



ARBORICULTURAL REPORT

Construction Impact assessment

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PREPARED FOR: Caroline Chisholm Catholic College

Subject Site: Sacred Heart & St Johns Campus
204 Churchill Avenue, Braybrook, VIC 3019
27th July 2023

Prepared by:

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Appendices

Appendix 1a. 2023 Tree assessment details for thirty-one (31) trees.

Trees have been individually assessed, mapped, and identified within this tree assessment.

Maribyrnong's significant tree study / list Asset ID number has been highlighted in red.

Appendix 2a. Tree populations and location

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Appendix 3a. Explanation of Terms

- Age
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- Definitions
- Tree retention Values
- Tree Type
- Construction Impact – level of encroachment

27th July 2023

Watson Young Architects Pty Ltd
watsonyoung.com.au
8 Grattan Street,
Prahran VIC 3181

ARBORICULTURAL REPORT - Construction Impact Assessment

for Trees located at Caroline Chisholm Catholic College - Sacred Heart & St Johns Campus - 204 Churchill Avenue, Braybrook, VIC 3019.

1. Introduction

- 1.1 Watson Young Architects Pty Ltd have commissioned Toolern Tree Services Pty. Ltd. to provide a Construction Impact Assessment for the tree populations surrounding the site proposed for development at Caroline Chisholm Catholic College - Sacred Heart & St Johns Campus - 204 Churchill Avenue, Braybrook, VIC 3019.
- 1.2 This report is to identify the Tree Protection Zone (TPZ) levels of encroachment and construction impacts that the planning proposal may have on trees adjoining the site.

2. Objectives

- 2.1 To undertake a site assessment and provide a preliminary report identifying the trees genus / species, estimated age, canopy dimensions, trunk diameters, current health, structure, Safe Useful Life Expectancy (SULE), Tree Protection Zones (TPZ) radius, tree protection area m², Structural Root Zone (SRZ) radius, Tree Retention Value, and an arboricultural opinion regarding trees suitable for retention.
- 2.2 To provide an Impact Assessment on the tree populations located within and adjoining the site and identify where TPZ encroachments are likely to occur and to provide an opinion on acceptable and sustainable levels of encroachments for the ongoing retention of trees suitable for retention.
- 2.3 Provide recommendations for the sustainability of trees and protection against construction impacts.

3. Methodology

- 3.1 Toolern Tree Services Pty. Ltd. Consulting Arborist, Justin Simmonds conducted an inspection on a total of fifty-eight (58) trees located within the school grounds at Caroline Chisholm Catholic College - Sacred Heart & St Johns Campus on the 6th November 2021 as part of the annual tree assessment for the tree populations within the school grounds.

From the fifty-eight (58) trees assessed the following thirty-one (31) trees (Trees 1, 2, 3, 6, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 29b, 30, 31, 32, 33, 34, 35, 36, 37, 38 and 39) are within close proximity to the proposed development and may be subject to construction impacts.

- 3.2 Visual observations were taken from ground level, photographed, and relevant tree information documented within the tree assessment details. Tree height and canopy dimensions have been estimated. Trunk diameters were measured at 1.4 meters from ground level to provide the optimal Tree Protection Zone (TPZ) distances to conform with the *Australian Standards, Protection of trees on development sites AS 4970-2009*.
- 3.3 Plans of the proposed development were provided by *Watson Young Architects Pty Ltd* for identifying the Tree Protection Zone (TPZ) levels of encroachment that the planning proposal may have on the tree populations within and adjoining the site.
- 3.4 The Tree Protection Zone (TPZ) areas and areas of encroachment have been calculated using the Council Arborist of Victoria (CAV) algorithm and conform to the Australian Standards, Protection of trees on development sites AS 4970-2009.
- 3.5 Trees containing existing identification tags attached to their trunks have been re-numbered within this report. The original identification number between the () within the tree assessment details represent the previous numbering system used.
- 3.6 Maribyrnong's significant tree study / list Asset ID have been highlighted in red.

4. Vegetation controls

4.1 Maribyrnong Planning scheme – Environmental Significance Overlay (ESO)

Permit requirement

A permit is required to:

Remove, destroy, or lop any vegetation, including dead vegetation. This does not apply:

If a schedule to this overlay specifically states that a permit is not required.

If the table to Clause 42.01-3 specifically states that a permit is not required.

To the removal, destruction or lopping of native vegetation in accordance with a native vegetation precinct plan specified in the schedule to Clause 52.16.

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4.2 SCHEDULE 2 TO CLAUSE 42.01 ENVIRONMENTAL SIGNIFICANCE OVERLAY

Shown on the planning scheme map as ESO2.

SIGNIFICANT TREES

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Statement of environmental significance

The Maribyrnong Significant Tree Register (2021) identifies trees which have special significance. The trees have been identified as significant for a variety of reasons, including for their aesthetic value or because they are remnant, an outstanding size or specimen, particularly old or in a unique location or context.

The trees contribute to the character and amenity of local areas and, collectively, to the City's urban forest.

A permit is not required to:

- Subdivide land unless the alignment of the title is within the Tree Protection Zone (TPZ) of a tree listed in the table to this schedule.
- Prune trees for maintenance purposes provided that the branch size is no more than 10 centimetres in diameter and the total amount removed is not more than 10 per cent of the canopy in accordance with Australian Standard – Pruning of Amenity Trees, AS4373-2007.
- Remove, destroy, or lop any vegetation not listed in the table to this schedule.
- Remove, destroy, or lop any vegetation in accordance with a plan approved under a Schedule to the Development Plan Overlay.
- Remove, destroy, or lop any vegetation which is dead or dying to the satisfaction of the responsible authority.

Application requirements

The following application requirements apply to an application for a permit under Clause 42.01, in addition to those specified elsewhere in the scheme and must accompany an application, as appropriate, to the satisfaction of the responsible authority:

- A report from a qualified arborist identifying:
- A plan showing the location of the tree to be removed, destroyed, or lopped, including the TPZ and Structural Root Zone (SRZ).
- Where a tree is proposed to be removed, destroyed, or lopped as a result of buildings and works, a plan showing the tree in the context of the buildings and works with the TPZ and SRZ clearly defined, including the protrusion of the buildings and works into the TPZ and SRZ.
- Where a tree is proposed to be removed, the location of any replacement tree planting with associated TPZ which ensures its growth to maturity.
- Details of the tree to be removed, destroyed, or lopped, including its height, canopy, spread, trunk diameter, age, health, safe useful life expectancy and structure.

- The retention value of the tree.
- The reason for the proposed work.
- Whether there are options for alternative treatment.
- What remedial or restorative action is proposed.
- The qualifications of the arborist.
- A timetable of when the proposed works are to be undertaken.
- Where buildings and works are proposed, detailed methods for tree protection during and following the buildings and works.

Decision guidelines

The following decision guidelines apply to an application for a permit under Clause 42.01, in addition to those specified in Clause 42.01 and elsewhere in the scheme which must be considered, as appropriate, by the responsible authority:

- The effect of the development on the tree, including the protrusion of the development into the TPZ and SRZ and the impact on the tree's ability to grow to maturity.
- The height, canopy, spread, trunk diameter, age, health, safe useful life expectancy and structure of the tree.
- The existing use and development of the land, including the ability for the use and/or development to be located elsewhere on the land to limit impacts on the tree.
- Whether the proposed buildings or works will result in damage to the tree by means of damage to roots, changes to soil drainage or by any other means.
- The reason for the removal, destruction or lopping of the tree.
- Where buildings and works are proposed, whether alternatives, including the redesign or relocation of buildings and works, are possible.
- Any report that identifies, describes, or deals with the tree, including the Maribyrnong Significant Tree Register (2021).
- Any report provided by a suitably qualified arborist.
- Where the removal of a tree is found to be appropriate by the responsible authority, the proposed replacement tree(s), and conditions to enable the tree's growth to maturity.

Trees subject to this permit requirement includes the following one (1) tree, (Tree 15). *Eucalyptus cladocalyx* (nana) Maribyrnong's Significant Tree Register Asset ID # 63.

| Tree ID No | Address of significant tree | Other affected properties | Location of significant tree | Type of tree | 2019 TPZ radius (m) |
|------------|---------------------------------|---------------------------|------------------------------|---------------------------------|---------------------|
| 63 | 204 Churchill Avenue, Braybrook | Nil | Side of college | <i>Ecladocalyx</i> Sugar Gum | 12 |

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4.3 Tree retention values

4.4 High - Retention Value trees

The following tree (Tree 15) located near the trade training centre within the site has been categorised as 'High' retention and is considered to be of substantial amenity or ecological significance as a prominent landscape feature and as such will be difficult to replace. Considerable effort should be made to retain this tree within the layout and design of the proposed planning proposal. Provision must be made for both the retention of this tree and the protection of the trees above and below ground structures (roots, trunk, and canopies) from construction impact.

4.5 Medium - Retention Value Trees

The following fifteen (15) trees (Trees 3, 6, 16, 17, 18, 19, 20, 21, 22, 23, 33, 35, 36, 38 and 39) Located within site have been categorised as 'Medium' retention and are considered to be of some amenity or ecological value. As such it is 'desirable' that these trees are retained where possible as they have the potential to become a medium to long-term landscape features. These trees can be of moderate quality with minor health and structural issues that can be managed with arboricultural input. Where practical the modification to the layout and design of the planning proposal should be considered to protect from construction impact.

4.6 Low - Retention Value Trees

The following fourteen (14) trees (Trees 1, 2, 14, 25, 26, 27, 28, 29, 29b, 31, 32, 34 and 27) located within subject site have been categorised as 'Low' retention and are generally trees with little or no amenity or ecological value and unlikely to be a landscape feature. These trees may also be considered as a common weed species, may contain structural faults or in varying stages of tree decline with an expired Safe Useful Life Expectancy (SULE) or may be exempt from permit requirements.

