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Arboricultural Impact Assessment

Cnr O'Connell Street and Eels Place, Parramatta

Proposed Parramatta Leagues Club Hotel Development

Prepared for Parramatta Leagues Club

Prepared 15 November 2018
Revised 28 November 2018
by

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New Leaf Arboriculture Pty Ltd

Contents

1. Introduction

1.1 Summary

This Arboricultural Impact Assessment (AIA) report has been prepared for Parramatta Leagues Club, to assist in the assessment of a Development Application to be submitted to Parramatta Council in relation to the hotel development at the corner of O'Connell Street and Eels Place, Parramatta. The report is prepared in accordance with Australian Standard *AS4970-2009 – Protection of trees on development sites.*

1.2 Purpose

The purpose of this report is to assess the potential impacts of the proposed works on the trees on the site, and detail tree protection measures required for retained trees including tree sensitive design and construction measures.

1.3 The Site

The site is currently an at grade carpark associated with the Leagues Club located on the western side of O'Connell Street, and is surrounded by a stadium to the south, Parramatta Park to the west, and medium density residential properties to the north and east. Various heritage properties surround the site, and North Parramatta Heritage Conservation Area is located to the east and northeast. The property contains a a bitumen carpark, fences, paths and planted native trees and garden areas.

1.4 The Trees

This report assesses sixteen (16) trees - seven (7) within the property, two (2) street trees (these trees appear to be located inside Parramatta Parks Trust land), and seven (7) trees in the adjoining property (Parramatta Stadium). Details of the species, dimensions, health, and condition of the assessed trees are contained in the **Tree Survey Information Table** (p. 4).

1.5 The Proposed Development

The proposed development consists of demolition of existing improvements and erection of a 17 storey hotel building (plus a single level basement for services) accommodating 209 beds and including the lower 4 levels containing a café, pool, fitness/recreational uses and a function room ancillary to the hotel. Access is proposed from O'Connell Street to the south of the building (via an access road to the adjoining Parramatta Stadium), and the proposal includes public domain works and services upgrades surrounding the building to integrate the building with the surrounding area and infrastructure. Also proposed are associated hard and soft landscape works as shown on the plans by Hassall. Six (6) trees within the site are proposed for removal within the context of the Hotel development.

2. Background

2.1 Tree Management Controls

Parramatta Development Control Plan 2011 (DCP) Section 5.4 applies to any trees with a height of 5m or more, or a Diameter at Breast Height (DBH) at 1.3m from ground level equal to or greater than 300mm, any bushland or mangrove vegetation irrespective of size. Exempt species, including fruit trees and weed species, and activities are listed at 3.8.1 C2 of the DCP.

The trees assessed in this report are subject to the DCP.

2.2 Reference Documents

The following documents were referred to in the preparation of this report:

- Survey Plan: *Plan Showing Detail & Levels Over Parramatta Leagues Club & Adjoining Carpark, CNR O'Connell St and Eels Place, Parramatta*, Brunskill Mcclenahan & Associates Pty Ltd, Ref. 15005-1, 27/2/15.
- Ground Level Landscape Plan, Hassall, Draft DA Issue B, Project No. 012981, 7/11/18.

- Australian Standard *AS4373-2007 Pruning of amenity trees*.
- Australian Standard *AS4970-2009 Protection of trees on development sites*.
- Parramatta Development Control Plan 2011 *Section 5.4 Preservation of Trees or Vegetation.*
- Parramatta Local Environmental Plan 2011.

3. Tree Assessment Methodology

3.1 Limitations and Assumptions

The recommendations in this report rely on the provided information, including architectural plans and documents, limited to those listed in **2.2 Reference Documents**.

Care has been taken to obtain all information from reliable sources; however the author makes no representations, guarantees or warranties as to the accuracy of information provided by others. Similarly, no warranties are made as to the accuracy or completeness of any reproduction of this report. This report is only valid in its entirety and for the purpose for which it was prepared.

Conditions on the site may change after the tree assessment. Liability will not be accepted for damage or injury as a result of unforeseeable events or natural processes.

This report does not constitute or include a tree risk assessment. Where defects are noted, these are recommended for further investigation where warranted. Other tree defects may be present which have not been noted.

