ARBORICULTURAL DEVELOPMENT IMPACT ASSESSMENT

32 CLARKE ST, NARRABEEN NSW 2101

PREPARED FOR

M. + A. DOOLAN
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Prepared by
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1. INTRODUCTION

This Report has been commissioned by M. + A. Doolan of 32 Clarke Street Narrabeen NSW.

The purpose of the Report is to assess the potential impact of a proposed semi in-ground concrete swimming pool on four (4) existing trees and palms located within the influence of the construction area.

The Report is based on observations made on site on 14.5.22. It includes site investigations and visual tree assessment. No diagnostic investigation or aerial inspections are included. It is not intended to be a comprehensive tree risk assessment.

Current industry accepted literature is referenced as a basis for the conclusions obtained. The Australian Standard, AS4970-2009 *Protection of trees on development sites* is referred to for terminology and methodology.

2. METHODOLOGY

2.1 DATA COLLECTION

A ground level, visual tree assessment (VTA) was undertaken by the author on 14.5.22 No aerial inspection, tree root mapping or woody tissue testing were undertaken as part of this assessment. The above ground root crown, trunk and canopy were examined visually and defects and indicators of decay.

2.2 DOCUMENTS

This Report is based on DA Plans + Sections prepared by Premier Pools:

Site Plan	Dwg ILA-7008-1B (Rev B 10.5.22)
Pool Plan + Section AA	Dwg ILA-7008-2A (Rev B 5.4.22)
Pool Sections BB + CC	Dwg ILA-7008-3A (Rev B 5.4.22)

Site Survey by Hill & Blume Dwg 63664001A (Rev A 25.1.22)

