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ARBORICULTURAL IMPACT ASSESSMENT REPORT

24 KING STREET
EAST MAITLAND

Prepared for

KEVIN HICKEY & YVONNE BUTLER

15th FEBRUARY 2022

By
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Diploma in Arboriculture

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1. INTRODUCTION

The owner of the property has requested that an Arboricultural Impact Assessment be undertaken on all trees on the adjoining properties located that are within or close to the proposed stormwater easement as part of their development application.

Whilst general comment will be given regarding tree condition **this evaluation is not intended for use for any other purposed other than that proposed.** Assessment is not provided for regarding the management or risk assessment of trees in relation to their existing health and vitality or structural condition.

The owners should employ the services of a suitable qualified (AQF Level 5) arborist in assessing their condition in relation to any tree management issues and safety concerns.

Native habitat or ecological significance of trees are not addressed in this report and should be assessed separately by a suitably qualified Ecologist.

Impact Assessment will be in accordance with Australian Standards – AS 4970 – 2009, Protection of Tree on Development Sites

Tree Assessment will be in the form of a Level 1 - Limited Assessment as described in the International Society of Arboriculture (ISA) Tree Risk Assessment Manual and conducted from the ground only.

Assessment and outcomes of this report will be based on the Design by MPC
Job No. 18-126:

- Part Stormwater Plan Drawing No. C02 Issue 1 dated 28/06/18

The report will contain the following information:

- Tree Assessment
- Impact Assessment
- Recommendations

The report should be read and considered in its entirety

2. SITE LOCATION

24 King Street East Maitland

Photo A - Assessment area

3. METHODOLOGY

An inspection of the subject trees was made on the 15th of February 2022 to evaluate the impacts the proposed excavation works may have on these trees.

As the report is primarily to assess the impacts of excavation works assessment of existing heath and structure was undertaken by means of a Level 1 – Limited Visual Assessment, as described in the International Society of Arboriculture (ISA) Tree Risk Assessment Manual and made form the ground only

A Level 1 limited Visual Assessment typically focuses on identifying trees with imminent and/ or probable likelihood of failure and is conducted from a specific perspective in order to identify obvious defects or specified conditions however do not always meet all of the criteria for risk assessment.

A limited visual assessment typically focuses on identifying trees with imminent and/ or probable likelihood of failure and is conducted from a specific perspective in order to identify obvious defects or specified conditions.

Trunk diameters were measured using a diameter tape whilst tree heights and canopy spreads were estimated.

Photographs were taken using a digital camera; no enhancements were made to any photographs used in this report.

Assessment of all trees did not include soil testing, root inspection, aerial inspection or any other investigative inspection methods.

4. SULE – Safe Useful Life Expectancy

The SULE method (developed by Jeremy Barrell) of assessment involves classifying trees, after an inspection, into one of five categories that will give an indication of its safe useful life expectancy. The value system is a planning tool only and should be taken in context with other attributes, characteristics or site conditions. These values would change as a result of the proposed development.

SULE takes into consideration the species, age, location, health and condition in trying to determine the possible outcomes and future potential of a tree (Appendix 1).

5. LIMITATIONS

Tree health and environmental conditions can change at any time due to unforeseen circumstances and as such the contents contained in this assessment refer to the tree's condition on the day of inspection only.

Only those trees specified were assessed and assessments were performed within the limitation specified.

Assessment of trees was by visual inspection from the ground only and as such not all faults may have been detected or extent of defects able to be fully determined. In such cases more advanced assessment techniques such as aerial inspections for evaluation of structural defects in trunks and branches, decay testing to determining the amount of sound and root inspections would need to be undertaken in further determining the structural integrity of the trees.

A visual assessment can only take into consideration the outward signs of a trees condition. There are many problems that can occur inside a tree that cannot be seen, such as fungal diseases and undetected structural faults such as decay and hollows. Problems can also occur within the root systems due to contaminated soils and root diseases.

These issues would require further investigative methods to be undertaken in further determining the health and condition of the tree.

Any tree whether it has visible weaknesses or not will fail if the force applied exceed the strength of the tree or its parts

No guarantee can be given nor can it be predicted that branch failure or uprooting (windthrow) would not occur as a result of extreme winds, storm activity, lightning strike and /or excessive rainfall.

No tree can be declared completely safe and total mitigation of risk can only be achieved by complete removal of trees. As such the risk that branch, trunk or root crown failure may occur is always present.

As root systems are neither symmetrical or entirely predictable in their depth and are affected by topography, characteristics of soil or substrate and underground obstructions their location and subsequent extent of potential damage is often unpredictable and assessing the impacts of construction can often be difficult to determine.

