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ARBORICULTURAL IMPACT ASSESSMENT REPORT

At

9 – 13 Cook Street
Forestville

Prepared for

Trumen Norman Forestville Pty Ltd

31st January 2019

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Graduate Certificate in Arboriculture (AQF L 8)
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DISCLAIMER

The Client acknowledges that this Report, and any opinions, advice or recommendations expressed or given in it, are the information supplied by the Client and on the data inspections, measurements and analysis carried out or obtained by Jacksons Nature Works (JNW) and referred to in the Report. The Client should rely on The Report, and on its contents, only to that extent.

Care has been taken to obtain all information from reliable sources. All data has been verified as far as possible. However, Ross Jackson – Consulting Arborist can neither guarantee nor be responsible for the accuracy of information provided by others. Unless stated otherwise:

- Information contained in this report covers only the trees examined and reflects the health and structure of the trees at the time of inspection. The documented, observations, results, recommendations and conclusions given may vary after the site visit due to environmental conditions.
- The inspection was limited to visual examination from the base of the subject tree without dissection, probing or coring; and
- There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future.

Ross Jackson.

Consulting Arborist

Table of Contents

1. BACKGROUND and METHODODOLGY

1.1 The purpose of this Tree Report is to inform and accompany the development application works at 9 – 13 Cook Street, Forestville – The Site.

1.2 The report was commissioned by Trumen Norman Forestville Pty Ltd to respond to Council's requirements to consider the development impacts on trees located on and around the Site.

1.3 This report outlines the health and condition of the subject trees, the remaining life expectancy of the trees, identifies any visible defects or other problems, describes which trees require pruning, removal, retention or represent a potential hazard and comments on the impact on these trees in relation to the works proposed. The report also provides recommended tree protection measures (Tree Management Plan) to ensure the long-term preservation of the trees to be retained where appropriate.

1.4 The Site is an existing Mitre 10 store at Forestville.

1.5 The trees were identified by ground level Visual Tree Assessment (VTA) [1] only in the data collection, taken on 30.11.2018. No aerial (climbing) was undertaken.

1.6 All site photographs were taken by the author at the site. All photographs were taken using a digital camera (Canon 7D) with no image enhancement either within the camera or on computer.

1.7 The subject trees were located on plans supplied. The trees have been plotted and can be found on Annexure B – Tree Location Plan.

1.8 The trees were identified and their genus species and common name used. The trees were identified by the use of data collected and compared to G Burnie, S Forrester et al (1997) **Botanica** Random House, Milsons Point, NSW, Australia.

1.9 DBH. The Trunk Diameter at Breast Height (1.4 metres above ground level) in centimetres was measured over bark using a metal tape which automatically converts to diameter and assumes a circular trunk cross section.

1.10 DRB. The trunk Diameter above Root Buttress in centimetres was measured over bark using a metal tape which automatically converts to diameter and assumes a circular trunk cross section.

1.11 Height. Estimated overall height in metres.

1.12 Spread. Measured with a metal tape measure and shown in metres.

1.13 Useful Life Expectancy (ULE)[2].
A systematic pre-development tree assessment procedure developed by Jeremy Barrell, Hampshire, England. It gives a length of time that the Arborist feels a

[1] Mattheck, Dr. Clause & Breloer, Helge (1994) – Sixth Edition (2001) **The Body Language of Trees – A Handbook for Failure Analysis** The Stationery Office, London, England
[2] Barrell, Jeremy (1996, 2001) **Pre-development Tree Assessment** Proceedings of the International Conference on Trees and Building Sites (Chicago) International Society of Arboriculture, Illinois, USA

particular tree can be retained with an acceptable level of risk based on the information available at the time of the inspection. SULE ratings are Long (retainable for 40 years or more with an acceptable level of risk), Medium, (retainable for 16 – 39 years), Short (retainable for 5 – 15 years) and Removal (tree requiring immediate removal due to imminent hazard or absolute unsuitability).

1.14 The Tree Protection Zone (TPZ) and Structural Root Zone (SRZ) have been calculated in terms of AS 4970 – 2009 Protection of trees on development site Section 3.

