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ARBORICULTURAL IMPACT ASSESSMENT REPORT

At

24 Cecily Street, Belfield

STRATHFIELD COUNCIL
RECEIVED

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Prepared for

Mr N Tartak

5th September 2020

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- 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.
- There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future:
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Ross Jackson.

Consulting Arborist

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1. BACKGROUND and METHODODOLGY

1.1 The purpose of this Tree Report is to inform and accompany the development application works at 24 Cecily Street, Belfield – The Site.

1.2 The report was commissioned by Mr N Tartak 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 a residential site with gardens at Belfield.

1.5 The trees were identified by ground level Visual Tree Assessment (VTA) [1] only in the data collection, taken on 27.8.2020. 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

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[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 C & A Surveyors NSW P/L dated 23.7.2020.
- Architectural plans by Princeton Piper dated 27.8.2020.
- Part O of the Strathfield Consolidated Development Control Plan 2005 – Tree Management (DCP); &
- Australian Standard AS 4970 – 2009 Protection of trees on development sites.

2. OBSERVATIONS as seen on the days of inspection (27.8.2020)

2.1 Our tree observations can be found in Annexure A.

3. DISCUSSIONS

3.1 We have been commissioned by Mr N Tartak, to examine the health and condition of the trees on and around this development site.

It is proposed to demolish the existing and the construction of a new residence on Site (development works).

3.2 We have examined the trees on site and can suggest the following considerations for the development works:

1. Tree 1 *Lophostemon confertus* shows good vitality with upper canopy pruning to accommodate the overhead power lines. There is an existing double brick wall along the front boundary that has restricted root growth into the site – refer plate 1. A new pathway to the front door will be created within this brick work – refer Annexure C. The construction of the pathway will have little or no impact on this street trees TPZ due to the existing site conditions. Note for retention in the Tree Management Plan (TMP).

Plate 1: Tree 1

2. Tree 2 *Agonis flexuosa* shows fair vitality with upper canopy pruning to accommodate the overhead power lines. There is an existing double brick wall along the front boundary that has restricted root growth into the site – refer plate 2. The modification of the driveway is at the edge of this tree's TPZ – refer Annexure C. No significant impact on this trees stability or longevity will occur when installing the re-worked driveway & layback. Note for retention and protection in the TMP.

Plate 2: tree 2, 3 behind & 4

3. Tree 3 *Lagerstroemia indica* shows good vitality and typical form – refer plate 2. Bo development works will impact this tree – refer Annexure C, thus ensuring retention. Note for retention and protection in the TMP.

4. Tree 4 *Brachychiton acerifolius* shows good vitality but has a genetic structural defect at 1.0 – 1.5m between the two stems i.e. included bark – refer plate 3. It is acknowledged this tree is in good vitality (acknowledging it is structurally defective) but to align the driveway to the street crossing this tree will need to be removed –

refer Annexure C. There is ample space on site to replant a replacement tree. Note this tree for removal in the TMP.

Plate 3: included bark in tree 4

5. Tree 5 *Jacaranda mimosifolia* shows good vitality with the canopy skewered to the west. The development works have less than 10% encroachment within this tree's TPZ – refer Annexure C, thus ensuring retention. Note for retention and protection in the TMP.

6. Tree 6 *Lagerstroemia indica* and tree 7 *Banksia integrifolia* show good vitality but tree 7 has a deformed apical form from being topped many years ago – refer plate 4. These trees are within the proposed access pathway leading to the rear of the new residence – refer Annexure C. While in good vitality, removal is supported. Note this tree for removal in the TMP.

Plate 4: trees 6 & 7

7. Tree 8 *Ficus microcarpa var. Hillii* shows good vitality with extensive surface roots growing in all directions around this tree, including under the pavement at the rear of the existing house and under the foundations with evident structural cracking – refer plate 5, 6 & 7. The calculated TPZ is 16.8m but using the maximum 15.0m radius, the site is sterilized by the calculated TPZ. This huge tree is not an appropriate species for a domestic location and its root spreading all around the root crown, including buttress roots the site cannot be developed with these limitations.

I understand the adjoining property at 22 Cecily Street have undertaken extensive repairs to their sewer pipes, pathways and rea yard pavement as a consequence of invasive roots. It is obvious the former owner of this property were unable or unwilling to undertake the repairs to the existing house due to the extent of roots in, around and under the foundations of the house, so it was sold.

This tree is within the building footprint and requires removal to undertake the proposed development – refer Annexure C. While acknowledging this tree is showing good vitality it should not be considered an impediment to the approval of this development application.