Whilst careful planning and thorough assessment of the potential impacts of construction, excavation procedures and adequate protection of the trees during construction it is possible that the changed surrounding conditions may inadvertently affect their condition in the future

6. PROTECTION ZONES

Tree Protection Zones (TPZ) are the principle means of protecting trees on development sites. The TPZ is a combination of the root area and crown area requiring protection. It is an area isolated from construction disturbance, so that the tree remains viable. The TPZ incorporates the Structural Root Zone (SRZ) (Figure A).

The method used to determine the TPZ and SRZ for these trees have been based on Australian Standard 4970 – 2009 Protection of Trees on Development Sites 3.3.5.

6.1 TPZ - Tree Protection Zones

Australian Standard 4970 – 2009 Protection of Trees on Development Sites requires that the Diameter at Breast Height (DBH) of the trunk measured 1.4m above ground be multiplied by 12 to obtain the radius of a Tree Protection Zones (TPZ).

It is possible that minor encroachments can be established for these trees provided that encroachment is less than 10% and outside their Structural Root Zone and that the area lost to encroachment can be compensated for elsewhere and contiguous with the TPZ (Figure B).

Note: A TPZ should not be less than 2 meters nor greater than 15 meters

6.2 SRZ – Structural Root Zones

Where major encroachment into the TPZ is expected the Structural Root Zone (SRZ) requires to be calculated (Figure 2). **The SRZ considers the trees structural stability only.** The woody root growth and soil cohesion in this area are necessary to hold the tree upright.

The method used to determine the SRZ for these trees have been based on Australian Standard 4970 – 2009 Protection of Trees on Development Sites3.3.5.

Note: An SRZ should not be less than 1.5 meters

- **Refer to Tree Evaluation Sheet (Appendix 3) in reference to calculated TPZ's & SRZ's and outline of Potential Impacts**