4.7 Remove - Retention value

Trees which have been given 'Remove' recommendation are trees which are:

- Structurally unsound/dangerous.
- Environmental weed species.
- Dead or senescent. (Senescent trees are over mature trees in an advanced state of decline which is unlikely to be reversible.)
- Young trees which are unable to achieve full potential due to inherent defect, disease, or unsuitable location.

Tree 30 has been categorised as 'Remove' retention value.

This tree has been exposed to partial tree failure from a bifurcation at its base, tree not expected to remain standing due to a compromised structural integrity, tree removal is recommended.

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5. Construction Impact Assessment

5.1 No Impact – None

Trees subject to No TPZ Encroachments from the planning proposal.

The following seventeen (17) trees (Trees 2, 3, 6, 22, 23, 29, 29b, 30, 31, 32, 33, 34, 35, 36, 37, 38 and 39) will be distant from any development works and will not be subject to any construction impacts.

It is recommended that Tree 30 be removed due to a compromised structural integrity.

Arboricultural report – Annual tree risk / hazard assessment – Toolern Tree Service – November 2021

Tree 30. Melaleuca armillaris

Arborist Comment: Tree has been exposed to partial tree failure from a bifurcation at its base. The remaining living section is not expected to remain standing due to a compromised structural integrity.

Recommendation: Recommend tree removal



Tree 30. *Melaleuca armillaris*



Tree has been exposed to partial tree failure from a bifurcation at its base. The remaining living section is not expected to remain standing due to a compromised structural integrity.

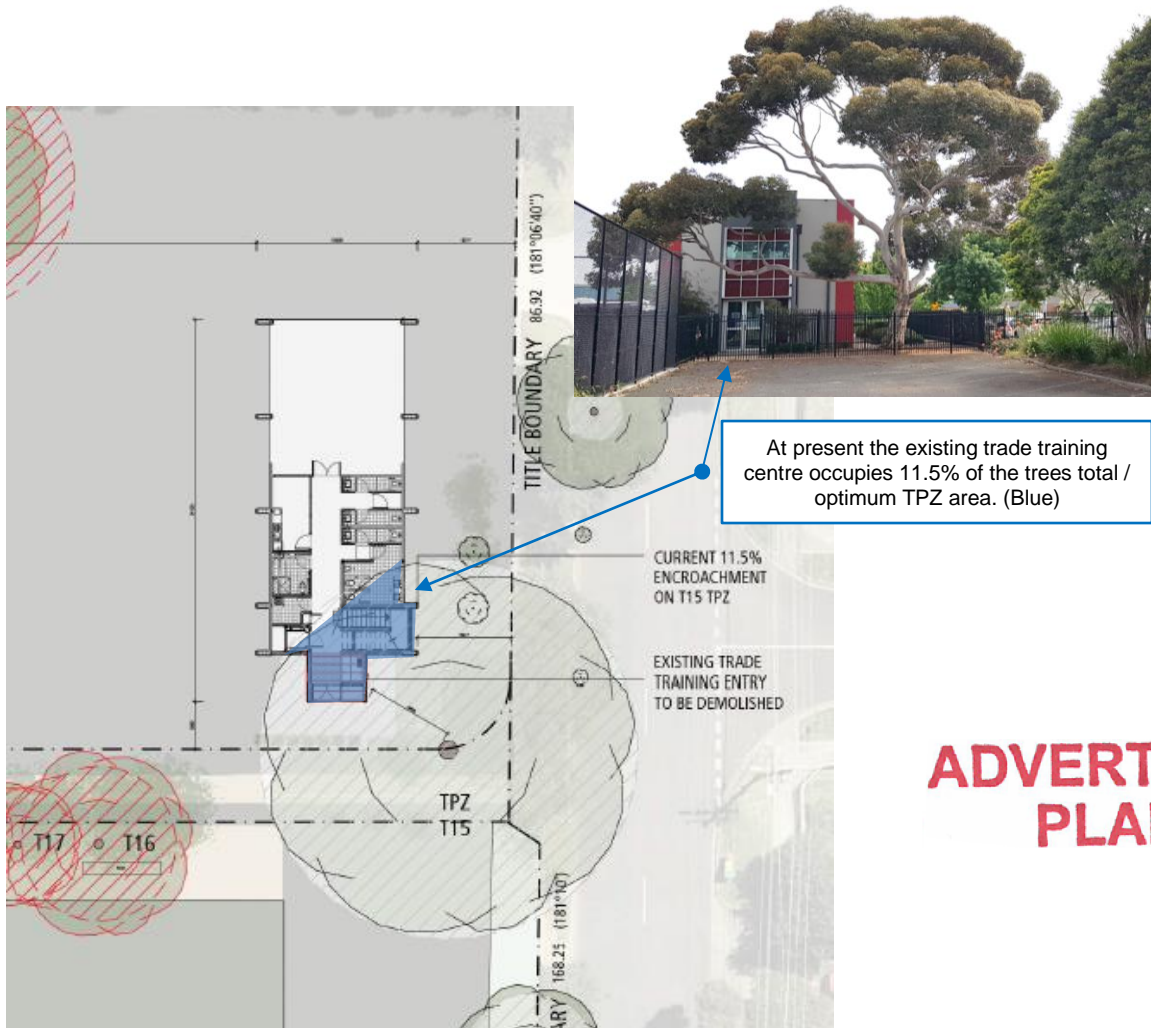
5.2 Discussion - Impact Major encroachment – Not Viable – Tree 15

Following the construction impact report published by Toolern Tree Services dated 15-05-2023 discussed that the following tree, Tree 15 (Maribyrnong's Significant Tree Register Asset ID # 63) will be subject to a Major – Not Viable levels of encroachments from the previous layout and design of the planning proposal. These TPZ encroachment were calculated at incursion of 20% or greater within the total / optimum TPZ area.

Discussions in order to reduce these encroachments were undertaken and modifications to the layout and design of the planning proposal i.e. basement and ground floor plans have been revised and amended to reduce or eliminate any TPZ encroachments within the TPZ area of Tree 15.

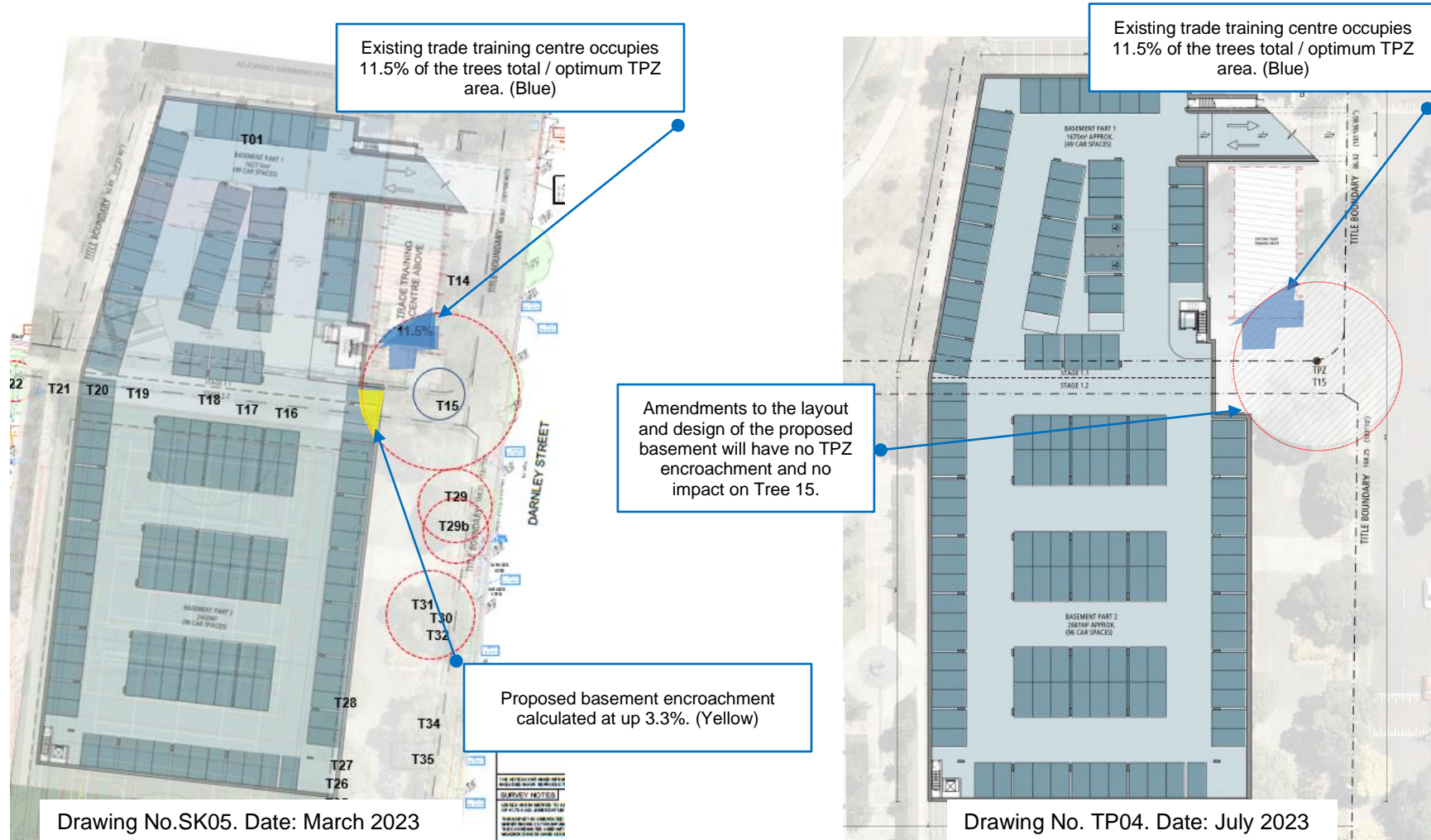
5.3 Existing site conditions and existing hard structures within the TPZ area of Tree 15 (63)

At present the existing trade training centre occupies 11.5% of the trees optimum TPZ area with additional encroachments from hard surface pavements i.e. pathways and carparks.



