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1039 OXFORD FALLS ROAD - WEST
OSD TANK OUTLET PIPE PROPOSAL
ARBORICULTURAL ASSESSMENT REPORT

INTRODUCTION

This report has been commissioned by Mr. Adam Loel to provide recommendations in minimising tree impacts for the location of a OSD Tank discharge pipe. Excavations for the discharge pipe is required to extend from the existing OSD Tank to within the Council verge adjacent 1039 Oxford falls Road (WST), OXFORD FALLS, SYDNEY NSW.

This report takes into consideration one (1) Sydney Blue Gum tree and discusses tree protection methodology such that works do not compromise the structural integrity of the tree.

METHODOLOGY

In preparation for this report a site consultation and limited ground level Visual Tree Assessment (VTA) was conducted by the author of this report on Tuesday 11th March 2014. The inspection was limited to observing the trees health expressed by the foliage volume and degree of dieback. The tree trunk was measured in accordance with Australian Standard AS 4970 – 2009 'Protection of Trees on Development Sites' to determine the Structural Root Zone (SRZ) radius, and rounded off to the nearest 50mm. The SRZ is the estimated area required for tree stability (AS4970) where no root damage shall occur.

This report utilises the Australian Standard AS 4970 – 2009 '*Protection of Trees on Development Sites*' with recommendations in tree protection based of the current standards and site conditions. All distances provided within this report are taken from the centre of the tree.

Documentation reviewed to assist in preparation of this report includes:

- OSD pipe Mark Up Sketch Plan, not titled or referenced – refer Attachment B

SUMMARY OF CONCLUSIONS

No excavation activities are proposed within the 3.0m SRZ radius indicating the stability of the tree will not be compromised by works. During consultation the line of excavation to accommodate the pipe was designed at a 6m setback to minimise any direct conflict with significant tree roots within the Tree Protection Zone (TPZ).

Given the 6m recommended setback for excavation to accommodate the discharge pipe works are expected to have a negligible impact to the tree. Tree roots >50mm(Ø) are to be retained intact and not damaged with pipes placed under significant tree roots encountered.

To ensure tree roots >50mm(Ø) are not damaged excavation works are to be supervised by a minimum Level 4 certified arborist. Where required the arborist shall clean cut tree roots <50mm(Ø) abiding to Australian Standards Pruning of Amenity Trees AS 4373 2007 section 9 Root pruning standards.

At completion of works arborist certification is to be forwarded to the Principal Certifying Authority (PCA).

In additional to proposed new works the large dead tree located adjacent the Blue Gum is recommended to be removed prior to excavations occurring.

Should you require further liaisons in this matter please contact me direct on 0419 250 248.

Yours sincerely

Mark A Kokot

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1. DISCUSSIONS OF OBSERVATIONS

1.1 The subject tree

1.1.1 The subject tree located near works is identified as an early mature *Eucalyptus saligna* Sydney Blue Gum tree. The tree contains an estimated height and canopy spread of >25 x 17m having a trunk diameter of 800mm.

Based on an 800mm(Ø) trunk the SRZ is estimated at 3m in radius and the Tree Protection Zone (TPZ) 9.6m from the tree.

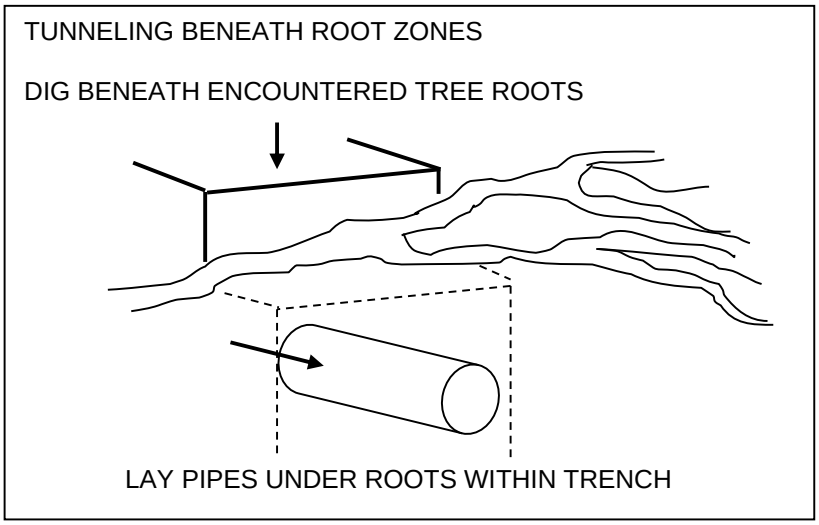
The health of the tree expressed by foliage vigour and content is considered fair to good with no signs of structural defects evident.

