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PROFESSIONALS IN ARBORICULTURE

Arboricultural Impact Assessment and Development Impact Report

Site: 105 Gibson Street, Bowden

Date: Thursday, 19 December 2024

ATS7886-105GibStDIR

Contents

Report Reference Number: ATS7886-105GibStDIR

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Executive Summary

Arborman Tree Solutions has assessed the identified trees in the survey area at 105 Gibson Street, Bowden and adjacent properties. The assessment has identified the potential impacts to the trees from the proposed development and supporting infrastructure and recommended mitigation strategies where appropriate. The proposal involves the demolition of the existing dwellings and the construction of new apartments, town houses, car parking and associated infrastructure. This assessment provides recommendations in accordance with Australian Standard AS4970-2009 *Protection of trees on development sites* (AS4970-2009).

The assessment considered seventeen trees which are identified as a mix of various native, indigenous and exotic species. These trees have been planted as part of the landscaping of the area, within the gardens and streetscape. The majority of trees are considered to be in Good (10) or Fair (5) overall condition and have extended useful life expectancies; only Trees 9 and 13 are displaying Poor overall condition as evidenced by the compromising level of decay in the primary trunk and the modest dieback within the crown of Tree 9 and Tree 13 appears to have been previously removed and is regrowth from a buried stump.

The growing environment of the trees includes the adjacent compacted road reserve, kerbing, footpaths, open but semi-compacted nature-strip, landscaped garden and lawn areas.

Tree 1 is a Significant tree and Trees 5, 6 and 16 are Regulated trees as defined in the *PDI Act 2016* and the *Planning and Design Code (Regulated and Significant Tree Overlay)*. Trees 2-4, 7 and 14 are Exempt from regulation and the remaining trees, Trees 8-13, 15 and 17 are Unregulated. Significant and Regulated trees should be preserved if they meet aesthetic and/or environmental criteria as described in the *Planning and Design Code (Regulated and Significant Tree Overlay)*. When assessed against the relevant 'Performance Outcomes' none of the trees are considered to provide 'important' aesthetic and/or environmental benefit and as such their protection as Regulated/Significant trees that prevents an otherwise reasonable and expected development is not warranted.

The Arboricultural Impact Assessment has identified two regulated trees (Trees 5 and 6), five exempt trees (Trees 2, 3, 4, and 14), and seven unregulated trees (Trees 8-13 and 15) within the development area that will be negatively impacted and require removal to facilitate the development. As the trees have a Moderate or Low Retention Rating and do not display attributes that indicate they should be protected, their removal to accommodate an expected development that incorporates social infrastucture and housing is reasonable.

Additionally, one Significant tree, Tree 1, one Regulated tree, Tree 16 and one Unregulated tree, Tree 17, can all be retained as part of the development as the encroachment is less than 10% of the TPZ area or is within the existing encroachment, it is therefore highly unlikely that the proposed works will impact on the viability of these trees.

Brief

Arborman Tree Solutions was engaged by Future Urban Group to undertake an Arboricultural Impact Assessment and provide a Development Impact Report for the identified trees at 105 Gibson Street, Bowden. The purpose of the Arboricultural Impact Assessment and Development Impact Report is to identify potential impacts the proposed development will have on the trees and provide mitigation strategies to minimise the impact where appropriate.

The proposed development includes the demolition of the existing dwellings and the construction of new apartments, town houses, car parking and associated infrastructure. This assessment will determine the potential impacts the proposal may have on the trees within and adjacent to the site and recommend impact mitigation strategies in accordance with Australian Standard AS4970-2009 *Protection of trees on development sites* (AS4970-2009) for trees to be retained.

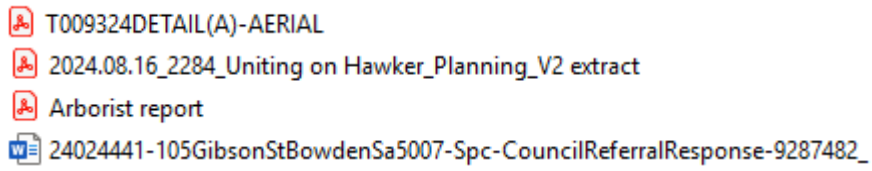
In accordance with section 2.2 of the AS4970-2009 the following information is provided:-

- Assessment of the general condition and structure of the subject trees.
- Identification of the legislative status of trees on site as defined in the *Planning, Development and Infrastructure Act 2016 (PDI Act 2016).*
- Identify and define the Tree Protection Zone (TPZ) and Structural Root Zone (SRZ) for each tree.
- Identify potential impacts the development may have on tree health and/or stability.
- Recommend impact mitigation strategies in accordance with AS4970-2009 for trees to be retained.
- Provide information in relation to the management of trees.

Documents and Information Provided

The following information was provided for the preparation of this assessment:-

- Email instruction on Scope of Works.
- Design Drawings.
- Associated documents:



Site Location

The trees are located in the gardens of 105 Gibson Street, Bowden and adjacent properties.

Figure 1: Site Location - 105 Gibson Street, Bowden

Methodology

The proposed design was reviewed in association with the information supplied in the Design Drawings and CAD files as provided by Future Urban Group.

The potential impact of the proposed works on tree condition is considered in accordance with the guidelines in AS4970-2009 *Protection of trees on development sites* (AS4970-2009). When determining potential impacts of an encroachment into a Tree Protection Zone (TPZ), the following should be considered as outlined in AS4970-2009 section 3.3.4 *TPZ encroachment considerations*:-

a) Location of roots and root development.

b) The potential loss of root mass from the encroachment.

c) Tree species and tolerance to root disturbance.

d) Age, vigour and size of the tree.

e) Lean and stability of the tree.

f) Soil characteristics and volume, topography, and drainage.

g) The presence of existing or past structures or obstacles affecting root growth.

h) Design factors.

The impacts on a tree can be varied and are not necessarily consistent with or directly corelated to a particular level of encroachment, to assist in providing consistency the levels of impact have been classified into the following categories:-

No Impact - no encroachment into the TPZ has been identified.

Low <10% - the identified encroachment is less than 10% of the TPZ area and not expected to impact tree viability.

Low >10% - the identified encroachment is greater than 10% of the TPZ area, however there are factors that indicate the proposed development will not negatively impact tree viability.

High >10% - the identified encroachment is greater than 10% of the TPZ area and factors are present that indicate the proposed development will negatively impact tree viability. The impact is likely to lead to the long-term decline of the tree, however it is unlikely to impact on its short-term stability.

Conflicted - the identified encroachment is greater than 10% of the TPZ area and in most cases will also impact the Structural Root Zone (SRZ) and/or the trunk. There are factors present that indicate the proposed development will negatively impact tree viability to the point where its removal is required as part of the development.

Trees with calculated encroachments greater than 10% and with an Impact identified as 'Low' have features or considerations identified in clauses in AS4970-2009 3.3.4 *TPZ encroachment considerations* which indicate these trees will be sustainable.

Trees with calculated encroachments greater than 10% and with an Impact identified as 'High' do not have any features or considerations identified in clauses in AS4970-2009 3.3.4 and therefore alternative design solutions, additional root investigations and/or tree sensitive construction measures are required if the tree is to be retained. Where alternative protection methodologies are not available tree removal may be required to accommodate the development.

Trees with an Impact identified as 'Conflicted' are impacted over the majority of their root zone and/or over the SRZ or on the trunk, additional root investigations or tree sensitive construction measures are not available, and the only option is alternative designs or tree removal.

Regulatory Status, Tree Protection Zones and Development Impacts are shown in Appendix B - Tree Assessment Findings.

Assessment

Arborman Tree Solutions has assessed the identified trees in the survey area at 105 Gibson Street, Bowden and adjacent properties. The assessment has identified the potential impacts to the trees from the proposed development and supporting infrastructure and recommended mitigation strategies where appropriate. The proposal involves the demolition of the existing dwellings and the construction of new apartments, town houses, car parking and associated infrastucture. This assessment provides recommendations in accordance with Australian Standard AS4970-2009 *Protection of trees on development sites* (AS4970-2009).

Tree Assessment

The assessment considered seventeen trees which are identified as a mix of various native, indigenous and exotic species. These trees have been planted as part of the landscaping of the area, within the gardens and streetscape. The majority of trees are considered to be in Good (10) or Fair (5) overall condition and have extended useful life expectancies; only Trees 9 and 13 are displaying Poor overall condition as evidenced by the compromising level of decay in the primary trunk and the modest dieback within the crown of Tree 9 and Tree 13 appears to have been previously removed and is regrowth from a buried stump.

The growing environment of the trees includes the adjacent compacted road reserve, kerbing, footpaths, open but semi-compacted nature-strip, landscaped garden and lawn areas.

Table 1 - Tree Identification

Botanic Name	Common Name	Number of Trees	Origin	Tree Numbers
Callistemon viminalis	Weeping Bottlebrush	3	Native	2, 5 and 7
Casuarina cunninghamiana	River She Oak	2	Native	6 and 14
Corymbia variegata	Northern Spotted Gum	1	Native	16
Cupaniopsis anacardioides	Tuckeroo	1	Native	3
Eucalyptus camaldulensis	River Red Gum	1	Indigenous	1
Eucalyptus leucoxylon ssp. stephaniae	Mallee Blue Gum	1	Native	17
Hymenosporum flavum	Native Frangipani	2	Native	4 and 9
Pyrus calleryana	Callery Pear	6	Exotic	8, 10-13 and 15

Findings on individual tree health and condition are presented in Appendix B - Tree Assessment Findings.

Legislative Assessment

Tree 1 is a Significant tree and Trees 5, 6 and 16 are Regulated trees as defined in the *PDI Act 2016* and the *Planning and Design Code (Regulated and Significant Tree Overlay)*. Trees 2-4, 7 and 14 are Exempt from regulation and the remaining trees, Trees 8-13, 15 and 17 are Unregulated. Significant and Regulated trees should be preserved if they meet aesthetic and/or environmental criteria as described in the *Planning and Design Code (Regulated and Significant Tree Overlay)*. When assessed against the relevant 'Performance Outcomes' none of the trees are considered to provide 'important' aesthetic and/or environmental benefit and as such their protection as Regulated/Significant trees that prevents an otherwise reasonable and expected development is not warranted.