Figure A – Indicative TPZ & SRZ

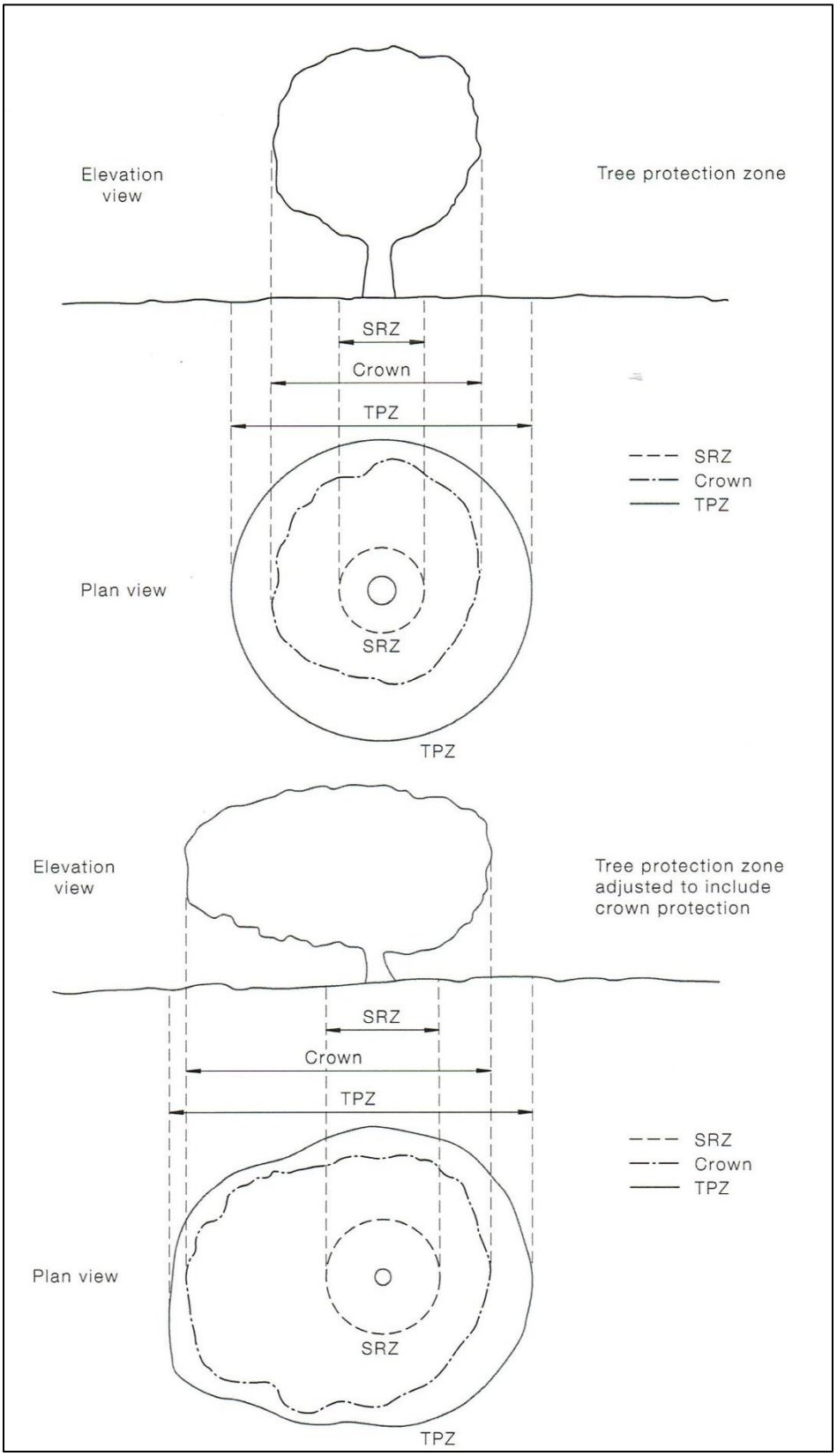


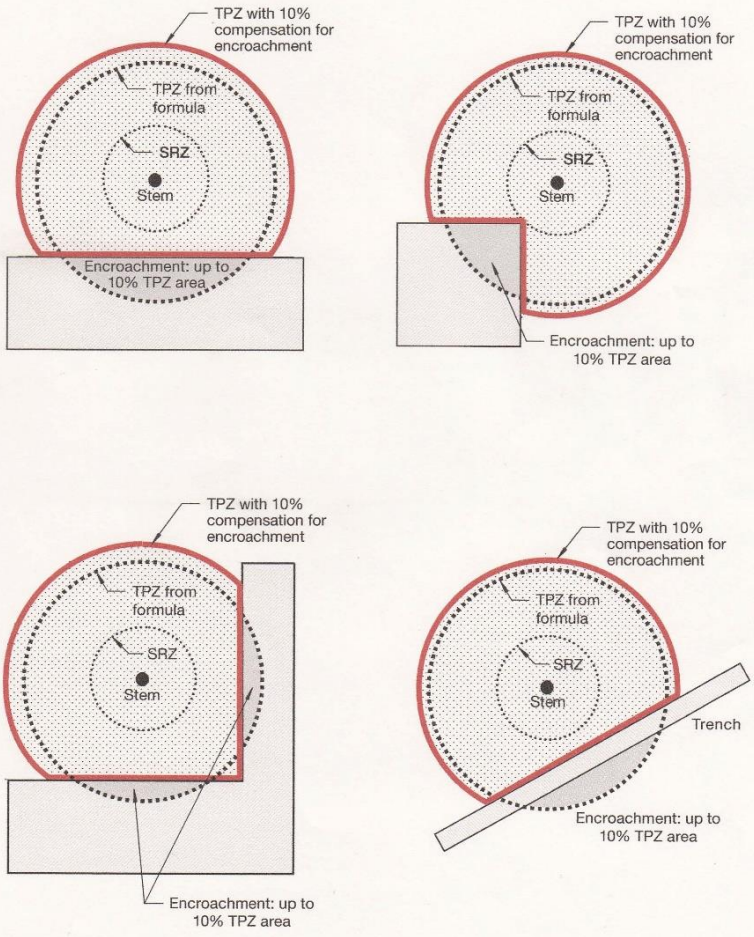
Figure B - Example of TPZ encroachment

APPENDIX D

ENCROACHMENT INTO TREE PROTECTION ZONE

(Informative)

Encroachment into the tree protection zone (TPZ) is sometimes unavoidable. Figure D1 provides examples of TPZ encroachment by area, to assist in reducing the impact of such incursions.



NOTE: Less than 10% TPZ area and outside SRZ. Any loss of TPZ compensated for elsewhere.

FIGURE D1 EXAMPLES OF MINOR ENCROACHMENT INTO TPZ

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7. IMPACT ASSESSMENT

7.1 Tree Nos. 18, 20 & 21

Tree Nos. 18, 20 & 21 are in direct line of the proposed easement and as such their removal would be necessary to facilitate the works as proposed (Photo 4).

The retention of any of these trees would require alternative non- destructive excavation methods (as opposed to open trench method) to be undertaken.

7.2 Tree Nos. 1, 3, 4, 8, 9, 11, 12 & 19

Excavation work will encroach into the calculated TPZ and SRZ's of these trees. The main area of concern is damage that may be caused to roots within the TPZ & SRZ.
(Photo's 1, 2, 3 & 4).

Damage to roots within the SRZ will significantly increase the risk of failure, especially during high winds. Tree roots anchor the tree and their continued function is an important factor in a tree's survival during any construction. Decrease in structural stability will result regardless of species although to what degree depends on many factors such as how many and how close to the tree roots are cut.

Severing of roots on one side of a tree (such as may occur when excavation is past a tree trunk but still within the drip zone), may weaken the tree making it unstable and likely to collapse sometime in the future. Excessive removal of soil from around the root zone can significantly reduce roots anchorage capacity increasing the risk of root crown failure.