3.2 Tree Assessment

Visual tree assessment was carried out by Jacki Brown, Arboricultural Consultant in July 2018. The tree inspection was limited to a visual assessment from ground level, without excavation, coring, drilling, climbing or other testing. Trunk diameters were measured using a standard tape measure, crown spreads were paced out on site, and tree heights were estimated by eye.

The Arboricultural Impact Assessment utilises the Australian Standard *AS4970-2009 Protection of trees on development sites*.

3.3 Tree Survey Data

Refer to the Tree Survey Information Table (page 4).

Useful Life Expectancy (ULE) ratings are given for each tree, of either Long (40+ years), Medium (15-40 years), Short (5-15 years) or Remove (less than 5 years). The ratings are estimates based on the assessed health, condition and structure of each tree at the time of assessment, in its specific location. The ratings are not static, and may be revised during future assessments if conditions change.

Significance ratings are given for each tree, based on their Amenity Value, Ecological Value, size and location. While High significance trees provide substantial values to their surroundings, Low and Medium significance trees also contribute to the Urban Forest and in many cases may grow to become High significance trees, given the opportunity.

An ***Ecological Value*** rating of High, Medium or Low has been assigned to each tree, based on the species and potential habitat values, however this should not be taken as ecological advice.

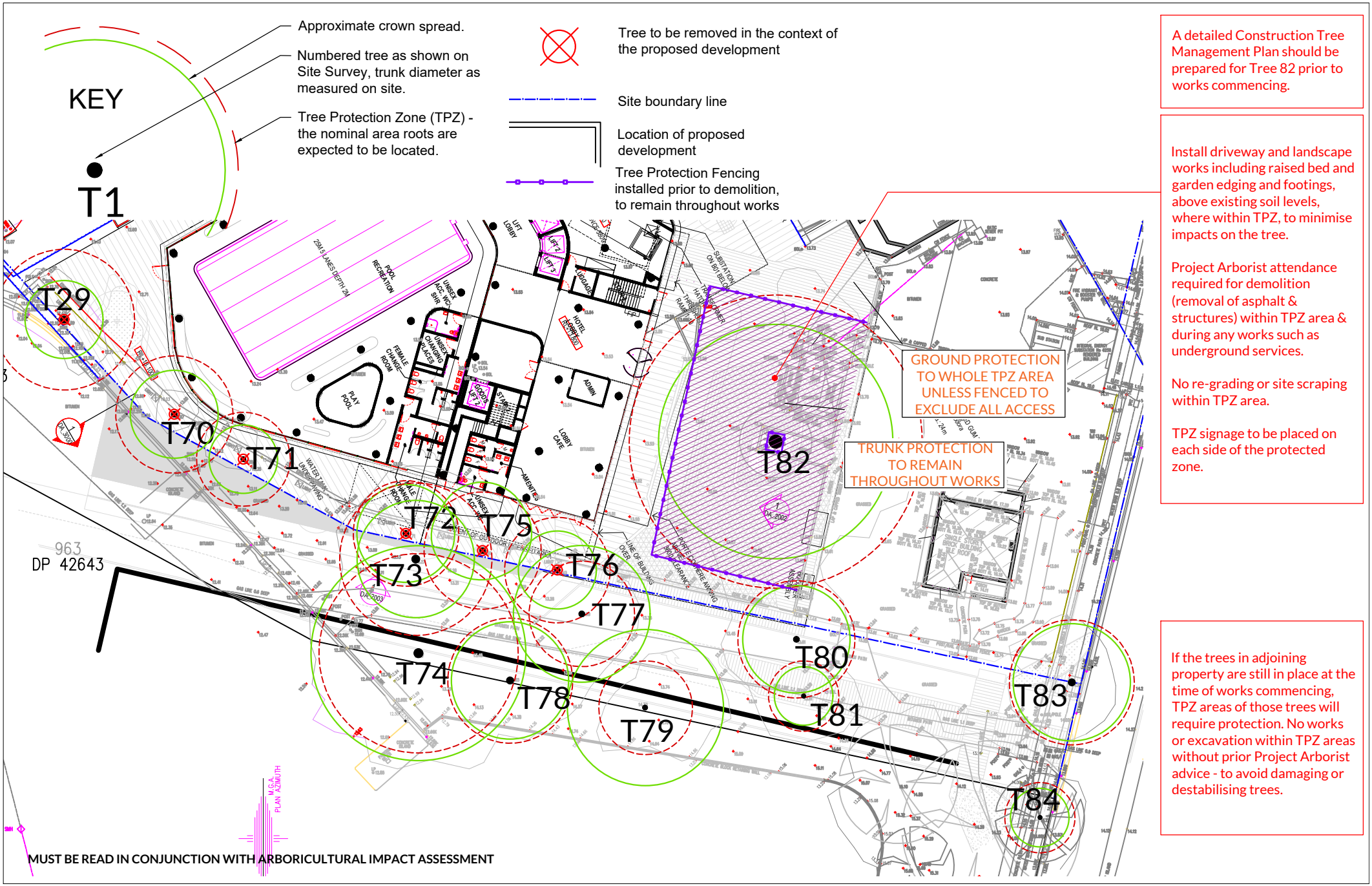
