 2m E 2m S 2m W 2m	The species is a declared noxious weed and exempt from protection in the Tree Preservation Order	B3	N/A	N/A
T15 <i>Ligustrum lucidum</i> Common name 'Large leaved privet' Age class 20 years	N/A	N/A	N 2m E 2m S 2m W 2m	The species is a declared noxious weed and exempt from protection in the Tree Preservation Order	B3	N/A	N/A

See Fig. 16.							
T16 <i>Eucalyptus saligna</i> Common name 'Sydney Blue Gum' Age class 20 years See Fig. 17	7m	1 x 24cm 1 x 16cm 40cm at the base	N 3m E 1m S 3m W 2m	A native species native to East coast NSW and the Sydney basin which is growing in the nature strip near the Southern border of the Site. The specimen is a IWC asset. The tree was in suppressed condition at the time of inspection with no significant pathogens nor defects apparent. The tree has co dominant stems adjoining in a saddle shape at 0.5m from the ground. The tree is located 1.9m from the border fence.	A2	3.46m	2.25m
T17 <i>Eucalyptus saligna</i> Common name 'Sydney Blue Gum' Age class 20 years See Fig. 18	20m	77cm 79cm at the base	N 10m E 5m S 6m W 4m	A native species native to East coast NSW and the Sydney basin which is growing in the nature strip near the Southern border of the Site. The specimen is a IWC asset. The tree was in good condition at the time of inspection with no significant pathogens nor defects apparent. The tree is located 2.3m from the border fence and there is a bias in the crown towards the North.	A1	9.24m	3m
T18 <i>Corymbia eximia</i> Common name 'Yellow Bloodwood' Age class 20 years See Fig. 19	9m	27cm 30cm at the base	N 5m E 1m S 2m W 3m	A native species native to East coast NSW and the Sydney region which is growing in the nature strip near the Southern border of the Site. The specimen is a IWC asset. The tree was in suppressed condition at the time of inspection with no significant pathogens nor defects apparent and a strong bias in its main stem to the North. The tree is located 1.8m from the border fence.	A1	3.24m	2m
T19 <i>Eucalyptus saligna</i> Common name 'Sydney Blue Gum' Age class 40 years See Fig. 20	20m	69cm 78cm at the base	N 10m E 7m S 8m W 4m	A native species native to East coast NSW and the Sydney basin which is growing in the nature strip near the Southern border of the Site. The specimen is a IWC asset. The tree was in good health and condition at the time of inspection with no significant pathogens nor defects apparent. The tree is located 1.8m from the	A1	8.28m	2.98m

				border fence. There is a bias in the crown towards the North.			
T20 <i>Melaleuca styphelioides</i> Common name 'Prickly leaved Paperbark' Age class 20 years See Fig. 21	10m	27cm 29cm at the base	N 3m E 3m S 3m W 2m	A native species native to East coast NSW and the Cumberland plain which is growing in the nature strip near the Southern border of the Site. The specimen is a IWC asset. The tree was in good health condition at the time of inspection with no significant pathogens nor defects apparent. The tree is located 5m from the border fence.	A1	3.24m	1.96m
T21 <i>Melaleuca styphelioides</i> Common name 'Prickly leaved Paperbark' Age class 20 years See Fig. 22	10m	1 x 11cm 1 x 32cm 36cm at the base	N 5m E 4m S 4m W 4m	A native species native to East coast NSW and the Cumberland plain which is growing in the nature strip near the Southern border of the Site. The specimen is a IWC asset. The tree was in good health condition at the time of inspection with no significant pathogens nor defects apparent. The tree is located 2.2m from the border fence.	A1	4.13m	2.15m
T22 <i>Morus nigra</i> Common name 'Mull berry Tree' Age class 20 years See Fig. 23	N/A	N/A	N/A	An exotic species native to Asia which is growing near the Northern border of the Site. The specimen is a IWC asset. The tree was in good health condition at the time of inspection with no significant pathogens nor defects apparent. The tree is listed as exempt in the TPO	B3	2m Min TPZ	1.5m MIN SRZ
T23 <i>Morus nigra</i> Common name 'Mull berry Tree' Age class 20 years See Fig. 24	N/A	N/A	N/A	An exotic species native to Asia which is growing near the Northern border of the Site. The specimen is a IWC asset. The tree was in good health condition at the time of inspection with no significant pathogens nor defects apparent. The tree is listed as exempt in the TPO	B3	2m Min TPZ	1.5m MIN SRZ
T24 <i>Morus nigra</i> Common name 'Mull berry Tree' Age class 20 years See Fig. 25	N/A	N/A	N/A	An exotic species native to Asia which is near the Northern border of the Site. The specimen is a IWC asset. The tree was in good health condition at the time of inspection with no significant pathogens nor defects apparent. The tree is listed as exempt in the TPO	B3	2m Min TPZ	1.5m MIN SRZ