Excessive damage to secondary and minor roots may initiate decline in tree health and vigour. Excessive removal of smaller absorbing roots can cause immediate water stress. The survival of the tree is linked to its tolerance of water stress and the ability of the tree to form new root rapidly.

Due to the close proximity of construction and extent of encroachment into their TPZ / SRZ's it is likely that the trees will be adversely impacted upon by the development that will be detrimental to both stability and health & vigour

The retention of any of these trees would require alternative non- destructive excavation methods (as opposed to open trench method) to be undertaken.

7.3 Tree Nos. 7, 13, 14 & 15

Based on the proposed plans excavation work is not expected to encroach within the calculated TPZ's of these trees. Provided no encroachment occurs and ground level within the TPZ's remains unchanged the trees can be retained and are not expected to be impacted upon by the proposed development (Photo's 1, 2 & 3).

7.4 Tree Nos. 2, 5, 10 & 17

Excavation is expected to encroach into the TPZ's of these trees of between 15 to 20% of their total TPZ's however the area lost to encroachment is outside of their SRZ and can be compensated for elsewhere and contiguous with the TPZ

As excavation is outside of their SRZ's the main area of concern is damage that may be caused to secondary or minor the roots. Excessive damage to secondary and minor roots may initiate decline in their health and vigour. Removal of smaller absorbing roots can cause immediate water stress. The survival of the tree is linked to its tolerance of water stress and the ability of the tree to form new root rapidly (Photo's 1, 2 & 3).

In assessing the potential impacts, it is considered that provided excessive damage to roots is avoided and remaining ground level within the remaining TPZ of each individual trees stays unchanged the trees can be retained and should tolerate the impacts as sufficient space for oxygen and associated beneficial fungi and micro-organisms which help the tree obtain minerals should still be available within the remaining TPZ.

This does not mean that construction activity (particularly excavation) within the TPZ can be carried out without out regard to roots. Any excavation activity within the TPZ must still be carried out carefully to avoid excessive damage to roots (see Item 8 Excavation within TPZ).

7.5 Tree Nos. 6 & 16

Based on the proposed plan excavation work is expected to encroach into the TPZ's of these trees however as encroachment is expected to be less than 10% of the total TPZ and the area lost to encroachment is outside their SRZ's and can be compensated for elsewhere and contiguous with the TPZ they are not expected to be significantly impacted upon by the proposed development and can be retained.

However this does not mean that excavation can be carried out without out regard to roots. Excavation within the TPZ must still be carried out carefully to avoid excessive damage to roots (see Item 8 Excavation within TPZ).

Provided encroachment does not exceed more than 10% of the total TPZ and ground level within the remaining TPZ remains unchanged as the tree the area lost to encroachment would be outside the SRZ and can be compensated for elsewhere and contiguous with the TPZ the tree could be retained and tolerate the impacts of the development (Photo's 1, 2 & 3).

7.6 Change to Stormwater Easement Width

Based on discussion with the building contractor it was determine that the actual trench need not be more than 400mm wide and as such it was decided that the width can be reduce from 1.0m to 800mm to the outer edge of the trench from the boundary line.

This, albeit minor, will nevertheless still be beneficial in providing some extra undisturbed space within the TPZ

Photo 1 – Tree Nos. 1 to 17 within close proximity to proposed stormwater easement

