PRELIMINARY TREE INSPECTION REPORT.

On: Tree Specimens
Location: 23 to 25 Charles Street Liverpool NSW 2170

TREEHAVEN ENVIRONSCAPES.
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For: Hume Community Housing
7 Hamilton Road, Fairfield NSW
C-/ Idraft Plans

On. 18/11/2020

CONTENTS

DISCLAIMER

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 23 to 25 Charles Street Liverpool NSW, henceforth referred to as the Site, is being proposed for a development by Hume Community Housing , who are proposing to demolish two existing single storey dwellings and outbuildings on the site and replace them with a an apartment block comprising of 24 units with subterranean parking (See Appendix 2b). In the process 3 trees on the Site are proposed for removal.

1.2 The property is within the jurisdiction of Liverpool City Council (LCC) which has in place Tree Management Policy (TMP)[1] which prohibit the pruning, removal, ringbarking, topping, lopping, injury or wilful destruction of a tree or any perennial plant that has a:

a) Height greater than 3.5 metres; or
b) Canopy spread greater than 4.0 metres; or
c) Primary trunk diameter greater than 400 millimetres when measured 1.0 metre above existing ground level of the tree.

For the removal or major pruning of trees covered by the TMP, LCC requires an arborist report whose purpose is to examine and appraise them prior to, and post any development of the site.
Consequently Idraft Plans, on behalf of Hume Community Housing have engaged, Mr. Stephen McLoughlin of Treehaven Environscapes, to visit the site examine 3 be affected by the development, and prepare this report.

1.3 This report details my site visit on 10/11/2020 and the examination of 3 trees, designated **T1** to **T3** inclusive which will be affected by the development.

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 CCC's TMC and utilizes the Australian Standards 4790-2009 *Trees on development sites* and 4373-2007 *Pruning of Amenity Trees* as a set of guiding principles.

[1] Liverpool Council Tree Management Policy Adopted: 12 October 2016

2. SITE DESCRIPTION

2.1 The land on which the trees are sited is on a rectangular shaped block on a South-Easterly facing slope and is in the Georges River Catchment.

2.2 Two single storey dwellings are on the Site at present with an outbuilding to the rear of the Site (see Fig 1). There are no street trees observed in the nature strip to the East of the Site.

2.3 Tree specimens **T1, T2, & T3** are located on the Site which will be affected by the proposed development (See Fig 1).

