



STANDFAST TREE SERVICES
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22/11/2022

Ben Nemeny

Director

Marker Architecture & Design Studio

Re Section 4.55 (1A) modification to consent DA2019/0152
T29 and T34

Prepared by

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Standfast Tree Services Pty Ltd



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Introduction

This report has been commissioned by Marker Architecture & Design Studio to respond to council's request for an arborist's assessment of the likely impacts that modifications to the DA will have on T29 and T34.

The following have been provided by Marker Architecture to assist with the report

- Natural Environment Referral Response – Biodiversity, Northern Beaches Council
- Development Application DA 2019/0152, Modification to Consent S4.55 (1A)
- Consent Modification S4.55 (1A)

Of the four modifications proposed it is the waterway access stairs and the extension to the pool decking that are close to the two trees.

A site visit was undertaken on 18/11/2022 when the two *Corymbia maculatas* were inspected and assessed by VTA.¹

¹ VTA:

Visual Tree Assessment – a systematic inspection usually conducted from ground level looking for defects in a tree. Further investigation would be carried out by aerial inspection or with specialised equipment to test the extent of a defect and the implications for the tree. A VTA is the accepted starting point and often the end point for assessing trees for defects. (C. Mattheck, 2015)



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T29 and T34 canopies



T29 and T34 ground level



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Findings

The health of T29 has improved since it was assessed for the AIA dated 09/02/2019. At that time it was in very poor health, suppressed and with poor form but now the canopy is full and form has improved.

T34, in good health in early 2019 is now in poor health with a sparse canopy.

The likely impacts to any trees from suspended construction methods such as the flight of steps or the deck extension will always be less than more intrusive forms such as pouring concrete or the changes in grade caused by excavations.

Conclusion/recommendations

- The ground around the base of the two trees would be lightly turned over without exposing any tree roots to reduce soil compaction and to improve aeration and water absorption
- A mixture of Seasol organic fertiliser diluted to recommended strength and rooting hormone (available at plant nurseries or Bunnings) would be placed in shallow holes approximately 75mm deep, usually dug with a bar and spaced approximately 1m apart.
- With the landscapers preparing to apply topsoil around T29 and T39 within the next month it is recommended that vintage leaf mulch is spread to a depth of 50mm on top of the loosened ground surface
- Care must be taken to ensure that the maximum area available within the TPZ of T39 is cultivated, fertilised and then covered with vintage leaf mulch

It is the conclusion of this report that the modifications will not subject T29 and T34 to any impacts that would affect the vigour of the trees.

Yours faithfully,

Nigel Dean

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Terminology

Age Classes:

Juvenile refers to a well-established but young tree (J). Semi-mature refers to a tree at growth stages between juvenile and full size (SM). Mature refers to a full-sized tree with some capacity for further growth (M).

Over-mature: '*Tree aged greater than 80% of life expectancy, in situ, or senescent with or without reduced vigour, and declining gradually or rapidly but irreversibly to death.*' (OM).

(Richards, Dictionary for Managing Trees in Urban Environments, 2009).

Health:

'The ability to resist strain. Health does not necessarily mean rapid growth. Vigour is the capacity to resist strain. Health is a dynamic condition that combines the intrinsic genetic program with available conditions. Health is a condition that must be viewed in degrees because you can have poor health or excellent health. An organism that has poor health does not survive long.' (Shigo, 2008) Classes are Excellent (E) Good (G) Poor (P), Declining (D).



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Condition:

The state of the scaffold (trunk and major branches) is assessed. Defects such as cavities, included branches and trunk unions and the fruiting body of a fungus would be indicative of compromised condition. Classes are Excellent (E) Good (G) Poor (P).

Note: Trees may be found to be in VG health but in VP condition and vice versa

DBH:

Diameter at Breast Height refers to the tree trunk diameter measured at breast height or 1.4 metres above ground level.

DAB:

Diameter Above the Buttress refers to the tree trunk diameter measured above the root buttress and is used to calculate the radius of the SRZ.