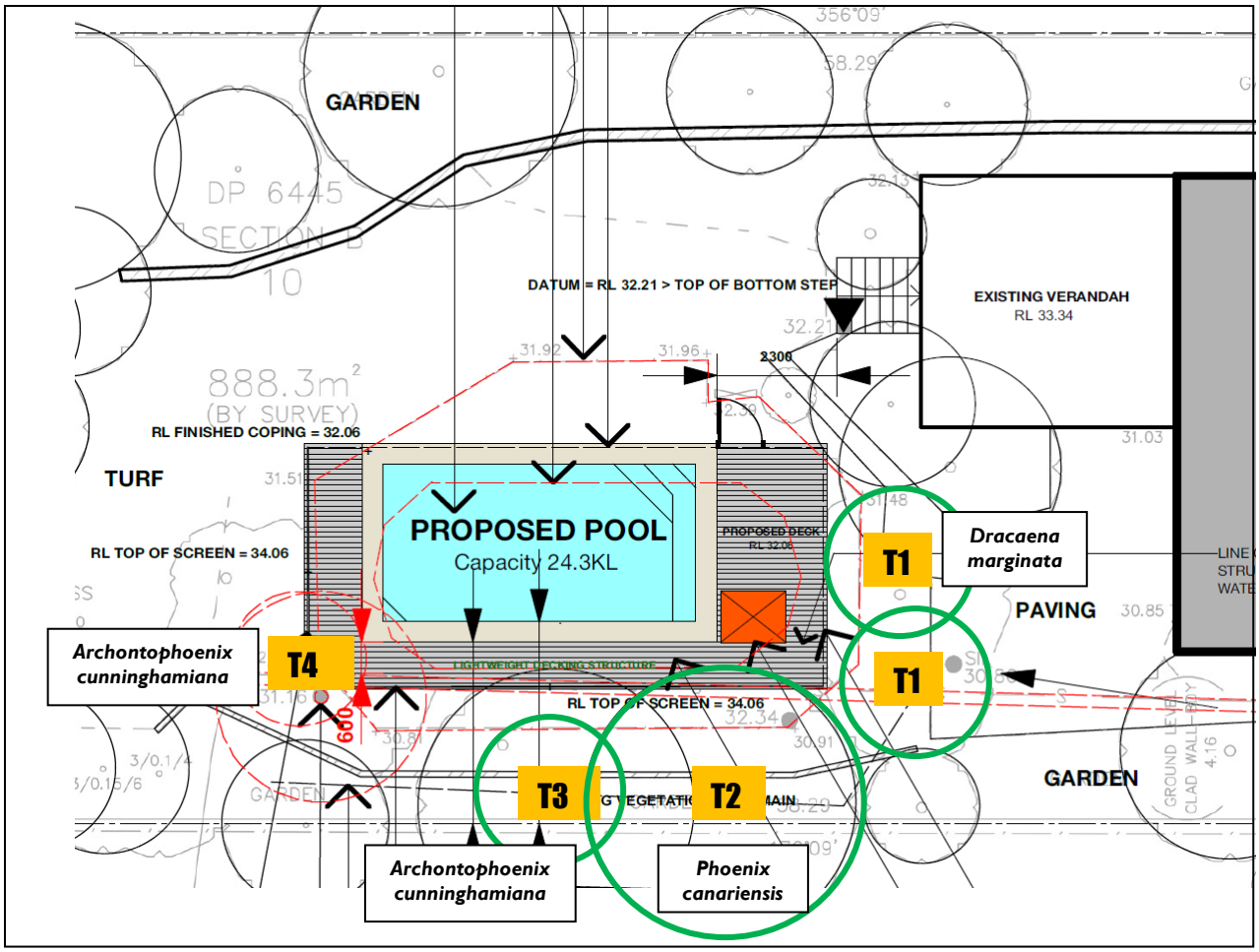


Figure 1
TREE LOCATION PLAN

3. OBSERVATIONS AND DISCUSSION

3.1 OBSERVATIONS

SPECIES	CATEGORY	DETAILS	OBSERVATIONS + RECOMMENDATIONS
T1 ***Dracaena marginata*** (Madagascar Dragon Tree)	DESCRIPTION	Multi-stemmed tree-like exotic foliage plant	Good Health + Vigour No Visible Signs of Pest or Disease Located within proximity of existing swimming pool
	HEIGHT + SPREAD	6m x 6m	
	TRUNK	Multi-trunked 300, 150mm diam. (TPZ 4.1m, SRZ 2.5m) 2x75 ,2x150 ,200mm (TPZ 3.7m, SRZ 2.5m)	Edge of new pool proposed to be located 3800mm from centre of trunk(s)
	MATURITY	Mature	New pool approximately 1m further from T1 than existing pool. Light weight timber deck similar to existing proposed. Deck posts proposed to be supported by individual concrete post footings.
	AGE	20 yrs +	
	HEALTH CONDITION / STRUCTURE	Good Good	
	USEFUL LIFE EXPECTANCY LANDSCAPE SIGNIFICANT RETENTION VALUE	MEDIUM LOW LOW	**NO ADVERSE IMPACT ANTICIPATED** **RETENTION RECOMMENDED**

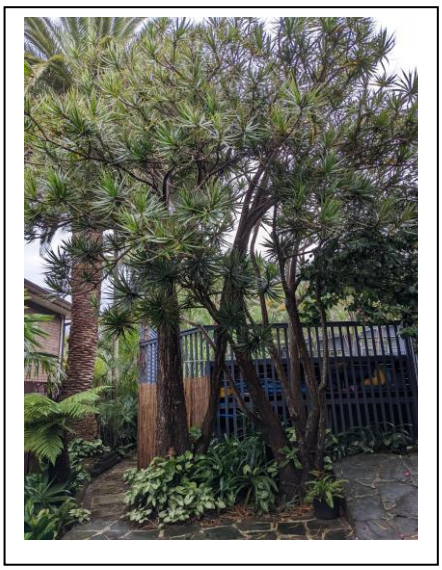
T2 ***Phoenix Canariensis*** (Canary Island Palm)	DESCRIPTION HEIGHT + SPREAD TRUNK MATURITY AGE HEALTH CONDITION / STRUCTURE USEFUL LIFE EXPECTANCY LANDSCAPE SIGNIFICANT RETENTION VALUE	Exotic Palm Exempt Species 9m x 7m DBH 5oomm, DAB 600mm diam. (TPZ 6m, SRZ 2.7m) Mature 20 yrs + Good Good MEDIUM MODERATE MODERATE	Good Health + Vigour No Visible Signs of Pest or Disease Located within proximity of existing swimming pool Edge of new pool proposed to be located 3500mm from centre of trunk New pool further from T2 than existing pool with light weight timber deck similar to existing. Posts proposed to be supported by individual concrete post footings. **NO ADVERSE IMPACT ANTICIPATED** **RETENTION RECOMMENDED**
T3 ***Archontophoenix cunninghamiana*** (Bangalow Palm)	DESCRIPTION HEIGHT + SPREAD TRUNK MATURITY HEALTH CONDITION / STRUCTURE USEFUL LIFE EXPECTANCY LANDSCAPE SIGNIFICANT RETENTION VALUE	Exotic Palm Exempt Species 8m x 3m 120mm diameter (TPZ 2m, SRZ 2m) Mature Good Good MEDIUM LOW VERY LOW	Good Health + Vigour No Visible Signs of Pest or Disease Located within proximity of existing swimming pool Edge of new pool proposed to be located 3500mm from centre of trunk New pool further from T3 than existing pool with light weight timber deck similar to existing. Posts proposed to be supported by individual concrete post footings. **NO ADVERSE IMPACT ANTICIPATED** **RETENTION RECOMMENDED**
T4 ***Archontophoenix cunninghamiana*** (Bangalow Palm)	DESCRIPTION HEIGHT + SPREAD TRUNK MATURITY HEALTH CONDITION / STRUCTURE USEFUL LIFE EXPECTANCY LANDSCAPE SIGNIFICANT RETENTION VALUE	Group of 3 Exotic Palms Exempt Species 6m x 4m, 3m x 2m, 2m x 2m 120, 75, 50mm diameters (TPZ 2m, SRZ 2m) Semi-Mature Good Good SHORT LOW VERY LOW	Good Health + Vigour No Visible Signs of Pest or Disease Located within proximity of existing swimming pool. Trunk locations conflict with location of proposed pool deck and retention of palms is not possible. **ADVERSE IMPACT ANTICIPATED** **EXEMPT SPECIES** **REMOVAL RECOMMENDED**