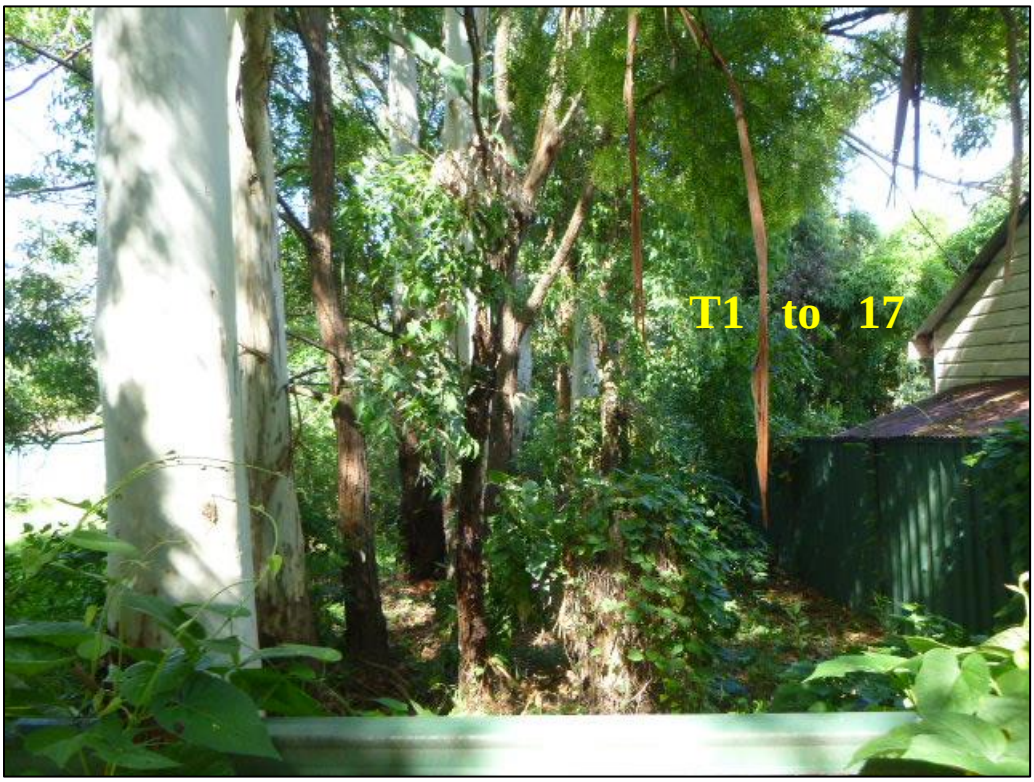


Photo 2 – Tree Nos. 1 to 17 within close proximity to proposed stormwater easement

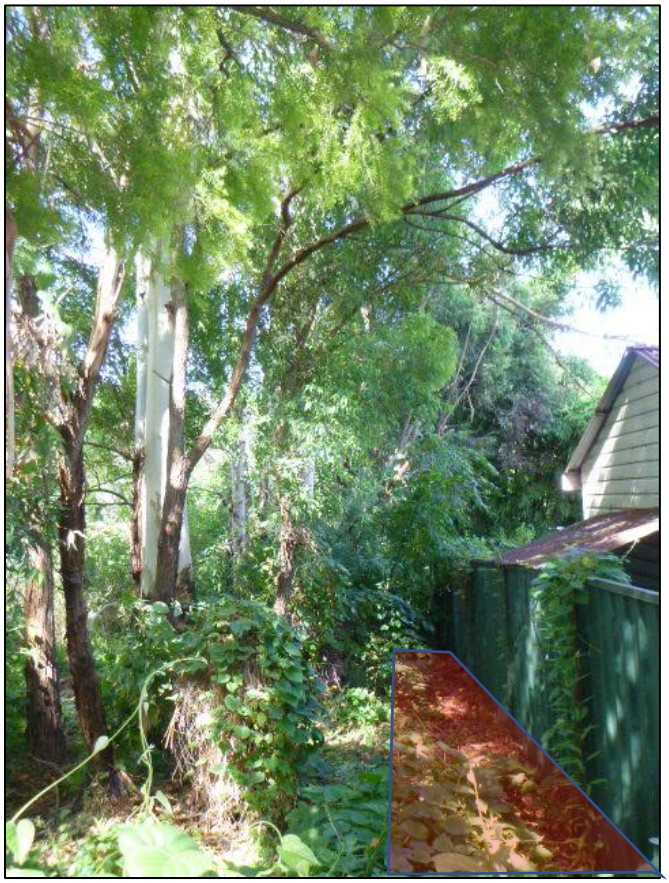


Photo 3 – Proposed line of stormwater easement

Photo 4 – Tree Nos. 18, 20 & 21 in direct line of proposed stormwater easement.
Trenching also within SRZ of Tree No. 19

Photo 5 – Dead Tree

Photo 6 – Dead Tree

Photo 7 – Dead Tree

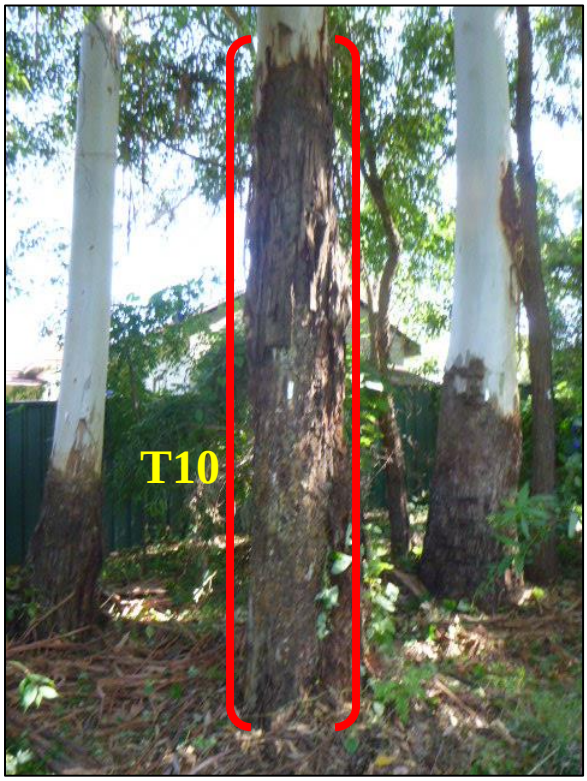


Photo 8 – Borer damage to trunk

Photo 9 – Diseased Tree

8. EXCAVATION WITHIN TPZ

Typically, most roots are found within the top 900mm of soil, and most of the fine roots active in water and nutrient absorption are in the top 300mm of soil. Large roots can also be encountered close to the surface.