1.15 To prepare this report we have reviewed the following documents:

- Detail survey by LTS, dated 11.9.2018 & hand marked up by JNW;
- Architectural plans by SBA Architects, dated 31.1.2019;
- Northern Beaches Council B4.22 Preservation of Trees or Bushland Vegetation (DCP); &
- Australian Standard AS 4970 – 2009 Protection of trees on development sites.

2. OBSERVATIONS as seen on the days of inspection (30.11.2018)

2.1 Our tree observations can be found in Annexure A.

3. DISCUSSIONS

3.1 We have been commissioned by Trumen Norman Forestville Pty Ltd, to examine the health and condition of the trees on and around this development site.

It is proposed to demolish the front portion of the Mitre 10 store, construct a new driveway to the new storage facility on Site, while retaining the rear portion of the site for Mitre 10 (development works).

3.2 We have examined the trees on site and can suggest the following considerations for the development works:
1. Tree 1 *Jacaranda mimosifolia* shows good vitality and is contained in an existing garden bed – refer plate 1. It is proposed to increase the size driveway to the Mitre 10 store to the east of this tree – refer Annexure C. The increase in the width of the driveway will necessitate the removal of this tree. Note this tree for removal in the Tree Management Plan (TMP);

Plate 1 – tree 1

2. The following street trees will not be impacted by the development works: Tree 2, 3 & 44 *Lophostemon confertus* – refer Annexure C. Note these trees for retention and protection in the TMP;

3. Tree 4 *Lophostemon confertus* shows good vitality, but with extensive upper canopy pruning to provide clearance for the overhead power lines – refer plate 2. It is proposed to widen the existing driveway to access the proposed storage facility – refer Annexure C. The widening of the driveway will have a detrimental impact on the roots system of this tree – all within the Structural Root Zone (SRZ). Any loss of roots within the SRZ will lead to the instability of this tree. Therefore, for the development to proceed this street tree will require removal. However, there is ample space within the footpath to replant another street tree to compensate for the removal of this tree. Note for removal with a replacement tree in accordance with Council's Street Tree Planting specifications;

Plate 2 – tree 4

4. The following trees are within either the building footprint, pathways around the building or have a greater than 40% encroachment within their TPZ that prevents retention: Tree 6, 7 *Melaleuca linariifolia* (fair vitality / low landscape significance), tree 8 & 9 *Casuarina glauca* (poor form), tree 14 & 17 *Pittosporum undulatum* (poor form/ topped), tree 15 *Acacia decurrens* (good vitality/ short life expectancy), tree 18 *Eucalyptus microcorys* (termite infested / structural loss), tree 19, 20, 21, 22, 23, 24, 25, 26 *Callistris rhomboidea*, tree 38 & 41 *Melaleuca linariifolia* (good vitality but in carpark), tree 39 *Corymbia maculata* (good vitality but in carpark), tree 40 *Callistemon viminalis* (good vitality but in carpark), tree 42 *Pittosporum undulatum* (poor form/ topped), tree 43 *Callistemon viminalis* (good vitality but in carpark) – refer Annexure C. Removal of these trees is supported, however rather than merely cutting them down replacement trees will be replanted around the site. Note for removal in the TMP;

5. The following trees are classified as Exempt trees in Council's DCP: Tree 5 *Agonis flexuosa*, tree 10 & 16 *Grevillea robusta*, tree 11, 12, 13 *Ligustrum lucidum*. Note these Exempt trees for removal in the TMP;

6. The following trees are located in the adjoining property to the east: Tree 27 – 35, 37 *Callistris rhomboidea* and tree 36 *Corymbia eximia* – refer plate 3 & 4. It is noted there are existing structures with concrete slabs that have deflected the roots from these trees entering the site. Plus, the storage facility will be 2m from the boundary

that will provide a buffer zone within their TPZ to minimise the encroachment. Note these neighbour's trees for retention in the TMP;

Plate 3 looking at tree 27 – 32

Plate 4 looking at tree 33 – 37

4. RECOMMENDATIONS

In consideration of the data collected recommendations are provided for the removal or retention of trees including specific tree protection measures required to reduce the anticipated impacts from the proposed construction on those trees proposed to be retained.

