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Arboricultural Impact Assessment

Tree/s Location: Carlton North Primary School 60 lee Street, Carlton North

Inspection date: 18 September 2024

Date of report: 10 October 2024

Prepared by: Ryan Roche, Consulting Arborist, Future Tree Health

Grad Cert Arb, University of Melbourne

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Purpose of this report

The purpose of this report is to provide the findings of an independent assessment of the trees occupying the aforementioned area, as well as impact mitigation advice and a risk of harm assessment where relevant. This report has been prepared in accordance with AS4970-2009 - Protection of Trees on Development Sites and AS4373-2007 – Pruning of Amenity Trees.

Documents relevant to this report

- Australian Standard: Protection of Trees on Development Sites AS4970-2009
- Australian Standard: Pruning of Amenity Trees AS4373-2007
- Site proposal / Plans

Victorian Planning Provisions:



To whom it may concern,

This report, as understood by the author is to be submitted to relevant parties regarding planned development of the property and the relationship to the trees present.

As agreed, this tree report will provide the following information regarding trees assessed:

- Onsite inspection of trees using QTRA methods where relevant
- Tree Identification
- Measurements and photographs (DBH tape, height meter, iPad photographs)
- Observations of tree health and condition
- Expected impact on trees and structures (including TPZ/SRZ details)

- Professional recommendations for works (if any), and/or mitigation or changes to construction techniques to allow any significant trees to be retained in accordance with AS4970-2009 *Protection of trees on Development Sites*.

- Specifics, details, or recommendations as required by the determining authority.

Please note:

- 1. Prior to reading this report and subsequently following any advice, opinions, recommendations, or findings provided, you must hereby understand and agree to our *Terms of Advice and Service* as provided at the end of the report.
- 2. Report inclusions and exclusions, assessment methodology (QTRA) and specifics pertaining to Australian Standards referenced may also be found at the end of the document.

Please find the tree report included below.

Kind Regards,

Ryan Roche.



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1.0. Executive Summary

Outline of proposal:

- Construction project at Carlton North Primary School including the development of a new multipurpose building and other upgrades to the site.

Impact from proposed construction: Trees proposed for removal.

Trees within the subject property:

- Tree T2 is proposed for removal. It is not compatible with the development plans.

- Tree Group 18 is proposed for removal to allow for the kiosk development in the North-East corner of the site. These trees are considered low value. no other trees will be impacted from this development.

Impact from proposed construction: Trees to be retained.

Trees within subject property: Tree1:

- Tree 1 is proposed for retention alongside the development plan.

- This tree will receive major encroachment greater than 10% of the TPZ resulting from the development plan. This has been mitigated to an acceptable level through lifting the floor level of the building above ground level and the use of screw piles. The screw piles will be approximately 180mm x 180mm and excavated to a depth of 500mm. we confirm that the tree will remain viable alongside and subsequent to the development however only excavation for the screw piles can occur within the TPZ.

Tree 7/8/9:

- Updated landscaping plans around trees T7, T8, and T9 is feasible. Works carried out within the TPZ of these trees should be done by hand and no excavation should occur within the TPZ of the trees. Paving materials used should be permeable to maintain tree viability in the long term.

Tree 25/26:

- Both Trees T25 and T26 are a suitable distance from the internal renovation and will not receive any encroachment and will remain viable alongside and subsequent to the development.

Tree Group 28:

- Tree group 28 are within a garden flowerbed. Development plans include the removal and replacement of the retaining flowerbed wall and subsequent addition of decking on top of the flowerbed.

- The retaining wall of this flowerbed has likely acted as a root barrier for this group of trees. When the retaining wall is replaced, the soil within the garden must remain undisturbed so that the tree's stability and structure remain unchanged. Any major soil disturbance or movement may lead to a change I the root structure of the trees and subsequently a weakened stability increasing the likelihood of failure.

- We confirm that the trees will remain viable alongside and subsequent to the development provided a tree protection plan is in place and adhered to for the duration of the project, and provided that no excavation for decking footings is undertaken within the SRZ of trees.



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Protection for retained trees:

- We approve the above impact and encroachment into Tree Protection Zones and can confirm that all trees scheduled for retention will remain viable alongside and subsequent to the development project, providing all demolition, construction and landscaping is undertaken in conjunction with an endorsed Tree Protection Plan prepared by an AQF5 Consulting Arborist. This plan will cover all encroachment items, as well as any potential for impact due to machinery and construction access to the site during development, which is common for street trees.

Permits required:

- It is the responsibility of the client to apply to council via this report to obtain any necessary removal permits for trees within the property.

