MARGOT BLUES
CONSULTING ARBORIST

24 May 2018

Mr Howard Fox
49 Gordon Street
CLONTARF NSW 2093

Dear Mr Fox,

Arborist Statement – DA Consent 220/15
Araucaria heterophylla & landscape changes – rear garden

At your request, a site visit was undertaken on Friday 18th May 2018 to inspect and report on one Norfolk Island Pine *(Araucaria heterophylla).* This statement is a requirement of Northern Beaches Council planning assessment to demonstrate landscape changes "will not unreasonably impact the Pine".

The purpose of this engagement was to determine the construction impact upon the tree with opportunity to advise on construction methodology for the expressed purpose of mitigating significant damage to the tree.

The tree presented as being in good health. The single trunk measured 1.1m (DBH @ 1.4m) in diameter giving an SRZ[1] radial measure of 3.5 metres and a TPZ[2] radial measurement of 13.2 metres. Pruning had reduced the lower one third of canopy (photo 1). The tree's estimated height was 18+ metres. No pests or disease were noted. The tree's form was typical. Three large surface roots orientated towards the pool area and terrace were observed (photo 3).

Plans viewed included:

- Council Stamped suite of Architectural Plans by Case Ornsby Designs Pty Ltd
- Proposed Pool Plans Case Ornsby Designs Pty Ltd (Stamped by Private Certifier)
- Landscape Plans (x 2) by Serenescapes Pty Ltd Issue B dated 7/9/2015

At the time of the site visit, pool support piers were in situ (photo 2). Elevation plans demonstrate the pool will be suspended above ground western side but requiring excavation along the eastern half enabling the pool surface to marry with the pool deck level (see elevation plans) – Appendix 1.

[1] SRZ = Structural Root Zone a radial measurement taken from the trunk centre and calculated in accordance with AS4970-2009.
[2] TPZ = Tree Protection Zone a radial measurement taken from the trunk centre and calculated in accordance with AS4970-2009.

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Landscaping between the pool and tree will consist of two terraced levels supported by retaining walls (Appendix 2). The purpose of these terraced levels is to permit access from the garden to the pool deck level. These walls will follow the natural land grade tapering from low at the eastern end to higher towards the west. The level of soil to be retained is thought not significant as the terrace width will be approximately 1 metre wide and maximum height of 1 metre approximately at the western end.

The greatest potential for tree damage (major roots) will be the construction of a continuous strip footings for the retaining walls.

Construction

The retaining walls run east to west. The wall closest to the tree is offset 3 metres (trunk centre) therefore within the SRZ. The second wall and terrace is within the TPZ of the tree.

In order to minimise/mitigate injury to encountered roots from the dissecting wall, discontinuous footings can accommodate encountered tree roots. Despite the low wall height, footings and wall will be constructed to engineering detail.

Recommendations

Based on the proposal as presented, construction of pool and terraced area can be constructed with limited impact to the tree.

Footings for the retaining walls must be engineered permitting any root 4cm or greater in diameter to remain in situ and undamaged. The discontinuous footings will "bridge" over the prescribed roots with sufficient offset distance for root movement and expansion. It is recommended a clearance of 100mm be allowed for laterally and above the roots.

The infilling of soil to achieve the terracing levels does not pose a problem for the roots as they are woody (first order roots) thereby are not responsible for the uptake of nutrients and water.

It is further recommended the old sewer pipe running beneath the tree be decommissioned with a new pipe placed beneath the pool area for east of access.

Kind regards

INSTITUTE OF AUSTRALIAN CONSULTING ARBORICULTURISTS
IACA
ACCREDITED MEMBER™

Margot Blues
Consulting Arborist (AQF5)
Dip. Horticulture (Arboriculture)

Photographs

Photo 1: The tree with reduced lower canopy

Photo 2: Pool piers. Pool is mainly supported above ground.

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Photo 3: Base of tree showing lateral roots orientating towards pool (red arrow) and a sewer inspection cap (yellow).