Table 2 - Legislative Status

Legislative Status	Number of Trees	Tree Numbers
Significant	1	1
Regulated	3	5, 6, and 16
Unregulated	8	8-13, 15 and 17
Exempt	5	2-4, 7 and 14

Retention Assessment

Trees that provide important environmental and/or aesthetic contribution to the area, are in good condition scored a High Retention Rating and conservation of these trees is encouraged. Trees that score a Moderate Retention Rating provide a level of environmental and/or aesthetic benefit, however not to an important level; these trees should be retained if they can be adequately protected. Trees identified as not suitable for retention or attained a Low Tree Retention Rating, displayed one or a number of the following attributes:-

a) provide limited environmental/aesthetic benefit,

b) short lived species,

c) represent a material risk to persons or property,

d) identified as causing or threatening to cause substantial damage to a structure of value,

e) limited Useful Life Expectancy, and

f) young and easily replaced.

There are nine trees considered to be suitable for retention as they achieved a Moderate Retention Rating. The trees whilst partially displaying environmental and/or aesthetic attributes do not do so to a level that identifies them as important trees; they are, however, worthy of consideration for retention if they can be adequately protected in an otherwise reasonable and expected development.

Table 3 - Retention Rating

Retention Rating	Number of Trees	Tree Numbers
Moderate	9	1-6, 14, 16 and 17
Low	8	7-13 and 15

The remaining eight trees achieve a Low Retention Rating indicating they should not form a constraint to an otherwise reasonable and expected development.

***Note**: There are no trees on site that are identified as 'Special Value' trees due to their cultural or environmental value that would override their retention rating.*

Encroachment and Impact Assessment

Within AS4970-2009, relevant information is provided to assist with determining the impact on trees when developing in close proximity to them. Any tree that requires protection should be retained whilst remaining viable during and post development. Further guidance on how to suitably manage any proposed or encountered encroachments is identified in AS4970-2009. When assessing potential impacts, a Tree Protection Zone (TPZ) and Structural Root Zone (SRZ) are the principle means of protecting a tree and are provided in accordance with AS4970-2009 section 1.4.5 and 3.2. This standard has been applied to ensure trees identified for retention remain viable and the redevelopment is achievable.

The encroachment for Trees 16 and 17 is less than 10% of the TPZ area or within existing encroachment this type of encroachment is recognised as 'Minor' as defined in AS4970-2009 (See Appendix C - Mapping). This

level of encroachment results in a Low impact and additional root investigations are not required, warranted and have not been recommended in this instance.

The encroachment for Tree 1 is greater than 10% of the total TPZ area and is therefore classified as a 'Major Encroachment' as defined in AS4970-2009. AS4970-2009 also identifies relevant factors that should be considered when determining the 'impact' of encroachments such as this; these considerations are listed under section 3.3.4 *TPZ encroachment considerations*. When considering these factors, the proposed encroachment is unlikely to result in tree damaging activity that will result in the decline, death or failure of the trees and is therefore considered to be a Low Impact.

The following discusses the relevant factors of AS4970-2009 section 3.3.4 *TPZ encroachment considerations* for this tree

- 3.3.4 (c) '*Tree species and tolerance to root disturbance'*
  The species (*Eucalyptus camaldulensis*) has a good tolerance to root disturbance as its dimorphic root system has evolved to be able to exploit water at great depths. A dimorphic root system is an adaptation of evolutionary and environmental conditioning which essentially consists of two rooting systems, a lateral rooting system and a deep rooting system. The TPZ is therefore able to tolerate considerable encroachment without impacting tree viability.
- 3.3.4 (d) '*Age, vigour and size of the tree'*
  The tree is semi-mature and displays good health and vitality, indicating it can tolerate the proposed level of encroachment without noticeable impacts. Healthy and vigorous trees can manage various levels of pruning, demolition of existing structures, changes in soil grade and moisture, soil compaction and other root zone encroachments and are better able to adapt to the new site conditions once the development phase has been completed.
- 3.3.4 (g) '*The presence of existing or past structures or obstacles affecting root growth'*
  The existing encroachment has been in place or used for more than 30 years. This would therefore restrict root development in this area due to the poor growing environment created by the encroachment and continuous traffic. The replacement of the existing encroachment with the proposed encroachment is therefore unlikely to impact the long-term viability of the tree.
- 3.3.4 (h) '*Design factors'*
  Tree friendly methodologies and materials have been recommended to promote an adequate environment for the root architecture while facilitating the development to ensure the subject tree is not impacted by the proposal.

The encroachment for the remaining trees is greater than 20% of their TPZ and/or impacts the SRZ and trunk and as such, they will be destabilised by the required work and they are therefore considered to be Conflicted by the proposed development.

Table 4 - Development Impact

Impact	Number of Trees	Tree Numbers
Conflicted	14	2-15
Low	3	1, 16 and 17

Conclusion

The Arboricultural Impact Assessment has identified two regulated trees (Trees 5 and 6), five Exempt trees (Trees 2, 3, 4, and 14), and seven Unregulated trees (Trees 8-13 and 15) within the development area that will be negatively impacted and require removal to facilitate the development. As the trees have a Moderate or Low Retention Rating and do not display attributes that indicate they should be protected, their removal to accommodate an expected development that incorporates social infrastructure and housing is reasonable.

Additionally, one Significant tree, Tree 1, one Regulated tree, Tree 16 and one Unregulated tree, Tree 17, can all be retained as part of the development as the encroachment is less than 10% of the TPZ area or is within the existing encroachment. It is therefore highly unlikely that the proposed works will impact on the viability of these trees.

Recommendation

Tree Protection

Whilst the viability of the trees to be retained is unlikely to be impacted by the proposed works, there is potential for incidental damage and as such, Tree Protection is recommended as part of this construction.

The following is recommended as a minimum:-

1. Ensure all work requirements/activities in the vicinity of these trees are discussed and designed in consultation with the Project Arborist, i.e. no machinery operation in the vicinity of the trees without a Tree Protection Plan.
2. A Tree Protection Zone fence is to be erected to ensure access to the main trunk and branches is restricted to avoid accidental damage. The fence is to be installed prior to the commencement of all other site works including demolition.
3. If machinery access is required within areas of the Tree Protection Zone to be retained, ground protection is to be installed in consultation with the Project Arborist to ensure tree roots are not damaged.

These recommendations have been provided to ensure the balance between development and arboricultural management have been addressed and considered. If the recommendations are followed and adhered to the subject trees will not be negatively impacted by this proposal.

Thank you for the opportunity to provide this report. Should you have any questions or require further information, please contact me and I will be happy to be of assistance.

Yours sincerely,

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Diploma of Arboriculture – AHC50516
VALID Tree Risk Assessment (VALID)
Native Vegetation Council Trained Arborist
ISA – Tree Risk Assessment Qualification

Definitions

Circumference: trunk circumference measured at one metre above ground level. This measurement is used to determine the status of the tree in relation to the *Planning, Development and Infrastructure Act 2016 (PDI Act 2016)*.

Diameter at Breast Height: trunk diameter measured at 1.4 metres above ground level used to determine the Tree Protection Zone as described in Australian Standard AS4970-2009 *Protection of trees on development sites*.

Diameter at Root Buttress: trunk diameter measured just above the root buttress as described in Australian Standard AS4970-2009 *Protection of trees on development sites* and is used to determine the Structural Root Zone.

Tree Damaging Activity: Tree damaging activity includes those activities described within the *Planning, Development and Infrastructure Act 2016 (PDI Act 2016),* such as removal, killing, lopping, ringbarking or topping or any other substantial damage such as mechanical or chemical damage, filling or cutting of soil within the TPZ. Can also include forms of pruning above and below the ground.

Tree Protection Zone (TPZ): area of root zone that should be protected to prevent substantial damage to the tree's health.

Structural Root Zone (SRZ): calculated area within the tree's root zone that is considered essential to maintain tree stability.

Project Arborist: a person with the responsibility for conducting a tree assessment, report preparation, consultation with designers, specifying tree protection measures, monitoring and certification. The Project Arborist must be competent in arboriculture, having acquired through training, minimum Australian Qualification Framework (AQTF) Level 5, Diploma of Horticulture (Arboriculture) and/or equivalent experience, the knowledge and skills enabling that person to perform the tasks required by this standard.

Encroachment: the area of a Tree Protection Zone that is within the proposed development area.

Impact: the effect on tree health, structure and/or viability as a result of required works associated with the proposed development within the TPZ or the vicinity of the tree(s).

References

Australian Standard AS4970–2009 ***Protection of trees on development sites***: Standards Australia.

Matheny N. Clark J. 1998: ***Trees and Development a Technical Guide to Preservation of Trees During Land Development***: International Society of Arboriculture, Champaign, Illinois, USA.

Appendix A - Tree Assessment Methodology

Tree Assessment Form (TAF©)

Record	Description
Tree	In botanical science, a tree is a perennial plant which consists of one or multiple trunks which supports branches and leaves. Trees are generally taller than 5 metres and will live for more than ten seasons, with some species living for hundreds or thousands of seasons.
Genus and Species	Botanical taxonomy of trees uses the binominal system of a genus and species, often there are subspecies and subgenus as well as cultivars. When identifying tree species, identification techniques such as assessing the tree's form, flower, stem, fruit and location are used. Identifying the right species is critical in assessing the tree's legalisation and environmental benefit. All efforts are made to correctly identify each tree to species level, where possible. Genus is the broader group to which the tree belongs e.g. *Eucalyptus, Fraxinus* and *Melaleuca*. Species identifies the specific tree within the genus e.g. *Eucalyptus camaldulensis*, *Fraxinus griffithi* or *Melaleuca styphelioides*. Trees will also be assigned the most commonly used Common Name. Common Names are not generally used for identification due to their nonspecific use, i.e. *Melia azedarach* is commonly known as White Cedar in South Australia but is also called Chinaberry Tree, Pride of India, Bead-tree, Cape Lilac, Syringa Berrytree, Persian Lilac, and Indian Lilac; equally similar common names can refer to trees from completely different Genus e.g. Swamp Oak, Tasmanian Oak and English Oak are from the *Casuarina, Eucalyptus* and *Quercus* genus's respectively.
Height	Tree height is estimated by the arborist at the time of assessment. Tree height is observed and recorded in the following ranges; <5m, 5-10m, 10-15m and >20m.
Spread	Tree crown spread is estimated by the arborist at the time of assessment and recorded in the following ranges <5m, 5-10m, 10-15m, 15-20m, >20m.
Health	Tree health is assessed using the Arborman Tree Solutions - Tree Health Assessment Method that is based on international best practice.
Structure	Tree structure is assessed using Arborman Tree Solutions - Tree Structure Assessment Method that is based on international best practice.
Tree Risk Assessment	Tree Risk is assessed using Tree Risk Assessment methodology. The person conducting the assessment has been trained in the International Society of Arboriculture Tree Risk Assessment Qualification (TRAQ), Quantified Tree Risk Assessment (QTRA) and/or VALID Tree Risk Assessment (VALID). Refer to the Methodology within the report for additional information.
Legislative Status	Legislation status is identified through the interpretation of the *Development Act 1993*, the *Natural Resource Management Act 2004,* the *Native Vegetation Act 1991* and/or any other legislation that may apply.
Mitigation	Measures to reduce tree risk, improve tree condition, remove structural flaws, manage other conditions as appropriate may be recommended in the form of pruning and is listed in the Tree Assessment Findings (Appendix B). Tree pruning is recommended in accordance with AS4373-2007 *Pruning amenity trees* where practicable. Where measures to mitigate risk is not possible and the risk is unacceptable, then tree removal or further investigation is recommended.