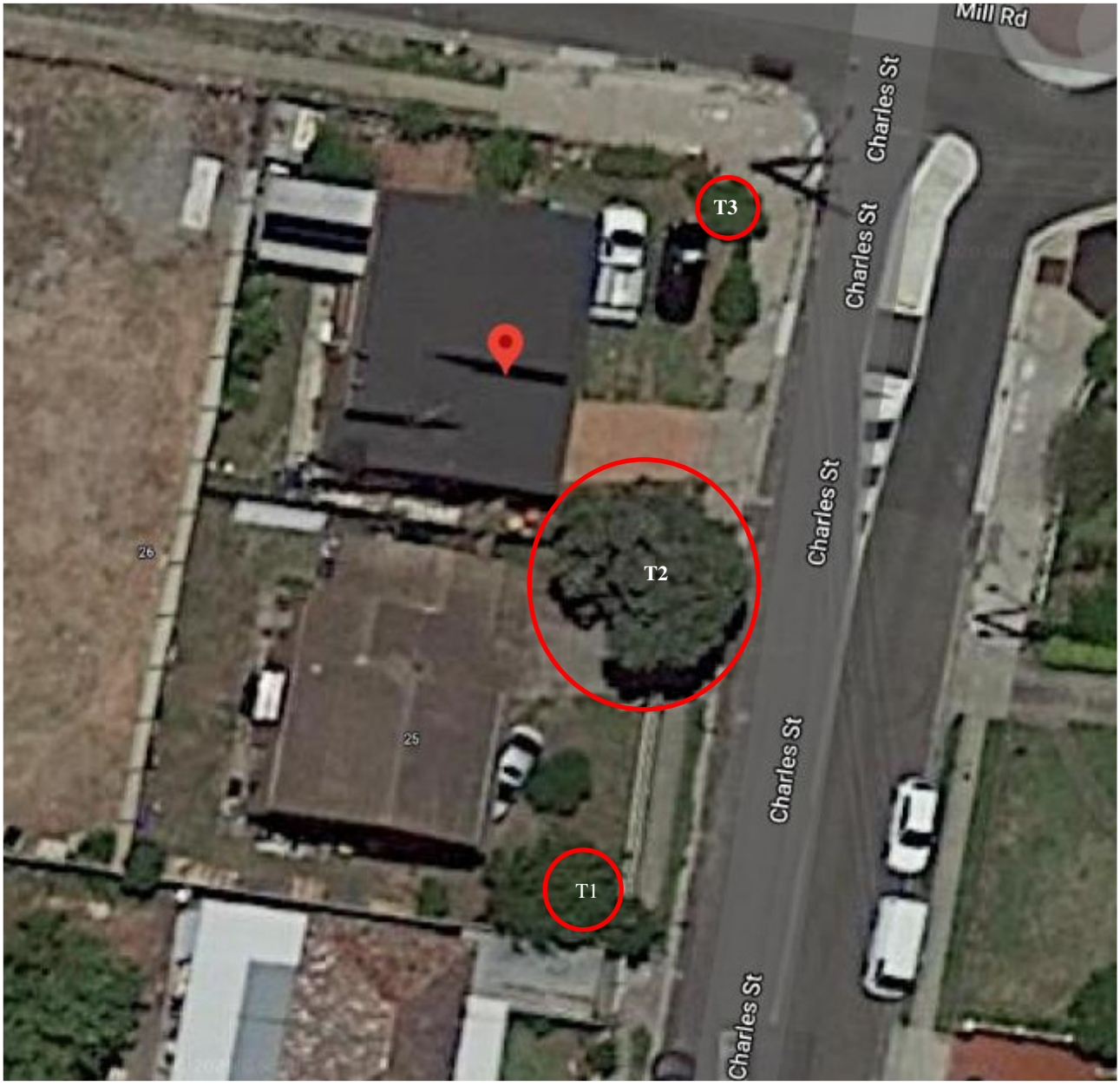

Fig 1. Aerial photo of the site from Google Maps showing position of the trees (in red Circles).

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** which has 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 Idraft Plans.

3.5 Minor & Major Encroachments are defined in AS 4970-2009 as being up to 10%, for the former, and greater than 10% for the latter of a tree's TPZ.

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

4.1 Tree **T1** is a *Photinia robusta* or 'Photinia' which is an exotic species endemic to Asia (See Fig. 2). The tree is located in the property to the East of the Site.
The tree was in good health and condition at the time of my inspection. The specimen is less than 3.5m in height and not subject to the TMP.
Impact of the development:
This tree would be subjected to Major Encroachment into its TPZ and is scheduled to be removed (See Appendix 2b)

4.2 Tree **T2** is a *Metersiderous thomasii* or 'New Zealand Christmas Bush' which is an exotic species endemic to New Zealand (See Fig. 4).
The tree is are located in the property to the North of the existing driveway.
The specimen has a significant defect in the form of a 'V' shaped stem junction with included bark in the union (See Fig. 5).
Impact of the development:
This tree would be subjected to Major Encroachment into its TPZ and is scheduled to be removed (See Appendix 2b)

4.3 Tree **T3** is an *Olea africana* or 'African Olive' which is an exotic tree endemic to South Africa. The tree is located near the North East Corner of the site (See Fig. 6).
This specimen is in good health and condition what has assumed a 'shrublike habit. The specimen is less than 3.5m in height and not subject to the TMP.
Impact of the development:
This tree would be subjected to Major Encroachment into its TPZ and is scheduled to be removed (See Appendix 2b)

5. DISCUSSION

5.1 There were no remnant nor heritage listed trees observed on the Site and all are the trees noted in this report are planted specimens.