Tree No.	Botanical & Common Name	Height	Spread	DBH (mm)	DRB (mm)	Age	Health	Condition	ULE	Significance	Amenity Value	Ecological Value	SRZ	TPZ	Site Notes	Development Encroachment	Development Impact
29 (tag 303)	*Eucalyptus nicholii* Narrow Leaf Peppermint	14	8	600	700	M	G	Av	S-M	M	M	M	2.8	7.2	-	**100%**	**Within proposed paved concourse.**
70 (tag 302)	*Eucalyptus nicholii* Narrow Leaf Peppermint	11	9	500	550	M-OM	Av	Av-P	S	M	M	M	2.6	6.0	Spiral wound with exposed heartwood. Dieback, deadwood.	**100%**	**Within proposed paved concourse.**
71 (tag 301)	*Eucalyptus nicholii* Narrow Leaf Peppermint	12	7	400	450	M	Av	Av	S-M	M	M	M	2.4	4.8	Epicormics on trunk, deadwood, dieback. Recent stormwater pit close to base.	**100%**	**Within proposed paved concourse.**
72 (tag 58)	*Eucalyptus grandis* Flooded Gum	20	10	450	550	M	Av	Av	M	M	M-H	M	2.6	5.4	Bulge @ base.	**100%**	**Within proposed paved concourse.**
73	*Eucalyptus microcorys* Tallowwood	17	5N, 4S, 5E, 6W	650	750	M	G	Av	L	M-H	M-H	M	2.9	7.8	Outside property boundary. Large (150diam.) exposed root to S damaged - completely stripped of top bark (mower damage). Junction @6m possibly included.	**11%**	**1.5m from property boundary & 3.2m from proposed underground water tank - major encroachment within TPZ.**
74 (tag 56)	*Ficus microcarpa var. Hillii* Hill's Fig	14	22	850	850	M	G	G	L	H	H	M	3.1	10.2	Outside property boundary. Mass of surface roots on all sides - some damaged. Gravelly soil. Some erosion & compaction. Some small aerial roots emerging from undersides. Small wounds on trunk. Vandalism/initials carved. Low branches poorly pruned (no undercut).	**0%**	**No impact from proposed development.**