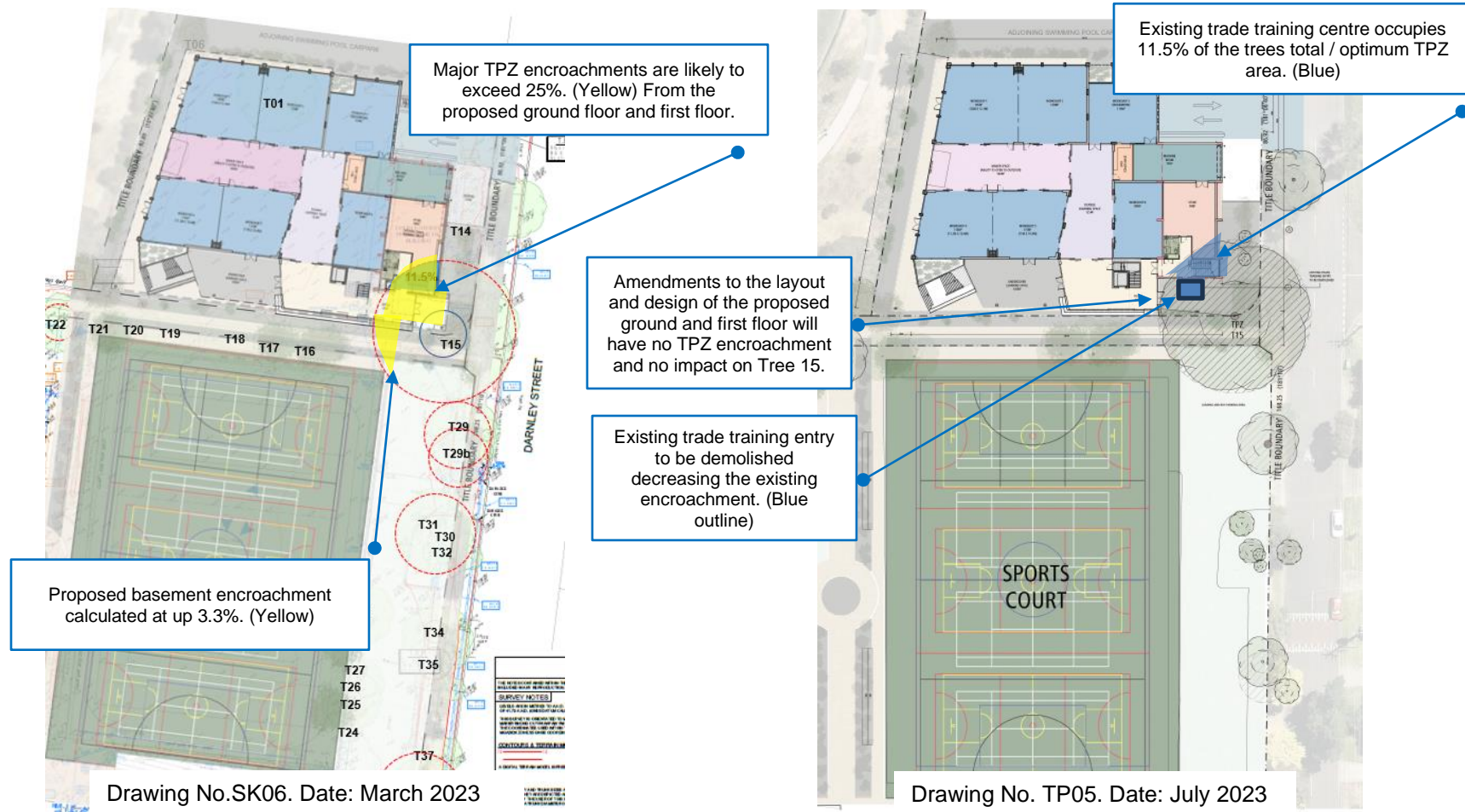
5.4 Impact from proposed basement – Tree 15 (63) July 2023

The amended layout and design of the proposed basement now remains outside of the TPZ area of Tree 15 where it has no encroachment.



5.5 Proposed ground floor and first floor encroachments Tree 15 (63), July 2023

The amended layout and design of the proposed ground and first floor now remains outside of the TPZ area of Tree 15 where it has no encroachment.



5.6 Impact Severe - Removal

Trees that will require removal as they will be within the area of the proposed development.

The following twelve (12) trees (Trees 1, 16, 17, 18, 19, 20, 21, 24, 25, 26, 27 and 28) will require removal to support the planning proposal.

Tree 1 is of low retention value and contains major structural faults and is not suitable for retention in support of this planning proposal.

5.7 Arboricultural report – Annual tree risk / hazard assessment – Toolern Tree Service – November 2021

Tree 1. *Casuarina stricta* (*Allocasuarina verticillata*)

Arborist Comment: Tree contains multiple bifurcations and defective faults within main trunk and canopy with evidence to suggest from wound wood development that there is partial separation within the bark inclusion within the bifurcation of the main trunk. Signs of borer activity is also evident throughout its main trunk.

It is also expected that this tree has been exposed to construction impacts and soil compaction. This tree is expected to fail due to structural issues and may impact on vehicles within the carpark where it is located and / or impact on the parking area and general public using the swimming pool.

Recommendations: Recommend tree removal.

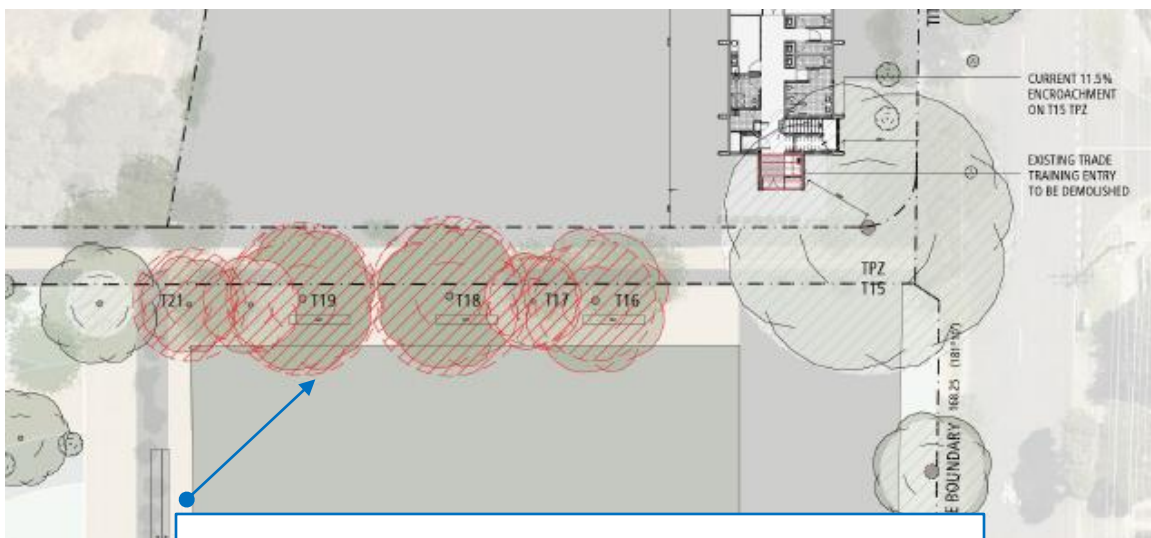


Tree 1. *Casuarina stricta* (*Allocasuarina verticillata*).