- Neighbouring trees are the property of the tree owner and require permission to remove if required.



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2.0. Site Observations & Trees Present





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2.1. Trees assessed.

RET	AIN TREE REMOVE TREE	*All measurements are in metres.													
No.	BOTANICAL NAME	COMMON NAME	HEIGHT	WIDTH	DBH	TPZ (m radius)	DAB	SRZ (m radius)	HEALTH	STRUCTURE	AGE	ARB. VALUE	ULE	ІМРАСТ	PERMITS
1	Angophora costata	Smooth-Barked Apple Gum	17	15	0.63	7.56	0.73	2.90	Good	Good	Maturing	High	50+	Minor encroachment	Local Law
2	Corymbia maculata	Spotted Gum	15	6	0.4	4.80	0.51	2.49	Good	Good	Semi-mature	High	50+	Removal	Local Law
7	Lophostemon confertus	Queensland Brush Box	6	3	0.23	2.76	0.29	1.97	Average	Good	Young	Low	20-30	Retain	Exempt
8	Lophostemon confertus	Queensland Brush Box	7	3	0.45	5.40	0.47	2.41	Good	Good	Semi-mature	Low	20-30	Retain	Local Law
9	Acacia implexa	Lightwood	5	1	0.1	1.20	0.1	1.26	Good	Good	Young	Low	20-30	Retain	Exempt
18	Allocasuarina verticillata	Drooping Sheoak	10	1	0.2	2.40	0.2	1.68	Good	Good	Young	Low	20-30	Remove	Exempt
25	Acacia dealbata	Silver Wattle	8	2	0.2	2.40	0.2	1.68	Good	Good	Young	Low	20-30	Retain	Exempt
26	Acacia melanoxylon	Blackwood	5	1	0.1	1.20	0.1	1.26	Good	Good	Young	Low	20-30	Retain	Exempt
28	Melia azedarach	White Cedar	6	4	0.35	4.20	0.45	2.37	Average	Good	Semi-mature	High	20-30	Retain	Local Law



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2.2. Existing conditions



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2.3. Development proposal



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3.0. Tree Data Profiles

Tree # 1 Angophora costata Smooth-Barked Apple Gum



Tree # 2 Corymbia maculata Spotted Gum

Tree # 7 Lophostemon confertus Queensland Brush Box

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Tree # 8 Lophostemon confertus Queensland Brush Box

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Tree # 9 Acacia implexa Lightwood

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Tree # 18 Allocasuarina verticillata Drooping Sheoak

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Tree # 25 Acacia dealbata Silver Wattle

Tree # 26 Acacia melanoxylon Blackwood

Tree # 28 Melia azerdarach White Cedar

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4.0. Tree retention notes

Regarding trees intended for retention, the following information is essential for consideration.

- 1. Unscheduled works must not enter the SRZ under any circumstances. Doing so may destabilise the tree, leading to potential total tree failure.
- 2. Any tree removal is to be undertaken only with prior-approved written consent from the determining authority or under appropriate licence and undertaken by the determining authority.
- 3. Tree pruning is to be undertaken only with prior-approved written consent from the determining authority or under appropriate licence and undertaken by the determining authority.
- 4. Should works or access be required within or close to Tree Protection Zones, the presence of a project arborist is required in conjunction with an approved Tree Protection Plan.

5.0. Report exclusions

This assessment/report <u>did not</u> include the following:

- 1. Below ground inspection (includes: location, condition and/or integrity of roots; condition of inaccessible parts of trunk; property or asset conflicts and/or damage due to roots).
- 2. Soil profile test (includes levels of compaction if any)
- 3. Detailed aerial tree inspection observations/findings (Visual Tree Inspection was conducted from the ground)
- 4. Abiotic disorder certainty (resulting from groundwater analysis, gas leak investigations, etc.).
- 5. Certainty of presence/identity of biotic agents (pests, pathogens). Where present, biotic agents must be sampled and sent for lab analysis, a process not included in this commission.
- 6. Certainty of decay present (if any) within the tree (tree was inspected from the outside only, meaning the condition and integrity of the xylem wood within the tree cannot be ascertained).

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6.0. Australian Standard 4970-2009: Protection of Trees on Development Sites

This report has been prepared in accordance with Australian Standard 4970-2009: Protection of Trees on Development Sites. Where proposed works are within the vicinity of trees, this standard is used to determine acceptable distances of works from trees via the calculation of Tree Protection Zones (TPZ) and the Structural Root Zone (SRZ).