There is ample space on site to replant at least three canopy trees to compensate for the removal of this tree. The replacement trees are species endemic to the Strathfield Council area – e.g. *Eucalyptus fibrosa, Eucalyptus paniculata & Eucalyptus siderophloia*[3]

[3] Benson. D. & Howell. J. (1995). **Taken for Granted The Bushland of Sydney and its Suburbs.** Kangaroo Press.

Note this tree for removal with replacement planting of 3 trees on site.

Plate 5: roots from tree 8

Plate 6: roots, pavement & damaged rear of house

Plate 7: cracking in house walls

4. RECOMMENDATIONS

The following recommendations are advised:

a) Retain the following council street trees: Tree 1 & 2.
b) Retain the following trees on site: Tree 3 & 5.
c) Remove the following trees on site: Tree 4, 6,7 & 8.
d) That 3 replacement trees be replanted on site to compensate for the removal of Tree 8, using species found in the Strathfield Council area: e.g. *Eucalyptus fibrosa, Eucalyptus paniculata & Eucalyptus siderophloia.*
e) 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).*
f) Install the following Tree Protection Measures around the retained street tree: Tree 1 & 2, 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.

g) Install the following Tree Protection Measures around the retained trees on site: Tree 3 & 4, 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. 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 – refer Annexure D.
h) 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.
i) An AQF Level 5 Project Arborist shall be engaged to supervise the building works and certify compliance with all Tree Protection Measures.
j) The tree location plan can be found on Annexure B: &
k) The tree impact plan can be found on Annexure C.

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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	*Lophostemon confertus*	M	8	8	43	55	5.2	2.6	G vitality, ST, OHPL	2
2	*Agonis flexuosa*	M	5	3	28	31	3.4	2.0	F vitality, ST, OHPL	2
3	*Lagerstroemia indica*	M	8	6	8 x 12	60	3.4	2.7	G vitality	2
4	*Brachychiton acerifolius*	M	9	7	44	54	5.3	2.6	G vitality, crown-lifted to 4m, bifurcated @ 1.5m	2
5	*Jacaranda mimosifolia*	M	8	6	24	28	2.9	1.9	G vitality, canopy skewed to west	2
6	*Lagerstroemia indica*	M	8	6	5 x 12	40	3.2	2.3	G vitality	2
7	*Banksia integrifolia*	M	9	4	27	34	3.2	2.1	G vitality, topped @ 2m > 3 secondary leaders	2
8	*Ficus microcarpa var. hillii*	M	18	16	140	160	15.0 (16.8)	4.0	G vitality, surface roots all around the trunk	2

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.

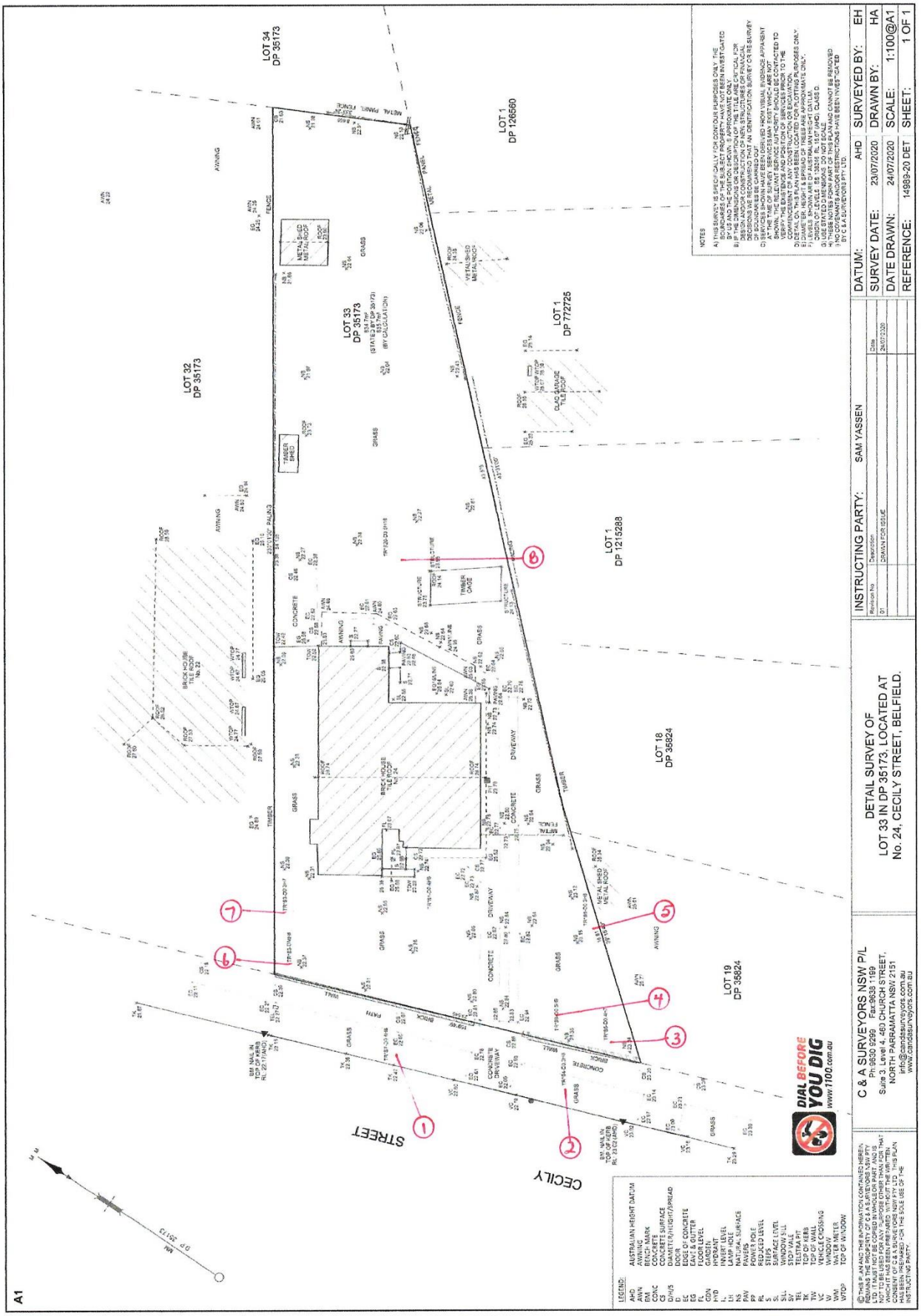
(TPZ) Tree Protection Zone & Structural Root Zone (SRZ) as defined by AS 4970 – 2009 Section 3