Useful Life Expectancy (ULE)

ULE Rating	Definition
Surpassed	The tree has surpassed its Useful Life Expectancy. Trees that achieve a surpassed ULE may do so due to poor health, structure or form. Additionally, trees that are poorly located such as under high voltage powerlines or too close to structures may also achieve a surpassed ULE. Trees that achieve this status will be recommended for removal as there are no reasonable options to retain them.
<10 years	The tree displays either or both Poor Health and/or Structure and is considered to have a short Useful Life Expectancy of less than ten years. Some short-lived species such as *Acacia sp*. may naturally achieve a short ULE.
>10 years	The tree displays Fair Health or Structure and Good Health or Structure and is considered to have a Useful Life Expectancy of ten years or more. Trees identified as having a ULE of >10, will require mitigation such as pruning, stem injections or soil amelioration to increase their ULE.
>20 years	The tree displays Good Health and Structure and is considered to have an extended Useful Life Expectancy of more than twenty years.

Maturity (Age)

Age Class	Definition
Senescent	The tree has surpassed its optimum growing period and is declining and/or reducing in size. May be considered as a veteran in relation to its ongoing management. Tree will have generally reached greater than 80% of its expected life expectancy.
Mature	A mature tree is one that has reached its expected overall size, although the tree's trunk is still expected to continue growing. Tree maturity is also assessed based on species; as some trees are much longer lived than others. Tree will have generally reached 20-80% of its expected life expectancy.
Semi Mature	A tree which has established but has not yet reached maturity. Normally tree establishment practices such as watering will have ceased. Tree will generally not have reached 20% of its expected life expectancy.
Juvenile	A newly planted tree or one which is not yet established in the landscape. Tree establishment practices such as regular watering will still be in place. Tree will generally be a newly planted specimen up to five years old; this may be species dependant.

Tree Health Assessment (THA©)

Category	Description
Good	Tree displays normal vigour, uniform leaf colour, no or minor dieback (<5%), crown density (>90%). When a tree is deciduous, healthy axillary buds and typical internode length is used to determine its health. A tree with good health would show no sign of disease and no or minor pest infestation was identified. The tree has little to no pest and/or disease infestation.
Fair	Tree displays reduced vigour abnormal leaf colour, a moderate level of dieback (<15%), crown density (>70%) and in deciduous trees, reduced axillary buds and internode length. Minor pest and/or disease infestation potentially impacting on tree health. Trees with fair health have the potential to recover with reasonable remedial treatments.
Poor	Tree displays an advanced state of decline with low or no vigour, chlorotic or dull leaf colour, with high crown dieback (>15%), low crown density (<70%) and/or in deciduous trees, few or small axillary buds and shortened internode length. Pest and or disease infestation is evident and/or widespread. Trees with poor health are highly unlikely to recover with any remedial treatments; these trees have declined beyond the point of reversal.
Dead	The tree has died and has no opportunity for recovery.

Tree Structural Assessment (TSA©)

Category	Description
Good	Little to no branch failure observed within the crown, well-formed unions, no included bark, good branch and trunk taper present, root buttressing and root plate are typical. Trees that are identified as having good health display expected condition for their age, species and location.
Fair	The tree may display one or more of the following a history of minor branch failure, included bark unions may be present however, are stable at this time, acceptable branch and trunk taper present, root buttressing and root plate are typical. Trees with fair structure will generally require reasonable remediation methods to ensure the tree's structure remains viable.
Poor	History of significant branch failure observed in the crown, poorly formed unions, unstable included bark unions present, branch and/or trunk taper is abnormal, root buttressing and/or root plate are atypical.
Failed	The structure of the tree has or is in the process of collapsing.

Tree Form Assessment (TFA©)

Category	Description
Good	Form is typical of the species and has not been altered by structures, the environment or other trees.
Fair	The form has minor impacts from structures, the environment or adjacent trees which has altered its shape. There may be slight phototropic response noted or moderate pruning which has altered the tree's form.
Poor	The tree's form has been substantially impacted by structures, the environment, pruning or other trees. Phototropic response is evident and unlikely to be corrected.
Atypical	Tree form is highly irregular due to structures or other trees impacting its ability to correctly mature. Extreme phototropic response is evident; or the tree has had a substantially failure resulting in its poor condition, or extensive pruning has altered the tree's form irreversibly.

Priority

Category	Description
Low	Identified works within this priority should be carried out within 12 months.
Medium	Identified works within this priority should be carried out within 6 months.
High	Identified works within this priority should be carried out within 3 months.
Urgent	Identified works within this priority should be carried out immediately. Works within this priority rating will be brought to attention of the responsible person at the time of assessment.

Tree Retention Rating (TRR)

The Tree Retention Rating is based on a number of factors that are identified as part of the standard tree assessment criteria including Condition, Size, Environmental, Amenity and Special Values. These factors are combined in a number of matrices to provide a Preliminary Tree Retention Rating and a Tree Retention Rating Modifier which combine to provide a Tree Retention Rating that is measurable, consistent and repeatable

Preliminary Tree Retention Rating

The Preliminary Tree Retention Rating is conducted assessing Tree Health and Structure to give an overall Condition Rating and Height and Spread to give an overall Size Rating. The following matrices identify how these are derived.

Condition Matrix				
Structure	**Health**			
	Good	**Fair**	**Poor**	**Dead**
Good	Good	Fair	Poor	Very Poor
Fair	Fair	Fair	Poor	Very Poor
Poor	Poor	Poor	Poor	Very Poor
Failed	Very Poor	Very Poor	Very Poor	Very Poor

Size Matrix					
Spread	**Height**				
	>20	**15-20**	**10-15**	**5-10**	**<5**
>20	Very Large	Large	Medium	Medium	Medium
15-20	Large	Large	Medium	Medium	Medium
10-15	Medium	Medium	Medium	Medium	Medium
5-10	Medium	Medium	Medium	Small	Small
<5	Medium	Medium	Medium	Small	Very Small

The results from the Condition and Size Matrices are then placed in the Preliminary Tree Retention Rating Matrix.

Preliminary Tree Retention Rating				
Size	**Condition**			
	Good	**Fair**	**Poor**	**Very Poor**
Very Large	High	Moderate	Low	Low
Large	High	Moderate	Low	Low
Medium	Moderate	Moderate	Low	Low
Small	Moderate	Low	Low	Low
Very Small	Low	Low	Low	Low

The Preliminary Tree Retention Rating gives a base rating for all trees regardless of other environmental and/or amenity factors and any Special Value considerations. The Preliminary Tree Retention Rating can only be modified if these factors are considered to be of high or low enough importance to warrant increasing or, in a few cases, lowering the original rating.

Tree Retention Rating Modifier

The Preliminary Tree Retention Rating is then qualified against the recognised Environmental and Amenity benefits that trees present to the community thereby providing a quantitative measure to determine the overall Tree Retention Rating. Data is collected in relation to Environmental and Amenity attributes which are compared through a set of matrices to produce a Tree Retention Rating Modifier.

Environmental Matrix				
Origin	**Habitat**			
	High Habitat	**Medium**	**Low**	**No Habitat**
Indigenous	High	Moderate	Moderate	Low
Native	Moderate	Moderate	Low	Low
Exotic	Moderate	Low	Low	Low
Weed	Moderate	Low	Low	Low

Amenity Matrix				
Character	**Aesthetics**			
	High	**Moderate**	**Low**	**None**
High	High	High	Moderate	Moderate
Moderate	High	Moderate	Moderate	Low
Low	Moderate	Moderate	Low	Low
None	Moderate	Low	Low	Low

Tree Retention Rating Modifier			
Amenity	**Environment**		
	High	**Moderate**	**Low**
High	High	High	Moderate
Moderate	High	Moderate	Moderate
Low	Moderate	Moderate	Low

Tree Retention Rating

The results of the Preliminary Tree Retention Rating and the Tree Retention Rating Modifier matrices are combined in a final matrix to give the actual Tree Retention Rating.

Tree Retention Rating Matrix			
Tree Retention Rating Modifier	**Preliminary Tree Retention Rating**		
	High	**Moderate**	**Low**
High	High	High	Moderate
Moderate	Moderate	Moderate	Low
Low	Moderate	Low	Low

Special Value Trees

Trees can have 'Special Value' for reasons outside of normal Arboricultural assessment protocols and therefore would not have been considered in the assessment to this point; to allow for this a Special Value characteristic that can override the Tree Retention Rating can be selected. Special Value characteristics that could override the Tree Retention Rating would include factors such as the following:

Cultural Values

Memorial Trees, Avenue of Honour Trees, Aboriginal Heritage Trees, Trees planted by Dignitaries and various other potential categories.

Environmental Values

Rare or Endangered species, Remnant Vegetation, Important Habitat for rare or endangered wildlife, substantial habitat value in an important biodiversity area and various other potential categories.

Where a tree achieves one or more Special Value characteristics the Tree Retention Rating will automatically be overridden and assigned the value of Important.

Tree Retention Rating Definitions

Special Value These trees will in all instances be required to be retained within any future development/redevelopment. It is highly unlikely that trees that achieve this rating would be approved for removal or any other tree damaging activity. Trees will have either important cultural or environmental value, that warrant their protection regardless of other Arboricultural considerations.