1.2 Discussion of development proposal

1.2.1 The development proposal consists of connecting an OSD discharge pipe from the existing OSD Tank to the street culvert pit located adjacent one Blue Gum tree. Based on site consultations the design was marked up as being located at an acceptable setback such that the stability of the tree would not be compromised by works, see Figure 2 p4.

1.2.2 The location of the pipe should not encroach closer than 6m from the centre of the tree with no excavation permitted within the 3m SRZ. Excavation within the 9.6m TPZ shall be supervised by a minimum Australian Qualification Framework (AQF) Level 4 arborist ensuring no tree roots >50mm(Ø) are damaged during works. Where significant tree roots are located tunneling beneath the roots is recommended, see Figure 1 below.

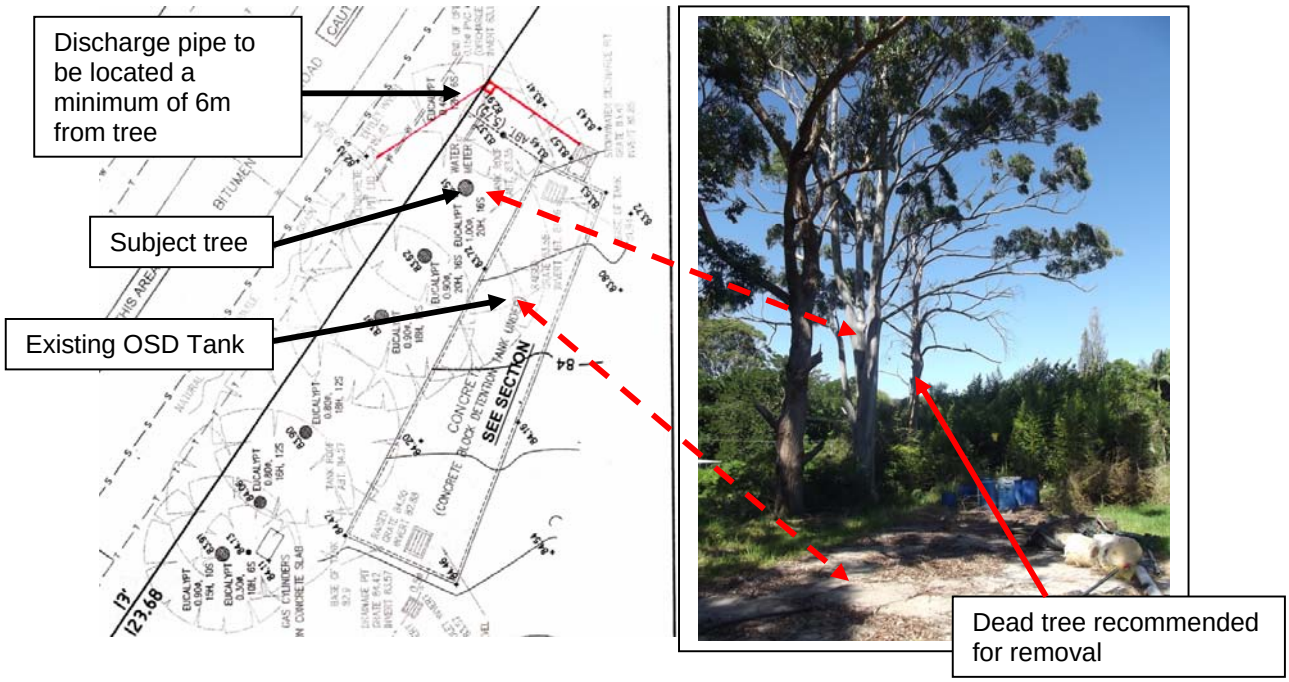
Figure 1, showing tunneling beneath root zones



1.2.3 Located adjacent the proposed excavation is a large dead tree. This tree is recommended to be removed before works occur as excavation may compromise the stability of the tree.

