Arboricultural Assessment and Management Plan

4-18 Doncaster Avenue, Kensington.

Prepared for: Next Group P/L.
Prepared by: George Palmer, Botanics P/L.

Dated: October, 2020.

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1. Summary

1.1 This assessment provides information in relation to the impacts associated with the installation of the proposed site water detention tank. This is largely outside the tree's theoretical Tree Protection Zone (TPZ) and is unlikely to directly impact on the mature Sydney Blue Gum documented as Tree 42. This is the largest and most significant tree on site and has been seen as a material constraint to the proposed development. The remainder of the trees on site have been removed as part of the demolition and site establishment.

1.2 The installation of the detention tank will require the excavation to allow for its installation. Consideration will need to be given to the sandy nature of the surrounding soil profile. The support of this to ensure that it does not collapse and extend the impacts of the construction process beyond those documented.

1.3 As previously detailed, the tree's basal flare is over 1.2m, representing a Structural Root Zone (SRZ) of 3.6 meters and with a trunk diameter of 80cm requiring a theoretical Tree Protection Zone (TPZ) of 11 meters as detailed. The works will theoretically affect less than 1% of this TPZ.

1.4 The impacts associated with the stormwater installation works will also require excavation within 3m of the tree's base. This will require the preservation of all larger diameter (30mm+) roots to ensure the tree's structural integrity. These have been based on our current standard for the *Protection of Trees on Development Sites AS4970-2009.* A pre construction assessment of the feasibility of this would require the lifting/removal of portions of the footpath to allow non destructive excavation of the proposed trench. This report will recommend that this non destructive excavation occur as part of the installation works to limit impacts on pedestrian and traffic movements here.

1.5 This document focuses on the construction impacts associated with excavation and installation of the OSD tank detailed here. This is located adjacent to the outer edge of the tree's theoretical TPZ and is unlikely to directly affect this tree.

2. Background

2.1 The final stages of the design and approval process require the installation of the detention tank to hold and store roof water. The size of the catchment has lead to a requirement for a 4 x 5m tank to be installed to a depth of 2m.

3. Aims

3.1 The aims of this report are to;

- Review Council Policies for applicable conditions regarding the site and documented trees;
- Conduct a visual assessment of the documented trees and their growing environment;
- Provide a detailed list of Tree Preservation Recommendations aimed at preserving those trees documented for preservation.

3.2 There is no warranty or guarantee, expressed or implied that health, pests, disease, deficiencies, decay or any structural failures may occur at any time following documentation. Information contained in this report covers only the documented trees and reflects their health and condition at the time of inspection.

4. Methodology

4.1 A Visual Tree Assessment (VTA) was performed from ground level and consideration was given to the overall health of each tree, percentage of canopy, epicormic growth, deadwood, and form for this species. The tree heights and canopy spreads have been estimated and where relevant the orientation of the canopy spread noted. The trunk diameters of each tree has been estimated at breast height of 1.4meters (DBH) and measured with a diameter tape where required to calculate Tree Protection Zones (TPZ). The site was most recently inspected by consulting arborist George Palmer in October, 2020.

5. Tree Data

5.1 The remaining *Eucalyptus saligna*, or Sydney Blue Gum has been documented as Tree 42. As previously detailed this is a locally native tree species that will have been planted in this location less than eighty (80) years ago. The tree is a mature and significant example of the species and will be allocated the maximum TPZ construction setback of 11m under AS4970 guidelines for the *Protection of Trees on Development Sites.*

6. Discussion

6.1 The proposed OSD tank installation will see a 5 x 4m pit installed approximately 10m from the centre of the tree. As detailed, this is adjacent to the southern edge of the tree's theoretical TPZ and requires consideration.

6.2 The excavation to allow for this installation will require mechanical excavation. This will need to be completed with full recognition of the significance of the tree and done in such a way as to limit the impacts on both the tree's feeder root network should it extend here.

6.3 The support of the surrounding soil profile to ensure that it does not fail and lead to a broadening of the construction impact zone to beyond that detailed needs consideration.

7. Tree Management Recommendations

7.1 This *Eucalyptus saligna,* or Sydney Blue Gum is a mature and significant example of this locally native tree species and is required for preservation. As detailed this portion of these works will require excavation adjacent to the TPZ of this tree.

7.2 Access to allow for these works to occur should be done from within the proposed construction footprint to limit any unnecessary impacts of compaction on the underlying soil profile and root systems.

7.3 The impacts of this on both the tree's health and structural integrity will need to be considered as they occur.

7.4 All roots required for pruning or removal should be cut cleanly adjacent to the edge of the proposed construction and covered with hessian to limit the spread of decay and their exposure to the atmosphere.