High These trees will in most instances be required to be retained within any future development/redevelopment. It is unlikely that trees that achieve this rating would be approved for removal or any other tree damaging activity. Trees in this category will provide a high level of amenity and/or environmental benefit and are still good overall condition.

Moderate Trees with a moderate retention rating provide limited environmental benefit and amenity to the area. These trees may be semi mature or exotic species with limited environmental value. Moderate trees may also be large trees that display fair overall condition.

Low These trees may not be considered suitable for retention in a future development or redevelopment. These trees will either be young trees that are easily replaced or in poor overall condition. Trees in this category do not warrant special works or design modifications to allow for their retention. Trees in this category are likely to be approved for removal and/or other tree damaging activity in an otherwise reasonable and expected development. Protection of these trees, where they are identified to be retained, should be consistent with Australian Standard AS4970-2009 *Protection of trees on development sites*.

Development Impact Assessment

Potential development impacts were determined in accordance with Australian Standard 4970-2009 *Protection of trees on development sites.* The identification of the impact of development considers a number of factors including the following:

a. The extent of encroachment into a tree's Tree Protection Zone by the proposed development as a percentage of the area.

b. Results of any non-destructive exploratory investigations that may have occurred to determine root activity.

c. Any required pruning that may be needed to accommodate the proposed development.

d. Tree species and tolerance to root disturbance.

e. Age, vigour and size of the tree.

f. Lean and stability of the tree.

g. Soil characteristics and volume, topography and drainage.

h. The presence of existing or past structures or obstacles potentially affecting root growth.

i. Design factors incorporated into the proposed development to minimise impact.

The impacts on a tree can be varied and are not necessarily consistent with or directly corelated to a particular level of encroachment, to assist in providing consistency the levels of impact have been classified into the following categories: -

No Impact - no encroachment into the TPZ has been identified.

Low <10% - the identified encroachment is less than 10% of the TPZ area and not expected to impact tree viability.

Low >10% - the identified encroachment is greater than 10% of the TPZ area however there are factors that indicate the proposed development will not negatively impact tree viability.

High >10% - the identified encroachment is greater than 10% of the TPZ area and factors are present that indicate the proposed development will negatively impact tree viability. The impact is likely to lead to the long-term decline of the tree however it is unlikely to impact on its short-term stability.

Conflicted - the identified encroachment is greater than 10% of the TPZ area and in most cases will also impact the SRZ and/or the trunk. There are factors present that indicate the proposed development will negatively impact tree viability to the point where its removal is required as part of the development.

Trees with calculated encroachments greater than 10% and with an Impact identified as 'Low' have features or considerations identified in clauses in AS4970-2009 3.3.4 *TPZ encroachment considerations* which indicate these trees should be sustainable.

Trees with calculated encroachments greater than 10% and with an Impact identified as 'High' do not have any features or considerations identified in clauses in AS4970-2009 3.3.4 and therefore alternative design solutions, additional root investigations and/or tree sensitive construction measures are required if the tree is to be retained. Where alternative protection methodologies are not available tree removal may be required to accommodate the development.

Trees with an Impact identified as 'Conflicted' are impacted over the majority of their root zone and/or over the SRZ or on the trunk, additional root investigations or tree sensitive construction measures are not available and the only option is alternative designs or tree removal.

Appendix B - Tree Assessment Findings

Eucalyptus camaldulensis

Tree No: 1

River Red Gum

Inspected:	14 November 2024
Height:	15-20 metres
Spread:	10-15 metres
Health:	Good
Structure:	Fair
Form:	Fair
Trunk Circumference:	>2 metres
Useful Life Expectancy:	>10 years
Tree Protection Zone:	12.00 metres
Structural Root Zone:	3.48 metres

Observations

This tree is in good health but has a reduced overall condition due to the historical pruning resulting in increased epicormic growth. There is obvious deadwood within the crown but appears to be typical of the species and its age.

Legislative Status	Significant

This tree has a trunk circumference greater than two metres and is not subject to any exemption from regulation and therefore it is identified as a Significant Tree as defined in the Planning, Development and Infrastructure Act 2016.

Retention Rating	Moderate

This tree has a Moderate Retention Rating and could be considered for retention if it can be protected. Tree damaging activity, including removal, may be approved if it is shown that reasonable alternative design solutions are not available.

Development Impact	Low

The identified encroachment is greater than 10% of the TPZ area however there are factors that indicate the proposed development will not negatively impact tree viability.

Action	Protect Root Zone

Protect the root zone and crown in accordance with the recommendations and principles of AS4970-2009 Protection of trees on development sites.

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Callistemon viminalis

Tree No: 2

Weeping Bottlebrush

Inspected:	14 November 2024
Height:	5-10 metres
Spread:	5-10 metres
Health:	Good
Structure:	Good
Form:	Fair
Trunk Circumference:	>1 metres
Useful Life Expectancy:	>20 years
Tree Protection Zone:	3.84 metres
Structural Root Zone:	2.15 metres

Observations

The health and structure of this tree indicate it is in good overall condition and has adapted to its local environment. The dimensions of this tree have been estimated due to access restrictions.

Legislative Status	Exempt

This tree is within 3 metres of a dwelling or inground swimming pool and is therefore exempt from control under the Planning, Development and Infrastructure Act 2016.

Retention Rating	Moderate

This tree has a Moderate Retention Rating and could be considered for retention if it can be protected. Tree damaging activity, including removal, may be approved if it is shown that reasonable alternative design solutions are not available.

Development Impact	Conflicted

This tree is in the building envelope and the encroachment covers the entire TPZ area, the SRZ and the trunk. This tree cannot be successfully retained in this proposal.

Action	Removal Required

Tree removal is required to facilitate the proposed development.

Cupaniopsis anacardioides

Tree No: 3

Tuckeroo

Inspected:	14 November 2024
Height:	5-10 metres
Spread:	<5 metres
Health:	Good
Structure:	Good
Form:	Fair
Trunk Circumference:	>1 metres
Useful Life Expectancy:	>20 years
Tree Protection Zone:	3.90 metres
Structural Root Zone:	2.17 metres

Observations

The health and structure of this tree indicate it is in good overall condition and has adapted to its local environment. There is evidence of early stage included bark, however this is not significant or impacting the structural rating for this tree.

Legislative Status	Exempt

This tree is within 3 metres of a dwelling or inground swimming pool and is therefore exempt from control under the Planning, Development and Infrastructure Act 2016.

Retention Rating	Moderate

This tree has a Moderate Retention Rating and could be considered for retention if it can be protected. Tree damaging activity, including removal, may be approved if it is shown that reasonable alternative design solutions are not available.

Development Impact	Conflicted

This tree is in the building envelope and the encroachment covers the entire TPZ area, the SRZ and the trunk. This tree cannot be successfully retained in this proposal.

Action	Removal Required

Tree removal is required to facilitate the proposed development.

Hymenosporum flavum

Tree No: 4

Native Frangipani

Inspected:	14 November 2024
Height:	5-10 metres
Spread:	5-10 metres
Health:	Good
Structure:	Good
Form:	Fair
Trunk Circumference:	>1 metres
Useful Life Expectancy:	>20 years
Tree Protection Zone:	3.84 metres
Structural Root Zone:	2.15 metres

Observations

The health and structure of this tree indicate it is in good overall condition and has adapted to its local environment. This trees dimensions have been estimated due to access restrictions.

Legislative Status	Exempt

This tree is within 3 metres of a dwelling or inground swimming pool and is therefore exempt from control under the Planning, Development and Infrastructure Act 2016.

Retention Rating	Moderate

This tree has a Moderate Retention Rating and could be considered for retention if it can be protected. Tree damaging activity, including removal, may be approved if it is shown that reasonable alternative design solutions are not available.

Development Impact	Conflicted

This tree is in the building envelope and the encroachment covers the entire TPZ area, the SRZ and the trunk. This tree cannot be successfully retained in this proposal.

Action	Removal Required

Tree removal is required to facilitate the proposed development.

Callistemon viminalis

Tree No: 5

Weeping Bottlebrush

Inspected:	14 November 2024
Height:	5-10 metres
Spread:	5-10 metres
Health:	Good
Structure:	Good
Form:	Fair
Trunk Circumference:	>1 metres
Useful Life Expectancy:	>20 years
Tree Protection Zone:	3.84 metres
Structural Root Zone:	2.15 metres

Observations

The health and structure of this tree indicate it is in good overall condition and has adapted to its local environment. There is evidence of early stage included bark, however this is not significant or impacting the structural rating for this tree. The dimensions of this tree have been estimated due to access restrictions.

Legislative Status	Regulated

This tree has a trunk circumference greater than one metre but less than two metres and is not subject to any exemption from regulation and therefore it is identified as a Regulated Tree as defined in the Planning, Development and Infrastructure Act 2016.

Retention Rating	Moderate

This tree has a Moderate Retention Rating and could be considered for retention if it can be protected. Tree damaging activity, including removal, may be approved if it is shown that reasonable alternative design solutions are not available.

Development Impact	Conflicted

This tree is in the building envelope and the encroachment covers the entire TPZ area, the SRZ and the trunk. This tree cannot be successfully retained in this proposal.

Action	Removal Required

Tree removal is required to facilitate the proposed development.

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Casuarina cunninghamiana

Tree No: 6

River She Oak

Inspected:	14 November 2024
Height:	15-20 metres
Spread:	10-15 metres
Health:	Good
Structure:	Good
Form:	Good
Trunk Circumference:	>1 metres
Useful Life Expectancy:	>20 years
Tree Protection Zone:	7.20 metres
Structural Root Zone:	2.85 metres

Observations

The health and structure of this tree indicate it is in good overall condition and has adapted to its local environment. There is obvious deadwood within the crown, however this is within normal levels and not an indicator of reduced health.

Legislative Status	Regulated

This tree has a trunk circumference greater than one metre but less than two metres and is not subject to any exemption from regulation and therefore it is identified as a Regulated Tree as defined in the Planning, Development and Infrastructure Act 2016.

Retention Rating	Moderate

This tree has a Moderate Retention Rating and could be considered for retention if it can be protected. Tree damaging activity, including removal, may be approved if it is shown that reasonable alternative design solutions are not available.