Machinery may be used for excavation however where encroachment exceeds more than 10% of the TPZ but is outside of the SRZ. However this does not mean that excavation can take place without regard to the damage that might be caused to the root system.

Extreme care must still be taken when excavating within nominated TPZ not to tear or rip any roots. As the operator feels the resistance of a root excavation should cease and digging should revert back to hand tools.

Excavation should be undertaken around the area of the tree where works are expected to encroach into the TPZ to the depth that is expected for the required excavation works.

No excavation is permitted, or roots shall be cut or damaged within the calculated SRZ of the tree.

Upon excavation within the TPZ:

- Roots up to 50mm in diameter should only be cut if absolutely necessary.
- Roots over 50mm in diameter should only be cut after consultation with a suitably qualified arborist.
- Roots to be removed should have the soil removed and cut cleanly with a sharp saw or secateurs flush with the edge of excavation.
- Roots temporarily exposed should not be allowed to dry out or be exposed to direct sunlight for long periods. Damp hessian bags should be used to protect exposed roots.

➢ Upon completion of excavation works an application of Seasol ‘Complete Garden Health Treatment’ or other similar product at the recommended rate and mulch should be applied to the affected area:
  - Enhances root growth & health & vigour
  - Help tree cope with stresses
  - Help increase nutrient uptake
  - Increases beneficial microbial activity in the soil
  - Increases resistance to heat, drought, frost, pests and disease

  - Mulch excavated area 75 to 100mm thick

9. RECOMMENDATIONS

Based on the proposed Site Plan and after an assessment of the potential impacts of the proposed development the following outcomes are recommended:

1. **Removal of Tree Nos. 19, 20 & 21**
   Reason:
   Trees are in direct line of the trench and as such their removal would be necessary to facilitate the development as proposed

2. **Removal of Tree Nos. 1, 3, 4, 8, 9, 11, 12 & 19**
   Reason:
   Due to the close proximity of excavation and extent of encroachment into their TPZ / SRZ's it is likely that the trees will be adversely impacted upon by the development that will be detrimental to both stability and health & vigour and as such their removal would be necessary to facilitate the development as proposed.

3. **Retention of Tree Nos. 2, 5, 10 & 17**
   Reason:
   Although excavation of between 15 to 20% is expected to encroach into the TPZ's of these trees the area lost to encroachment is outside of their SRZ and can be compensated for elsewhere and contiguous with the TPZ.

   Provided excessive damage to roots is avoided and remaining ground level within the remaining TPZ of each individual trees stays unchanged the trees should tolerate the impacts as sufficient space for oxygen and associated beneficial fungi and micro-organisms which help the tree obtain minerals should still be available within the remaining TPZ.

4. **Retention of Tree Nos. 6 & 16**
   Reason:
   Although construction will occur within their TPZ's it is expected that encroachment will be no more than 10% of their total TPZ and that as the area lost to encroachment is outside the SRZ and can be compensated for elsewhere and contiguous with the TPZ the impacts of the development should be tolerated by the trees

5. **Retention of Tree Nos. 7, 13, 14 & 15**
   Reason:
   Excavation is not expected to encroach within the calculated TPZ's of these trees and as such they are not expected to be impacted upon.

6. **Reduce width of trench from 1.0m to 800mm from the existing boundary line**
   Reason:
   To provide extra space within the TPZ

7. **Careful excavation procedures as outlined in Item 10.6 required within the TPZ / SRZ of Tree Nos. 2, 5, 6, 10, 16 & 17**
   To avoid excessive damage or severance to roots within the TPZ

8. **Upon completion of excavation works an application of Seasol 'Complete Garden Health Treatment' or other similar product at the recommended rate and mulch should be applied to the affected area**
   Reason:
   To assist trees in coping with potential imp acts associated with root disturbance.

9. **Consider alternative excavation methods if it is determined that any tree identified for removal is to be retained**
   Reason:
   To reduce the impacts to roots and minimize soil disturbance within the TPZ / SRZ

10. REFERENCES

Australian Standards AS 4970 – 2009 Protection of Tree on Development Sites
Standards Australia Sydney

Dunster, Julian A., E. Thomas Smiley, Nelda Matheny, and Sharon Lilly. 2013 Tree Risk Assessment Manual. Champaign, Illinois: International Society of Arboriculture

Matheny, Nelda and Clark, James R. 1998, Trees and Development: A Technical Guide to Preservation of Trees During Land Development, International Society of Arboriculture Champaign, USA.