APPENDIX 1b. Figures 2 to 23 Photos of Trees on the Site.



Fig 2 Photo of T1 and T2 both *Syagrus romanzoffianum*.



Fig.3 Photo of T3 a *Eucalyptus saligna*



Fig 4. Photo of T4 a *Syagrus romanzoffianum* covered in vines

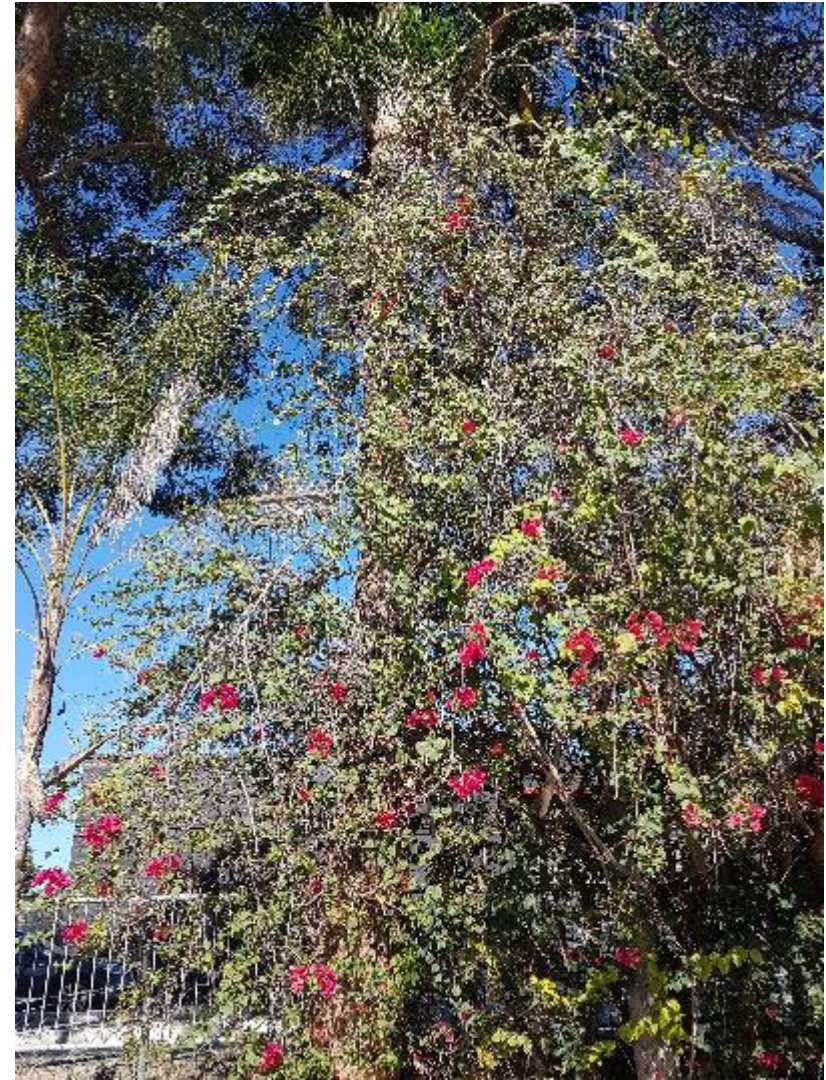


Fig. 5 Photo of T5 a *Eucalyptus microcorys*



Fig. 6 Photo of T6 a *Syagrus romanzoffianum*.