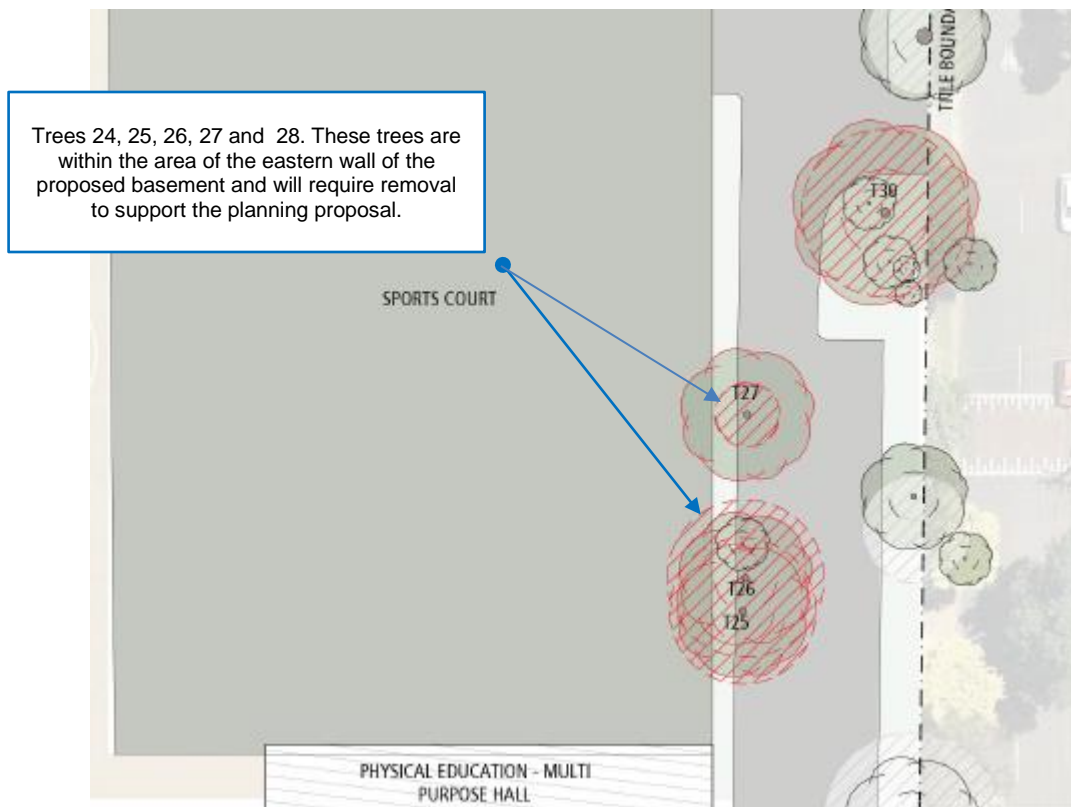
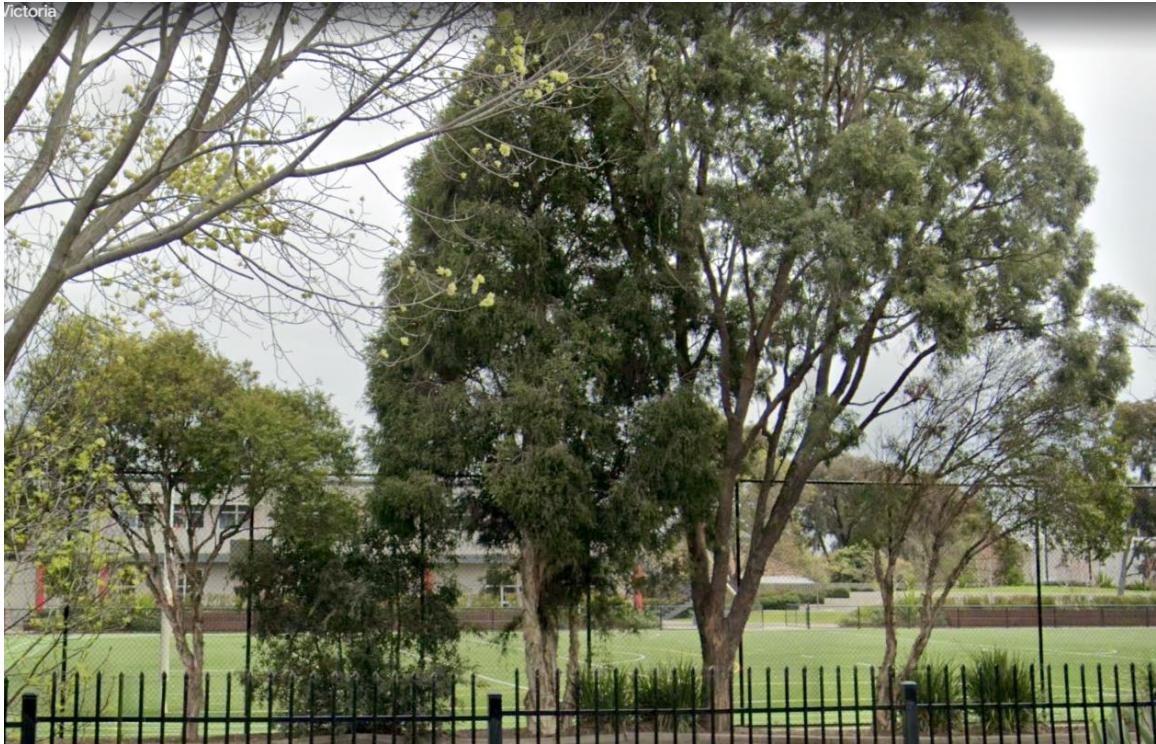
Tree contains multiple bifurcations and defective faults within main trunk and canopy with evidence to suggest from wound wood development that there is partial separation within the bark inclusion within the bifurcation of the main trunk. Signs of borer activity is also evident throughout its main trunk.

5.8 Trees 16, 17, 18, 19, 20 and 21. These trees are within the area of the proposed basement, these trees have been categorized as medium retention.



Trees 16, 17, 18, 19, 20 and 21. These trees are within the area of the proposed basement and will require removal to support the planning proposal.

5.9 Trees 24, 25, 26, 27 and 28. These trees are within the area of the proposed basement, these trees / shrubs have been categorized as low retention.



6: Recommendations

6.1 Tree protection measures for trees to be retained

Tree Protection Zones (TPZ) are a combination of the root and canopy area around a tree requiring protection during the various stages of development to prevent damage that can occur to tree roots, trunks and canopies from compaction, excavation and other construction activities that occur within the site.

6.2 Tree protection fencing / barriers

Tree protection fencing must be strong enough to sustain knocks from machinery and construction activities and clearly defined with signage as the Tree Protection Zone.

The height for tree protection fencing must be a minimum of between 1.5 - 1.8 metres or greater and can be constructed from various acceptable materials that can include:

- Chain and mesh fence supported by concrete blocks (or similar),
- Ring lock, barrier webbing, or shade cloth with treated pine posts or star pickets greater than 20mm in diameter.
- TPZ area to be mulched if applicable or at discretion of the project arborist.
- Posts must avoid tree roots and be offset if required.
- Existing perimeter or boundary fencing can also be combined or utilized within the tree protection fence.

Entry into tree protection zones from people, vehicles and/or machinery is prohibited.

Tree protection zones are not to be used as storage facilities for building materials of any type. Soil levels must not be lowered or raised within the Tree Protection Zone.

The fence(s) are to remain intact throughout all proposed construction works and should only be dismantled after all construction works are complete.

Barrier tape is not considered as an acceptable tree protection fence.

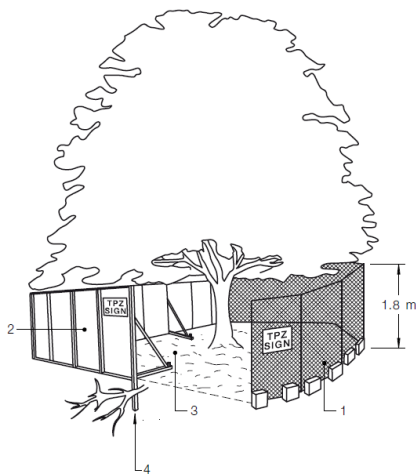


Figure 1. Tree Protection Fencing



Example: Temporary fencing. Tree Protection Fencing

6.3 Scaffolding / temporary boardwalks

Scaffolding / temporary boardwalks are also considered as a form of tree protection providing that they are constructed appropriately. They can be utilized within restricted spaces and within the TPZ areas for trees retained where access for construction crews is required. The use of scaffolding / temporary boardwalks 1 to 2 meters in width within the TPZ areas of trees that are either within the site or overlapping the site will ensure protection to the tree roots is achieved and will still allow for construction activities and access to be undertaken within the TPZ area for trees retained. These can be constructed by:

- Overlapping thick plywood sheets or timber planks within the protection zone on a bed of mulch 50-100 mm in depth with an impervious sheeting to prevent soil contamination.
- The use of custom scaffolding with a ground level platform for the prevention of compaction. These are suitable enough to be erected in and around the tree protection zones.

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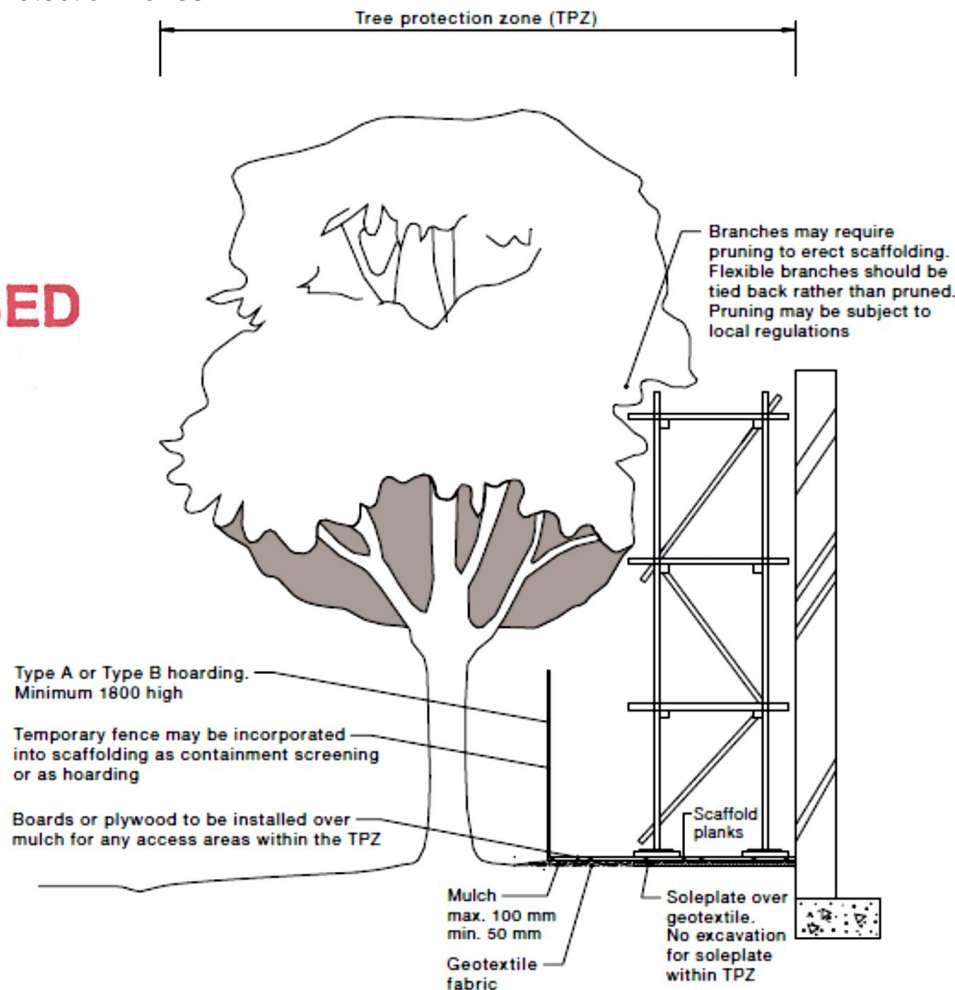


Figure 2. Scaffolding / temporary boardwalks

6.4 Tree root and ground protection

Various material can be incorporated for ground protection around a tree. This can include steel plates or timber boards laid over a bed of mulch. Areas that contain or have pre-existing hard surfaces such as concreted areas (existing pavement) within the TPZ and SRZ areas of trees to be retained will not require further ground protection unless these structures are going to be removed.