Tree No.	Botanical & Common Name	Height	Spread	DBH (mm)	DRB (mm)	Age	Health	Condition	ULE	Significance	Amenity Value	Ecological Value	SRZ	TPZ	Site Notes	Development Encroachment	Development Impact
75 (tag 57)	*Corymbia maculata* Spotted Gum	18	7 N/ 3 S/ 5 E/ 5 W	300 / 300	550	M	G-Av	Av	M	M	M-H	M	2.6	5.1	Bifurcated @ 1.2m - kino flow - inclusion.	**100%**	**Within proposed paved concourse.**
76 (tag 54)	*Corymbia maculata* Spotted Gum	21	8	450	500	M	Av	G-Av	L	M	M	M	2.5	5.4	-	**100%**	**Within proposed paved concourse.**
77	*Eucalyptus microcorys* Tallowwood	11	14	450	550	M	Av	Av	L	M-H	M-H	M	2.6	5.4	Outside property boundary. Psyllids. Low branches pruned. One large exposed root with recent mower damage. Low arching foliage. Large vertical wound @ 3-5m S side - possible previous tear-out.	**12%**	**3.5m from property boundary. Proposed concourse within TPZ.**
78 (tag 55)	*Ficus microcarpa var. Hillii* Hill's Fig	12	12	530	650	M	G	G	L	M-H	M-H	M	2.8	6.4	Outside property boundary. 2 stems from 0.5m. Vandalism/carved into trunk. Exposed roots downhill. Oblong branch over path - reduction pruned.	**0%**	**No impact from proposed development.**
79 (tag 52)	*Eucalyptus microcorys* Tallowwood	12	7N, 8S, 8E	400	450	M	Av	Av	M	M	M	M	2.4	4.8	Outside property boundary. Lot of deadwood & dead epicormics. Multi leaders from 3m. Flowering. On embankment - some erosion & compaction. Low branches pruned. Previous large branch failure NW side. Epicormics.	**0%**	**No impact from proposed development.**

Tree No.	Botanical & Common Name	Height	Spread	DBH (mm)	DRB (mm)	Age	Health	Condition	ULE	Significance	Amenity Value	Ecological Value	SRZ	TPZ	Site Notes	Development Encroachment	Development Impact
80 (tag 50)	*Eucalyptus microcorys* Tallowwood	18	12	500	550	M	G	G	L	M-H	H	M	2.6	6.0	Outside property boundary. 150 ø E from base x 2. Some insect damage to foliage. Some deadwood and epicormics	**20%**	**1.4m from property boundary. Proposed concourse/driveway & "booster assembly" within TPZ.**
81 (tag 51)	*Eucalyptus tereticornis* Forest Red Gum	12	6	300	350	SM	G-Av	G-Av	M	M	M	M	2.1	3.6	Outside property boundary. Buttsweep. Crownshy to T80. Wound on trunk west side.	**0%**	**No impact from proposed development.**
82	*Corymbia citriodora* Lemon Scented Gum	25	24	1250	1300	M	Av	Av	M-L	H	H	M	3.7	15.0	Cockatoo? damage at major junction @ 8m - possible hollow - aerial inspection recommended. Large branches previously pruned over carpark. Small amount of occlusion. Some moderate deadwood. Secondary crown.	**79%**	**Approx. 10m from proposed building (minor encroachment) & proposed driveway on both sides of tree (major encroachment). Driveway should be completely above existing soil levels to avoid root impacts. Utilise permeable pavement to improve soil root conditions. Route services and structures outside TPZ. Tree can be retained with tree sensitive design & construct.**
83 (tag 48)	*Platanus x acerifolia* London Plane	14	12	350 / 400	650	M	G-Av	Av	M	M-H	M-H	L	2.8	6.4	Street tree on O'Connell St. 2 stems from 1m pressing together. In small pit in concrete path.	**0%**	**No impact from proposed development. Within future access road / Ross Street extension.**
84 (tag 47)	*Platanus x acerifolia* London Plane	8	6	300	350	SM	Av	Av	S-M	L-M	M	L	2.1	3.6	Street tree on O'Connell St. Main leader & side branch dead. Suppressed by adjacent Tallowwood. Wound @ base.	**0%**	**No impact from proposed development. Within future access road / Ross Street extension.**

Key: Height (in metres) ; Spread (crown spead in metres) ; DBH (Diameter at Breast Height / 1.4m) in millimetres ; DRB (Diameter above Root Buttress) in millimetres ; Age (Semi-mature, Mature, Overmature, or Senescent) ; Health (Good, Average or Poor) ; Condition (Good, Average or Poor) ; Useful Life Expectancy (ULE) (Short, Medium or Long) ; Significance (High, Medium or Low) ; Amenity Value (High, Medium or Low) ; Ecological Value (High, Medium or Low) ; SRZ (Structural Root Zone) in metres ; TPZ (Tree Protection Zone) in metres

*Trees highlighted in green are within the Parramatta Leagues Club Hotel site.



A detailed Construction Tree Management Plan should be prepared for Tree 82 prior to works commencing.

