SEASONED TREE CONSULTING

ARBORICULTURAL IMPACT ASSESSMENT REPORT

Prepared for

Clarendon Homes

Site address

21 Arthur St Forestville

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Date	5 December 2024

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1. INTRODUCTION

1.1 This report has been commissioned Clarendon Homes on behalf of the site owners to assess trees located on and adjoining the site that may be impacted by a proposed development.

Table 1: Plans and documents reviewed or prepared as part of this assessment:

Title	Author	Date	Reference on document
Contract Drawings	Clarendon Homes	17.10.2024	Rev D

1.2 Tree data collected for the purpose of this assessment and report was collected on 5th November 2024 where all trees on the survey plan were assessed by David Gowenlock (AQF5). The weather at the time of the site assessment was clear with good visibility.

2. ASSIGNMENT

2.1 This report has been carried out to meet the objectives listed below.

2.1.1 Conduct a Visual Tree Assessment from ground level of all trees identified on the survey plan provided that may be impacted by a proposed development.

2.1.2 In accordance with the relevant Consent Authority, a 'tree' is defined as possessing a height of 5 metres or more.

2.1.3 Determine the trees estimated useful life expectancy and award retention values to each tree.

2.1.4 Provide an assessment of the potential impact the proposed development is likely to cause to the condition of the subject trees in accordance with AS4970 Protection of trees on development sites (2009).

2.1.5 Recommend methods to mitigate development impacts where appropriate.

2.1.6 Provide tree protection advice in accordance with AS4970 Protection of Trees on Development Sites (2009) and a site-specific tree protection plan where reasonably practical.

3. METHODOLOGY

3.1 **The following data was collected from each tree during the site assessment.**

3.1.1 Age class

3.1.2 Diameter at Breast Height (DBH Trunk/Stem diameter at breast height/1.4m above ground level) - millimetres.

3.1.3 Diameter at Base (DAB trunk diameter above the root flare near the base of the tree)

3.1.4 Estimated height - metres

3.1.5 Estimated crown spread (Radius of crown) - metres

3.1.6 Health

3.1.7 Structural condition

3.1.8 Landscape value

3.1.9 Safe Useful Life expectancy (SULE)[1]

3.1.10 Trees AZ retention value [2]

3.1.11 An assessment of the trees condition was made using the Visual Tree Assessment (VTA) method (Mattheck & Breloer, 1994).[3]

3.1.12 Trunk diameter was measured using a calculated diameter tape measure. Where this was not possible the measurements have been estimated. All other measurements were estimations unless otherwise stated.

3.1.13 All tree protection zones and structural root zones have been calculated in accordance with AS4970 Protection of trees on development sites (2009).

3.1.14 The TPZ of palms and other monocots, cycads and tree ferns has been calculated at one metre outside the crown projection.

3.1.15 Details of how the observations in this report have been assessed are listed in the appendices.

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[1] Barrell Tree Consultancy, *SULE: Its use and status into the New Millennium*, TreeAZ/03/2001, http://www.treeaz.com/.

[2] Barrell Tree Consultancy, *Tree AZ version 10.10-ANZ*, http://www.treeaz.com/.

[3] Mattheck, C. & Breloer, H., *The body language of trees - A handbook for failure analysis*, The Stationary Office, London, England (1994).

4. GLOSSARY OF BASIC TERMS

4.1.1 **Tree protection zone (TPZ)**: The TPZ is principle means of protecting trees on development sites and is an area required to maintain the viability of trees during development. It is commonly observed that tree roots will extend significantly further than the indicative TPZ, however the TPZ is an area identified to be the extent where root loss or disturbance will generally impact the viability of the tree. The TPZ is identified as a restricted area to prevent damage to trees either above or below ground during a development. Where trees are intended to be retained, proposed developments must retain an adequate TPZ around trees. The TPZ is set aside for the tree's root zone, trunk and crown and it is essential for the stability and longevity of the tree. The tree protection also incorporates the SRZ (see below for more information about the SRZ). The TPZ of palms and other monocots, cycads and tree ferns has been calculated at one metre outside the crown projection.