Development Impact	Conflicted

This tree is in the building envelope and the encroachment covers the entire TPZ area, the SRZ and the trunk. This tree cannot be successfully retained in this proposal.

Action	Removal Required

Tree removal is required to facilitate the proposed development.

Callistemon viminalis

Tree No: 7

Weeping Bottlebrush

Inspected:	14 November 2024
Height:	<5 metres
Spread:	<5 metres
Health:	Good
Structure:	Fair
Form:	Fair
Trunk Circumference:	>1 metres
Useful Life Expectancy:	>10 years
Tree Protection Zone:	4.12 metres
Structural Root Zone:	2.23 metres

Observations

This tree is considered to be in fair overall condition due to the presence of a moderate level of decay and a currently stable included bark union in the primary trunk division.

Legislative Status	Exempt

This tree is within 3 metres of a dwelling or inground swimming pool and is therefore exempt from control under the Planning, Development and Infrastructure Act 2016.

Retention Rating	Low

This tree has a Low Retention Rating and should not form a material constraint to the redevelopment of this site. Tree damaging activity, including removal, is likely to be approved as part of an otherwise reasonable development.

Development Impact	Conflicted

This tree is in the building envelope and the encroachment covers the entire TPZ area, the SRZ and the trunk. This tree cannot be successfully retained in this proposal.

Action	Removal Required

Tree removal is required to facilitate the proposed development.

Pyrus calleryana

Tree No: 8

Callery Pear

Inspected:	14 November 2024
Height:	<5 metres
Spread:	<5 metres
Health:	Good
Structure:	Good
Form:	Fair
Trunk Circumference:	<1 metres
Useful Life Expectancy:	>20 years
Tree Protection Zone:	2.00 metres
Structural Root Zone:	1.50 metres

Observations

The health and structure of this tree indicate it is in good overall condition and has adapted to its local environment.

Legislative Status	Unregulated

This tree does not achieve a regulated trunk circumference and therefore is not regulated by the Planning, Development and Infrastructure Act 2016.

Retention Rating	Low

This tree has a Low Retention Rating and should not form a material constraint to the redevelopment of this site. Tree damaging activity, including removal, is likely to be approved as part of an otherwise reasonable development.

Development Impact	Conflicted

This tree is in the building envelope and the encroachment covers the entire TPZ area, the SRZ and the trunk. This tree cannot be successfully retained in this proposal.

Action	Removal Required

Tree removal is required to facilitate the proposed development.

Hymenosporum flavum

Tree No: 9

Native Frangipani

Inspected:	14 November 2024
Height:	5-10 metres
Spread:	<5 metres
Health:	Good
Structure:	Poor
Form:	Fair
Trunk Circumference:	<1 metres
Useful Life Expectancy:	<10 years
Tree Protection Zone:	3.36 metres
Structural Root Zone:	2.05 metres

Observations

This tree is considered to be in poor overall condition due to the compromising level of decay in the primary trunk and the modest dieback within the crown.

Legislative Status	Unregulated

This tree does not achieve a regulated trunk circumference and therefore is not regulated by the Planning, Development and Infrastructure Act 2016.

Retention Rating	Low

This tree has a Low Retention Rating and should not form a material constraint to the redevelopment of this site. Tree damaging activity, including removal, is likely to be approved as part of an otherwise reasonable development.

Development Impact	Conflicted

This tree is in the building envelope and the encroachment covers the entire TPZ area, the SRZ and the trunk. This tree cannot be successfully retained in this proposal.

Action	Removal Required

Tree removal is required to facilitate the proposed development.

Pyrus calleryana

Tree No: 10

Callery Pear

Inspected:	14 November 2024
Height:	<5 metres
Spread:	<5 metres
Health:	Good
Structure:	Fair
Form:	Fair
Trunk Circumference:	<1 metres
Useful Life Expectancy:	>10 years
Tree Protection Zone:	2.00 metres
Structural Root Zone:	1.50 metres

Observations

This tree is considered to be in fair overall condition. There is a moderate level of decay within the primary trunk and/or branches, however the tree is otherwise healthy and appears to be self optimising.

Legislative Status	Unregulated

This tree does not achieve a regulated trunk circumference and therefore is not regulated by the Planning, Development and Infrastructure Act 2016.

Retention Rating	Low

This tree has a Low Retention Rating and should not form a material constraint to the redevelopment of this site. Tree damaging activity, including removal, is likely to be approved as part of an otherwise reasonable development.

Development Impact	Conflicted

This tree is in the building envelope and the encroachment covers the entire TPZ area, the SRZ and the trunk. This tree cannot be successfully retained in this proposal.

Action	Removal Required

Tree removal is required to facilitate the proposed development.

Pyrus calleryana

Tree No: 11

Callery Pear

Inspected:	14 November 2024
Height:	5-10 metres
Spread:	<5 metres
Health:	Fair
Structure:	Good
Form:	Fair
Trunk Circumference:	<1 metres
Useful Life Expectancy:	>10 years
Tree Protection Zone:	2.76 metres
Structural Root Zone:	1.88 metres

Observations

This tree has increased epicormic growth on the scaffold branches but is otherwise in good health.

Legislative Status	Unregulated

This tree does not achieve a regulated trunk circumference and therefore is not regulated by the Planning, Development and Infrastructure Act 2016.

Retention Rating	Low

This tree has a Low Retention Rating and should not form a material constraint to the redevelopment of this site. Tree damaging activity, including removal, is likely to be approved as part of an otherwise reasonable development.

Development Impact	Conflicted

This tree is in the building envelope and the encroachment covers the entire TPZ area, the SRZ and the trunk. This tree cannot be successfully retained in this proposal.

Action	Removal Required

Tree removal is required to facilitate the proposed development.

Pyrus calleryana

Tree No: 12

Callery Pear

Inspected:	14 November 2024
Height:	<5 metres
Spread:	<5 metres
Health:	Fair
Structure:	Good
Form:	Fair
Trunk Circumference:	<1 metres
Useful Life Expectancy:	>10 years
Tree Protection Zone:	2.04 metres
Structural Root Zone:	1.65 metres

Observations

This tree has increased epicormic growth on the scaffold branches but is otherwise in good health.

Legislative Status	Unregulated

This tree does not achieve a regulated trunk circumference and therefore is not regulated by the Planning, Development and Infrastructure Act 2016.

Retention Rating	Low

This tree has a Low Retention Rating and should not form a material constraint to the redevelopment of this site. Tree damaging activity, including removal, is likely to be approved as part of an otherwise reasonable development.

Development Impact	Conflicted

This tree is in the building envelope and the encroachment covers the entire TPZ area, the SRZ and the trunk. This tree cannot be successfully retained in this proposal.

Action	Removal Required

Tree removal is required to facilitate the proposed development.

Pyrus calleryana

Tree No: 13

Callery Pear

Inspected:	14 November 2024
Height:	<5 metres
Spread:	<5 metres
Health:	Good
Structure:	Poor
Form:	Poor
Trunk Circumference:	<1 metres
Useful Life Expectancy:	<10 years
Tree Protection Zone:	2.00 metres
Structural Root Zone:	1.50 metres

Observations

This tree is considered to be in poor overall condition due to the lopping of the crown and poor attachment of the resultant epicormic growth. This tree appears to have been previously removed and is regrowth from a buried stump.

Legislative Status	Unregulated

This tree does not achieve a regulated trunk circumference and therefore is not regulated by the Planning, Development and Infrastructure Act 2016.

Retention Rating	Low

This tree has a Low Retention Rating and should not form a material constraint to the redevelopment of this site. Tree damaging activity, including removal, is likely to be approved as part of an otherwise reasonable development.

Development Impact	Conflicted

This tree is in the building envelope and the encroachment covers the entire TPZ area, the SRZ and the trunk. This tree cannot be successfully retained in this proposal.

Action	Removal Required

Tree removal is required to facilitate the proposed development.

Casuarina cunninghamiana

Tree No: 14

River She Oak

Inspected:	14 November 2024
Height:	15-20 metres
Spread:	5-10 metres
Health:	Good
Structure:	Good
Form:	Fair
Trunk Circumference:	>2 metres
Useful Life Expectancy:	>20 years
Tree Protection Zone:	8.40 metres
Structural Root Zone:	3.00 metres

Observations

The health and structure of this tree indicate it is in good overall condition and has adapted to its local environment. There is obvious deadwood within the crown, however this is within normal levels and not an indicator of reduced health.

Legislative Status	Exempt

This tree is within 3 metres of a dwelling or inground swimming pool and is therefore exempt from control under the Planning, Development and Infrastructure Act 2016.

Retention Rating	Moderate

This tree has a Moderate Retention Rating and could be considered for retention if it can be protected. Tree damaging activity, including removal, may be approved if it is shown that reasonable alternative design solutions are not available.

Development Impact	Conflicted

This tree is in the building envelope and the encroachment covers the entire TPZ area, the SRZ and the trunk. This tree cannot be successfully retained in this proposal.

Action	Removal Required

Tree removal is required to facilitate the proposed development.

Pyrus calleryana

Tree No: 15

Callery Pear

Inspected:	14 November 2024
Height:	<5 metres
Spread:	<5 metres
Health:	Good
Structure:	Good
Form:	Fair
Trunk Circumference:	<1 metres
Useful Life Expectancy:	>20 years
Tree Protection Zone:	2.52 metres
Structural Root Zone:	1.82 metres

Observations

The health and structure of this tree indicate it is in good overall condition. There is a slight increase in the level of epicormic growth within the crown but this is not at a level that would affect the overall condition rating.

Legislative Status	Unregulated

This tree does not achieve a regulated trunk circumference and therefore is not regulated by the Planning, Development and Infrastructure Act 2016.

Retention Rating	Low

This tree has a Low Retention Rating and should not form a material constraint to the redevelopment of this site. Tree damaging activity, including removal, is likely to be approved as part of an otherwise reasonable development.

Development Impact	Conflicted

This tree is in the building envelope and the encroachment covers the entire TPZ area, the SRZ and the trunk. This tree cannot be successfully retained in this proposal.

Action	Removal Required

Tree removal is required to facilitate the proposed development.

Corymbia variegata

Tree No: 16

Northern Spotted Gum

Inspected:	14 November 2024
Height:	15-20 metres
Spread:	10-15 metres
Health:	Good
Structure:	Good
Form:	Fair
Trunk Circumference:	>1 metres
Useful Life Expectancy:	>20 years
Tree Protection Zone:	5.28 metres
Structural Root Zone:	2.65 metres

Observations

The health and structure of this tree indicate it is in good overall condition and has adapted to its local environment.