7.5 The remaining Tree Protection Recommendations are generic recommendations that have been based on AS4970 Standards and should be implemented where applicable.

7.6 Appointment of Site Arborist
A site arborist shall be appointed prior to the commencement of work on site. The Site Arborist shall clearly mark out all trees to be removed and ensure that all trees documented for retention are preserved with the implementation of the following tree protection measures. The Site Arborist shall have a minimum qualification equivalent to a NSW TAFE Certificate Level 5 or above in Arboriculture.

7.6.1 Inspection Points
Give 5 working days notice to allow inspections to be undertaken at the following stages;

Inspection Point	Inspection Personnel
Installation of Tree Protection Zones including Tree Protection Fencing, Silt Fencing and Signage	Site Arborist
Modification of the Tree Protection Zone	Site Arborist
Works within the Tree Protection Zone	Site Arborist
Completion of Construction Works	Site Arborist Site Supervisor.

7.6.2 Education

Contractors and site workers shall receive a copy of these specifications prior to the commencement of work. Contractors and site workers undertaking any works within a TPZ shall sign the site log to confirm that they have read and understand these specifications prior to their undertaking.

7.6.3 Tree Protection Zones
Where applicable, all trees to be retained through the construction process shall be protected from mechanical damage and the indirect impacts of the construction process with the installation of Tree Protection Zones (TPZ). Unless otherwise stated, the following activities must not be carried out within a TPZ;

- modification of existing soil levels
- excavation or trenching
- cultivation of soil
- mechanical removal of vegetation
- movement of natural rock
- storage of materials, plant or equipment
- erection of site sheds
- affixing signage or hoarding to trees
- disposal of chemical waste or construction material
- any activity that may directly or indirectly affect the health of these or surrounding trees.

Note: If access to a TPZ is required as part of the approved development, prior authorisation is required by the Site Arborist.

7.6.4 Tree Protection Fencing
Tree Protection Fencing shall be installed at the perimeter of the TPZ. As a minimum the Tree Protection Fencing shall be 1.8 meters high temporary chain supported by steel stakes. This shall be fastened and supported to prevent sideways movement. The tree's woody roots shall not be damaged during the installation of this Tree Protection Fencing.
This Tree Protection Fencing shall be erected prior to the commencement of works on site and shall be maintained for the duration of the construction process.

7.6.5 Trunk and branch protection
Where TPZ fencing cannot be installed due to practical site constraints, trunk protection shall be installed around the trunk or branch to avoid mechanical damage. As a minimum, the trunk and branch protection shall consist of padding wrapped around the trunk and/or branches of affected tree. Timber panels will then need to be erected around the affected branch or trunk.

7.6.6 Signage
Tree Protection Signage shall be attached the the TPZ and displayed in a prominent location. These signs shall be repeated in 10m intervals or closer where the fence changes direction. These shall be a minimum of a 72 font size and each sign at-least 600 x 500mm.

7.6.7. Tree and root pruning
All tree and root pruning and removal works shall be carried out in accordance with Australian Standard 4373 - 2007 Pruning of Amenity Trees. All pruning and removal works are to be carried out by a suitable qualified arborist, in accordance with the NSW WorkCover Code of Practice for the Amenity Tree Industry (1998).
Where root pruning is required, these should cut cleanly at the edge of the construction impact zone and kept moist by covering with a hessian material or mulch, for the duration of the construction period.

7.6.8 Mulching
The area within the TPZ shall be mulched and maintained with 80mm of leaf litter mulch for the duration of the construction process. This mulch shall be spread by hand to limit the impact on underlying roots and shall be installed prior to the commencement of works on site.

7.6.9The Site Arborist shall inspect and approve the TPZ including mulching. signage, Tree ProtectionFencing, Silt fencing and Signage prior to the commencement of works on site.

7.6.10. Ground protection
Wherever applicable pedestrian, vehicular and mechanical access shall be excluded from the TPZ. Where required access within the TPZ shall be restricted to areas where ground protection has been installed.

7.6.11 Site Management
Materials and waste storage, site sheds and temporary services shall not be located within the TPZ unless specified. Storage points shall be covered when not in use and be no greater than 2m in height.

7.6.12 Works within the TPZ
The TPZ may need to be modified during the works to allow access between the protected tree and the proposed construction. The TPZ shall remain as specified and only those works detailed in the proposed construction undertaken.

7.6.13 Completion of Works within specified TPZ
Upon the completion of works within a TPZ the protective fencing shall be reinstated as specified. Where the construction of new structures does not allow for the reinstallation of fencing the TPZ shall be modified by the Site Arborist.

George Palmer
Diploma Horticulture- Arboriculture (Level 5)
Associate Diploma Horticulture- Landscape.