(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).

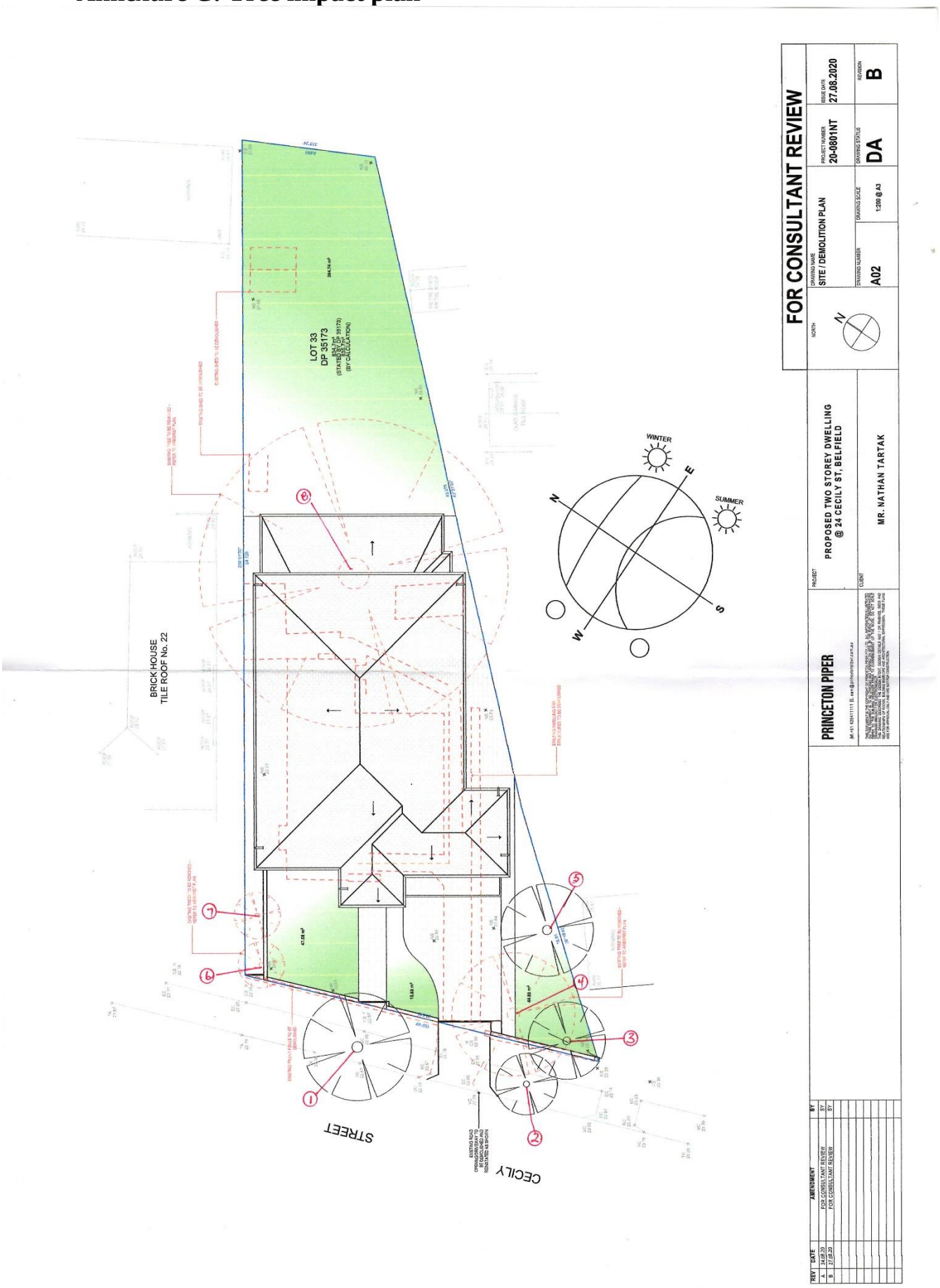
ULE RATING (UPDATED 1/4/01) BARRELL

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.	

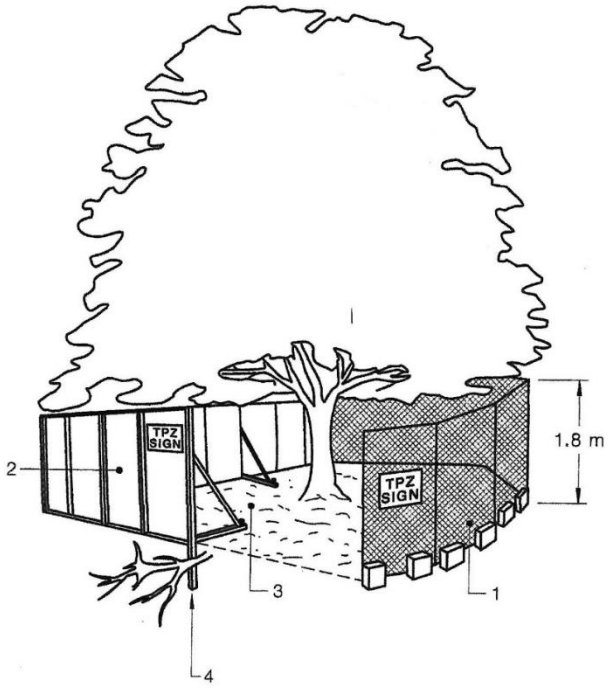
Annexure B: Tree location plan



Annexure C: Tree impact plan



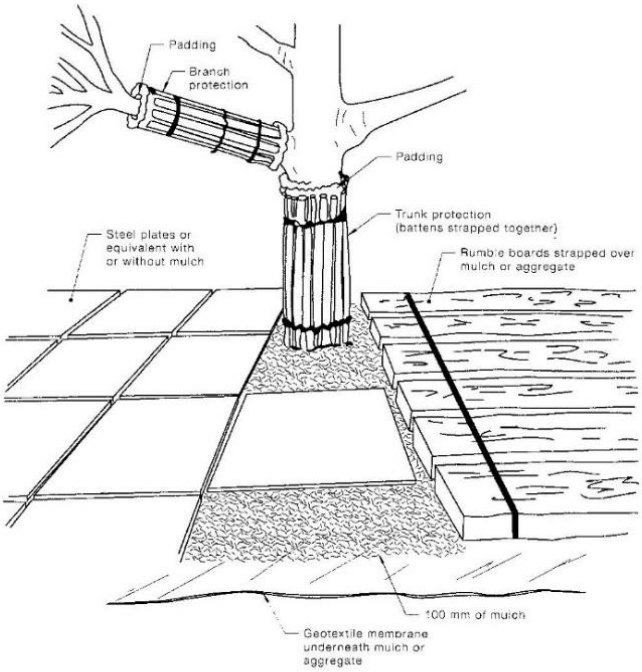
Annexure D: Tree protection details



LEGEND:

1 Chain wire mesh panels with shade cloth (if required) attached, held in place with concrete feet.
2 Alternative plywood or wooden paling fence panels. This fencing material also prevents building materials or soil entering the TPZ.
3 Mulch installation across surface of TPZ (at the discretion of the project arborist). No excavation, construction activity, grade changes, surface treatment or storage of materials of any kind is permitted within the TPZ.
4 Bracing is permissible within the TPZ. Installation of supports should avoid damaging roots.

FIGURE 3 PROTECTIVE FENCING



NOTES:

1 For trunk and branch protection use boards and padding that will prevent damage to bark. Boards are to be strapped to trees, not nailed or screwed.
2 Rumble boards should be of a suitable thickness to prevent soil compaction and root damage.

FIGURE 4 EXAMPLES OF TRUNK, BRANCH AND GROUND PROTECTION

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