Fig. 7 Photo of T7 a *Eucalyptus microcorys*



Fig 8. Photo of T8 a *Syagrus romanzoffianum*



Fig. 9 Photo of T9 a *Eucalyptus microcorys*



Fig 10. Photo of T10 a *Syagrus romanzoffianum*



Fig. 11. Photo of T11 a *Eucalyptus microcorys*



Fig 12. Photo of garden bed and curb in front carpark



Fig. 13. Photo of T12 a *Eucalyptus robusta*



Fig 14. Photo of tree T13 an *Allocasuarina cunninghamiana*



Fig. 15. Photo of T14 a *Ligustrum lucidum*

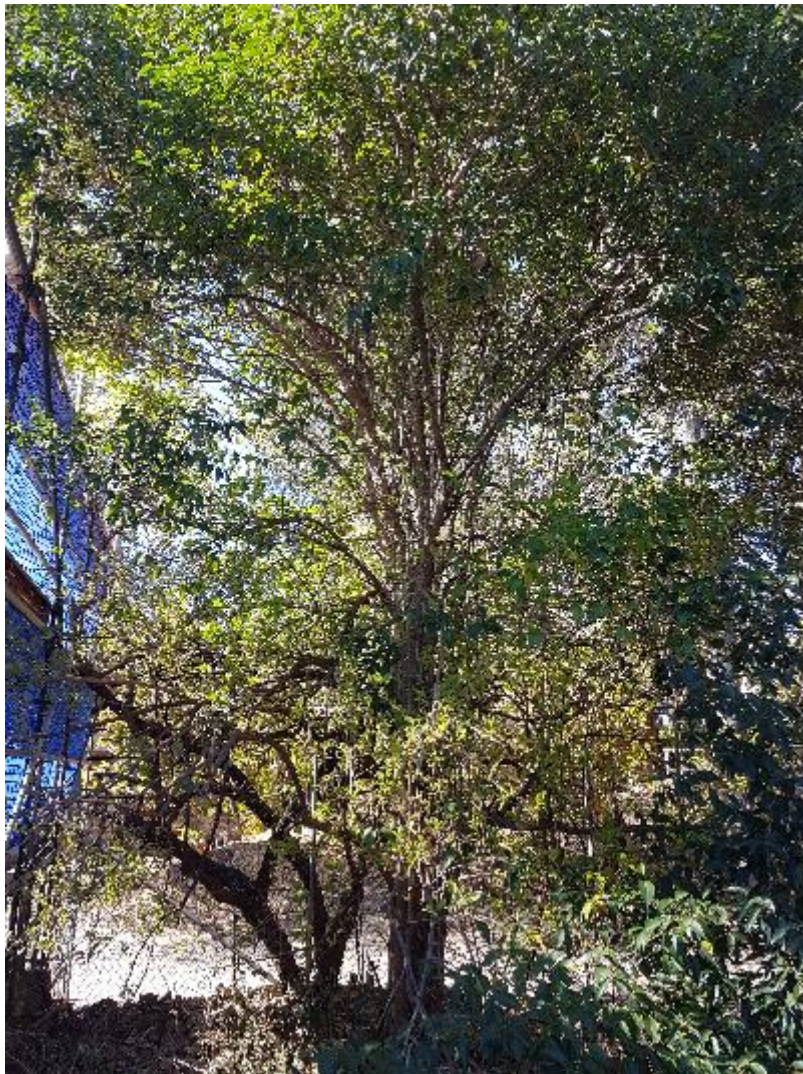


Fig 16. Photo of tree T15 a *Ligustrum lucidum*



Fig. 17. Photo of T16 a *Eucalyptus saligna*



Fig 18. Photo of tree T17 a *Eucalyptus saligna*



Fig. 19. Photo of T18 a *Corymbia gummiifera*