Legislative Status	Regulated

This tree has a trunk circumference greater than one metre but less than two metres and is not subject to any exemption from regulation and therefore it is identified as a Regulated Tree as defined in the Planning, Development and Infrastructure Act 2016.

Retention Rating	Moderate

This tree has a Moderate Retention Rating and could be considered for retention if it can be protected. Tree damaging activity, including removal, may be approved if it is shown that reasonable alternative design solutions are not available.

Development Impact	Low

The identified encroachment is less than 10% of the TPZ area and not expected to impact tree viability.

Action	Protect Root Zone

Protect the root zone and crown in accordance with the recommendations and principles of AS4970-2009 Protection of trees on development sites.

Eucalyptus leucoxylon ssp. stephaniae Tree No: 17

Mallee Blue Gum

Inspected:	14 November 2024
Height:	5-10 metres
Spread:	5-10 metres
Health:	Good
Structure:	Good
Form:	Fair
Trunk Circumference:	<1 metres
Useful Life Expectancy:	>20 years
Tree Protection Zone:	3.60 metres
Structural Root Zone:	2.08 metres

Observations

The health and structure of this tree indicate it is in good overall condition. There is a slight increase in the level of epicormic growth within the crown but this is not at a level that would affect the overall condition rating.

Legislative Status	Unregulated

This tree does not achieve a regulated trunk circumference and therefore is not regulated by the Planning, Development and Infrastructure Act 2016.

Retention Rating	Moderate

This tree has a Moderate Retention Rating and could be considered for retention if it can be protected. Tree damaging activity, including removal, may be approved if it is shown that reasonable alternative design solutions are not available.

Development Impact	Low

The identified encroachment is less than 10% of the TPZ area and not expected to impact tree viability.

Action	Protect Root Zone

Protect the root zone and crown in accordance with the recommendations and principles of AS4970-2009 Protection of trees on development sites.

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Floor Plan
Ground Floor

ATS7886-105GibStDIR
18/12/2024

PDIA 2016 Status

S	Significant
R	Regulated
E	Exempt
U	Unregulated

Legend

- TPZ - Retain
- TPZ - Remove

Tree Protection Plan

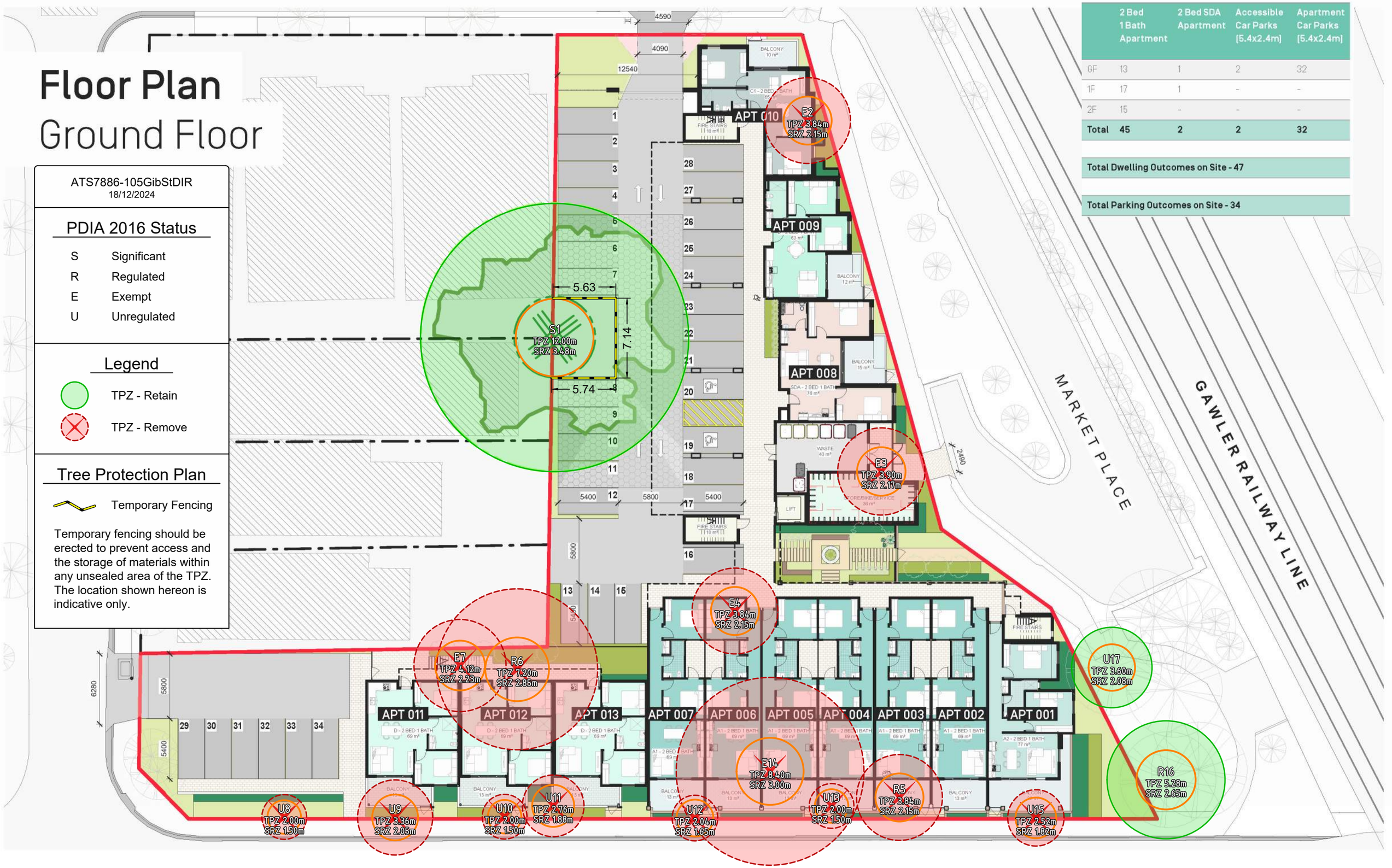
- Temporary Fencing

Temporary fencing should be erected to prevent access and the storage of materials within any unsealed area of the TPZ. The location shown hereon is indicative only.

	2 Bed 1 Bath Apartment	2 Bed SDA Apartment	Accessible Car Parks (5.4x2.4m)	Apartment Car Parks (5.4x2.4m)
GF	13	1	2	32
1F	17	1	-	-
2F	15	-	-	-
Total	**45**	**2**	**2**	**32**

Total Dwelling Outcomes on Site - 47

Total Parking Outcomes on Site - 34



UNITING SA Housing
Uniting SA
70 Dale Street,
Port Adelaide, SA 5015
(08) 8440 2200

City Collective
/Urban Design
/Architecture
/Planning

Drawing Title : **GROUND FLOOR PLAN**
Scale : 1 : 300
Status : CONCEPT DESIGN

Project: Uniting on Hawker
Project No: 2284
Date: 29/11/2024

Drawn: SW
Checked: DC
Drawing: P1000
Revision: P.04

Appendix D – Tree Assessment Summary

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Tree Assessment Summary

Tree No.	Botanic Name	Legislative Status	Retention Rating	Development Impact	TPZ Radius	Observations	Action
1	*Eucalyptus camaldulensis*	Significant	Moderate	Low	12.00 metres	This tree is in good health but has a reduced overall condition due to the historical pruning resulting in increased epicormic growth. There is obvious deadwood within the crown but appears to be typical of the species and its age.	Protect Root Zone
2	*Callistemon viminalis*	Exempt	Moderate	Conflicted	3.84 metres	The health and structure of this tree indicate it is in good overall condition and has adapted to its local environment. The dimensions of this tree have been estimated due to access restrictions.	Removal Required
3	*Cupaniopsis anacardioides*	Exempt	Moderate	Conflicted	3.90 metres	The health and structure of this tree indicate it is in good overall condition and has adapted to its local environment. There is evidence of early stage included bark, however this is not significant or impacting the structural rating for this tree.	Removal Required
4	*Hymenosporum flavum*	Exempt	Moderate	Conflicted	3.84 metres	The health and structure of this tree indicate it is in good overall condition and has adapted to its local environment. This trees dimensions have been estimated due to access restrictions.	Removal Required
5	*Callistemon viminalis*	Regulated	Moderate	Conflicted	3.84 metres	The health and structure of this tree indicate it is in good overall condition and has adapted to its local environment. There is evidence of early stage included bark, however this is not significant or impacting the structural rating for this tree. The dimensions of this tree have been estimated due to access restrictions.	Removal Required
6	*Casuarina cunninghamiana*	Regulated	Moderate	Conflicted	7.20 metres	The health and structure of this tree indicate it is in good overall condition and has adapted to its local environment. There is obvious deadwood within the crown, however this is within normal levels and not an indicator of reduced health.	Removal Required

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Tree Assessment Summary

Tree No.	Botanic Name	Legislative Status	Retention Rating	Development Impact	TPZ Radius	Observations	Action
7	*Callistemon viminalis*	Exempt	Low	Conflicted	4.12 metres	This tree is considered to be in fair overall condition due to the presence of a moderate level of decay and a currently stable included bark union in the primary trunk division.	Removal Required
8	*Pyrus calleryana*	Unregulated	Low	Conflicted	2.00 metres	The health and structure of this tree indicate it is in good overall condition and has adapted to its local environment.	Removal Required
9	*Hymenosporum flavum*	Unregulated	Low	Conflicted	3.36 metres	This tree is considered to be in poor overall condition due to the compromising level of decay in the primary trunk and the modest dieback within the crown.	Removal Required
10	*Pyrus calleryana*	Unregulated	Low	Conflicted	2.00 metres	This tree is considered to be in fair overall condition. There is a moderate level of decay within the primary trunk and/or branches, however the tree is otherwise healthy and appears to be self optimising.	Removal Required
11	*Pyrus calleryana*	Unregulated	Low	Conflicted	2.76 metres	This tree has increased epicormic growth on the scaffold branches but is otherwise in good health.	Removal Required
12	*Pyrus calleryana*	Unregulated	Low	Conflicted	2.04 metres	This tree has increased epicormic growth on the scaffold branches but is otherwise in good health.	Removal Required
13	*Pyrus calleryana*	Unregulated	Low	Conflicted	2.00 metres	This tree is considered to be in poor overall condition due to the lopping of the crown and poor attachment of the resultant epicormic growth. This tree appears to have been previously removed and is regrowth from a buried stump.	Removal Required
14	*Casuarina cunninghamiana*	Exempt	Moderate	Conflicted	8.40 metres	The health and structure of this tree indicate it is in good overall condition and has adapted to its local environment. There is obvious deadwood within the crown, however this is within normal levels and not an indicator of reduced health.	Removal Required