Install driveway and landscape works including raised bed and garden edging and footings, above existing soil levels, where within TPZ, to minimise impacts on the tree.

Project Arborist attendance required for demolition (removal of asphalt & structures) within TPZ area & during any works such as underground services.

No re-grading or site scraping within TPZ area.

TPZ signage to be placed on each side of the protected zone.

If the trees in adjoining property are still in place at the time of works commencing, TPZ areas of those trees will require protection. No works or excavation within TPZ areas without prior Project Arborist advice - to avoid damaging or destabilising trees.

REV	DESCRIPTION	DRAWN	DATE
A	PRELIMINARY SITE ANALYSIS - TREE IMPACT PLAN - FOR COORDINATION	JB	24-07-18
B	ARBORICULTURAL IMPACT ASSESSMENT - TREE PROTECTION PLAN - FOR REPORT DRAFT	JB	25-10-18
C	TREE PROTECTION PLAN - FOR FINAL REPORT	JB	13-11-18
D	TREE PROTECTION PLAN - FOR FINAL REPORT	JB	28-11-18

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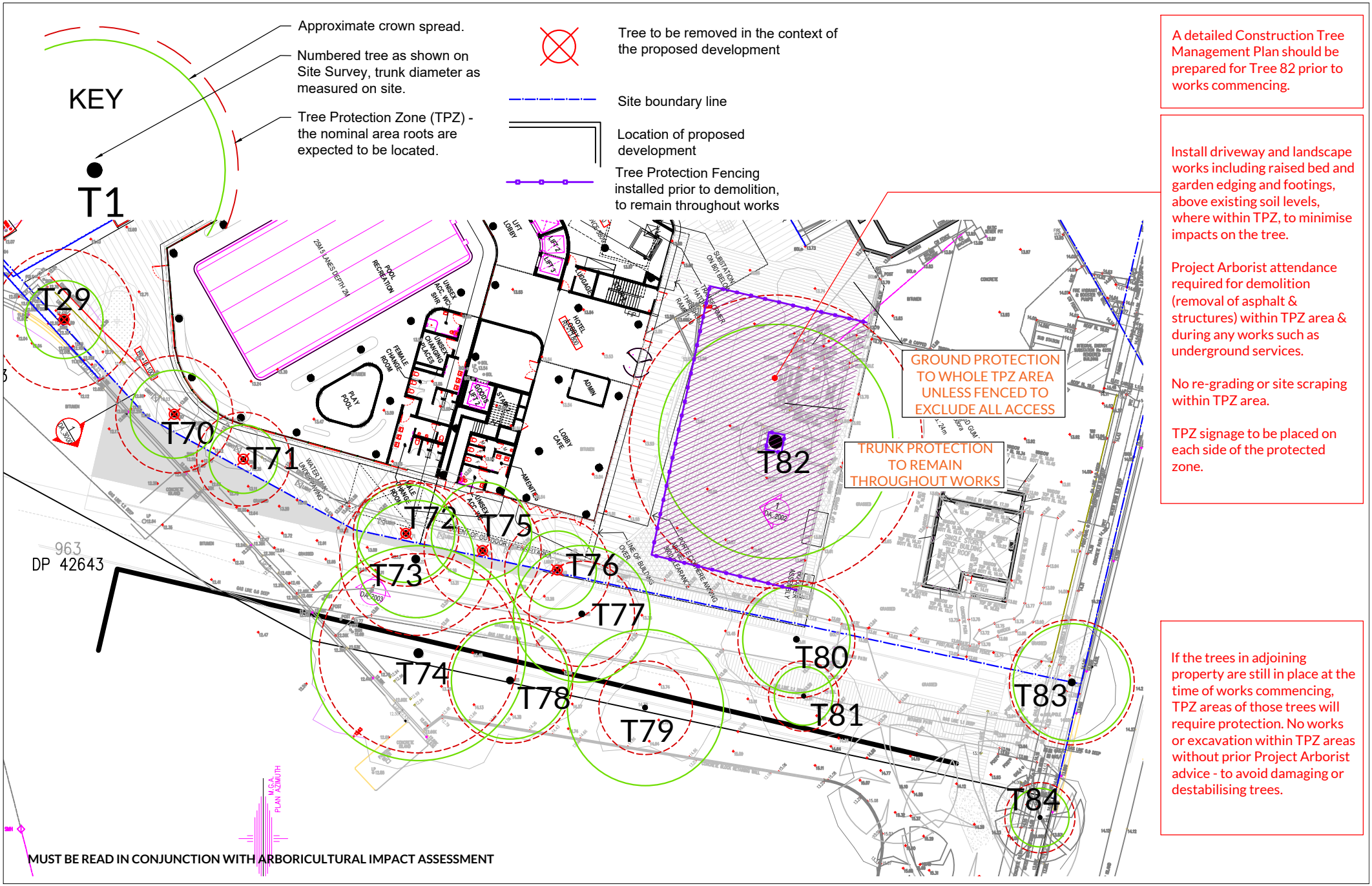
ADDRESS: PARRAMATTA LEAGUES CLUB HOTEL
PROJECT: PROPOSED HOTEL DEVELOPMENT
CLIENT: APP PTY LTD