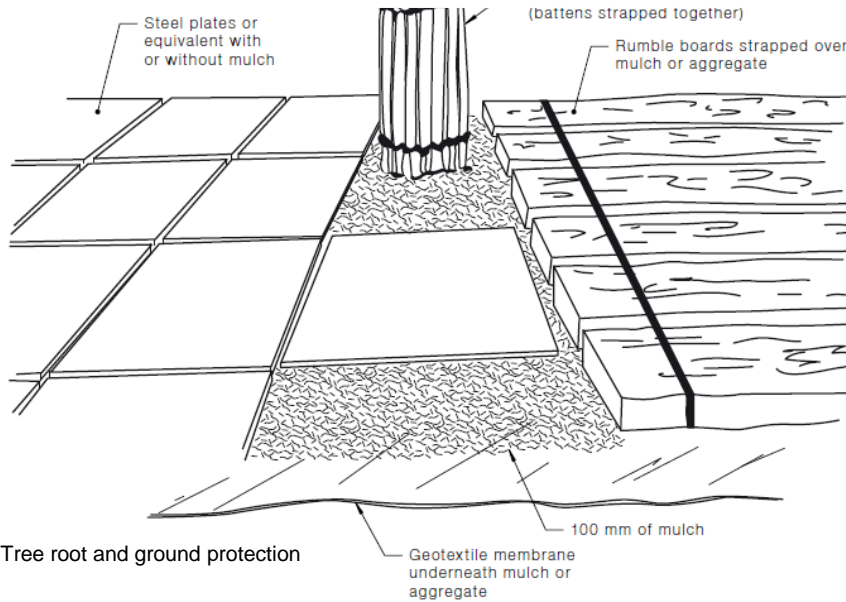


Figure 3. Tree root and ground protection

6.5 Underground utility / Service Locations

The location of any underground services i.e. gas, water, electricity must preferably remain outside of the TPZ areas for trees which are to be retained. If such services are required to encroach within the TPZ areas for trees to be retained, suitable Non-Destructive Digging (NDD) must be undertaken.

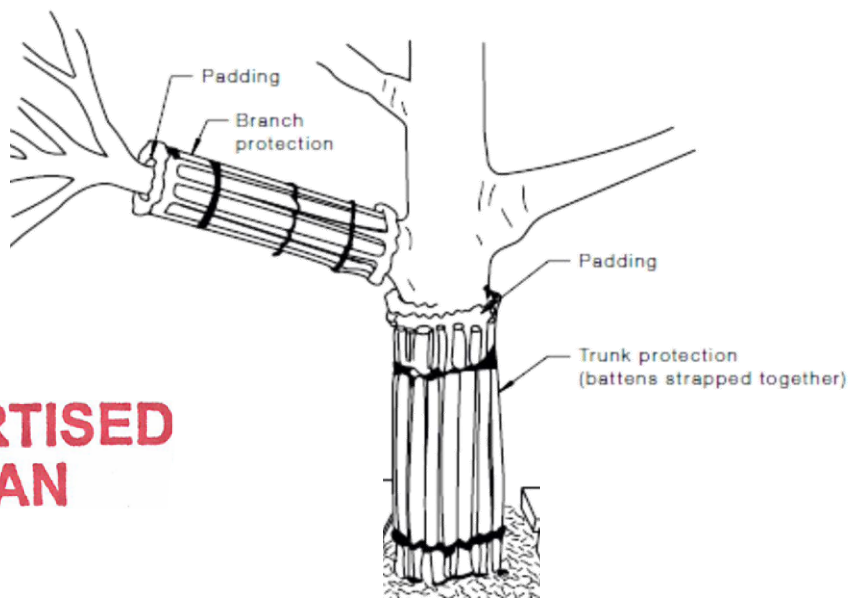
This is usually site specific and such operations may include underground boring, air spade, hydro vac, or manual excavation for the installation of these services. At no stage must trenching be allowed within the TPZ or SRZ areas for trees to be retained.



Photo: Non-destructive digging (NDD) using a Hydro Vac / excavation vac

6.6 Trunk and branch Protection

Trunk and branch protection may be required in areas where TPZ fencing has been modified or reduced and ground protection measures have been implemented. In order to prevent damage that can occur to the living cambium and bark that's present on the outer surface of trees to be retained a variety of materials can be utilized in the construction to form these trunk and branch barricades. Form work or boxing can be constructed around a tree's trunk and branch and if they are to be attached to the tree itself it must consist of an inner soft padding surrounded by a durable material that can sustain knocks / belts that can occur during construction activities. I.e. hessian or carpet underlay covered with timber / plastic battens joined with wire / ties. *Refer to diagram below Figure 5.* Nails, bolts, and screws must not be attached, pierce or come into contact with the tree.



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Figure 5. Trunk and branch protection



Example: Trunk protection. Timber boxing around the tree trunk



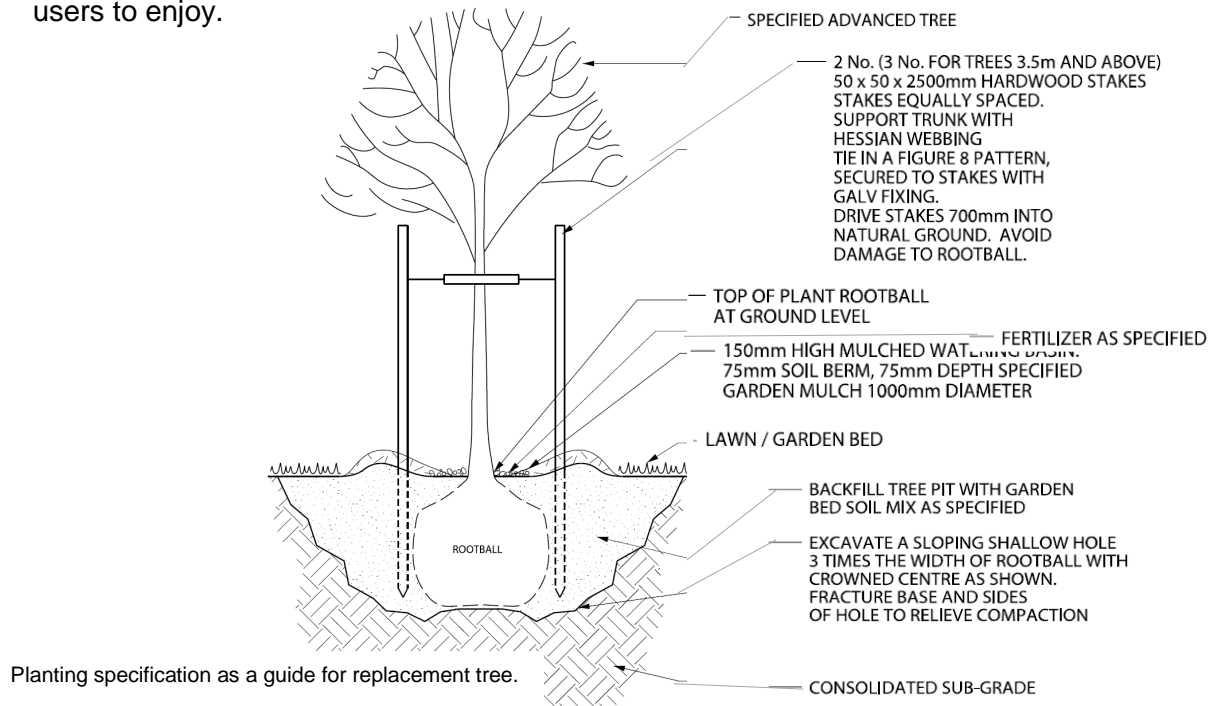
Example: Trunk protection. Timber battens around the tree trunk

6.7 Replacement planting program / future planting of the site.

Replacement planting of suitable shade trees around the boundaries and within the site to provide natural shade areas. The landscape planting of the site should include an extensive variety of native / indigenous and exotic trees species that are tolerable and suited to the environmental conditions of the site.

Tree selection should include tree species that provide ample shade, are small to medium size trees that contain interesting foliage, bark colour and texture. If the trees are to be planted in garden beds use a large variety of smaller shrubs, plants, groundcovers, and grasses within the planting design this will help to suppress undesired weed growth.

If established trees are to be used within the plantings it is recommended that trees are brought from a supplier who specialises in growing established trees as quality tree stock is vital for establishing trees in the long term, correct tree root growth, trunk, and branch development at an earlier stage in a tree's development will increase the useful life expectancy of a tree and provide a living asset for future users to enjoy.



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6.8 Mulching around existing trees to be retained

Improving the existing soil by adding organic matter such as mulches, manures or composts that will be incorporated naturally into the soil by the activity of worms and other soil organisms. The process when applied correctly can dramatically improve soil productivity and tree health.



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7. Summary

7.1 Impact severe – Proposed tree removal

The following twelve (12) trees (Trees 1, 16, 17, 18, 19, 20, 21, 24, 25, 26, 27 and 28) will require removal to support the planning proposal.

7.2 Trees not subject to any construction impact

Trees 2, 3, 6, **15 (63)**, 22, 23, 29, 29b, 30, 31, 32, 33, 34, 35, 36, 37, 38 and 39 will be distant from any development works and will not be subject to any construction impacts.

As discussed within sections 5.2, 5.3, 5.4 and 5.5 modification to the layout and design of the basement, ground and first floors have been undertaken to eliminate any TPZ encroachment within the TPZ area of Tree 15.