A tree protection zone is calculated (DBH \times 12) to establish the acceptable proximity of works, equipment, and construction practices/procedures from an existing tree. Following this, the erection of isolation fencing, the tying of branches, tree protection measures or instalment of tree protection zone signage may be required. This ensures the tree is protected for the duration of the works. The proposed works must not encroach within the tree protection zone unless this encroachment is less than 10% of the TPZ, is previously agreed upon and compensation of additional TPZ area (% of encroachment) is added to the TPZ.

Structural Root Zone (SRZ) refers to the structural roots within closer vicinity to the trunk which are required by the tree to remain upright. Encroachment into the SRZ of an existing tree is not permitted. Works conducted within the SRZ may destabilise the tree, requiring removal to avoid subsequent tree failure.

7.0. Retention Methodologies & Tree Assessment Descriptors

Arboricultural Value:

Low	Trees that offer little in terms of contributing to the future landscape.
Medium	Trees with some beneficial attributes that may benefit the site. Could be considered for retention if possible.
High	Trees with the potential to positively contribute to the site. Should be considered for retention if possible.

ULE (Useful Life Expectancy):

Long	Trees that appear retainable with an acceptable level of risk for more than 40 years.
Medium	Trees that appear retainable with an acceptable level of risk for 15-40 years.
Short	Trees that appear retainable with an acceptable level of risk for 5-15 years.
Remove	Trees with a high level of risk that would require removal within the next 5 years.

Tree age:

Juvenile	A recently planted tree.
Young	Tree is actively establishing.
Semi-mature	Tree is actively growing.
Maturing	Tree has reached expected size in existing conditions.

Tree health:

Good	Foliage is entire and with good colour, very little sign of pathogens and good density. Growth indicators are good i.e., extension growth of twigs and wound wood development. Minimal or no canopy dieback (deadwood).
Average	Tree is showing one or more of the current symptoms; <25% deadwood, minor canopy dieback, foliage with good colour though with some imperfections may be present. Minor pathogen damage present with growth indicators typical for the species and location of tree.
Poor	Tree is showing one or more of the following symptoms: >25% deadwood, canopy dieback is observable, discoloured, or distorted leaves. Pathogens present, stress symptoms are observable as reduced leaf size, extension growth and canopy density.

Tree structure:

Good	Trunk and scaffold branches show good taper and attachment with minor or no structural defects. Tree is a good example of species with a well-developed form showing no obvious root problems, pests, or disease.
Average	Tree shows minor structural defects or minor damage to trunk e.g., bark missing, cavities present. Minimal damage to structural roots. Tree could be seen as an average/typical example of its species.
Poor	There are major structural defects, damage to trunk or bark missing. Co-dominant stems present, or poor structure with points of failure. Girdling or damaged roots can be observed. Tree is structurally problematic.

8.0. Glossary of terms

Term	Definition
Arb Value	The Arboricultural value of a tree
Compaction	The process of removing aeration from between soil aggregate via pressure applied to the soil. Pressure can be applied via pedestrian, vehicular or machinery methods. Compaction is damaging to tree roots and overall tree health and vitality
DAB	Diameter at base, as measured from just above the root flare of tree
DBH	Diameter at Breast Height, as measured at 1.4m from the ground
Encroachment (%)	The percentage of total TPZ area to be impacted via demolition, access, or construction. Lesser than 10% is acceptable minor encroachment. Above 10% is major, unacceptable encroachment.
Ground Protection	The entire process of protecting the TPZ of a tree from damaging soil compaction or root cuts/disturbance via pedestrian, vehicular or machinery access. Executed via a geotextile membrane under 100mm of mulch. Rumble boards or steel plates are then placed atop.
Health	The health of a tree, gauged from a visual inspection, including but not limited to: canopy %, photosynthetic material quantity and quality, apical bud health & bark condition.
Height	An estimate of the height of a tree
Impact	Potential / actual damage of proposed works to a tree.
Incursion	See encroachment
Measurements	All measurements within the report, including DBH, DAB, height, Spread, etc are measured in metres.
Overlay	Any vegetation or tree related regulations as imposed by the determining authority (i.e., local council).
POF	Probability of Failure
Project Arborist	An AQF Level 5 or higher qualified consulting Arborist
Pruning	The process of removing branch or root material from a tree
QTRA	Quantified Tree Risk Assessment
Rumble Boards	Wooden planks to be placed atop mulch for ground protection
Spread	The combination of east-west & north-south canopy width estimates
SRZ	Structural Root Zone (SRZ) refers to the structural roots within closer vicinity to the trunk which are required by the tree to remain upright. Encroachment into the SRZ of an existing tree is not permitted without authorization. Root cuts conducted within the SRZ may destabilise the tree, requiring removal to avoid subsequent tree failure.
SRZ breach	Disturbance of any kind within the Structural Root Zone via any unapproved or unscheduled works.
Structure	The structural integrity of a tree, i.e., architecture, root structure,
Supervision	The presence of a Project Arborist to observe works within the TPZ of a tree/s