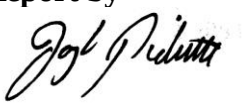
Bartlett Tree Research Laboratories E. Thomas Smiley PhD. Assessing The Failure Potential of Tree Roots.

11. DISCLAIMER

The conclusions and recommendations contained in this report refer to the tree's condition on the day of inspection only. The report is to be read and considered in its entirety. All care has been taken using the most up to date arboricultural information in the preparation of this report.

The report is based on visual inspection only and as such not all defects may have been detected. Tree health and environmental conditions can change at any time. No guarantee can be given nor can it be predicted that branch failure or uprooting (windthrow) would not occur as a result of high winds and /or excessive rainfall and other unpredictable events.

Report by



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APPENDIX 1

SULE - Safe Useful Life Expectancy

1. Long SULE

a. Structurally sound and can accommodated future growth
b. Long term potential with minor remedial treatment
c. Trees of special significance which warrant extra care

2. Medium SULE

a. Will live between 15-40 years
b. Will live for more than 40 years but would be removed for safety or nuisance reasons
c. May live for more than 40 years but will interfere with more suitable specimens and need removal eventually
d. More suitable for retention in the medium term with some remedial care

3. Short SULE

a. Trees that may only live between 5-15 more years
b. May live for more than 15 years but would need removal for safety or other reasons
c. Will live for more than 15 years but will interfere with more suitable specimens or provide space for replacement plantings
d. Require substantial remedial care but are only suitable for short term retention

4. Removals

a. Dead, dying or seriously diseased
b. Dangerous trees through instability or loss of adjacent trees
c. Structural defects such as cavities
d. Damaged that are clearly not safe to retain
e. May or are causing damage to structures
f. That will become dangerous

5. Moved or Replaced

Trees, which can be reliably moved or replaced

a. Small trees less than 5 meters
b. Young trees between 5-15 years
c. Trees that have been regularly pruned to control growth

APPENDIX 2

CONDITION RATINGS

Each tree or group of trees has been placed into categories ranging from 1 to 6, with no.1 being in the worst condition through to no.6 in a health condition.

This is based on observations of their health and structure.

1. A dead tree.

2. A tree in severe decline. Major structural damage that cannot be repaired, dieback of trunk or scaffold branches and the majority of foliage consist of epicormic growth.

3. A tree in decline. Significant structural damage that cannot be repaired, dieback of medium to larger branches and epicormic growth.

4. A tree moderate vigor, dieback of smaller branches and twigs, thinning of crown, poor leaf colour and moderate structural defects that could be mitigated with regular care.

5. A tree in slight decline with only a small amount of twig dieback and minor structural damage that could be easily rectified.

6. A healthy vigorous tree that shows reasonably free signs of pest and diseases and good structural form.

APPENDIX 3 – TREE EVALUATION SHEETS

Legend
DBH – Diameter at Breast Height (1.4m) DARF - Diameter Above Root Flare
TPZ – Tree Protection Zone SRZ – Structural Root Zone

Tree No.	Botanical Name Common Name	Age	Hgt (m)	Canopy Spread(m) N S E W	DBH (mm)	DGL (mm)	TPZ (m)	SRZ (m)	Structure	Health	Condition	SULE	Comments	Impacts
1	Dead tree	M	10	1117	840	910	10.1	3.18	Poor	Poor	1	4a	Dead Tree Previous failure of central leader Indicative of failure / breakage due to storm damage (Photo 5)	Potential damage to roots within the TPZ / SRZ
2	*Eucalyptus camaldulensis* River Red Gum	M	15	1611	370	440	4.4	2.34	Good/ Fair	Good/ Fair	4	2d	Initial stage of decline - Some dead small size lower branches and dieback of some other branches Fair habit & form Suppressed canopy orientated to the south	Potential damage to minor or secondary roots within the TPZ
3	*Eucalyptus spp.* Eucalyptus Tree	M	10>15	5128	410	418	4.9	2.29	Good/ Fair	Good	4	2d	No significant signs of dieback or decline No significant structural defects Fair habit & form Suppressed canopy orientated to the northwest	Potential damage to roots within the TPZ / SRZ
4	Dead tree	M	5>10	3112	310	470	3.7	2.41	Poor	Poor	1	4a	Dead Tree (Photo 6)	Potential damage to roots within the TPZ / SRZ
5	*Eucalyptus saligna* Sydney Blue Gum	M	25>30	3334	540	690	6.5	2.83	Good	Good	5	1b	No significant signs of dieback or decline No significant structural defects	Potential damage to minor or secondary roots within the TPZ
6	*Eucalyptus camaldulensis* River Red Gum	M	15>20	1271	310	380	3.7	2.20	Good/ Fair	Fair	4	3d	Initial to moderate stage of decline state of decline. Dead small & medium size branches & dieback of other branches Fair habit & form Suppressed canopy orientated to the east	Potential damage to minor roots within the TPZ
7	*Eucalyptus microcorys* Tallowwood	S/M	10	1263	220	240	2.6	1.82	Good/ Fair	Good	5	1b	No significant signs of dieback or decline No significant structural defects Fair habit & form Suppressed canopy orientated to the west	Excavation works outside if TPZ No direct impacts expected
8	Dead tree	M	20>25	2222	460	520	5.5	2.51	Poor	Poor	1	4a	Dead Tree (Photo 7)	Potential damage to roots within the TPZ / SRZ
9	*Eucalyptus saligna* Sydney Blue Gum	M	25>30	9524	380	550	4.6	2.57	Good	Good	5	1b	No significant signs of dieback or decline No significant structural defects	Potential damage to roots within the TPZ / SRZ
10	*Eucalyptus saligna* Sydney Blue Gum	M	20>25	2425	550	630	6.6	2.73	Fair	Good/ Fair	4	2d	Some dead small & medium size branches No significant signs of dieback or decline Substantial borer damage to lower trunk resulting in exposed dead and decaying wood, cracking and loose bark affecting up to 60% stem circumference Fair response growth (Photo 8)	Potential damage to minor or secondary roots within the TPZ
11	*Eucalyptus saligna* Sydney Blue Gum	M	20>25	9353	620	720	7.4	2.88	Good	Good	5	1b	Dead large branch to east otherwise no significant signs of dieback or decline No significant structural defects	Potential damage to roots within the TPZ / SRZ