Fig 20. Photo of tree T19 a *Eucalyptus saligna*



Fig. 21. Photo of T20 a *Melaleuca styphelioides*



Fig 22. Photo of tree T21 a *Melaleuca styphelioides*



Fig. 23. Photo of T22 a *Morus nigra*



Fig 24. Photo of tree T23 a *Morus nigra*

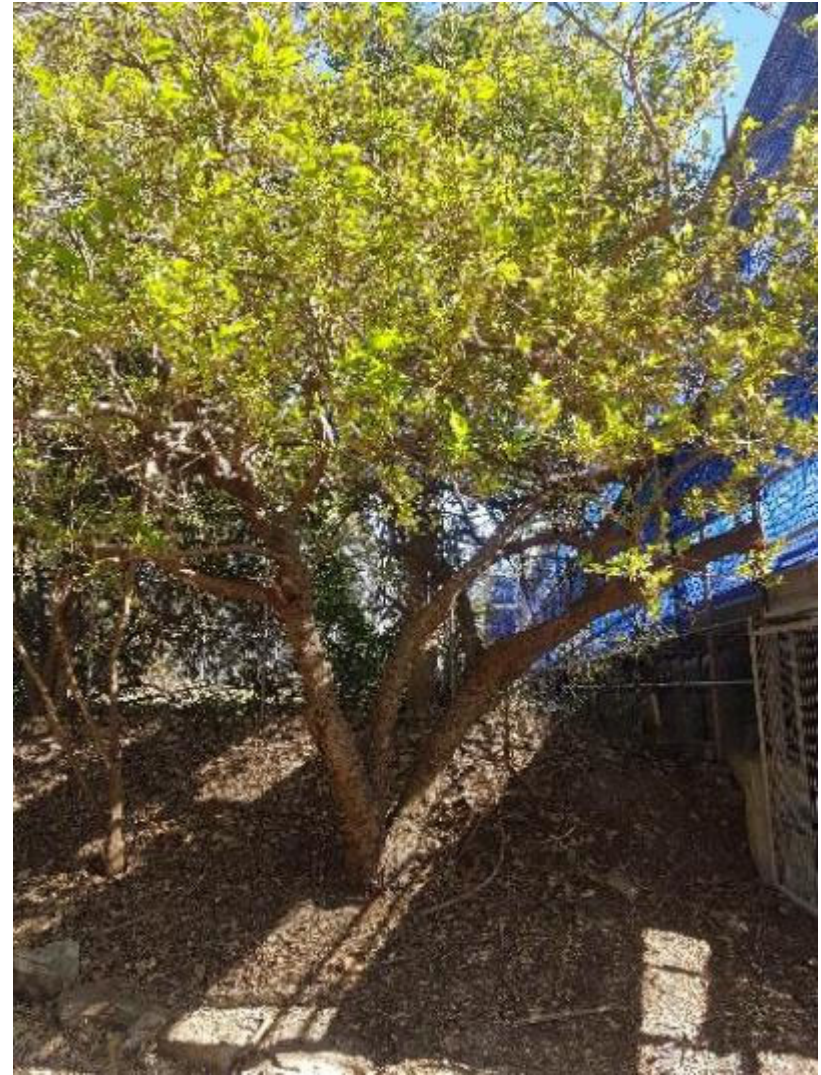
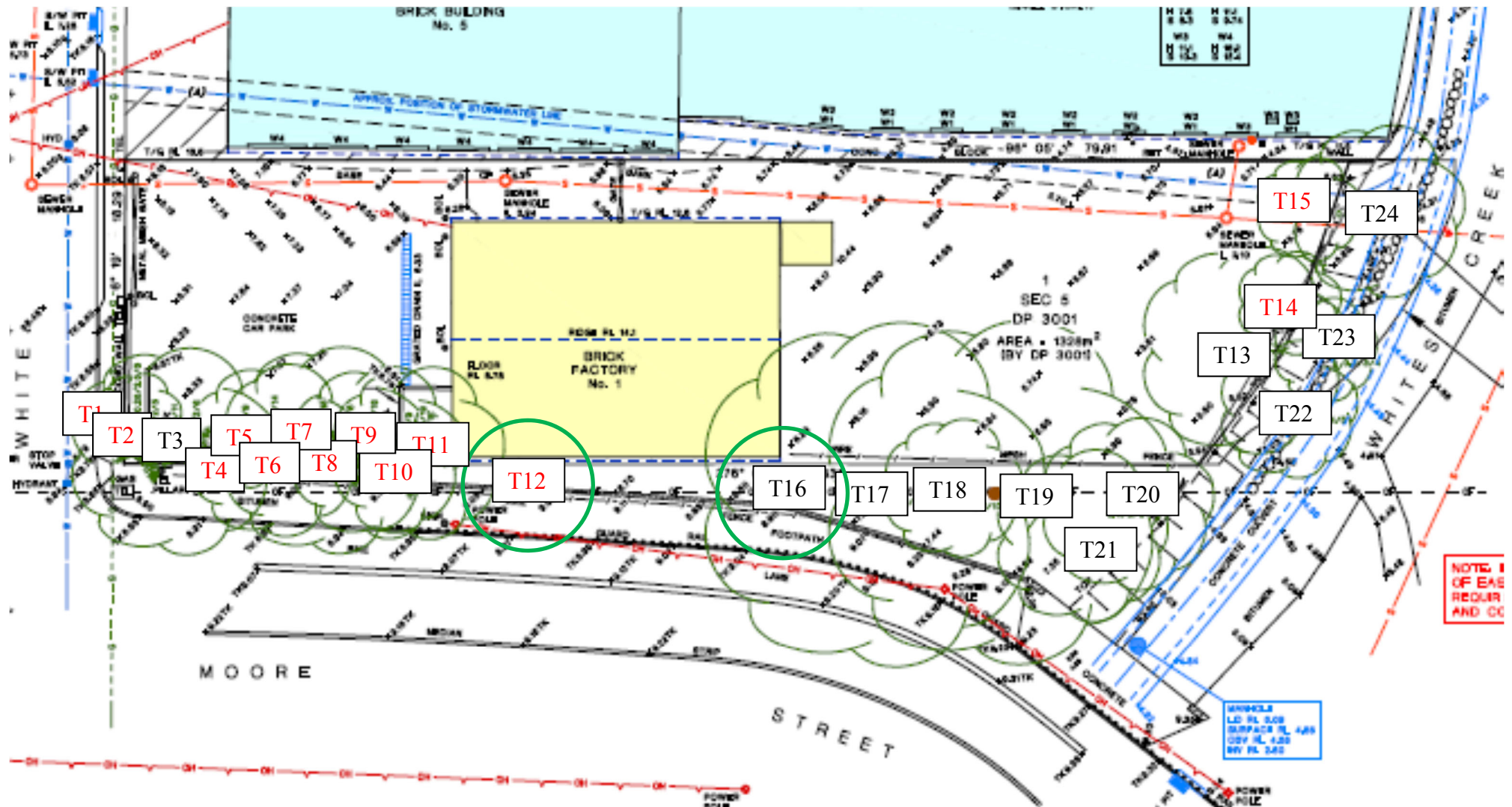
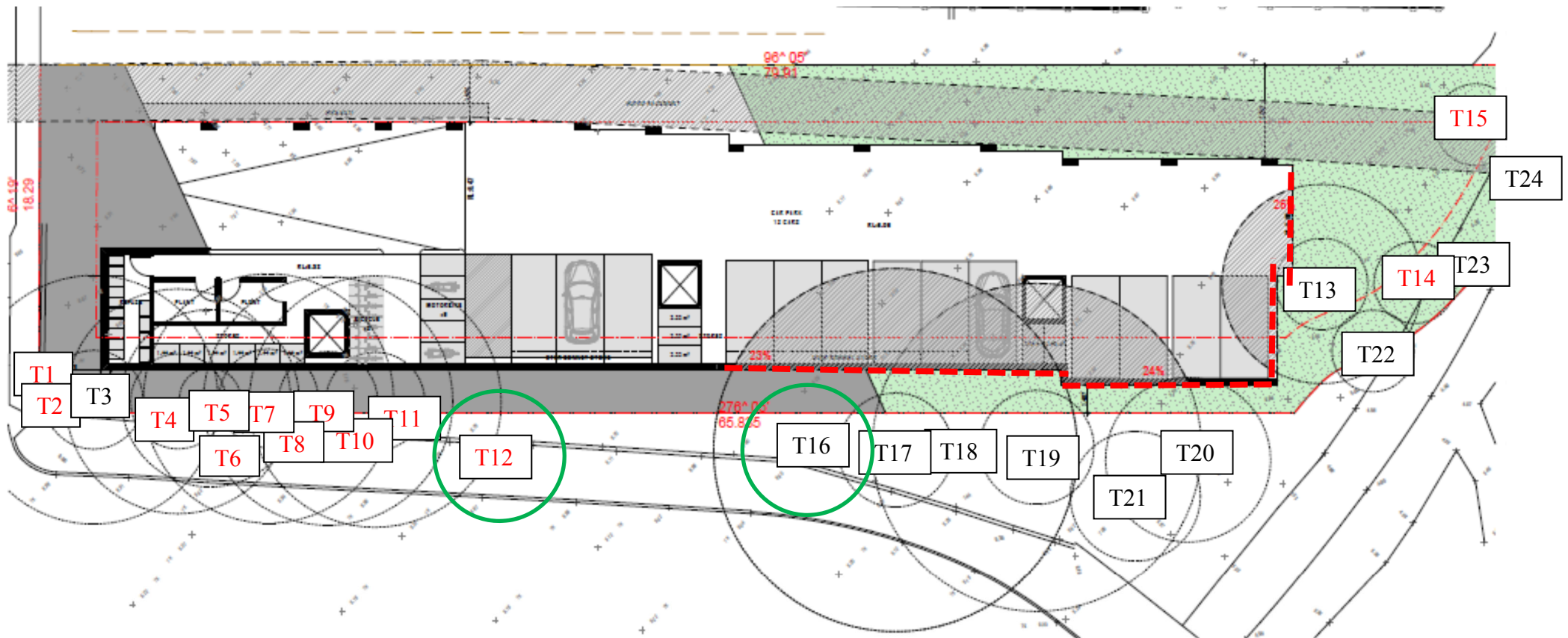