4.1.2 **Structural Root Zone (SRZ)**: This is the area around the base of a tree required for the trees stability in the ground. An area larger than the SRZ always needs to be maintained to preserve a viable tree. There are several factors that can vary the SRZ which include height, crown area, soil type and soil moisture. It can also be influenced by other factors such as natural or built structures. Generally work within the SRZ should be avoided. Soil level changes should also generally be avoided inside the SRZ of trees to be retained. Palms, other monocots, cycads and tree ferns do not have an SRZ.

4.1.3 **Minor encroachment**: Sometimes encroachment into the TPZ is unavoidable. Encroachment includes but is not limited to activities such as excavation, compacted fill and machine trenching. Minor encroachment of up to 10% of the overall TPZ area is normally considered acceptable, providing there is space adjacent to the TPZ for the tree to compensate and the tree is displaying adequate vigour/health to tolerate changes to its growing environment.

4.1.4 **Major encroachment**: Where encroachment of more than 10% of the overall TPZ area is proposed the project Arborist must investigate and demonstrate that the tree will remain in a viable condition. In some cases, tree sensitive construction methods such as pier and beam footings, suspended slabs, or cantilevered sections, can be utilised to allow additional encroachment into the TPZ by bridging over roots and minimising root disturbance. Major encroachment is only possible if it can be undertaken without severing significant size roots, or if it can be demonstrated that significant roots will not be impacted.

4.1.5 The TPZ and SRZ measurements should be measured in radius from the centre of the tree trunk.

5. THE SITE AND THE PROPOSED WORKS

5.1 The subject site is located within the Northern Beaches Council LGA.
The trees on site are managed under the following policy and legislation:

5.1.1 Warringah Local Environmental Plan 2011
5.1.2 Warringah Development Control Plan (DCP) 2011
5.1.3 State Environmental Planning Policy (SEPP) (Biodiversity and Conservation 2021)
5.1.4 Biodiversity Conservation Act 2016

Tile 1. Site location [4]

[4] https://maps.six.nsw.gov.au/

Table 3: Site Considerations

Site Considerations	Application to site Yes/No	Source/Reference
Heritage Conservation Area	No	*https://www.planningportal.nsw.gov.au/spatialviewer/#/find-a-property/address*
Heritage Item	No	
Biodiversity	No	
Ecologically Sensitive	No	
Bushfire Prone Land	No	

5.2 The site is an irregular shaped corner residential block totalling approx. 661sqm in size. The site is zoned as R2: Low density residential. The site is gently to moderately sloping from north (Arthur Street) to South (down Willunga Crescent). The site contains an existing house plus secondary dwelling that has a driveway crossover (unused) off Arthur Street. No driveway currently exists for the main house.

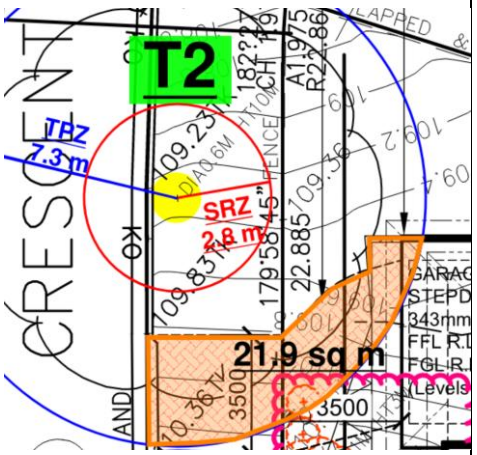
5.3 Many small trees and shrubs exist within the site, plus trees within the front and side nature strip areas. Many of the shrubs and small trees have been grouped as they are well below the 5m prescribed tree size.

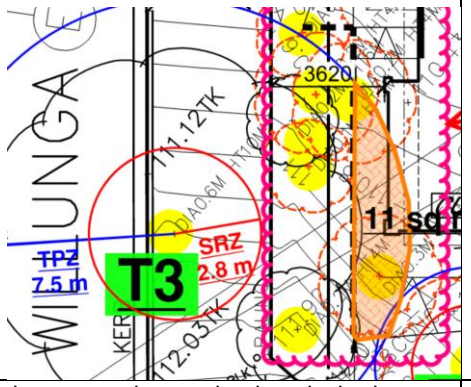
5.4 The proposal consists of a knock down and rebuild new house and integrated garage, with construction of a new driveway crossover off Willunga Crescent.

