



Alex Austin AQF Level 8 Consulting Arborist
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1. Summary

Alex Austin, an AQF level 8 Arborist, was commissioned by James McHugh, to respond to the Northern Beaches Council Landscape and Natural Environment Referral Responses for his proposed Development (DA2022/0196) at 17 Thompson St Scotland Island.

Responses to the concerns raised can be found below.

This report must be used in conjunction with the Arboricultural Impact Assessment by Arborsaw dated November 2021. And updated in May 2022 following the Council RFI and the revised plan showing the retention of a *Syagrus romanzoffiana* (Cocos Palm) in the neighboring property of 17 Thompson Street which was previously nominated for removal.

For further clarification or Any questions regarding this site, please direct correspondence to; arborsaw@gmail.com.

Regards

A handwritten signature in black ink, appearing to read "Alex Austin", written over a horizontal line.

AQF Level 8 Consulting Arborist.

2. Documents Reviewed

The following documents were reviewed as part of this report.

- Site Survey showing details and levels, by Waterview Surveying, dated 12/4/21
- Proposed Plans by Design Waves, Rev A, 21/09/21
- Waste Water Plan, by Martens, dated 15/07/21
- Bushfire Assessment Report, by Building Code & Bushfire Hazard Solutions Pty Limited dated 11/11/21.
- Arboricultural Impact Assessment by Arborsaw dated November 2021
- Preliminary Geotechnical Assessment by Martens Consulting Engineers dated November 2021.
- ADDITIONAL INFORMATION by Bushfire Hazard Solutions Pty Limited dated 19th April 2022
- Northern Beaches Council Landscape Referral Response for DA2022/0196, date 07/03/2022
- Northern Beaches Council Natural Environment Referral Response – Biodiversity for DA2022/0196, date 04/04/2022

3. Natural Environment Referral Response – Biodiversity

The following sections of the Northern Beaches Council Natural Environment Referral Response are replied to below;

3.1. Tree 121

3.1.1. Council

Concern is raised over the proposed removal of Tree 121, a dominant (85cm dbh) *Corymbia maculata* (Spotted Gum) of high landscape and ecological significance tree, with a life expectancy of 25-50 years. Limited evidence of alternate designs that would allow retention of this tree is provided with the application, with the following commentary provided in the arborist report:

"An unsuccessful attempt to include Tree 121 in the design was made. Furthermore, the canopy is large and will over hang any dwelling built in the vicinity which conflicts with the bushfire requirements."

3.1.2. Arborsaw

Following the Pre development Tree Survey, the Architect was instructed to attempt to include Tree 121 within the design, as it is the dominant site tree and has a High Retention Value. All proposed designs conflicted with tree retention primarily due to the proximity to the trunk, multiple key pier holes within the SRZ and the majority of the canopy overhanging the roof line which conflicts with the APZ requirements. Please see the Additional information from the Bushfire Consulted for further reasoning regarding the positioning of the dwelling.

4. Landscape Referral Response

The following sections of the Northern Beaches Council Landscape Referral Response are replied to below;

4.1. Tree 128

4.1.1. Council

Tree T128 is identified as low significance in the Arboricultural Impact Assessment however has a good life expectancy and is a species found in the Pittwater Spotted Gum Forest thus is not supported to be removed and shall be retained and protected during the works.

4.1.2. Arborsaw Response

Tree 128 *Allocasuarina littoralis* (Forest oak) is a small semi mature tree that is growing independently in the middle of the site. Due to its small size and despite it being a species from Pittwater Spotted Gum Forest, the tree has low landscape significance as it is considered easily replaceable in the short term. The tree has a 2.2m radius TPZ resulting in 14m² of area. The tree is positioned in the middle of the transpiration bed. Creating a gap in the transpiration bed will not be sufficient as the surrounding increased nutrient rich water flow is still likely to lead to swift decline in tree health. Furthermore, altering the transpiration bed layout puts more pressure on other site trees nominated for retention such as Tree 125. Removing Tree 128 and replacing it elsewhere onsite is considered the most reasonable approach considering the constraints of the site.