Disclaimer
All care has been taken to assess potential hazards, but trees are inherently dangerous. This assessment was carried out from the ground, and covers what was reasonable to be assessed at the time of inspection. No aerial or underground inspections were carried suability is accepted for damage or injury caused by trees and no responsibility is accept if the recommendations in this report are not adhered to. Limitations on the use of this reportThis report is to be utilised in its entirety only. Any written or verbal submission that includes statements taken from this report may only be used where the whole report is referenced.AssumptionsCare has been taken to obtain accurate information from reliable sources. Botanics can neither guarantee nor be responsible for the accuracy of information provided by others.

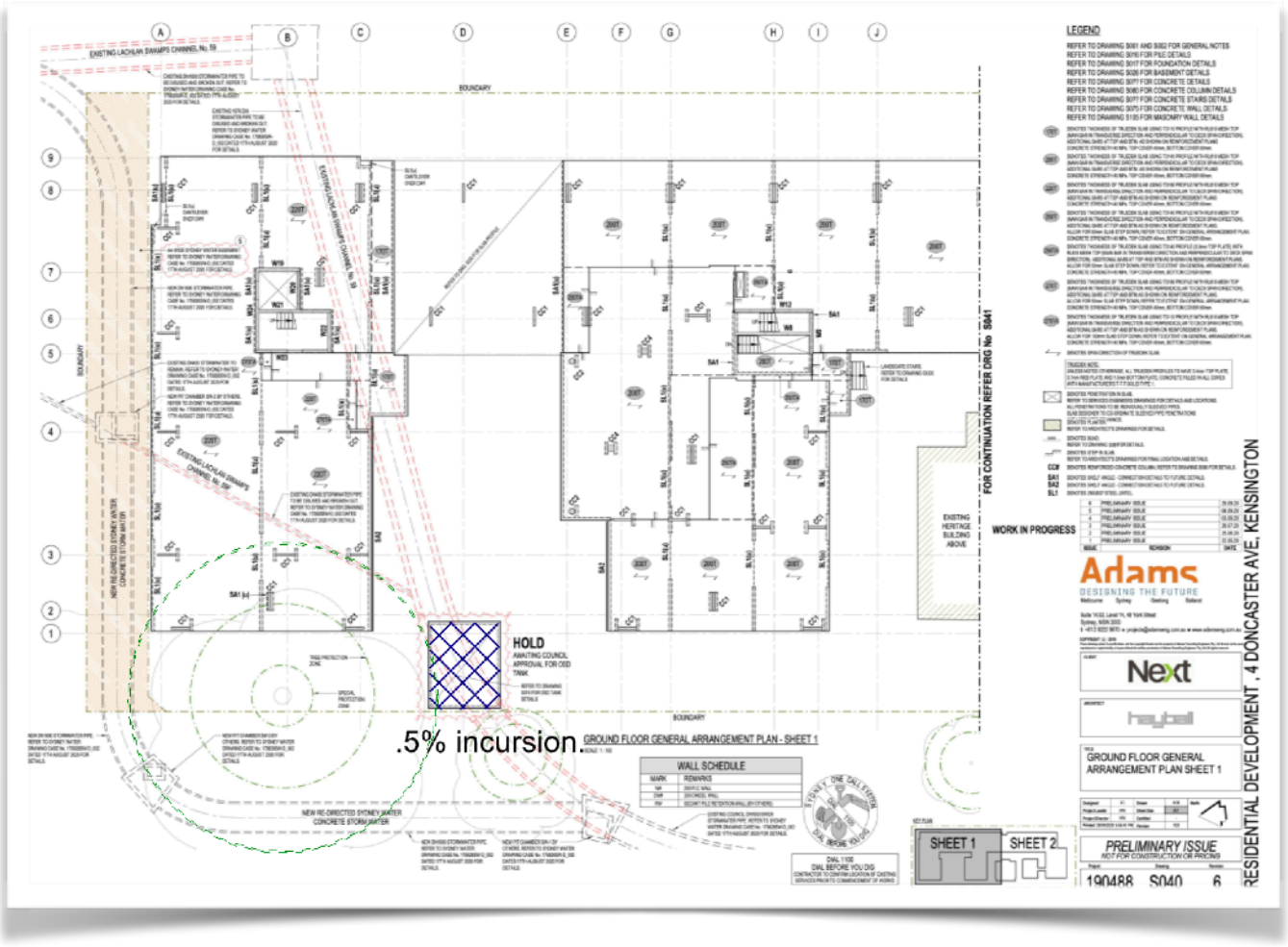

Figure 1 Shows the locations of both the existing and proposed stormwater pipe.