Tree Assessment Summary

Tree No.	Botanic Name	Legislative Status	Retention Rating	Development Impact	TPZ Radius	Observations	Action
15	*Pyrus calleryana*	Unregulated	Low	Conflicted	2.52 metres	The health and structure of this tree indicate it is in good overall condition. There is a slight increase in the level of epicormic growth within the crown but this is not at a level that would affect the overall condition rating.	Removal Required
16	*Corymbia variegata*	Regulated	Moderate	Low	5.28 metres	The health and structure of this tree indicate it is in good overall condition and has adapted to its local environment.	Protect Root Zone
17	*Eucalyptus leucoxylon ssp. stephaniae*	Unregulated	Moderate	Low	3.60 metres	The health and structure of this tree indicate it is in good overall condition. There is a slight increase in the level of epicormic growth within the crown but this is not at a level that would affect the overall condition rating.	Protect Root Zone

Appendix E - Tree Protection Zone Guidelines

Tree Protection Zone General Specifications and Guidelines

The Tree Protection Zone(s) is identified on the site plan, the TPZ is an area where construction activities are regulated for the purposes of protecting tree viability. The TPZ should be established so that it clearly identifies and precludes development/construction activities including personnel.

If development activities are required within the TPZ then these activities must be reviewed and approved by the Project Arborist. Prior to approval, the Project Arborist must be certain that the tree(s) will remain viable as a result of this activity.

Work Activities Excluded from the Tree Protection Zone:

a) Machine excavation including trenching;

b) Excavation for silt fencing;

c) Cultivation;

d) Storage;

e) Preparation of chemicals, including preparation of cement products;

f) Parking of vehicles and plant;

g) Refuelling;

h) Dumping of waste;

i) Wash down and cleaning of equipment;

j) Placement of fill;

k) Lighting of fires;

l) Soil level changes;

m) Temporary or permanent installation of utilities and signs, and

n) Physical damage to the tree.

o) Any other activity that could impact on the tree.

Protective Fencing

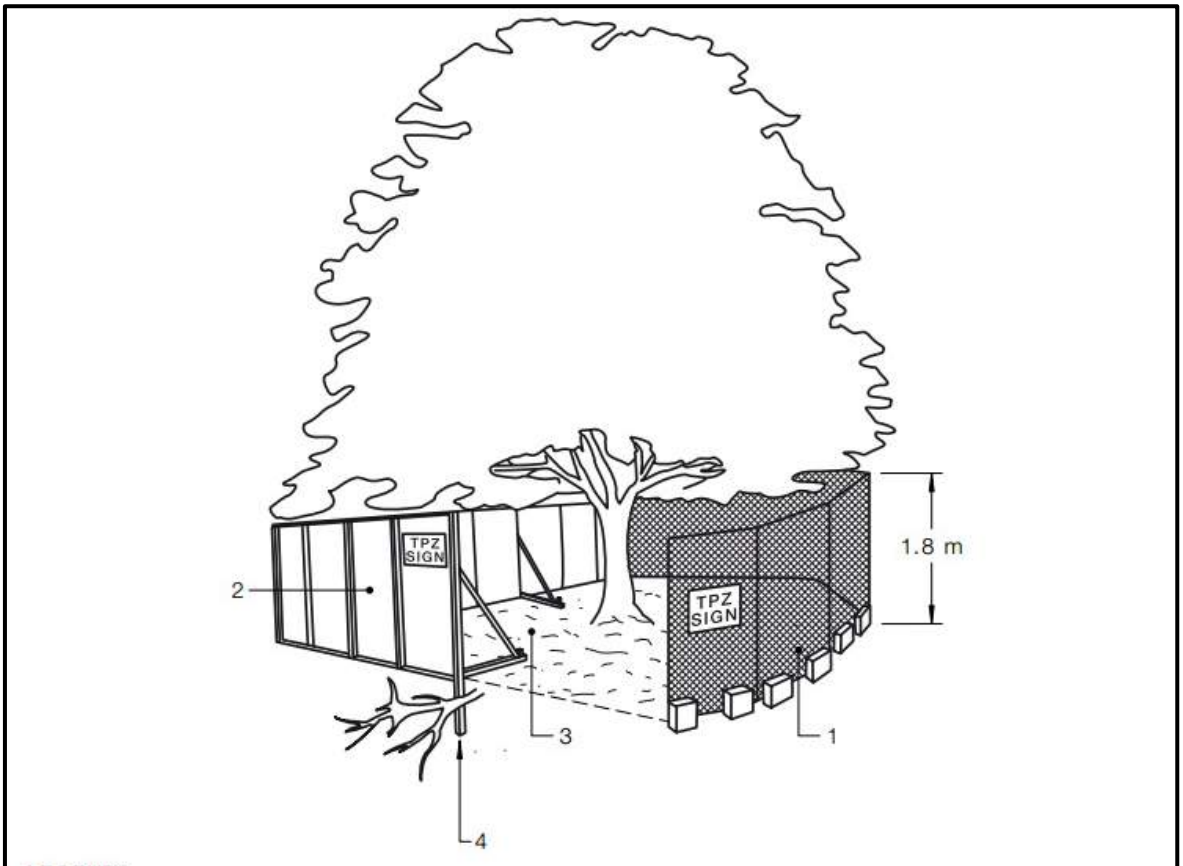
Protective fencing must be installed around the identified Tree Protection Zone (See Figure1). The fencing should by chain wire panels and compliant with AS4687 - 2007 *Temporary fencing and hoardings*. Shade cloth or similar material should be attached around the fence to reduce dust, other particulates and liquids entering the protected area.

Temporary fencing on 28kg bases are recommended for use as this eliminates any excavation requirements to install fencing. Excavation increase the likelihood of root damage therefore should be avoided where possible throughout the project.

Existing perimeter fencing and other structures may be utilised as part of the protective fencing.

Any permanent fencing should be post and rail with the set out determined in consultation with the Project Arborist.

Where the erection of the fence is not practical the Project Arborist is to approve alternative measures.



LEGEND:

1 Chain wire mesh panels with shade cloth (if required) attached, held in place with concrete feet.
2 Alternative plywood or wooden paling fence panels. This fencing material also prevents building materials or soil entering the TPZ.
3 Mulch installation across surface of TPZ (at the discretion of the project arborist). No excavation, construction activity, grade changes, surface treatment or storage of materials of any kind is permitted within the TPZ.
4 Bracing is permissible within the TPZ. Installation of supports should avoid damaging roots.

Figure 1 Showing example of protection fencing measures suitable.

Signage

The TPZ must be clearly identified with signs placed around the edge of the TPZ and be visible within the development site. Example of a Tree Protection Zone Sign at the end of this document..

Other Protection Measures

There are other protection methods that should be implemented within the development site and these include:

General

When a TPZ exclusion area cannot be established due to practical reasons or the area needs to be entered to undertake construction activities then additional tree protection measures may need to be adopted. Protection measures should be compliant with AS4970-2009 and approved by the Project Arborist

Installation of Scaffolding within Tree Protection Area.

Where scaffolding is required within the TPZ branch removal should be minimised. Any branch removal required should be approved by the Project Arborist and performed by a certified Arborist and performed in accordance with AS4373-2007. Approval to prune branches must be documented and maintained.

Ground below scaffold should be protected by boarding (e.g. scaffold board or plywood sheeting) as shown in Figure below. The boarding should be left in place until scaffolding is removed.