4.2. Tree Root Investigation and Tree Root Map

4.2.1. Council

It is noted proposed retaining walls are shown on the Landscape Plan which will impact the tree protection zone of tree T118 and T120. The Arboricultural Impact Assessment does not identify the impacts the proposed retaining walls will have on the existing trees. Tree root investigation and tree protection methods will be required subject to imposed conditions.

Prior to the issue of a Construction Certificate, a tree root mapping investigation for the construction of the proposed retaining walls shall be undertaken, and a Tree Root Map shall be documented that will be the basis for determining construction methodology near existing trees T118 and T120.

An Arborist with minimum AQF Level 5 in arboriculture shall supervise the works to verify tree root locations. A non-destructive root investigation shall be conducted complying with clause 3.3.4 of AS 4970-2009 Protection of Trees on Development Sites.

The root investigation shall map existing roots of significance that must not be impacted by construction works. The tree root investigation shall be conducted to confirm the following data to be used for the location/alignment of any new proposed works:

- i) confirmation of the location of any tree roots at or >25mm (Ø) diameter to areas that require excavation for proposed works. Alternative alignment of proposed works shall be provided as necessary to avoid major roots, and
- ii) mapping of the suitable location/alignment of proposed works.

The Tree Root Map shall be issued to a qualified Structural Engineer as a basis for structural design, and for determining the final location/alignment and construction methodology of proposed works within the tree protection zone (TPZ).

Prior to the issue of a Construction Certificate, the Arborist shall provide certification to the Certifying Authority that the tree root investigation and clear distance recommendations have been adequately addressed in the Construction Certificate plans.

4.2.2. Arborsaw Response

The retaining wall is a recommendation from the Geotec engineers is to help retain the existing cut-out on the site. Two 900mm high walls are proposed which run through the TPZ (Outside The SRZ) of tree numbers T118 & 120. The pier holes are flexible in location at this area and no other excavation is planned to accommodate the proposed walls. The pier holes use insignificant TPZ area.

In line with section 3.3.2 of AS 4970:2009, a 10% incursion to a TPZ is considered a minor encroachment. Any more than 10% is considered a major incursion and special measures should be taken to minimise impact on the retained trees and the Arborist must demonstrate that the tree will remain viable post construction. The pier holes do not take up more than 10% of TPZ area, therefore special measures such as root mapping do not need to be undertaken.

4.3. Pier Footing Design Near Trees to be Retained

4.3.1. Council

“Pier footing structural layout plans for the dwelling and home office shall be developed in co-ordination with an Arborist with AQF minimum Level 5 qualifications in arboriculture, and a qualified Structural Engineer, following a tree root mapping investigation near existing tree(s) identified in the Arboricultural Impact Assessment as tree numbers T104, T106, T118, T130 and T136 to locate critical tree roots and recommend pier footing locations for the construction of the dwelling and home office. The Arborist shall review, comment, recommend design revision as required and approve the pier footing layout, to ensure the locations of piers will be manageable in terms of tree protection measures.

A non-destructive root investigation shall be conducted complying with clause 3.3.4 of AS 4970-2009 Protection of Trees on Development Sites.

The Arborist shall submit certification to the Certifying Authority, that the locations of the pier and post footings are accepted. The agreed footing structural layout plans shall be submitted to the Certifying Authority for approval prior to the issue of a Construction Certificate”

4.3.2. Arborsaw Response

The entire house is raised on piers and not touching the ground in the TPZ. The dwelling has been specifically situated so that no piers are located in the SRZ of any tree. Six(6) Pier holes are planned in the TPZ's of Trees T104, T106 & T118. It is only the pier holes that result in a loss of TPZ area. There may be some minor excavation under the house for clearance, outside the TPZ areas.

If the floating floor level was included, the TPZ encroachment calculation of the encroaching floor area within the TPZ is still considered minor as follows;

- T104 - 4%
- T106 - 11%
- T118 - 10%
- T130 - 10%
- T136 – 6%

As the Six (6) pier locations are outside the SRZ and take up <10% of the TPZ, In line with section 3.3.2 of AS 4970:2009, a <10% incursion to a TPZ is considered a minor encroachment. Any more than 10% is considered a major incursion and special measures should be taken to minimise impact on the retained trees and the Arborist must demonstrate that the tree will remain viable post construction. The pier holes do not take up more than 10% of TPZ area, therefore special measures such as root mapping do not need to be undertaken. See the following page for plan excerpts for further detail.