Fig. 25. Photo of T24 a *Morus nigra*

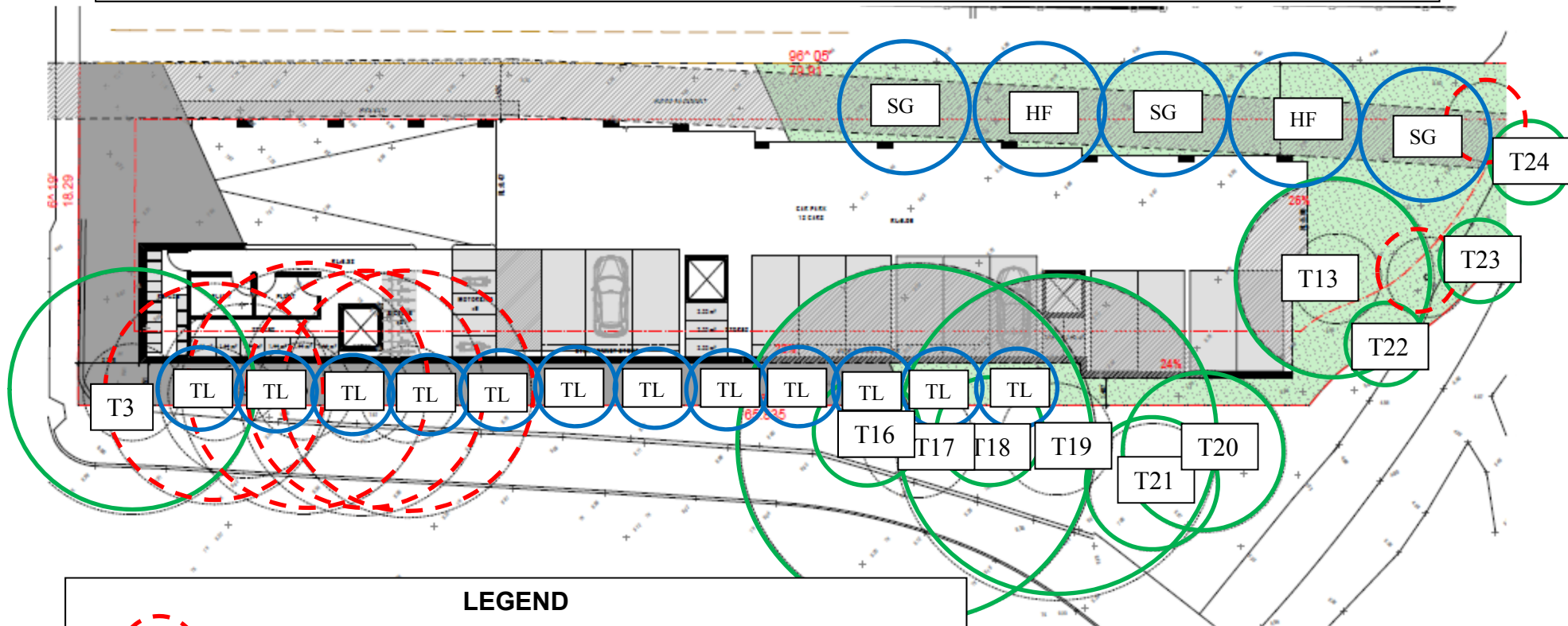
APPENDIX 2a Excerpt from site plan showing the location of the trees referred to in Appendix 1.