3.2 PROPOSED CONSTRUCTION

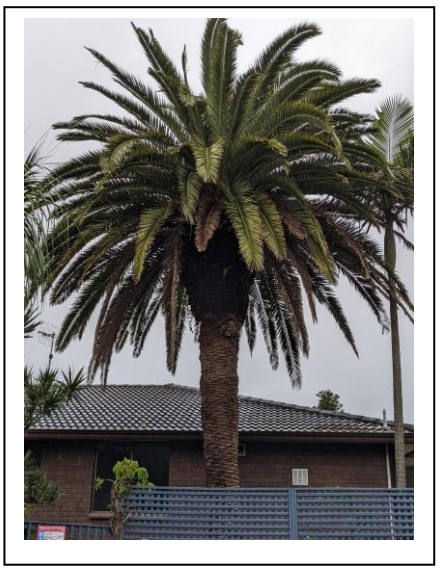
The proposed swimming pool is designed as a semi in-ground concrete structure with an elevated timber deck surrounding. The surrounding timber deck is proposed to be supported by timber posts on individual concrete footings similar to the existing pool deck. Construction and location of the proposed pool are similar to the existing in-ground pool with the following exceptions:

EXISTING POOL	PROPOSED POOL
8.5 x 3.6m	6.0 x 3.6m (Proposed Pool approximately 1m further away from T1, T2 + T3)
RL 32.39	Finished RL 32.06 (Proposed Pool 330mm lower than existing pool)

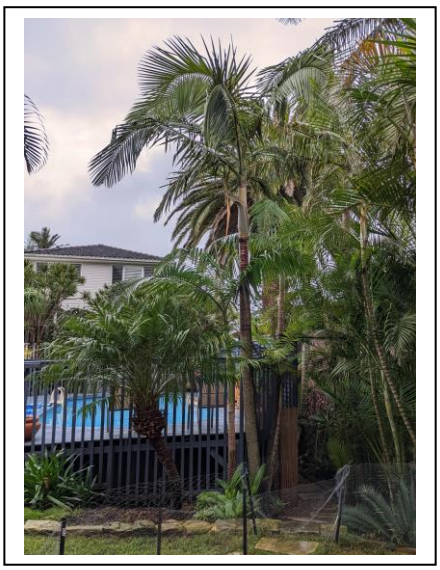
3.3 TREE ASSESSMENT



TREE 1
DRACAENA MARGINATA



TREES 2 + 3 (T 3 to right of T2)
PHOENIX CANARIENSIS
ARCHONTOPHOENIX CUNNINGHAMIANA



TREE 4
ARCHONTOPHOENIX CUNNINGHAMIANA

TREES 1, 2, 3

Trees / palms 1, 2 + 3 are located within the zone of impact from the proposed construction works. Trees 1 + 3 were planted after construction of the existing pool and Tree 2 was on site prior. The proposed new pool is located further away from Trees 1, 2 + 3 than the existing pool and all are species that tolerate root disturbance. No changes in soil level are proposed. Trees 2 + 3 are exempt palm species.