Stage 2 (Studio) has exactly the same scenario. Piers in the TPZ yet outside the SRZ resulting in a minor encroachment under section 3.3.2 of AS 4970:2009.

For further clarification or Any questions regarding this site, please direct correspondence to arborsaw@gmail.com

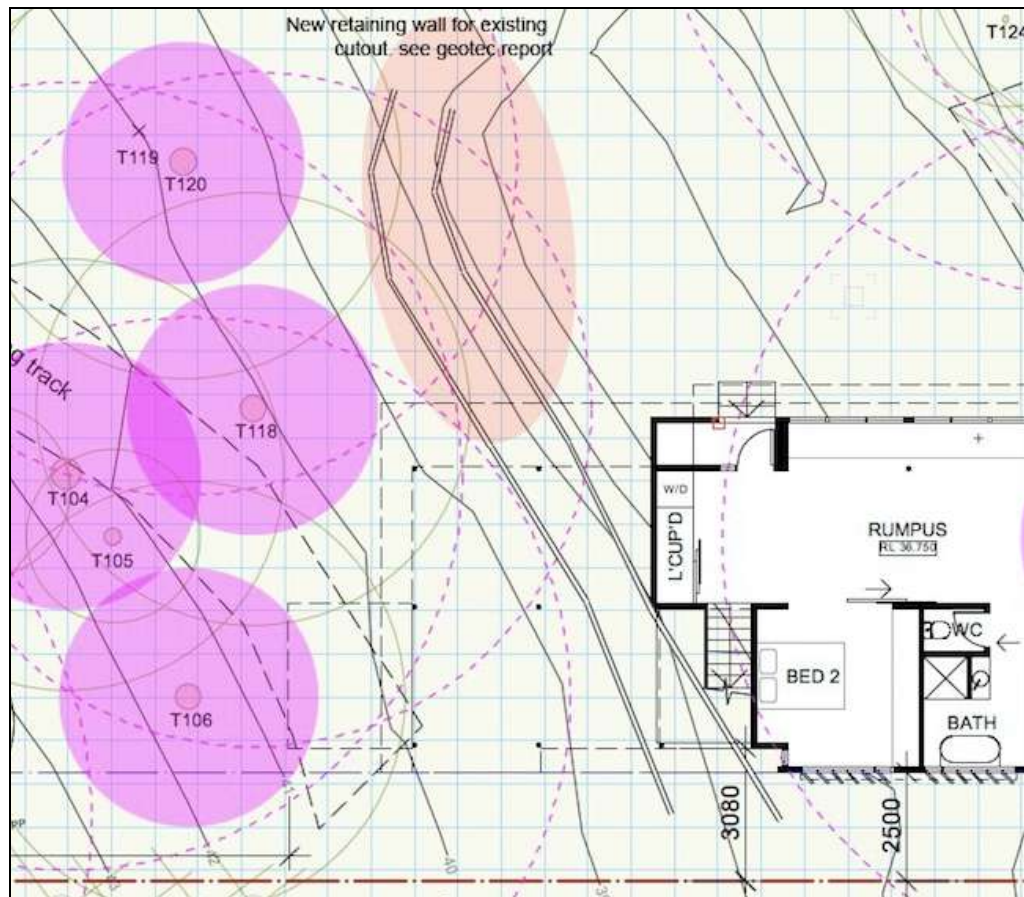


Figure 1: Stage 1 Plan excerpt, (Source: Proposed Plans by Design Waves, Rev A, 21/09/21)

Stage 2



Figure 2: Stage 2 Plan excerpt, (Source: Proposed Plans by Design Waves, Rev A, 21/09/21)

5. Industry Qualifications

AQF Level 5 & 8 Consulting Arborist.

ISA Certified Arborist # AU-0348A

Tree Risk Assessment Qualification (TRAQ) (Valid until Oct 2023)

Advanced Quantified Tree Risk Assessment Registered User # 3692