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1-1a NARRABEEN PARK PARADE – NORTH NARRABEEN, NSW SECTION 4.55 MODIFICATION, ARBORICULTURAL ASSESSMENT REPORT Ref No: 5821 issue 2

INTRODUCTION & METHODOLOGY

This report has been commissioned by Mr. Jimmy Arslan C/- Turnbull Planning International to address potential impacts that may have occurred to three (3) Council managed Norfolk Island Pines. The subject trees are located opposite a street side Café situated adjacent the North Narrabeen car park where new decking has been constructed within tree protection zones.

Within this report discussions of potential impacts are provided based on a limited visual site inspection. To assist in the discussions presented within this report the following documentation and/or works have been conducted:

- The author attended site to visually inspect site conditions and three (3) *Araucaria heterphylla* Norfolk Island Pine trees on Friday 23rd April 2021. The three trees are known as trees T1, 2 & 3 within DA2019/1478 arborist report by Raintree Consulting ref No. 8420 dated 5 May 2020.
- The impacts to trees 1 & 3 is considered negligible and have been excluded from discussions within this report.
- Visual inspection was conducted adjacent tree T2 where a small suspended deck has been constructed. Observations consisted of likely excavation areas to construct decking and deck location within the trees Structural Root Zone (SRZ), being the critical area required for tree stability based after Australian Standard AS 4970 – 2009 Protection of Trees on Development Sites.

Documentation reviewed

- Review of Raintree Consulting Minor Landscape Additions & Alterations report ref No. RTC-8420 dated 5 May 2020.
- 02 Architecture, Site Plan Dwg No. DA01, Ground Floor Plan Dwg No. DA02 & Elevation & Section Plan Dwg No. DA03 rev B dated 7.7.21
- Acknowledgement of Australian Standard AS4970 2009 'Protection of Trees on Development Sites'.

DISCLAIMER & LIMITATION ON THE USE OF THIS REPORT

This report is to be utilized in its entirety only. Any written or verbal submission, report or presentation that includes statements taken from the findings, discussions, conclusions or recommendations made in this report, may only be used where the whole of the original report (or copy) is referenced in, and directly to that submission, report or presentation. Unless stated otherwise: Information contained in this report covers only the tree/s that were examined and reflects the condition of the trees at the time of inspection: and the inspection was limited to visual examination of the subject tree without dissection, excavation, probing or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject tree/s may not arise in the future. Arborist cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specific period of time. Trees are a living entity and change continuously, they can be managed but not controlled and to be associated near one involves some degree of risk.

SUMMARY OF ASSESSMENT

Discussion of deck construction impact

1. Construction of a new timber deck adjacent tree T2 has been conducted in accordance with tree sensitive construction measures by suspending the deck above ground level. This mitigates the impact of development encroachment & impact within the trees 10.8m Tree Protection Zone (TPZ) radius as noted within AS4970-2009 Section 3.3.4 (h) *design factors*.

Visually the timber deck is near 120mm above ground level and is supported by single isolated pier footings. The deck clears ground level at 1.1m from the base of the tree.

The overall TPZ coverage and impact is considered negligible (<10%) TPZ occupancy with the decking permitting precipitation and irrigation through timber gaps to contact natural ground.

Figure 1: showing tree location & suspended deck area





Footings are located within the trees critical 3.2m Structural Root Zone (SRZ) radius where it is unclear if root severing occurred to accommodate footing pad placement. Having isolated pot hole excavation for pier footings it is unlikely, however still possible, critical roots have been disturbed by works.
Impacts to the tree would be based on the amount, size and loss of critical roots encountered or disrupted during excavation for footing placement of which the amount of disruption is unknown.

As shown within Figure 2, it is unclear if such roots have been disturbed with the suspended deck compliant with tree sensitive design.



Figure 2: showing footing location within SRZ

Discussion of tree vitality

- 3. In observations tree vitality (tree vigour) is considered average with fine tip dieback occurring throughout the outer canopy projection. Trees 1 & 3 also show signs of being slightly environmentally stressed where decline is likely to be associated with poor soil conditions, compaction and location to infrastructure restricting root growth potential. Sewer services interference or site sanitization should also be considered a potential contributing factor.
- 4. It is unclear if inground hydraulic maintenance works have occurred, or if such services have contributed to a reduction in tree vigour.

What is evident is that in May 2020 the vitality of T2 and trees 1 & 3 was recorded as being in good vigour, with no decline in canopy evident. This inspection recorded all trees as being slightly environmentally stressed having slight decline within the canopy projection.