The report specifically recommends:

a. Retain the following street trees: Tree 2, 3 & 44;
b. Remove the following street tree: Tree 4;
c. That a replacement street tree be replanted in the footpath reserve in front of the site and selected from Council's Street Tree Planting policy;
d. Remove the following Exempt trees on site: Tree 5, 10, 11, 12, 13, & 16
e. Remove the following trees on site: Tree 1, 6, 7, 8, 9, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 38, 39, 40, 41, 42, & 43;

f. Retain the following neighbour's trees: Tree 27, 28, 29, 30, 31, 32, 33, 34, 35, 36 & 37;
g. Tree removal work shall be carried out by an experienced tree surgeon in accordance with *Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal (2016)*;
h. Install the following Tree Protection Measures around the retained trees: Tree protection measures shall be a temporary fence of chain wire panels 1.8 metres in height (or equivalent), supported by steel stakes or concrete blocks as required and fastened together and supported to prevent sideways movement. Existing boundary fences or walls are to be retained shall constitute part of the tree protection fence where appropriate. A sign is to be erected on the tree protection fences of the trees to be retained that the trees are covered by Council's tree preservation orders and that "No Access" is permitted into the tree protection zone;
i. That a Tree Management Plan be prepared as part of the Construction Certificate by a consulting arborist who holds the Diploma in Horticulture (Arboriculture), Level 5 or above under the Australian Qualification Framework;
j. An AQF Level 5 Project Arborist shall be engaged to supervise the building works and certify compliance with all Tree Protection Measures;
k. Our tree location plan can be found on Annexure B;
l. The Tree Impact Plan can be found on Annexure C.

Ross Jackson M.A.A (Nos. 1695) & M.A.I.H.
Consulting Arborist
Graduate Certificate in Arboriculture – AQF Level 8 (Honours)
Diploma Horticulture (Arboriculture) – AQF Level 5
Certificate III in Horticulture
Certificate in Horticulture (Landscape – Honours)

Annexure A: Observations as seen on the day of inspection of trees

Tree No	Botanical Name	Age Class	Height (m)	Spread (m)	D.B.H. (cm)	D.R.B. (cm)	TPZ (radius m)	SRZ (radius m)	Condition comments as seen on site	ULE
1	*Jacaranda mimosifolia*	M	7	10	2 x 30, 2 x 25	72	6.6	2.9	G vitality	2a
2	*Lophostemon confertus*	M	3	6	34	42	4.1	2.3	G vitality, OHPL > ER, ST	2a
3	*Lophostemon confertus*	M	4	8	34	34	4.1	2.1	G vitality, OHPL > ER, ST	2a
4	*Lophostemon confertus*	M	6	8	46	58	5.5	2.6	G vitality, OHPL, ST	2a
5	*Agonis flexuosa*	M	3	3	3 x 20	60	4.2	2.7	Exempt tree (P vitality, topped @ 2m)	-
6	*Melaleuca linariifolia*	M	7	5	14, 18, 12	34	3.1	2.1	F vitality	2a
7	*Melaleuca linariifolia*	M	7	4	24	35	2.9	2.1	F vitality	2a
8	*Casuarina glauca*	M	7	4	26	32	3.1	2.1	F vitality, topped @ 6m	3a
9	*Casuarina glauca*	M	7	3	20	25	2.4	1.8	F vitality, topped @ 6m	3a
10	*Grevillea robusta*	M	16	10	42	49	5.0	2.5	Exempt tree (G vitality)	-
11	*Ligustrum lucidum*	M	5	-	-	-	-	-	Exempt species	-
12	*Ligustrum lucidum*	M	6	-	-	-	-	-	Exempt species	-
13	*Ligustrum lucidum*	M	7	-	-	-	-	-	Exempt species	-
14	*Pittosporum undulatum*	M	4	2	18	20	2.2	1.7	G vitality, topped @ 3m > ER	2b
15	*Acacia decurrens*	M	7	4	22	24	2.6	1.8	G vitality	2b
16	*Grevillea robusta*	M	12	7	23	28	2.8	1.9	Exempt tree (G vitality)	-
17	*Pittosporum undulatum*	M	4	3	4 x 12	38	2.9	2.2	Exempt tree (G vitality, canopy topped at 2m & 3m)	-
18	*Eucalyptus microcorys*	M	9	6	40	45	4.8	2.4	G vitality, arboreal termite nest @ 4m	2a
19	*Callitris rhomboidea*	M	6	2	18	20	2.2	1.7	G vitality	2b
20	*Callitris rhomboidea*	M	6	2	18	20	2.2	1.7	G vitality	2b
21	*Callitris rhomboidea*	M	6	2	18	20	2.2	1.7	G vitality	2b
22	*Callitris rhomboidea*	M	6	2	18	20	2.2	1.7	G vitality	2b
23	*Callitris rhomboidea*	M	6	2	18	20	2.2	1.7	G vitality	2b