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TPMP Site Induction	Construction manager, project arborist and all contractors to meet on-site or remotely prior to site preparation to introduce the Tree Management and Protection Plans, including the works requiring supervision by the project arborist inside the TPZ. The Tree Management Plan and Tree Protection Plan induction must be attended by all contractors. Project arborist to attend and sign off.
TPZ	A tree protection zone is calculated (DBH × 12) to establish the acceptable proximity of works, equipment, and construction practices/procedures from an existing tree. This
	measurement represents a radius from the centre of the tree trunk and encompasses both below and above ground aspects.
TPZ Fencing	Fencing erected in accordance with AS4970 to isolated and protect a tree to be retained
TPZ Mulching	The procedure of applying mulch within the TPZ of a tree. Mulch must be of a heavy, wood chip variety and applied at a minimum of 100mm depth. To avoid burns and health complications, mulch must not be allowed to come in contact with the immediate tree trunk
Tree architecture	The shape of a trees' canopy.
Tree Protection Plan	A document involving all protection measures for trees on a site to be retained in the same or an acceptable condition throughout a construction project. This document is provided to all workers on site and must be adhered to
Trunk Protection	The process of protecting tree trunks or branches from any form of damage as a result of demolition, access, or construction.
ULE	Useful Life Expectancy

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9.0 References

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10.0. Terms of advice and service

Prior to reading this report and subsequently following any advice, opinions, recommendations, or findings provided, you must hereby understand and agree to the following:

- This assessment and subsequent report findings are the culmination of research combined with the professional opinion of a qualified consulting arborist. Our consultants pride themselves on independent reports. This report has not been produced to support a particular motive, produce a desired value, or predict a desired occurrence. All findings are reported without bias towards certain parties or results.
- To the authors knowledge, all facts, assessment techniques and material presented is current and accurately researched. Opinions expressed within this report are supported by current research.
- This report contains sketches, photographs, plans, and/or diagrams. These are for illustrative use only and should not be considered to scale unless stipulated otherwise.
- *Future Tree Health* and its representatives will assume that all information divulged to them regarding legal matters, ownership of property or titles is correct. Any properties or projects will be considered to be compliant to relevant codes, legislation, and/or appropriate regulations.
- *Future Tree Health* has gone to every professional length to ensure data and information provided is correct, reliable, and accurate. Data or information provided by third parties is considered outside the control of our consultants and neither they, nor *Future Tree Health* will be held responsible for discrepancies or inaccuracies.
- Representatives of *Future Tree Health* are not required to give testimony or appear in court as a result of this tree report. An expert opinion may be presented by *Future Tree Health* where further arrangements are made; however, this is not a requirement or contractual obligation of this report.
- *Future Tree Health* and its representatives will not be held responsible for occurrences outside the consultants' control.
- This report is the product of a tree assessment, undertaken at the specific time and date listed on the Cover Page, within specific weather and environmental conditions. Thus, all information expressed within is relevant to this time, and date only. As a result, *Future Tree Health* will be in no way held responsible for damages, matters, occurrences, or other issues occurring after this inspection was completed. Following the inspection, all aspects pertaining to the tree/s and site/s in question are considered out of the control of *Future Tree Health*.
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- This report will not include or pertain to matters other than those aforementioned within the introductory letter and will not include any items listed within the 'Report exclusions' section.
- *Future Tree Health* cannot guarantee that any opinions expressed will come to fruition and will not be held responsible should matters discussed either eventuate or fail to do so.

11.0. Disclaimer

- Future Tree Health and its representatives are qualified professionals, and we take great care to provide information that is accurate, knowledgeable, and reliable. You hereby agree to the extent of the law that we will not be held responsible (regardless of liability theory) for occurrences or advice, due to direct, indirect or negligent actions (using professional opinions, experience, or information including information from third parties) which lead to or are perceived to lead to: any loss or damage (monetary, or otherwise), perceived loss, perceived damage; injury; revenue changes; aesthetic changes; and/or lifestyle impacts. We do not provide warranties or guarantees.
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