APPENDIX 2b Excerpt from Site plan showing the location of proposed tree plantings in relation to the new building footprint. - - - - - Line of root investigation.



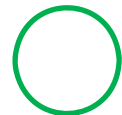
APPENDIX 2c Excerpt from building plans showing trees to be removed, trees to be retained and suggested locations for compensatory trees.



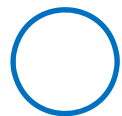
LEGEND



Trees to be removed



Trees to be retained



Compensatory trees



Tristainiopsus laurina



Syncarpia glomulifera



Hymenospermum flavum

APPENDIX 3. Figures 26 to 35. Photos from tree root investigation.



Fig 26. Photo of trench along proposed building line near tree T14



Fig. 27. Photo of 1 x 60mm tree root from T14



Fig 28. Photo of 1 x 80mm tree root near tree T14



Fig. 29. Photo of root buttress from connected to 80mm Ø root from T14



Fig 30. Photo of hard compacted layer of gravel and sand in trench 1



Fig. 31. Trench 1 dug using blade bucket along Sth building line



Fig 32. Photo of hard compacted layer of gravel and sand in trench 1



Fig. 33. Trench 1 dug using blade bucket along Sth building line



Fig 34 photo of soil profile showing fill material with small tree roots < 20mm Ø



Fig 35 Photo of soil profile showing fill material with small tree roots < 20mm Ø

APPENDIX 4. TABLE 2. SULE CATAGORIES AND SUB-CATEGORIES.

	1	2	3	4	5
	Long SULE: Appeared to be retainable at the time of assessment for over 40 years with an acceptable degree of risk, assuming reasonable maintenance.	Medium SULE: Appeared to be retainable at the time of assessment for 15 to 40 years with and acceptable degree of risk assuming reasonable maintenance.	Short SULE: Appeared to be retainable at the time of assessment for 5 to 15 years with and acceptable degree of risk assuming reasonable maintenance.	Remove: Trees which should be removed within the next 5 years.	Small young or regularly clipped: 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 15 and 40 more years.	Trees that may only live for between 5 and 15 more years	Dead, Dying suppressed or declining trees through disease or inhospitable conditions.	Small trees less than 5 m in height.
B	Trees that could be made suitable for retention in the long term by remedial care.	Trees that may live for than 40 years, but would need to be removed for safety or nuisance reasons	Trees that may live for than 15 years, but would need to be removed for safety or nuisance reasons	Dangerous trees through instability or recent loss of adjacent trees.	Young trees less than 15 years old but over 5m in height.
C	Trees of special significance for historical, commemorative or rarity reasons that would warrant	Trees that may live for more than 40 years but should be removed to prevent interference with more suitable	Trees that may live for more than 15years but should be removed to prevent interference with more suitable	Dangerous trees through structural defects including cavities, decay, included bark, wounds or poor form.	Trees that have been regularly pruned to artificially control their growth

	extraordinary efforts to secure their long term retention.	individuals or to provide space for new plantings	individuals or to provide space for new plantings		
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 plantings.	
F				Trees that may cause damage to existing structures within 5 years.	
G				Trees that will become dangerous after removal of other surrounding trees	

Table 2 Ref Barrell, Jeremy (1996). Predevelopment tree assessment. Proceedings of the International Conference on Trees and Building Sites (Chicago)