24	*Callitris rhomboidea*	M	6	2	22	26	2.6	1.9	F vitality	2b
25	*Callitris rhomboidea*	M	8	3	20	32	2.4	2.1	F vitality	2b
26	*Callitris rhomboidea*	M	8	5	5 x 18	48	4.8	2.4	G vitality	2b
27	*Callitris rhomboidea*	M	10	5	2 x 20	36	3.4	2.2	G vitality, ND	2b
28	*Callitris rhomboidea*	M	10	1	30	60	3.6	2.7	P vitality, 80% dead, ND	4a
29	*Callitris rhomboidea*	M	6	2	28	32	3.4	2.1	P vitality, 1/2 dead, ND	4a
30	*Callitris rhomboidea*	M	8	4	2 x 20	36	3.4	2.2	G vitality, ND	2b
31	*Callitris rhomboidea*	M	9	3	3 x 18	40	3.7	2.3	G vitality, ND	2b
32	*Callitris rhomboidea*	M	8	3	28	32	3.4	2.1	G vitality, ND	2b
33	*Callitris rhomboidea*	M	8	3	22	28	2.6	1.9	G vitality, ND	2b
34	*Callitris rhomboidea*	M	6	3	30	32	3.6	2.1	G vitality, ND	2b
35	*Callitris rhomboidea*	M	8	3	36	40	4.3	2.3	G vitality, ND	2b
36	*Corymbia eximia*	M	7	5	26	32	3.1	2.1	G vitality, ND	2a
37	*Callitris rhomboidea*	M	7	6	5 x 22	60	5.9	2.7	G vitality, ND, N.B. Howea forsteriana adjacent	2b
38	*Melaleuca linariifolia*	M	6	5	16	34	1.9	2.1	F vitality, ivy over canopy	2a
39	*Corymbia maculata*	M	10	8	40	52	4.8	2.5	G vitality, basal injury 40% of cambium	2a
40	*Callistemon viminalis*	M	5	5	16, 20, 12	42	3.4	2.3	G vitality	2a
41	*Melaleuca linariifolia*	M	7	6	36	42	4.3	2.3	G vitality	2a
42	*Pittosporum undulatum*	M	4	3	14	18	1.7	1.6	G vitality, topped	2a
43	*Callistemon viminalis*	M	5	4	3 x 20	34	4.2	2.1	G vitality	2a
44	*Lophostemon confertus*	M	6	8	42	62	5.0	2.7	G vitality, OHPL > topped, ST	2a

Terms used in Tree Survey & Report:

Age Class

(Y) – Young refers to a well-established but juvenile tree. Less than 1/3 life expectancy

(SM) – Semi-mature refers to a tree at growth stages between immaturity and full size. A tree has reached First Adult Form i.e. displays adult characteristics. 1/3 to 2/3 life expectancy
(M)- Mature refers to a full size tree with some capacity for future growth. Older than 2/3 life expectancy
(OM) – Over-mature refers to a tree approaching decline or already declining. Older than 2/3 life expectancy and showing signs of irreversible decline.

Health refers to a tree's vigour, growth rate, disease and/or insects.
Vitality summarises observations about the health and structure of the tree on a scale of: **(G) Good, (F) Fair, (P) Poor & (D) Dead.**
Good: Tree is generally healthy and free from obvious signs of structural weaknesses or significant effects of pests and diseases or infection;
Fair: Tree is generally vigorous although has some indication of being adversely affected by the early effects of disease or infection or environmental or mechanical damage. Appropriate tree maintenance can usually improve overall health and halt decline;
Poor: Tree in decline and is not likely to improve with reasonable maintenance practices or has a structural fault such as bark inclusion;
Dead: Tree no longer capable of sustained growth.
Deadwood (DW) – deadwood found in canopy as a percentage.
Over Head Power Lines (OHPL) – upper canopy pruned to accommodate power lines at a given height.