VTA:

Visual Tree Assessment – a systematic inspection usually conducted from ground level looking for defects in a tree. Further investigation would be carried out by aerial inspection or with specialised equipment to test the extent of a defect and the implications for the tree. A VTA is the accepted starting point and often the end point for assessing trees for defects. (Breloer, 1994)

Defect:

Tree defects are injuries, growth patterns, decay, or other conditions that reduce a tree's structural strength. While a defect identifies the point at which a tree may fail or why it may fail it does not mean the tree will fail. Defects should be tested until their full extent is established.

Hazard:

Something that has the potential to cause harm or loss; this does not mean that it will cause harm or is likely to cause harm.

Note: all trees are hazardous.

Risk:

The likelihood of a particular harm or loss occurring (Likelihood x Consequence). Often risk associated with trees is small enough to be ignored or small enough that no reasonable practicable solution exists to reduce risk. Consequence refers to the target that would be affected by tree or branch failure.



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TPZ:

Tree Protection Zone The radius of the TPZ is calculated for each tree by multiplying the DBH x 12. To establish the TPZ this radius is measured from the centre of the stem at ground level and it is an area that is to be isolated from construction disturbance. Any encroachment into the TPZ of more than 10% is a major encroachment. (Australia, AS 4970-2009 Protection of trees on development sites, 2009)

SRZ:

Structural Root Zone The radius of the SRZ is calculated using the following formula:

$r(SRZ) = (D \times 50)^{0.42} \times 0.64$ where D is the DAB measured in metres. It is the area around a tree that is required for tree stability and is usually applied on constructions sites after there has been a major encroachment of the TPZ. (Australia, AS 4970-2009 Protection of trees on development sites, 2009)

$t/R < 0.30$:

t = width of sound wood, R = radius of the trunk. Regarded as the threshold for action when the ratio of the width of sound wood to the radius of the trunk is less than 0.3 for a cavity or decay in the stem of a tree. (Harris, 2004)

Canker:

'A wound created by repeated localised killing of the vascular cambium and bark by wood decay fungi and bacteria usually marked by concentric disfiguration. The wound may appear as a depression as each successive growth increment develops around the lesion forming a wound margin.' (Richards, Dictionary for Managing Trees in Urban Environments, 2009). Wood becomes brittle and the canker may become a potential failure point.

Crown maintenance:

'Pruning according to the growth habit of the tree. It includes deadwooding, crown thinning, selective pruning and formative pruning....it does not reduce the volume of the crown and retains the structure and size of the tree.' AS 4373-2007, Pruning amenity trees.

Crown modification:

'Pruning that changes the form and habit of the tree. It includes reduction pruning, crown lifting, pollarding and remedial (restorative) pruning.' (Australia, AS 4373 -2007 Pruning of amenity trees, 2007).



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Wound:

'Damage inflicted upon a tree through injury to its living cells, from biotic or abiotic causes, e.g. where vascular cambium has been damaged by branch breakage, impact or insect attack. Some wounds decay and cause structural deterioration or defects' (Richards, Dictionary for Managing Trees in Urban Environments, 2009)

Project arborist:

'The person responsible for carrying out the tree assessment, report preparation, consultation with designers, specifying tree protection measures, monitoring and certification. The project arborist will be suitably experienced and competent in arboriculture, having acquired through training, (minimum AQF level 5, Diploma of Horticulture (Arboriculture) and/or equivalent experience, the knowledge and skills enabling that person to perform tasks required by this standard.' (Australia, AS 4970-2009 Protection of trees on development sites, 2009)

Vigour:

'Ability of a tree to sustain its life processes. This is independent of the condition of a tree but may impact upon it. Vigour can appear to alter rapidly with change of seasons (seasonality), e.g. dormant, deciduous or semi-deciduous trees. Vigour can be categorised as normal vigour, high vigour, low vigour and dormant tree vigour.' (Richards, Dictionary for Managing Trees in Urban Environments, 2009)

Epicormic shoots:

'Juvenile shoots produced at branches or trunk from epicormic strands in some Eucalypts (Burrows 2002, pp. 111-131) or sprouts produced from dormant or latent buds concealed beneath the bark in some trees. Production can be triggered by fire, pruning, wounding, or root damage but may also be a result of stress or decline.' (Richards, Dictionary for Managing Trees in Urban Environments, 2009)