DRAWING: TREE PROTECTION PLAN
SCALE: 1:500 @ A4
ISSUE: DA
SHEET: T - 01
DRAWN: JB
DATE: 28-11-18
REVISION: D



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DATE: 28-11-18
REVISION: D

6. Observations and Discussion

6.1 Trees to be Removed with Major Encroachment from the Proposed Development

Trees Within the Site

Six (6) trees (**Trees 29, 70, 71, 72, 75, & 76**) are located within the footprint of the proposed paved concourse and will require removal in the context of the proposed development.

Replacement planting of eleven (11) advanced size native trees are proposed within the landscape works associated with the development. Provided that sufficient soil volume and above ground space is allocated for these trees, and they are maintained to maturity, the canopy cover of the site will be replaced in the medium term.

Trees Outside the Site

Three (3) trees (**Trees 73, 77 & 80**) located outside the site will have major encroachments from the proposed works. **Tree 73** has a 12% encroachment from the proposed underground water tank and additional encroachment from the concourse paving. **Trees 77** and **80** have 12% and 20% encroachments, respectively, from the proposed concourse paving. A "booster assembly" is proposed within the TPZ of **Tree 80** which is also within the TPZ of **Tree 82**.

Provided that the proposed paving will need to be installed above existing soil levels (including sub-base layers) and the booster assembly and related underground services located outside the TPZ of retained trees, particularly the eastern boundary garden bed which is likely to contain many roots from **Tree 82** as well as **Tree 80,** the impact on these trees can be minimised.

6.2 Trees Not Impacted by the Proposed Development

Five trees (**Trees 74, 78, 79, 81, & 83**) are located outside the subject site and will not be impacted by the proposed hotel development. The impact on these trees from the access road has not been assessed, as the access road is subject to separate development consent and these trees have been approved for removal in that consent.

If the 'Little Coogee Link' road is to be used for construction access, tree protection measures will be required to these trees, if they are still in place at the time of works commencing (they may be removed as part of the development in the neighbouring property which is independent of the development addressed in this report).

Tree protection measures would need to include trunk and ground protection, and tree protection fencing if practicable.

6.3 Tree Proposed for Removal for Access Road Modification

Tree 84 is located within the proposed adjoining modified access road (Ross Street extension) and will require removal in the context of that road.

6.4 Tree to be Retained with Major Encroachment from the Proposed Development

One (1) large tree on site (**Tree 82**) is proposed to be retained within the context of the proposed development by utilising tree sensitive measures for the surrounding landscape and driveway.

6.5 Demolition within the TPZ of Tree 82

Tree sensitive measures will be required for all demolition works within the 15m radius TPZ of Tree 82. The Project Arborist should be present on site during demolition within the TPZ, to advise on methods to avoid tree damage, and to inspect and record any tree roots encountered during the works. Immediately following the removal of bitumen in the TPZ, temporary ground protection will need to be installed, to allow for construction access

within the TPZ. This will need to be in the form of 100mm depth of mulch, covered by rumble boards or steel plates. To minimise the extent of ground protection needed, fence off as much of the TPZ area as possible as an exclusion zone and install mulch only to the bare soil areas.