It is recommended that Tree 30 be removed due to a compromised structural integrity. *Refer to Arboricultural report – Annual tree risk / hazard assessment – Toolern Tree Service – November 2021. Section 5.1*

Consulting Arborist:

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Appendix 1a. Tree assessment details Caroline Chisholm Catholic College - Sacred Heart & St Johns Campus - 204 Churchill Avenue, Braybrook, Victoria. May 2023

| Tree no. | Botanical Name | Common Name | Tree Type | Origin | Significance | Age | Height (m) | D.B.H. (cm) | TPZ (m) | TPZ Area m ² | SRZ (m) | Structure | Health | Retention value | S.U.L.E. Yrs. | Encroachment | Incursion % | Comments 2023 |
|----------|---|---|-------------------|--|--------------------|-------------|------------|-------------|---------|-------------------------|---------|-----------|--------|-----------------|---------------|-----------------------------|-----------------------------|--|
| 1 | <i>Casuarina stricta</i> (<i>Allocasuarina verticillata</i>) | Drooping Sheoak | Australian Native | SA, NSW, Vic Tas | Planted vegetation | Mature | 12 | 72 | 8.6 | 234.5 | 2.9 | Poor | Fair | Low | 0'5 | Severe | Within development area | Tree is within the proposed development area. Tree contains multiple bifurcations and defective faults within main trunk and canopy, signs of borer is also evident throughout main trunk. It is also expected that tree has been exposed to construction impacts and soil compaction. Recommend tree removal. |
| 2 | <i>Pyrus calleryana</i> 'chanticleer' | Chanticleer/Cleveland Select Callery Pear | Exotic deciduous | China/Japan, this particular cultivar is from Ohio University in the USA | Planted vegetation | Semi-mature | 17 | 15 | 1.8 | 10.2 | 1.5 | Fair | Fair | Low | 5'10 | None | 0% | No impact predicted |
| 3 | <i>Angophora costata</i> | Smooth-barked Apple | Australian Native | Eastern Australia | Planted vegetation | Semi-mature | 8 | 20 | 2.4 | 18.1 | 1.7 | Good | Good | Medium | 10'20 | None | 0% | No impact predicted |
| 6 | <i>Angophora costata</i> | Smooth-barked Apple | Australian Native | Eastern Australia | Planted vegetation | Semi-mature | 6 | 20 | 2.4 | 18.1 | 1.7 | Good | Good | Medium | 10'20 | None | 0% | No impact predicted |
| 14 | X 4 <i>Pyrus calleryana</i> 'chanticleer' | Chanticleer/Cleveland Select Callery Pear | Exotic deciduous | China/Japan, this particular cultivar is from Ohio University in the USA | Planted vegetation | Semi-mature | 8 | 15 | 1.8 | 10.2 | 1.5 | Fair | Fair | Low | 5'10 | Subject to landscape design | Subject to landscape design | Trees may be subject for removal to suit new landscape plantings |
| 15 | <i>Eucalyptus cladocalyx</i> (<i>nana</i>) | Dwarf Sugar Gum | Australian Native | South Australia (Flinders Ranges, Eyre Peninsula, Kangaroo Island) | Planted vegetation | Mature | 15 | 100 | 12.0 | 452.4 | 3.3 | Good | Good | High | 10'20 | None | 0.0% | Existing trade training centre occupies 11.5% of the trees TPZ area. Amendment to the layout and design will not have any further impacts on this tree |
| 16 | <i>Corymbia maculata</i> | Spotted Gum | Australian Native | QLD, NSW VIC | Planted vegetation | Mature | 18 | 41 | 4.9 | 76.0 | 2.3 | Good | Good | Medium | 10'20 | Severe | Within development area | Tree is within the proposed development area. |
| 17 | <i>Corymbia maculata</i> | Spotted Gum | Australian Native | QLD, NSW VIC | Planted vegetation | Mature | 15 | 30 | 3.6 | 40.7 | 2.0 | Fair | Good | Medium | 10'20 | Severe | Within development area | Tree is within the proposed development area. |

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Appendix 1a. Tree assessment details Caroline Chisholm Catholic College - Sacred Heart & St Johns Campus - 204 Churchill Avenue, Braybrook, Victoria. May 2023

| Tree no. | Botanical Name | Common Name | Tree Type | Origin | Significance | Age | Height (m) | D.B.H. (cm) | TPZ (m) | TPZ Area m2 | SRZ (m) | Structure | Health | Retention value | S.U.L.E. Yrs. | Encroachment | Incursion % | Comments 2023 |
|----------|---------------------------------|--------------------------|-------------------|-------------------------|--------------------|--------|------------|-------------|---------|-------------|---------|-----------|--------|-----------------|---------------|--------------|-------------------------|---|
| 18 | <i>Corymbia maculata</i> | Spotted Gum | Australian Native | QLD, NSW VIC | Planted vegetation | Mature | 15 | 54 | 6.5 | 131.9 | 2.6 | Fair | Good | Medium | 10'20 | Severe | Within development area | Tree is within the proposed development area. |
| 19 | <i>Corymbia maculata</i> | Spotted Gum | Australian Native | QLD, NSW VIC | Planted vegetation | Mature | 15 | 52 | 6.2 | 122.3 | 2.5 | Good | Good | Medium | 10'20 | Severe | Within development area | Tree is within the proposed development area. |
| 20 | <i>Corymbia maculata</i> | Spotted Gum | Australian Native | QLD, NSW VIC | Planted vegetation | Mature | 15 | 37 | 4.4 | 61.9 | 2.2 | Good | Good | Medium | 10'20 | Severe | Within development area | Tree is within the proposed development area. |
| 21 | <i>Corymbia maculata</i> | Spotted Gum | Australian Native | QLD, NSW VIC | Planted vegetation | Mature | 15 | 38 | 4.6 | 65.3 | 2.2 | Good | Good | Medium | 10'20 | Severe | Within development area | Tree is within the proposed development area. |
| 22 | <i>Corymbia maculata</i> | Spotted Gum | Australian Native | QLD, NSW VIC | Planted vegetation | Mature | 12 | 23 | 2.8 | 23.9 | 1.8 | Fair | Fair | Medium | 5'10 | None | 0% | No impact predicted |
| 23 | <i>Corymbia citriodora</i> | Lemon Scented Gum | Australian Native | NSW, QLD | Planted vegetation | Mature | 12 | 36 | 4.3 | 58.6 | 2.2 | Fair | Good | Medium | 5'10 | None | 0% | No impact predicted |
| 24 | <i>Melaleuca viminalis</i> | Weeping Bottlebrush | Australian Native | NSW, Qld, WA | Planted vegetation | Mature | 5 | 15 | 1.8 | 10.2 | 1.5 | Fair | Fair | Low | 5'10 | Severe | Within development area | Tree is within the proposed development area. |
| 25 | <i>Melaleuca styphelioides</i> | Prickly Leaved Paperbark | Australian Native | NSW, QLD | Planted vegetation | Mature | 10 | 45 | 5.4 | 91.6 | 2.4 | Poor | Fair | Low | 5'10 | Severe | Within development area | Tree is within the proposed development area. |
| 26 | <i>Eucalyptus gomphocephala</i> | Tuart | Australian Native | South Western Australia | Planted vegetation | Mature | 12 | 48 | 5.8 | 104.2 | 2.4 | Good | Good | Low | 10'20 | Severe | Within development area | Tree is within the proposed development area. |
| 27 | <i>Melaleuca viminalis</i> | Weeping Bottlebrush | Australian Native | NSW, Qld, WA | Planted vegetation | Mature | 4 | 18 | 2.2 | 14.7 | 1.6 | Poor | Fair | Low | 5'10 | Severe | Within development area | Tree is within the proposed development area. |
| 28 | <i>Melaleuca styphelioides</i> | Prickly Leaved Paperbark | Australian Native | NSW, QLD | Planted vegetation | Mature | 10 | 20 | 2.4 | 18.1 | 1.7 | Poor | Fair | Low | 5'10 | Severe | Within development area | Tree is within the proposed development area. |
| 29 | <i>Melaleuca linariifolia</i> | Narrow leaved paperbark | Australian Native | NSW, QLD | Planted vegetation | Mature | 10 | 36 | 4.3 | 58.6 | 2.2 | Poor | Fair | Low | 5'10 | None | 0% | No impact predicted |

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Appendix 1a. Tree assessment details Caroline Chisholm Catholic College - Sacred Heart & St Johns Campus - 204 Churchill Avenue, Braybrook, Victoria. May 2023