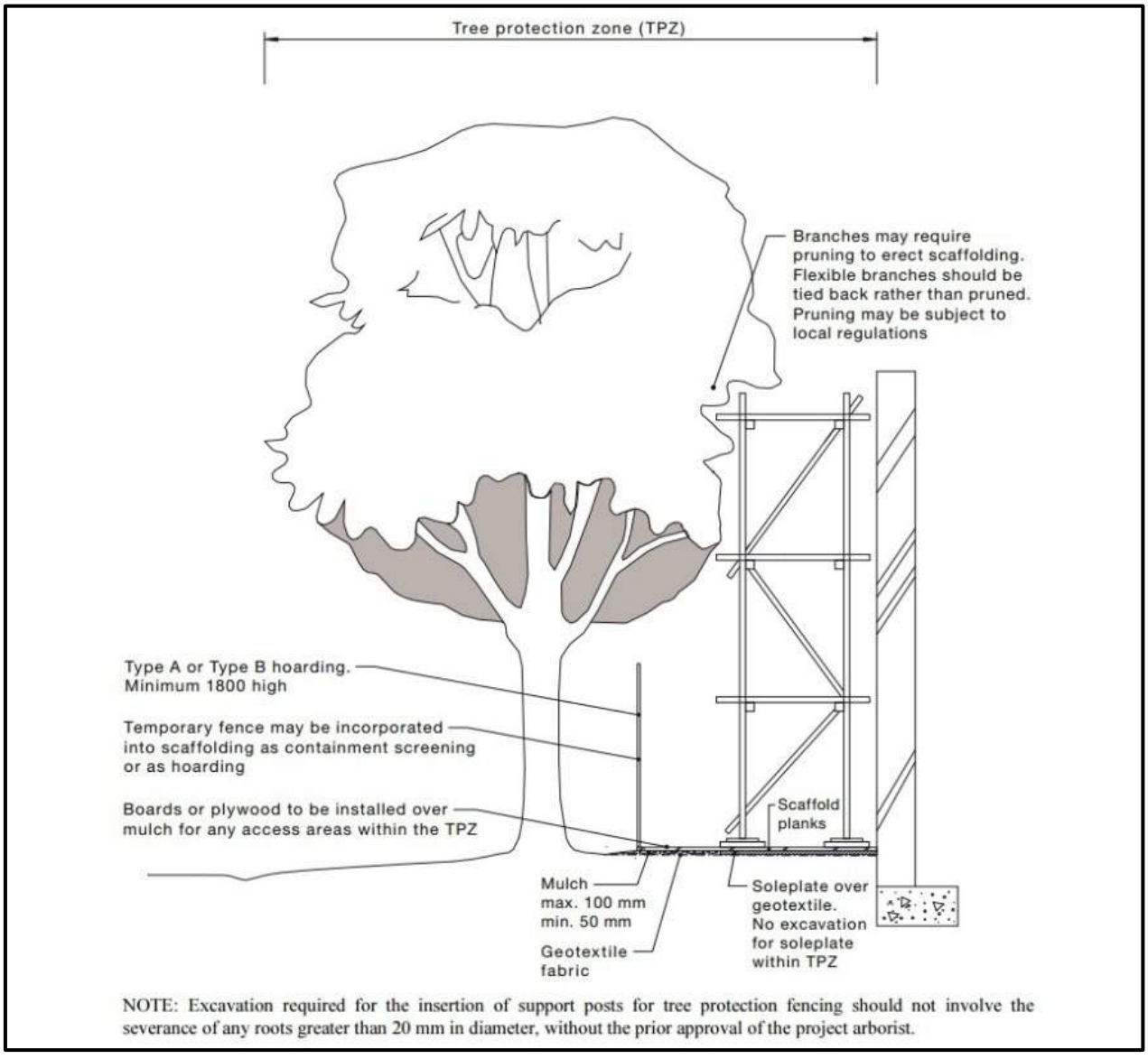
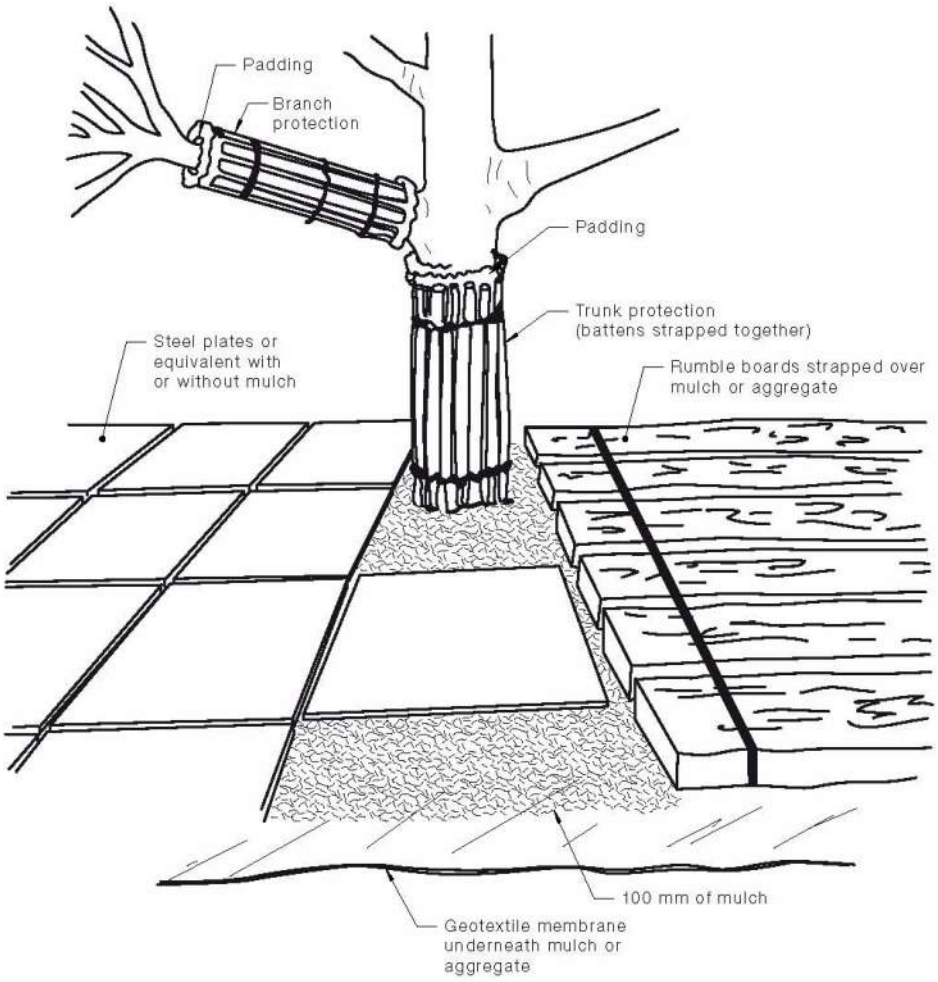


Figure 2 – Showing scaffold constructed within TPZ.

Ground Protection and TPZ Access

Temporary access within the TPZ can be achieved by the installation of suitable ground protection. The purpose of ground protection is to prevent damage to tree roots and avoid compaction of the soil.

Ground protection methods include the placement of a permeable membrane beneath a layer of non-compactable material such as mulch or a no fines gravel which is in turn covered with rumble boards or steel plates.



NOTES:

1 For trunk and branch protection use boards and padding that will prevent damage to bark. Boards are to be strapped to trees, not nailed or screwed.

2 Rumble boards should be of a suitable thickness to prevent soil compaction and root damage.

Figure 3 – Ground protection methods.

Document Source:

The previous three diagrams in this document are sourced from AS4970-2009 Protection of trees on development sites*. Further information and guidelines are available in within that document.*

Paving Construction within a Tree Protection Zone

Paving within any Tree Protection Zone (TPZ) must be carried out above natural ground level unless it can be shown with non-destructive excavation (AirSpade® or similar) that no or insignificant root growth occupies the proposed construction area.

Due to the adverse effect filling over a Tree Protection Zone (TPZ) can have on tree health; alternative mediums other than soil must be used. Available alternative mediums include structural soils or the use of a cellular confinement system such as *Ecocell*®.

Ecocell®

Ecocell® systems are a cellular confinement system that can be filled with large particle sized gravels as a sub-base for paving systems to reduce compaction to the existing grade.

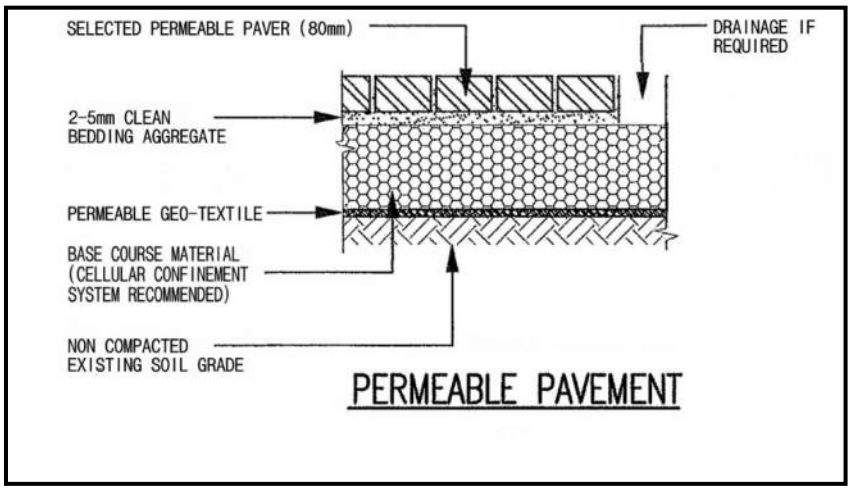
Site preparation

- Clearly outline to all contracting staff entering the site the purpose of the TPZ's and the contractors' responsibilities. No fence is to be moved and no person or machinery is to access the TPZ's without consent from the local council and/or the Project Arborist.

- Fence off the unaffected area of the TPZ with a temporary fence leaving a 1.5 metre gap between the work area and the fence; this will prevent machinery access to the remaining root zone.

Installation of Ecocell® and EcoTrihex Paving®

- Install a non-woven geotextile fabric for drainage and separation from sub base with a minimum of 600mm overlap on all fabric seams as required.
- Add Ecocell®, fill compartments with gravel and compact to desired compaction rate.
- If excessive groundwater is expected incorporate an appropriate drainage system within the bedding sand level.
- Add paving sand to required depth and compact to paving manufacturer's specifications.
- Lay EcoTrihex Paving® as per manufactures specifications and fill gaps between pavers with no fines gravel.
- Remove all debris, vegetation cover and unacceptable in-situ soils. No excavation or soil level change of the sub base is allowable for the installation of the paving.
- Where the finished soil level is uneven, gullies shall be filled with 20 millimetre coarse gravel to achieve the desired level.



This construction method if implemented correctly can significantly reduce and potentially eliminated the risk of tree decline and/or structural failure and effectively increase the size of the Tree Protection Zone to include the area of the paving.

Certificates of Control

Stage in development	Tree management process	
	Matters for consideration	**Actions and certification**
Development submission	Identify trees for retention through comprehensive arboricultural impact assessment of proposed construction. Determine tree protection measures Landscape design	Provide arboricultural impact assessment including tree protection plan (drawing) and specification
Development approval	Development controls Conditions of consent	Review consent conditions relating to trees
Pre-construction (Sections 4 and 5)		
Initial site preparation	State based OHS requirements for tree work Approved retention/removal Refer to AS 4373 for the requirements on the pruning of amenity trees Specifications for tree protection measures	Compliance with conditions of consent Tree removal/tree retention/transplanting Tree pruning Certification of tree removal and pruning Establish/delineate TPZ Install protective measures Certification of tree protection measures
Construction (Sections 4 and 5)		
Site establishment	Temporary infrastructure Demolition, bulk earthworks, hydrology	Locate temporary infrastructure to minimize impact on retained trees Maintain protective measures Certification of tree protection measures
Construction work	Liaison with site manager, compliance Deviation from approved plan	Maintain or amend protective measures Supervision and monitoring
Implement hard and soft landscape works	Installation of irrigation services Control of compaction work Installation of pavement and retaining walls	Remove selected protective measures as necessary Remedial tree works Supervision and monitoring
Practical completion	Tree vigour and structure	Remove all remaining tree protection measures Certification of tree protection
Post construction (Section 5)		
Defects liability/ maintenance period	Tree vigour and structure	Maintenance and monitoring Final remedial tree works Final certification of tree condition

Document Source:

This table has been sourced from AS4970-2009 Protection of trees on development sites. *Further information and guidelines are available in within that document.*

Tree Protection Zone

NO ACCESS

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PROFESSIONALS IN ARBORICULTURE