6.6 Excavation for Hotel

The proposed excavation for the hotel building should be limited to 1.5m from the building footprint, utilising shoring/vertical piling as needed to avoid overexcavation towards the tree. Shoring should be implemented as soon after excavation as possible, to minimise ground water loss in the tree's TPZ. Irrigation will be required for maintenance of the tree as soon as excavation commences. Footings for the porte-cochère will need to be carefully excavated with Project Arborist attendance, as they will be within the TPZ of Tree 82.

6.7 Ground Surfaces within TPZ of Tree 82

The demolition of existing ground surfaces, and the design and installation of proposed ground surfaces have the greatest potential to cause damage to Tree 82, and should be carefully managed in consultation with a Project Arborist.

Installation of ground surfacing should involve no excavation into the existing soil, i.e the base of the ground surfacing including subbase should be above the existing soil (beneath removed bitumen layer) to avoid or minimise soil disturbance and tree root damage.

Ramping of finished ground surfaces will be required where existing soil levels are higher (e.g. in the garden bed surrounding the tree and along the boundary), so that the installed materials can be completely above grade by utilising structural soils as fill, or a system to elevate slabs above grade without requiring large footings within the TPZ.

Permeable ground surfacing is recommended to improve the tree's growing conditions, reduce the effects of construction stress and increase the tree's useful life expectancy.

6.8 Underground Services

All proposed services, including fire hydrants, boosters and underground pipes should be routed outside the TPZ of **Tree 82**. Any underground services associated with the hotel should be installed within the same excavation footprint as the hotel (i.e. within 1.5m of the building footprint. Redundant services should be left in situ within the TPZ of Tree 82 to avoid soil and tree root disturbance. No excavation soil disturbance should occur within the Structural Root Zone (SRZ) of **Tree 82** (3.7m radius from the centre of the trunk).

6.9 Monitoring and Maintenance During Works

Tree 82 should be monitored by an AQF Level 5 arborist throughout works on site, to ensure that the tree is being effectively protected, and minimise the potential for damage to the tree from the construction works. Watering and plant health care will be required throughout the development. The Project Arborist should be engaged to attend site during all works in the TPZ of **Tree 82**.

6.10 Staging of the Development

Development in the adjoining property (Parramatta Stadium) is ongoing, and tree removal on that site may be planned within their separate development approvals. If the trees assessed in this report, located on the adjoining property, are still in situ when the subject development commences, those trees will require protection and Project Arborist input where any works are planned within their TPZ areas. Damage to roots of the trees may cause destabilisation of the tree/s and must be avoided.

7. Recommendations

7.1 Tree Retention

- Retain **Tree 82** by utilising tree sensitive design, demolition and construction measures, and installing and maintaining tree protection throughout the works.

7.2 Tree Removal

- Remove **Trees 29, 70, 71, 72, 75 & 76** as they are within the proposed development footprint.
- Remove **Tree 84** as it is within the proposed modified access road.

7.3 Tree Protection

- Tree protection will need to be installed and maintained, and adjusted at different stages during the development.
- Trunk protection, ground protection and tree protection fencing will be required at different stages during the development, as shown on the Tree Protection Plan.
- Irrigation will be required for **Tree 82**.

7.4 Tree Sensitive Demolition & Construction Measures

- All works within the TPZ of **Tree 82** are to be installed above grade without excavation into existing soil, to avoid root disturbance.
- No underground services to be routed within the TPZ of **Tree 82**.
- Project Arborist to be on site during demolition of ground surfaces and other objects within the TPZ of **Tree 82**.
- Ongoing monitoring of the tree and any works within the TPZ of **Tree 82** regularly (monthly) throughout works on site.

7.5 Replacement Tree Planting

- Install eleven (11) medium to large (8-15m mature height) replacement trees from minimum 200L containers, in suitably prepared and improved landscape soil within the property to offset the loss of tree canopy, as shown on the landscape plans. Trees should be high quality nursery grown plant stock and planted by persons with horticultural qualifications. The trees should be maintained to maturity.

The recommendations of this report do not constitute consent to carry out works. Approval is required in the form of Development Consent to prune or remove trees, as well as the consent of the tree owner where trees are on neighbouring properties.

Further information and clarification can be obtained from the author.

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