CONCLUSIONS & RECOMMENDATIONS

- 5. In conclusions it is highly unlikely excavations for isolated pier footings to construct the deck has structurally destabilized tree 2 with the deck construction being compliant with AS4970-2009 in mitigating development encroachment impacts.
- 6. The cause of decline in tree vigour is unknown and may be partly associated with root zone disturbance by construction activities. It may also be associated with poor site and soil conditions, disturbances caused by hydraulic line maintenance or associated contaminants (cleaning agents) used to sanitize public use facilities within a Café environment for COVID compliance.
- 7. Providing deep natural tree mulch within exposed soil and garden bed areas with regular irrigation would likely mitigate environmental stress and increase tree vitality. Restricting sanitization of outdoor public use areas would also be beneficial where maintaining significant tree vitality is a requirement.
- 8. To ensure the trees are appropriately managed there should be no additional excavation within tree protection zone setbacks without prior arborist advice.

Figure 3: showing hydraulic services & likely required COVID sanitization area



Yours sincerely

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Tree	Species	Height x	DBH	SRZ	Significance	ULE
No:		Span(m)	mm	TPZ	-	
1	Araucaria heterphylla	28 x 14	1050	50 3.5m Very high	Very high	2
	Norfolk Island Pine			12.6		
2	Araucaria heterphylla Norfolk Island Pine	28 x 13	900	3.2	Very high	2
				10.8		
3	Araucaria heterphylla Norfolk Island Pine	27 x 13	850	3.1	Very high	2

APPENDIX- A: Tree schedule & development impact discussions – general

NOTES:

1) Tree height & canopy spread is estimated only. DBH = Diameter of tree trunk at near 1.4m above ground level 2) This report acknowledges the current Australian Standards 'Protection of Trees on Development Sites' AS 4970 - 2009 with reference to the Tree Protection Zone (TPZ): being a combination of the root and crown area requiring protection. The TPZ takes into consideration the Structural Root Zone (SRZ): The area required for tree stability. Determined by AS4970 - 2009 Figure 1, Table of determining the SRZ, section 3.3.5 of the standards. The standard states where a greater than 10% encroachment occurs the arborist is to take into consideration the schedule of determining impacts as set within AS4970 s. 3.3.4. Encroachments are referred to within this report as major or minor encroachments (AS4970 s. 3.3.2 & 3.3.3). Given the existing site conditions both the SRZ & TPZ cannot be accurately determined. Development encroachments are referred to as No impact (0%) incursion, Low impact (<10%) of minor consequence, Medium impact (<20%) incursion where the project arborist is to demonstrate the tree/s remain viable by tree sensitive construction techniques, and High level impact (>20%) where design changes or further information is required to manage tree vitality. 3) Landscape Significance: The significance of a tree in the landscape is a combination of its amenity, environmental and heritage values. Values may be subjective however, are based after IACA Sustainable Retention Index Value (SRVI) which offer a visual understanding of the relative importance of the tree to the environment. The Landscape Significance for this assessment is described in seven categories to assist in determining the retention value of trees. 1) Significant, 2) Very High, 3) High, 4) Moderate, 5) low, 6) Very Low & 7) Insignificant

4) U.L.E. categories Useful Life Expectancy (after *Barrell* 1996, modified by the author) the can be categorised as Short, Medium or Long retention values. A trees U.L.E. category is the life expectancy of the tree modified first by its age, health, condition, safety and location. U.L.E. assessments are not static but may be modified as dictated by changes in trees health and environment. The five categories of U.L.E. are as follows:

1. Long U.L.E

Appear retainable at the time of assessment for over 40 years with an acceptable degree of risk assuming reasonable maintenance.

2. Medium U.L.E.

Appear to be retainable at the time of assessment for 15 to 40 years with an acceptable degree of risk assuming reasonable maintenance.

3. Short U.L.E.

Trees appear to be retainable at the time of assessment for 5 to15 years with an acceptable degree of risk assuming reasonable maintenance.

4. Verv short – Removal

Trees which should be scheduled for removal within the very short term or as specified within this report. 5. Small, young or regularly pruned

Trees under 5m in height that can be easily moved or replaced, includes screen plantings or hedge lines.

Care has been taken to obtain information from reliable sources. All data has been verified as far as possible, however, I can neither guarantee nor be responsible for the accuracy of information provided by others.

SELECTED REFERENCES:

<u>Barrell J. 1993</u>, 'Preplanning Tree Surveys: Safe useful Life expectancy (SULE) is the Natural Progression", Arboricultural Journal 17: 1, February 1993, pp. 33-46.

<u>Matheny N. & Clark J. 1998</u>, Trees & Development 'A Technical Guide to Preservation of Trees During Land Development' International Society of Arboriculture,

Champaign USA.

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

<u>Standards Australia 2007</u>, *Australian Standards 4373 Pruning of Amenity Trees* - Standards Australia, Sydney, Australia.