| Tree no. | Botanical Name | Common Name | Tree Type | Origin | Significance | Age | Height (m) | D.B.H. (cm) | TPZ (m) | TPZ Area m2 | SRZ (m) | Structure | Health | Retention value | S.U.L.E. Yrs. | Encroachment | Incursion % | Comments 2023 |
|----------|---------------------------------------|--------------------------|--|---|--------------------|-------------|------------|-------------|---------|-------------|---------|-----------|--------|-----------------|---------------|--------------|-------------|--|
| 29b | <i>Melaleuca styphelioides</i> | Prickly Leaved Paperbark | Australian Native | NSW, QLD | Planted vegetation | Mature | 10 | 34 | 4.1 | 52.3 | 2.1 | Poor | Fair | Low | 5'10 | None | 0% | No impact predicted |
| 30 | <i>Melaleuca armillaris</i> | Bracelet honey myrtle | Australian Native | Coastal NSW, Wingen inlet VIC | Planted vegetation | Mature | 10 | 52 | 6.2 | 122.3 | 2.5 | Poor | Fair | Remove | 0'5 | None | 0% | No impact predicted. Tree has been exposed to partial tree failure from a bifurcation at its base, tree not expected to remain standing due to a compromised structural integrity, recommend tree removal. |
| 31 | <i>Callistemon citrina (citrinus)</i> | Crimson Bottlebrush | Victorian Native | Eastern coast NSW, VIC | Planted vegetation | Mature | 8 | 12 | 1.4 | 6.5 | 1.4 | Fair | Fair | Low | 5'10 | None | 0% | No impact predicted |
| 32 | <i>Ulmus glabra "Lutescens"</i> | Golden Elm | Exotic deciduous | Europe, with the cultivar being introduced from Germany | Planted vegetation | Semi-mature | 5 | 10 | 1.2 | 4.5 | 1.3 | Good | Good | Low | 5'10 | None | 0% | No impact predicted |
| 33 | <i>Corymbia ficifolia</i> | Red Flowering Gum | Australian Native | South coast WA | Planted vegetation | Mature | 12 | 58 | 7.0 | 152.2 | 2.6 | Fair | Fair | Medium | 10'20 | None | 0% | No impact predicted |
| 34 | <i>Callistemon citrina (citrinus)</i> | Crimson Bottlebrush | Victorian Native | Eastern coast NSW, VIC | Planted vegetation | Mature | 6 | 14 | 1.7 | 8.9 | 1.4 | Fair | Good | Low | 5'10 | None | 0% | No impact predicted |
| 35 | <i>Corymbia maculata</i> | Spotted Gum | Australian Native | QLD, NSW VIC | Planted vegetation | Mature | 15 | 33 | 4.0 | 49.3 | 2.1 | Fair | Fair | Medium | 5'10 | None | 0% | No impact predicted |
| 36 | <i>Eucalyptus sideroxylon</i> | Iron Bark | Indigenous, Victorian Native Australian Native | VIC, SA, NSW, QLD | Planted vegetation | Mature | 12 | 56 | 6.7 | 141.9 | 2.6 | Fair | Fair | Medium | 5'10 | None | 0% | No impact predicted |
| 37 | <i>Callistemon citrina (citrinus)</i> | Crimson Bottlebrush | Victorian Native | Eastern coast NSW, VIC | Planted vegetation | Mature | 9 | 36 | 4.3 | 58.6 | 2.2 | Fair | Fair | Low | 5'10 | None | 0% | No impact predicted |
| 38 | <i>Corymbia ficifolia</i> | Red Flowering Gum | Australian Native | South coast WA | Planted vegetation | Mature | 10 | 25 | 3.0 | 28.3 | 1.8 | Good | Good | Medium | 10'20 | None | 0% | No impact predicted |
| 39 | <i>Corymbia maculata</i> | Spotted Gum | Australian Native | QLD, NSW VIC | Planted vegetation | Mature | 17 | 51 | 6.1 | 117.7 | 2.5 | Fair | Good | Medium | 10'20 | None | 0% | No impact predicted |

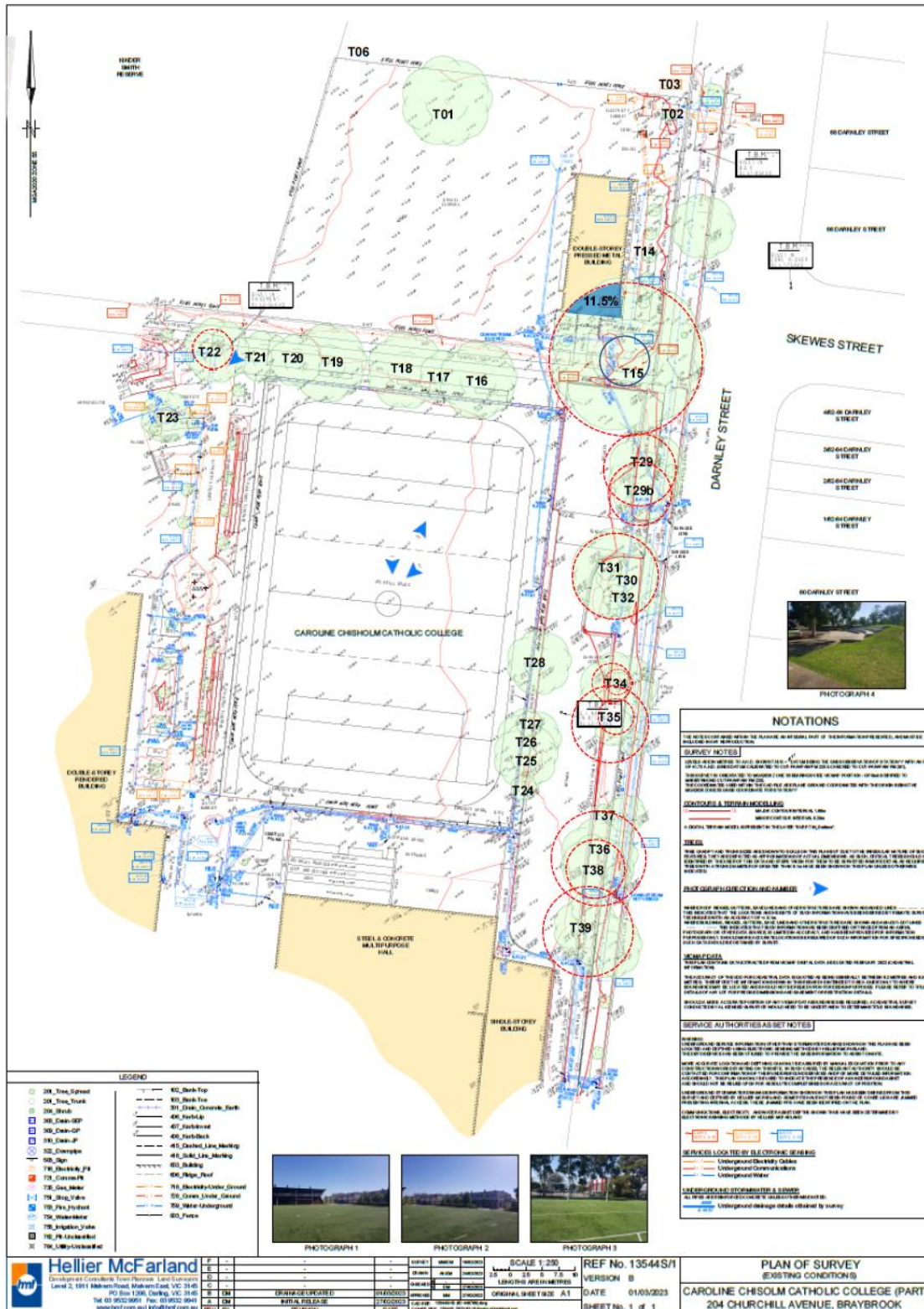
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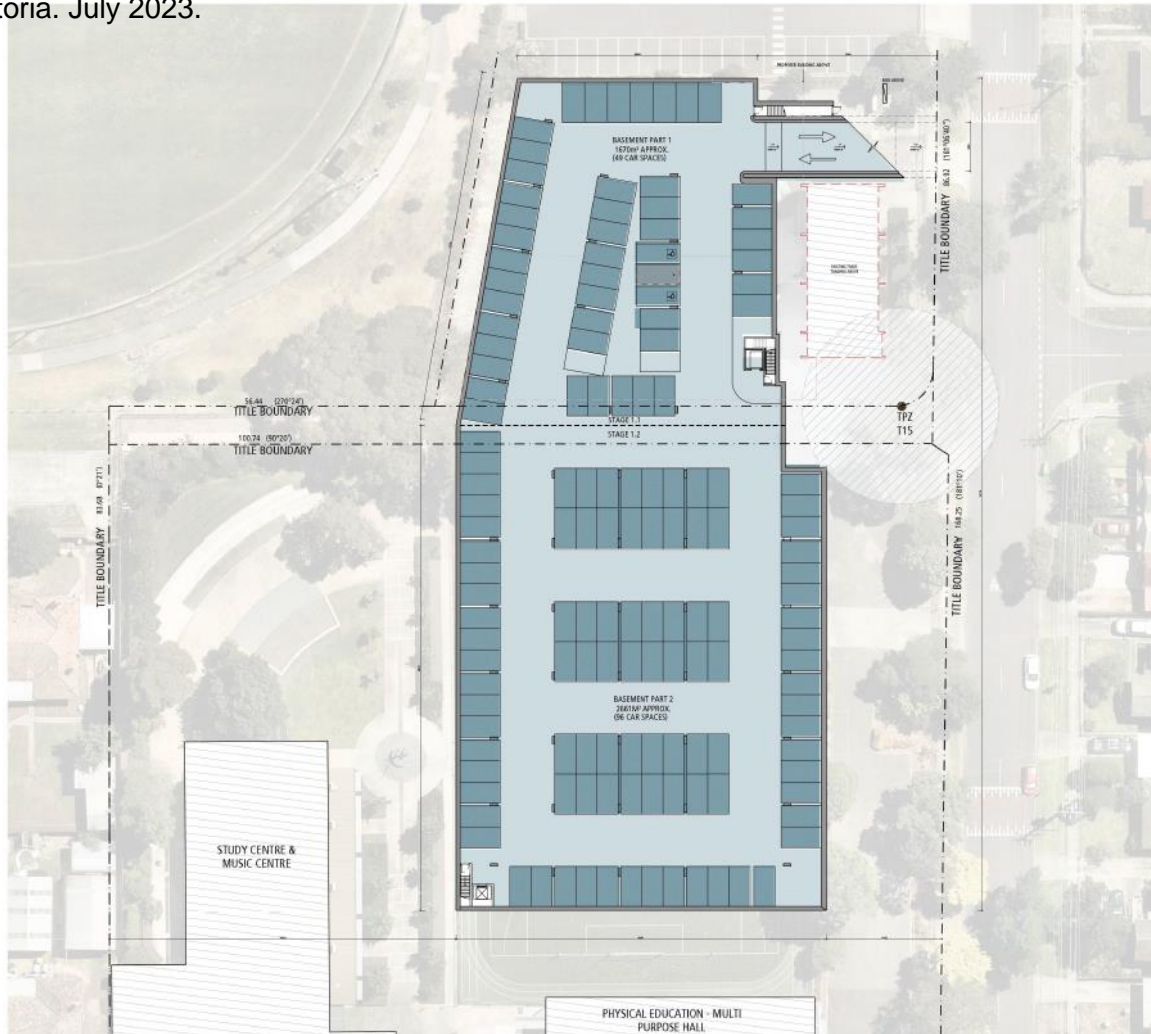
Appendix 2a. Tree location. Caroline Chisholm Catholic College - Sacred Heart & St Johns Campus - 204 Churchill Avenue, Braybrook, Victoria. November 2021



Appendix 2b. Site Survey and Tree location. Caroline Chisholm Catholic College - Sacred Heart & St Johns Campus - 204 Churchill Avenue, Braybrook, Victoria. May 2023.