Height expressed in metres refers to estimated overall height of tree.

Next Door tree (ND) – tree located in the neighbour's property.

Street Tree (ST) – tree located in Councils footpath reserve.

Spread expressed in metres refers to estimated spread of crown at the drip line.

(DBH) Diameter at Breast Height expressed in millimetres refers to the trunk diameter at 1.4 metres above ground level. Where there are multiple trunks the combined diameter has been calculated in terms of Appendix A – AS 4970 – 2009, shown in brackets.

(DRB) Diameter above Root Buttress expressed in millimetres refers to the trunk diameter above root buttress.

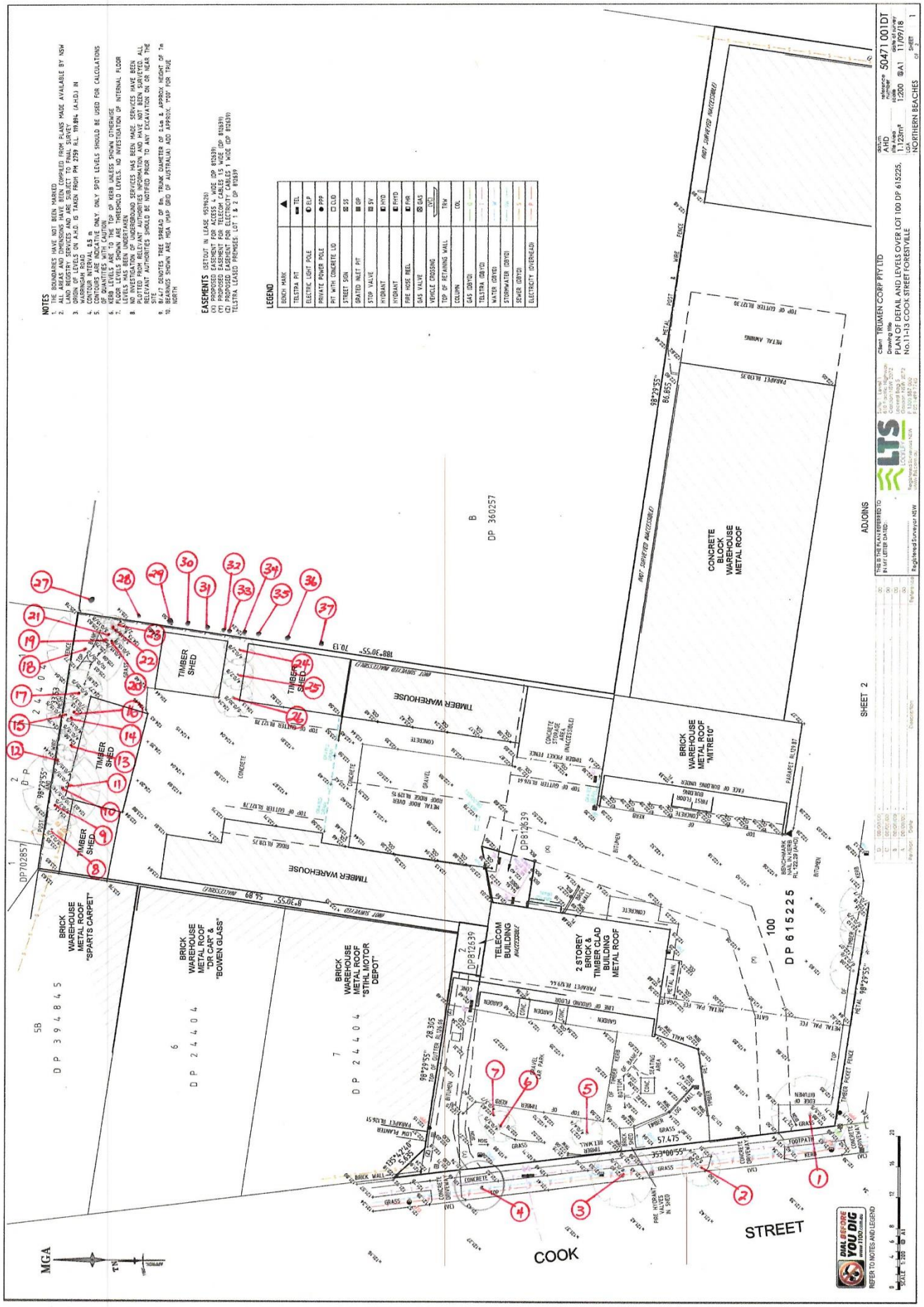
(TPZ) Tree Protection Zone & Structural Root Zone (SRZ) as defined by AS 4970 – 2009 Section 3