Tree No.	Botanical Name Common Name	Age	Hgt (m)	Canopy Spread(m) N S E W	DBH (mm)	DGL (mm)	TPZ (m)	SRZ (m)	Structure	Health	Condition	SULE	Comments	Impacts
12	*Eucalyptus microcorys* Tallowwood	S/M	5>10	2114	170	200	2.0	1.68	Good/ Fair	Good	5	2d	No significant signs of dieback or decline No significant structural defects Fair habit & form Suppressed canopy orientated to the west	Potential damage to roots within the TPZ / SRZ
13	*Eucalyptus microcorys* Tallowwood	S/M	10	6113	200	260	2.4	1.88	Good	Good	5	1b	No significant signs of dieback or decline No significant structural defects Fair habit & form Suppressed canopy orientated to the north	Excavation works outside if TPZ No direct impacts expected
14	*Eucalyptus microcorys* Tallowwood	S/M	10>15	1633	260	330	3.1	2.08	Good	Good	5	1b	No significant signs of dieback or decline No significant structural defects Fair habit & form Suppressed canopy orientated to the east	Excavation works outside if TPZ No direct impacts expected
15	*Eucalyptus saligna* Sydney Blue Gum	S/M	5>10	7111	160	200	1.9	1.68	Fair	Good	4	3c	No significant signs of dieback or decline Leaning tree. Severe lean approx. 30° to north Poor habit & form Suppressed canopy orientated to the north	Excavation works outside if TPZ No direct impacts expected
16	*Eucalyptus saligna* Sydney Blue Gum	M	15>20	5151	340	470	4.1	2.41	Fair	Good/ Fair	4	4a	Some dead small size branches No significant signs of dieback or decline Poor habit & form Suppressed from above Diseased tree fungal bracket in west side lower trunk Minor hollow sound produced on sides around affected area when tapped indicating the presence of decay Fungal brackets indicate the presence of disease and are a definite indicator of decay. (Photo 9)	Potential damage to minor roots within the TPZ
17	*Eucalyptus saligna* Sydney Blue Gum	M	25>30	6384	600	790	7.2	3.00	Good	Good	5	1b	Some dead medium size branches No significant signs of dieback or decline No significant structural defects	Potential damage to minor or secondary roots within the TPZ
18	*Callistemon viminalis* Weeping Bottlebrush	M	5>10	6113	160 150	300	2.6	2.00	Fair	Good/ Fair	4	3d	No significant signs of dieback or decline Poor habit & form Suppressed canopy orientated to the north Vine covered tree	Within direct line of proposed trench
19	*Melaleuca bracteata* 'Revolution Gold' Revolution Gold Melaleuca	M	10	4342	310	370	3.7	2.18	Good	Good	5	2d	No significant signs of dieback or decline No significant structural defects	Potential damage to roots within the TPZ / SRZ
20	*Callistemon viminalis* Weeping Bottlebrush	M	5>10	3151	170 160 150	350	3.3	2.13	Good/ Fair	Good	5	2d	Some dead small size branches but no significant signs of decline No significant structural defects Fair habit & form Suppressed canopy orientated to the east	Within direct line of proposed trench
21	*Liquidambar formosana* Liquidamber	S/M	10	5442	310	330	3.7	2.08	Good	Good	5	1b	No significant signs of dieback or decline No significant structural defects	Within direct line of proposed trench

APPENDIX 4 SITE PLAN