It is also likely that the root system of the dead tree had originally impeded the Blue Gums root extension towards the east indicating that root impacts in this location may be very minimal.

Figure 2, showing OSD pipe detail



2. CONCLUSIONS & RECOMMENDATIONS

2.1 As no works are proposed within the 3m SRZ the stability of the tree will not be compromised by excavation activities. Having the pipe setback at 6m from the tree it is unlikely that tree roots >100mm(Ø) will be encountered. All tree roots >50mm(Ø) are to be retained intact and not damaged with the pipe installed beneath tree root system.

2.2 Should root pruning be required to tree roots <50mm(Ø) the supervising arborist shall clean cut and treat roots in accordance with Australian Standards Pruning of Amenity Trees AS 4373 2007 section 9 Root pruning.

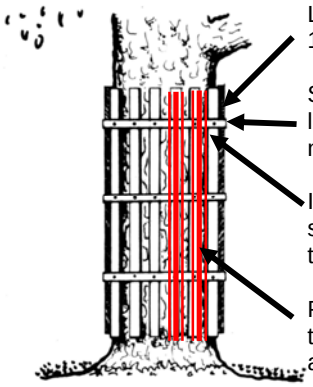
2.3 The appointed Level 4 supervising arborist shall provide certification and photographic evidence of the exposed trench to the Principal Certifying Authority (PCA) at completion of works. Certification is to include appropriate tree protection methodology conducted by the arborist, timing of events and discussions of any tree root located or removed to accommodate works.

2.4 It is unlikely the tree will require tree protection devices such as fencing or trunk protection given the trees location. Should there be a requirement for tree trunk protection timber beams are to be installed as per Attachment A Notes p5.

ATTACHMENT, A: Terminology, Notes & references

Age classes: (ESM) refers to an early semi mature tree not of juvenile appearance. (SM) Semi-mature refers to a tree at growth stages advancing into maturity and full size. (LSM) Late Semi-Mature, refers to a tree between semi-mature and close to mature. (EM) refers to a tree at the first stages of maturity.
Health: Refers to a trees vigor exhibited by the crown density, leaf colour, presence of epicormic shoots, ability to withstand disease invasion and the degree of dieback.
Condition: Refers to the tree's form and growth habit, as modified by its environment (aspect, suppression by other trees, soils) and the state of the scaffold (i.e. Trunk and major branches), including structural defects such as cavities, crooked trunks or week trunk / branch junctions. These are not directly connected with health and it is possible for a tree to be healthy but in poor condition.
SRZ: The anchoring root zone responsible for tree stability. A development exclusion zone pending appropriate arboricultural advice. Determined by AS4970 - 2009 Figure 1, Table of determining the SRZ section 3.3.5. The percentage of encroachment requires to be calculated where development is proposed within the natural area of the SRZ.
TPZ: The principle means of protecting trees on development sites. It is a combination of the root area and crown area requiring protection. Development occupying 10% of the TPZ is acceptable, greater encroachment requires specific arboricultural assessment. The TPZ forms part of the development exclusion zone.

NOTES: showing details of tree protection fencing



Detail by Catriona Mackenzie © 2002

Lengths of Pine timber 2m x 50 x 50mm in size at 150mm centres.

Secure galvanized hoop strapping (or similar) at no less than three 3 locations – screws/bolts/nails must not contact or be fixed to trunk.

Insert expansion joint padding (or similar) at three 3 strategic locations to prevent direct contact between timber beams and trunk.

Place high visibility bunting material around the tree trunk / timber beams to a height of no less than 2m acting as a visual barrier.

Tree protection barriers are to remain in place until all site works have been completed

REFERENCES:

Mattheck, C. & Breloer, H.(1994) *The Body Language of Trees.* Research for Amenity Trees No.4 the Stationary Office, London.

Standards Australia 2009, *Australian Standards 4970 Protection of Trees on Development Sites* - Standards Australia, Sydney, Australia.

Standards Australia 2007, *Australian Standards 4373 Pruning of Amenity Trees* - Standards Australia, Sydney, Australia.

ATTACHMENT, B: OSD Tank discharge pipe location plan