(ULE) The various ULE categories indicate the useful life anticipated for an individual tree or trees assessed as a group. Factors such as the location, age, condition and vitality of the tree are significant to the determination of this rating. Other influences such as the tree's effect on better specimens and the economics of managing the tree successfully in its location are also relevant to ULE (Barrell 1993, 1995, 2001).

ULE RATING (UPDATED 1/4/01) BARRELL

1.Long ULE: Trees that appear to be retainable at the time of assessment for more than 40 years with an acceptable level of risk.	**2.Medium ULE:** Trees that appear to be retainable at the time of assessment for more than 15-40 years with an acceptable level of risk.	**3.Short ULE:** Trees that appear to be retainable at the time of assessment for more than 5-15 years with an acceptable level of risk.	**4.Remove:** Trees that should be removed within the next 5 years.	**5.Small, young or regularly pruned:** Trees that can be reliably moved or replaced.
(A) Structurally sound trees located in positions that can accommodate future growth	**(A)** Trees that may only live between 15 and 40 more years.	**(A)** Trees that may only live between 5 and 15 more years.	**(A)** Dead, dying, suppressed or declining trees because of disease or inhospitable conditions.	**(A)** Small trees less than 5 Metres in height.
(B) Trees that could be made suitable for retention in the long term by remedial tree care.	**(B)** Trees that could live for more than 40 years but may be removed for safety or nuisance reasons.	**(B)** Trees that could live for more than 15 years but may be removed for safety or nuisance reasons.	**(B)** Dangerous trees because of instability or recent loss of adjacent trees.	**(B)** 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.	**(C)** Trees that could live for more than 40 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting.	**(C)** Trees that could live for more than 15 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting.	**(C)** Dangerous trees because of structural defects including cavities, decay, included bark, wounds or poor form.	**(C)** Formal hedges and trees intended for regular pruning to artificially control growth.
	(D) Trees that could be made suitable for retention in the medium term by remedial tree care.	**(D)** Trees that require substantial remedial tree care and are only suitable for retention in the short term.	**(D)** Damaged trees that are clearly not safe to retain.	
			(E) Trees that could live for more than 5 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting.	
			(F) Trees that are damaging or may cause damage to existing structures within 5 years.	
			(G) Trees that will become dangerous after removal of other trees for the reasons given in (A) to (F).	
			(H) Trees in categories (A) to (G) that have a high wildlife habitat value and, with appropriate treatment, could be retained subject to regular review.	

Annexure B: Tree location plan



MGA
TN
CONCRETE BLOCK WAREHOUSE METAL ROOF
CONCRETE BLOCK WAREHOUSE METAL ROOF
BRICK WAREHOUSE METAL ROOF "MITRE10"
TELECOM BUILDING
2 STOREY BRICK & TIMBER CLAD BUILDING METAL ROOF
GRAVEL CAR PARK
100
DP 615225
B
DP 360257
1
DP 773831
DP 1088749
C2
DP 375329
DP 853688
24555
ADJOINS
SHEET 1
COOK
STREET
SEE SHEET 1 FOR NOTES & LEGEND
BENCHMARK NAIL IN KERB RL 122.29 (AHD)
FIRE HYDRANT VALVES IN SHED
1
2
3
38
39
40
41
42
43
44
DIAL BEFORE YOU DIG
REFER TO NOTES AND LEGEND
Client TRUMEN CORP PTY LTD
PLAN OF DETAIL AND LEVELS OVER LOT 100 DP 615225.
No.11-13 COOK STREET FORESTVILLE
AHD
1,123m²
NORTHERN BEACHES
50471 001DT
1:200
11/09/18
LTS
Registered Surveyor NSW

Annexure C: Tree impact plan