All three (3) trees / palms have matured to be healthy specimens within proximity of the existing pool and would be expected to continue to thrive under the improved root conditions of the new construction, providing adequate tree protection measures are undertaken during the construction phase.

TREE 4

Tree 4 is a group of 3 palms (*Archontophoenix cunninghamiana*) which are exempt from protection under Warringah DCP. They will be adversely impacted by the proposed works and are recommended for removal.

4. RECOMMENDATIONS

TREE RETENTION

The following assessed trees,

T1 Dracaena marginata*, *T2 Phoenix canariensis*, *T3 Archontophoenix cunninghamiana

can be adequately retained within the proposed development provided general tree protection measures are implemented throughout the works to ensure their continued health and vigour.

TREE REMOVAL

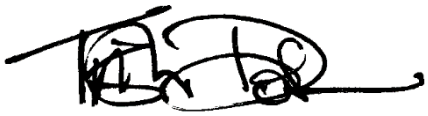
The following assessed trees,

T4 Archontophoenix cunninghamiana *(group of 3 palms)*

cannot be adequately retained within the proposed development. These palms are recommended for removal.

Report prepared by Trish Dobson

23 May 2022



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5. APPENDIX

APPENDIX A - TERMS + DEFINITIONS

The following relate to terms and definitions included in this report.

Aerial Inspection
Where the subject tree is climbed by a professional tree worker or Arborist specifically to inspect and assess the upper stem and crown of the tree for signs or symptoms of defects, disease, etc.

Age Class – Immature (IM), Semi-Mature (SM), Mature (M), Over Mature (OM). Assessment of the trees current age. A Mature (M) tree has reached a near stable size (biomass) above and below ground. Over-mature (OM) trees show symptoms of irreversible decline and decreasing biomass.

Condition
The general form and structure of the trunk/s and branching. Trunk lean, trunk/branch structural defects, canopy skewness or other hazards are considered.

Defect
Any internal or external structural weakness or deformity which reduces the stability of the tree

Height
Tree height estimated from the ground. These measurements have not been confirmed with a clinometer or other surveying instrument.
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Retention Value
A visual tree assessment method to determine a qualitative and numerical rating for the viability of urban trees for development sites and management purposes, based on general tree and landscape assessment criteria using classes of age, condition and vigour.

Tree Protection Zone TPZ Radius
The radial distance in metres, measured from the centre of the tree stem which is subject to protective fencing or barrier to create an exclusion zone. A radial offset (m) equal to twelve times (x12) DBH measured from the centre of trunk (for trees less than 0.3m DBH minimum TPZ is 2.0m). To satisfactorily retain the tree construction activity (both soil cut and fill) must be restricted within this offset. Generally an area equivalent to the TPZ should be available to the tree post development. Encroachment occupying up to 10% of the TPZ are is acceptable without detailed root zone assessment. Encroachments greater than 10% require specific arboricultural assessment.

Structural Root Zone - SRZ Radius
The area around a tree required for tree stability. Earthworks should be prohibited within the SRZ. The area is calculated from the formula and graph at Figure 1 of AS4970-2009. The SRZ graph has been adapted from the work of Claus Mattheck (1994).

ULE – Useful Life Expectancy. A systematic tree assessment procedure developed by Jeremy Barrell, Hampshire, England. It gives a length of time that the Arborist feels a particular tree can be retained with an acceptable level of risk based on the information available at the time of inspection. SULE ratings are **1. Long** (retainable for 40 yrs or more with an acceptable level of risk), **2. Medium** (retainable for 16-39 yrs), **3. Short** (retainable for 5-15 years) and **4. Removal** (tree requiring removal within 5yrs or immediate removal due to imminent hazard or absolute unsuitability), **5. Small**, young or regularly pruned trees that can be reliably moved or replaced.

VTA Visual Tree Assessment
A procedure of defect analysis developed by Mattheck and Breloer (1994) that uses the growth response and form of a tree to detect defects.