5.2 Trees **T1** to **T3** are proposed to be removed. (See Appendix 2b). Trees T9 to T13 are proposed to be removed.

5.3 Tree **T2** has a significant defect in the form of a 'V' shaped stem junction with included bark which is considered to be a weak union and prone to failure (Mattheck & Breloer 2005)

5.4 In compensation for the removal of 3 trees and several shrubs on the properties the proposal offers 20 trees, 5 of which are street trees, to be planted in the new landscaping for the Site (See Appendix 2c) These are as follows:

4 x *Eliocarpus reticulatus* (Blueberry Ash)
2 x *Tristainiopsus laurina luscious* (Water Gums).
2 x *Lagerstroemia indica* (Crepe myrtle)
7 x *Lagerstroemia acoma* (Crepe Myrtle)
3 x Magnolia grandiflora 'Exmouth' (Bull Bay Magnolia)
2 x Zelkova serrata (Japanese Elm)

6. CONCLUSIONS & RECOMENDATIONS

6.1. For the development to proceed as planned trees **T1, T2 & T3** are recommended for removal.

6.2 5 trees are proposed to be planted on the nature strip to the Northe and East of the Site and another 15 trees on the Site as complimentary plantings (See Appendix 2b).

Yours sincerely

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Australian Association of Bush Regenerators Member
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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

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REFERENCES

Australian Standard 4373 1996 *Pruning of amenity trees.*

Australian Standard 4790 2009 *Trees on development sites.*

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

Cumberland (Holroyd City) Council 2003 Tree Management Order

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

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

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

Table describes trees growing on the development site. Tree numbers correspond with numbers on site plan appendix. 2.
***DBH Diameter at Breast Height. **DGH Diameter at Ground Height. ***SULE ratings are included as Appendix 3 of this report.**

Specimen name	Est. Height	Diameter DBH* DGH**	Crown	Comments	SULE ***	TPZ	SRZ
T1 *Photinia robusta* Common name 'Photinia' Age class. 20 years See Fig. 2.	2m	Multiple stems 15cm at the base	N 1m E 1m S 1m W 1m	An exotic tree endemic to Asia which has been planted in the Site near the eastern border of the property. The tree was in good health and condition at the time of my inspection. There were no significant pathogens nor signs of mechanical damage. The specimen is under 3.5m in height and exempt from protection under the	A5	N/A	N/A
T2 *Meterosiderous thomasii* Common name 'New Zealand Christmas Bush' Age class. 40 years See Fig. 3 & 4.	8m	1 x 37cm 1 x 42cm 45cm at the base	N 4m E 4m S 4m W 3m	An exotic tree endemic to New Zealand. The tree has been planted beside the driveway in the property to the East of the Site. The tree was in good health and condition at the time of my inspection. There were no significant pathogens nor signs of mechanical damage. The tree has a significant defects at the base in the form of a 'V' shaped stem junction with included bark in the union.	B2	6.7m	2.36m
T3 *Olea africana* Common name 'African Olive' Age class. 20 years See Fig. 6.	2m	10cm 12cm at the base	N 1m E 1m S 1m W 1m	An exotitree endemic to the Sydney. The tree has been planted in the neighbouring property to the North of the Site. The tree was in good health and condition at the time of my inspection. There were no significant pathogens nor signs of mechanical damage.	A5	N/A	N/A

APPENDIX 1B. Figures 2 to 7**.** Photos of Trees as listed in Appendix1 A.

Fig. 2. Photo of T1 a Photinia robusta

Fig. 3. Photo of shrubs facing East along Charles Street.