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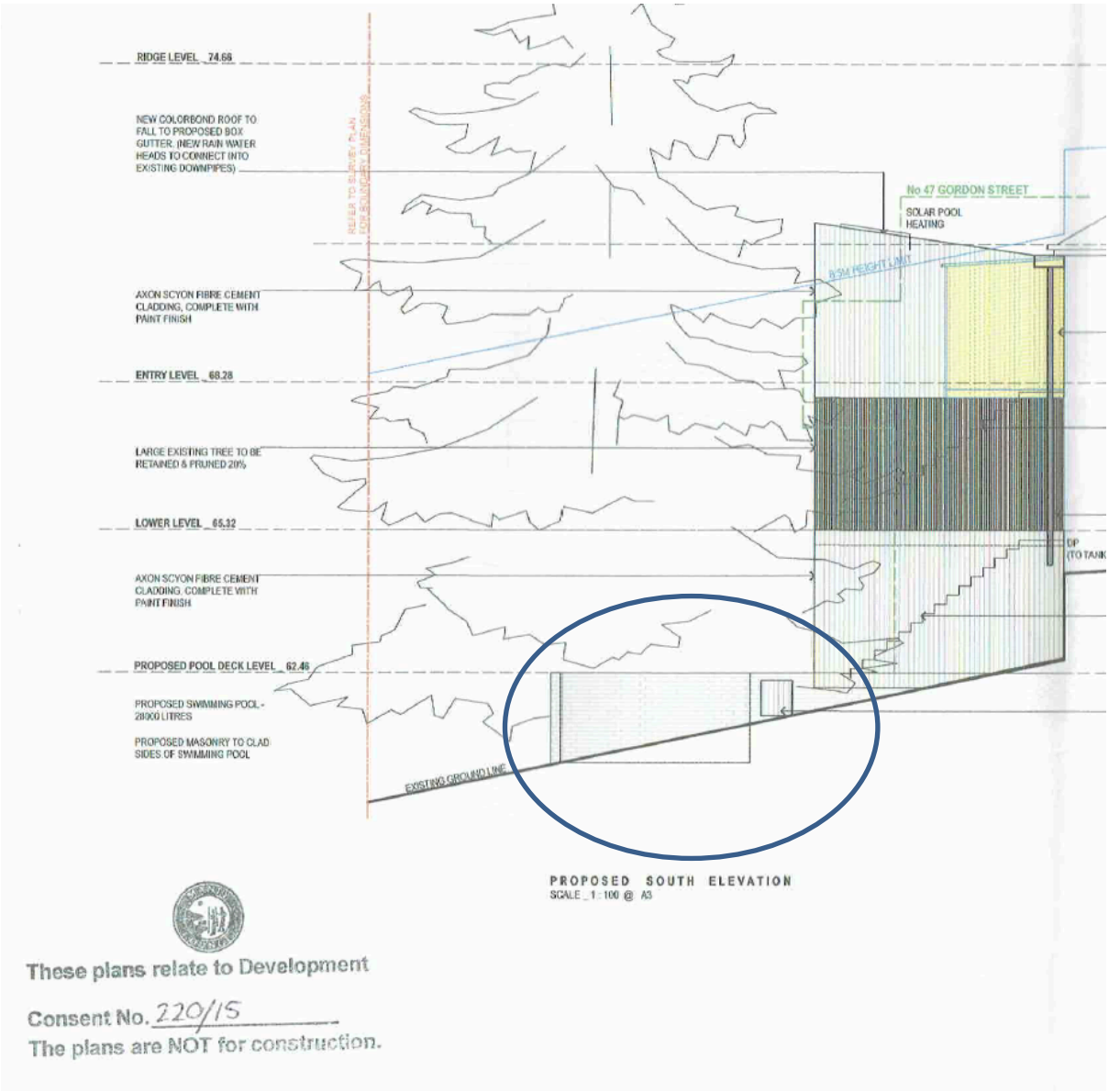
Appendix 1: Required excavation for pool installation.



Extract 1: Council Stamped Plans demonstrating required "cut" along eastern side of pool.

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Appendix 2: Certifier Stamped Plans of terracing around pool.