Appendix 2c. Proposed basement. Caroline Chisholm Catholic College - Sacred Heart & St Johns Campus - 204 Churchill Avenue, Braybrook, Victoria. July 2023.



LEGEND:

| | |
|--|----------------------|
| | CAR SPACES |
| | DRIVEWAY |
| | TREE PROTECTION ZONE |

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PROJECT:
CCCC VET + STEM
204 CHURCHILL AVE BRAYBROOK

TITLE:
PROPOSED BASEMENT
CARPARK



CLIENT:
CAROLINE CHISHOLM CATHOLIC COLLEGE

DATE: JULY, 2023
DRAWN BY: TJ
SCALE: 1:250 (B&A)
SCALE: 1:500 (A3)

NO. 22374
TWO: TP04 A

| REV. | DATE | REVISION | BY | CHK |
|------|------|---------------------|----|-----|
| 1. | | TITLE PLANNING/2024 | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |

All areas indicated are indicative for design and planning purposes only and should not be used for any other purpose without reference to the relevant design or planning documents.

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Appendix 2d. Proposed ground floor. Caroline Chisholm Catholic College - Sacred Heart & St Johns Campus - 204 Churchill Avenue, Braybrook, Victoria. July 2023.



Appendix 3a. Explanation of Terms

Age

| Category | Description |
|-------------|--|
| Juvenile | Small/young tree in terms of its potential physical size and reproductive ability. May have been recently planted. |
| Semi-Mature | Tree in active growth phase of life cycle and not yet of an expected maximum physical size for location. |
| Mature | Specimen has reached an expected maximum physical size and reproductive ability for the species in its particular location. |
| Senescent | The period of a plant's life cycle between maturity and death when a gradual deterioration in health occurs, often resulting in the abscission/shedding of fruit, foliage, and branches. |

Health

| Category | Description |
|-----------|--|
| Excellent | Exceptional specimen. Canopy full & evenly balanced. Entire foliage cover that is of good size and colour for species with no visible pathogen damage. Excellent growth indicators, e.g. seasonal extension growth, tree ideally suited to site. |
| Good | Crown full of foliage, can be slightly unbalanced. Good canopy density, foliage colour and size with minimal or no visible pathogen damage. None or minimal deadwood in canopy and good growth indicators, e.g. seasonal extension growth. |
| Fair | Canopy may be unbalanced. Reduced canopy density for species, with a possible reduction in foliage size and/or discolouration. Visible amounts of deadwood in canopy. Canopy may contain levels of epicormic growth. Minor pathogen damage present. |
| Poor | Clearly reduced canopy density for species. Significant amounts of deadwood and/or epicormic growth in canopy with noticeable dieback in branch tips. Discoloured foliage and/or reduced leaf size. Pathogen attack evident. Tree clearly in state of stress and health likely to decline further. |
| Dead | Tree is dead with no visible live material. Bark may be visibly peeling from trunk and/or branches. |

Structure:

| Category | Description |
|-----------|---|
| Good | Sound branch attachment with no visible structural defects e.g.: included bark. Trunk undamaged with no visible wounds. No visible damage to roots that could affect tree stability. No evident pests or diseases. |
| Fair | Minor structural defects with small amounts of included bark; dubious branch attachment(s), apical leaders sharing common union(s). Minor damage to structural roots. Small wounds on trunk where decay has or could begin. |
| Poor | Noticeable structural fault(s) with significant levels of included bark. Union failure likely in a short period of time (0-5 years). Trunk or branch wounds evident with large cavities. Damage to structural roots. |
| Hazardous | Tree deemed to be of immediate concern with branch and/or complete tree failure imminent. Immediate arboricultural works are required to mitigate danger to people or property. |

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Safe Useful Life Expectancy (S.U.L.E.):

| Category |
|-----------------|
| 0-5 Years |
| 5-10 Years |
| 10-20 Years |
| 20-30 Years |
| 30-50 Years |
| 50-100 Years |

The S.U.L.E. of a tree refers to the period of time the tree can be retained within the landscape given its species, current age, health, structural condition, and location before its amenity value declines to a point where it may detract from the appearance of the landscape and/or becomes potentially hazardous to people and/or property.

Definitions

Epicormic Branches/Epicormic:

Fast growing, poorly attached branches, often produced by a tree as a result of stress or poor pruning practices.

Hazard:

Hazard tree evaluation is the systematic process of assessing the potential for a tree or its parts to fail and, in so doing, injure people or damage property. All trees have the potential to cause property damage or personal injury if failure occurs. The degree of hazard (and therefore the risk) will vary with the size of the tree, type and location of the defect, tree species and the nature of the target (Harris et al, 2004).

A tree is considered to be hazardous if it has structural defects that may cause part or all of it to fail, the size of the parts that fail could cause damage or injury and if targets are present for the tree or part thereof to fall onto. The greater the defect, the larger the part and the greater the occupancy of the target site, the greater the hazard. (Matheny & Clark, 1994).

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Tree Retention Values

Very High

Trees which have been given '**Very High**' retention value are considered to be of sufficient amenity or ecological and/or of historical significance and considered **irreplaceable**. Or are trees have the potential as a long-term landscape asset if management appropriately. Provision must be made for both the retention of these trees and the protection of the trees above and below ground structures (roots, trunk, and canopies) from construction impact.

High

Trees which have been given '**High**' retention value are considered to be of substantial amenity or ecological significance and a prominent landscape feature and as such will be difficult to replace. Considerable effort should be made to retain these trees. Provision must be made for both the retention of these trees and the protection of the trees above and below ground structures (roots, trunk, and canopies) from construction impact.

Medium

Trees which have been given a '**Medium**' retention value are considered to be of some amenity or ecological value. As such it is 'desirable' that these trees are retained where possible as they have the potential to become a medium to long-term landscape feature. These trees can be of moderate quality with minor health and structural issues that can be managed with arboricultural input. Where practical the modification to the layout and design of the planning proposal should be considered to protect from construction impact.

Low

Trees which have been allocated a '**Low**' retention value are generally trees with little or no amenity or ecological value and unlikely to be a landscape feature. The tree may also be considered as a common weed species, in decline or contain structural faults with an expired SULE or may be exempt from permit requirements.

Remove

Trees which have been given 'Remove' recommendation are trees which are:

- Structurally unsound/dangerous.
- Environmental weed species.
- Dead or senescent. (Senescent trees are over mature trees in an advanced state of decline which is unlikely to be reversible.)
- Young trees which are unable to achieve full potential due to inherent defect, disease, or unsuitable location.

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Tree type

Indigenous species

Originating / occurring naturally and is characteristic to a particular region of Victoria. Tree, shrub or plant is an endemic local species that has provenance within the area of the subject site.

Victorian native species

Occurs naturally within various parts of Victoria but is not an indigenous or endemic species local to the subject site.

Australian native species

Originating / occurring naturally within various areas and parts of Australia but is not a Victorian native or indigenous species local to the subject site.

Exotic deciduous species

Originating outside of Australia and introduced from a foreign country, but not fully naturalized. Tree, shrub, or plant species sheds its leaves annually. Species usually planted / grown as a landscape specimen.

Exotic evergreen species

Originating outside of Australia and introduced from a foreign country, but not fully naturalized. Tree, shrub, or plant species retains its leaves all year round. Species usually planted / grown as a landscape specimen.

Palm Tree 'Palm'

Any of numerous plants of the family Arecaceae or alternatively Palmae, most species being tall and distinguished by their large, compound, **evergreen** leaves, known as fronds, arranged at the top of an unbranched stem. Roots are usually replaced by **adventitious** roots forming fibrous or fleshy root systems. A family in the monocot order or commonly referred to as a woody monocotyledon.

Other:

Specified as indicated.

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Construction Impact. Level of Encroachment

NO Impact - None

Tree will not be subject to any TPZ encroachments from any proposed development works. Trees can be retained.

Impact Minor Encroachment - Sustainable

Trees that will be subject to a Minor and sustainable level of encroachment within the TPZ area from any proposed development. The TPZ encroachment will have an incursion <10% within the total / optimum TPZ area. Tree is expected to remain viable.

Impact Major Encroachment - Viable

Trees that will be subject to a Major and sustainable level of encroachment within the TPZ area from any proposed development. The TPZ encroachment will have an incursion >10% within the total / optimum TPZ area.

- A non-destructive tree root investigation has demonstrated that roots were limited or absent within the area of proposed works.
- The species may be tolerant to tree root disturbance
- Modified or alternative tree sensitive building methods have been used within the layout and design of the planning proposal to limit tree root disturbance.

Impact Major Encroachment – Not Viable

Trees that will be subject to a Major level of encroachment within the TPZ area from any proposed development. The TPZ encroachment will have an incursion >10% within the total / optimum TPZ area or impacts within the SRZ.

Impact Severe - Removal

Trees that will require removal as they will be within the area of the proposed development.

Condition – Removal

A trees health or structural condition is so poor that it is not suitable for retention, regardless of any proposed layout and design of any planning proposal.

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