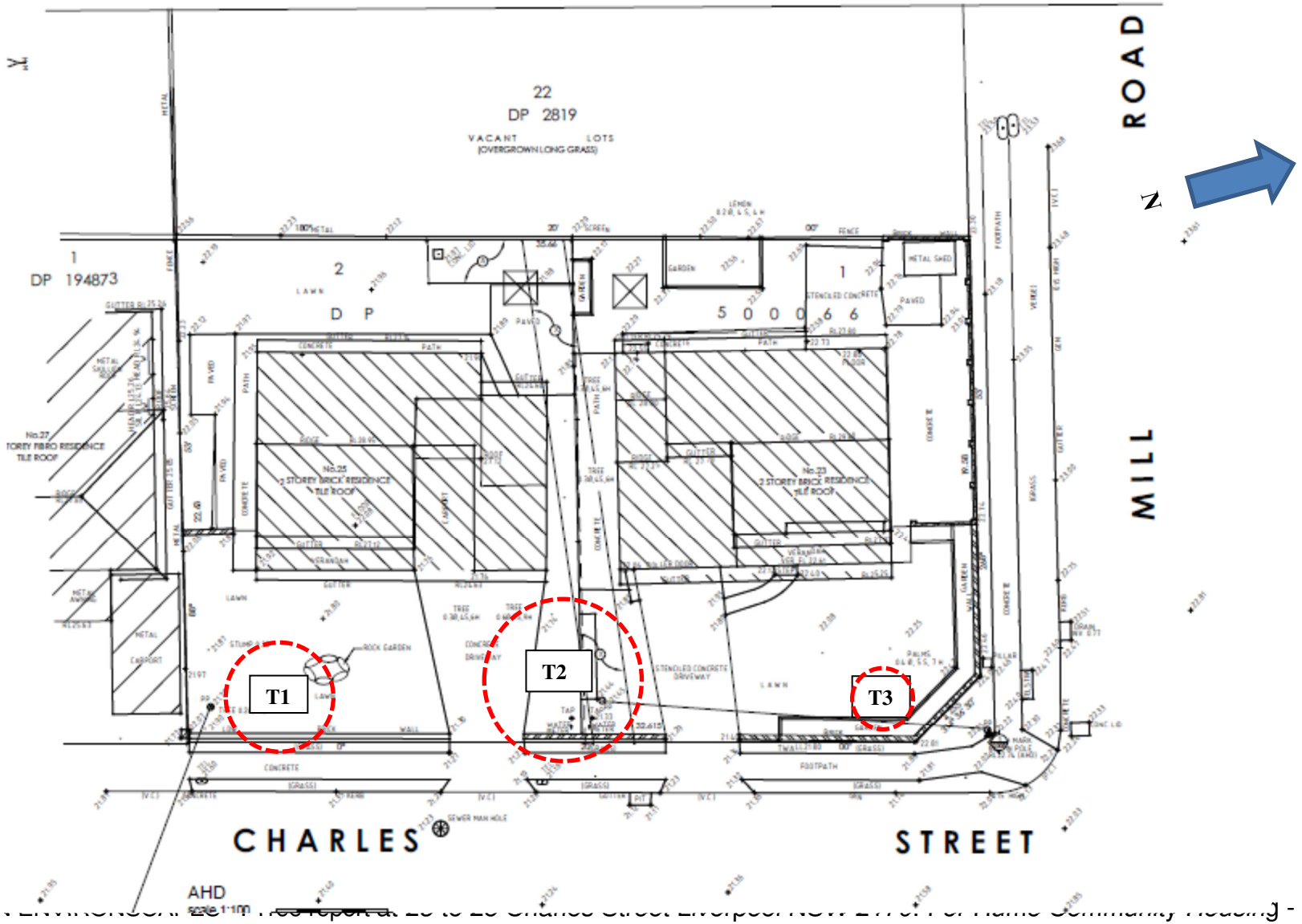
Fig. 4. Photo of T2 a *Meterosiderous thomasii*

Fig. 5. Photo showing 'V' shaped stem junction with included bark

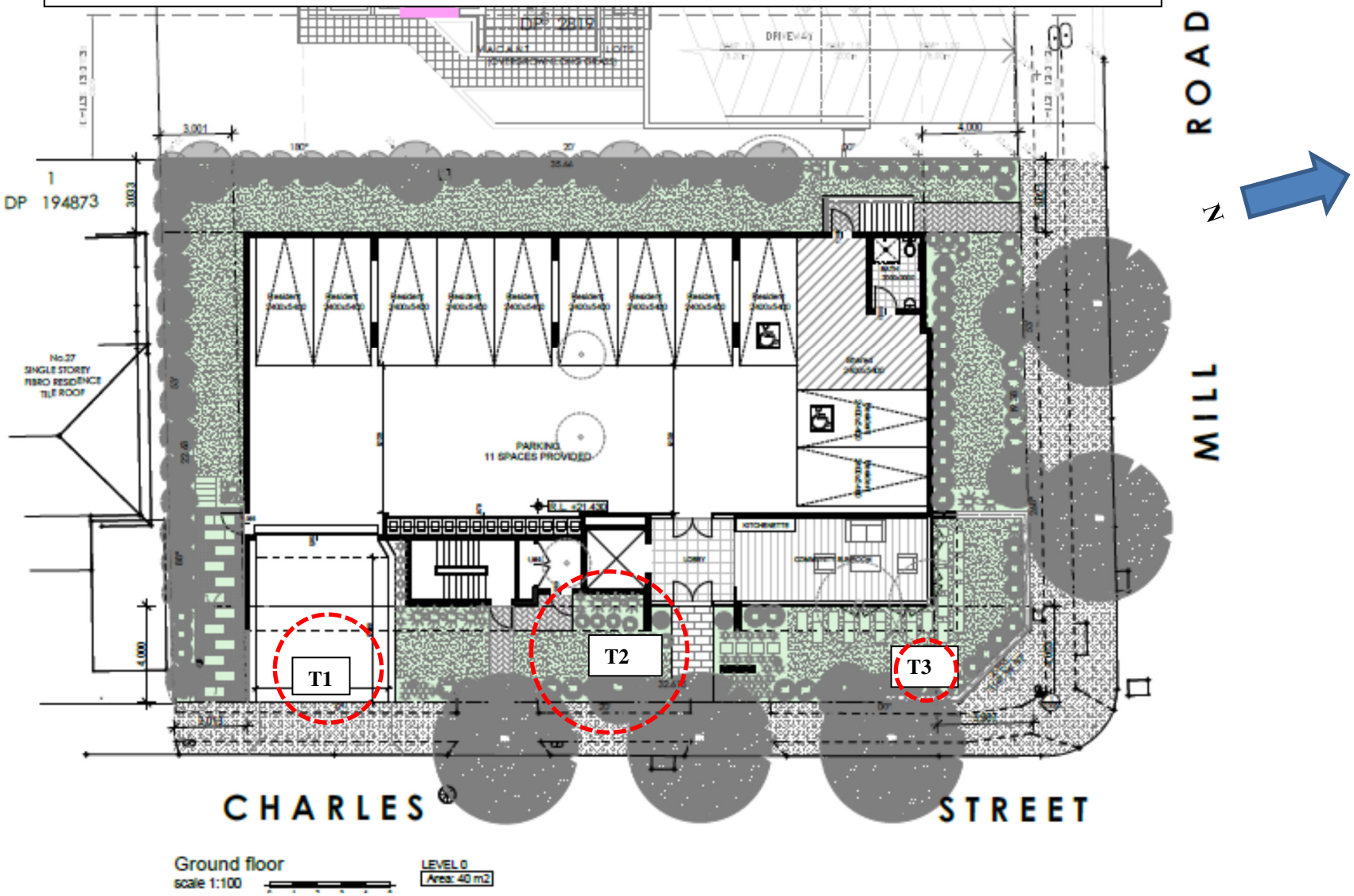
Fig. 6. Photo of T3 an *Olea africana.*

Fig. 7. Photo of vacant block to the West of the Site.

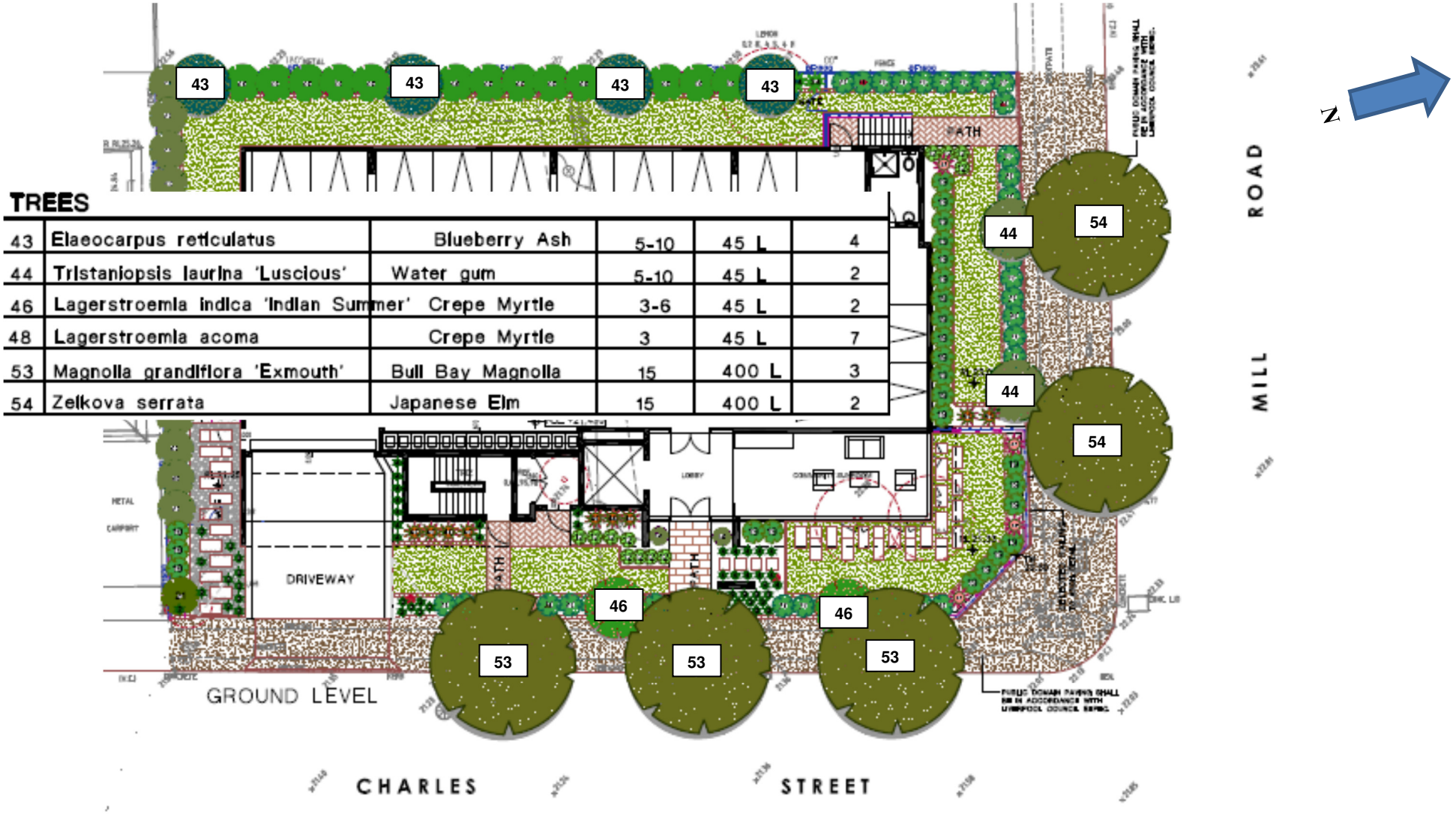
APPENDIX 2a Excerpt from site survey showing the location of the trees in this report.



APPENDIX 2b Excerpt from site plans showing the position of trees in reference to the proposed buildings.



APPENDIX 2c Excerpt from landscaping plans showing the position of compensatory plantings on the Site.



TREES

43	Elaeocarpus reticulatus	Blueberry Ash	5-10	45 L	4
44	Tristaniopsis laurina 'Luscious'	Water gum	5-10	45 L	2
46	Lagerstroemia indica 'Indian Summer'	Crepe Myrtle	3-6	45 L	2
48	Lagerstroemia acoma	Crepe Myrtle	3	45 L	7
53	Magnolia grandiflora 'Exmouth'	Bull Bay Magnolia	15	400 L	3
54	Zelkova serrata	Japanese Elm	15	400 L	2

APPENDIX 3. 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)