2 low retaining walls are proposed to be constructed by the owner within the site.

6. ASSESSEMENT OF CONSTRUCTION IMPACTS

6.1 **Table 4:** Summary of the impact of proposed development impact to all trees included in the report.

Tree ID	Species	Retention value	TPZ radius (m)	SRZ Radius (m)	TPZ Area (sqM)	TPZ encroachment	Discussion/ Conclusion	Recommendation
1	All shrubs 2-3 m in height	Z1	-	-	-	Nil	Small shrubs that can be removed or retained as desired. The owner is to communicate with the Project Arborist and demolition company to flag any shrubs to be retained before works commence on the site.	Remove or retain as desired.
2	*Lophostemon confertus*, Brushbox	A2	7.32	2.8	168.3	Major	Street tree that will be subject to a major calculated encroachment (21.9sqm= 12.9%) from proposed plans for a driveway crossover and driveway/ garage within the TPZ. This encroachment has been significantly revised down from original plans which had the driveway crossover through the SRZ area. The impact is also lower than the encroachment suggests as the garage pad and driveway within the TPZ area is slightly above natural ground level, with no cut required here. Brushbox are highly tolerant of construction impact and root pruning and the proposed plans will not significantly impact the health or condition of the tree. The excavation required for the driveway crossover must be directly supervised by the project arborist who is to advise on the management of any roots encountered. 	Retain and protect. **Project Arborist Supervision of driveway crossover excavation.**

Tree ID	Species	Retention value	TPZ radius (m)	SRZ Radius (m)	TPZ Area (sqM)	TPZ encroachment	Discussion/ Conclusion	Recommendation
3	*Lophostemon confertus,* Brushbox	A1	7.56	2.8	179.6	Minor	Street tree that will be subject to a minor encroachment from proposed plans for the front of house site cut and low retaining wall. This encroachment is acceptable under the AS4970-2009 and the tree can be retained in a viable condition from proposed plans. 	Retain and protect.
4	All shrubs and small trees under 5m in height	Z1	-	-	-	Nil	Small shrubs and small trees that can be removed or retained as desired. The owner is to communicate with the Project Arborist and demolition company to flag any shrubs to be retained before works commence on the site as the majority are proposed for removal but 1 tree is noted to be retained on the plans.	Remove or retain as desired.
5	*Nyssa sylvatica,* Tupelo	A1	3.12	2	30.6	Major	A small tree that is located within the front yard area that will be subject to a major encroachment for works that include the site cut (that is within the SRZ) The tree is not retainable with the current plans.	Remove and replace.
6	*Acer palmatum,* Japanese maple	Z1	2	1.6	12.6	Nil	Exempt small tree that will not be subject to encroachment.	Retain.
7	*Camellia spp.* + shrubs all under 3m in height	Z1	-	-	-	Nil	Exempt small shrubs that will not be subject to encroachment.	Retain.
8	*Liquidambar styraciflua,* Liquidamber	A2	7.68	2.9	185.3	Nil	Street tree that will not be subject to encroachment.	Retain.

7. CONCLUSIONS

7.1 **Table 5:** Summary of development impacts on trees assessed.

Impact	Reason	Retention Category		
		AA	A	Z
Trees to be removed	Building construction, new surfacing and/or proximity, or trees in poor condition.	-	**T5** **(1 tree)**	**T1, T4** **(2 trees)**
Retained trees that will be subject to TPZ encroachment	Removal of existing surfacing/structures and/or installation of new surfacing/structures	-	**T3** **(1 tree)**	**-**
Trees to be retained that will not be subject to TPZ encroachment	Trees are located sufficiently away from the development not to be impacted.	**-**	**T8** **(1 tree)**	**T6, T7** **(2 trees)**
Retained trees that will require project arborist supervision due to major calculated encroachments	Refer to section 6 specifications		**T2** **(1 tree)**	--

8. RECOMMENDATIONS AND MITIGATION STRATEGIES

8.1 This report assesses the impact of a proposed development at the site on **8 trees** in accordance with the AS4970 *Protection of trees on development sites* (2009).

8.2 **T2, T3, T6, T7 and T8 (total of 6 trees)** can all be retained.

8.3 T2 will require direct project arborist supervision of the excavation for the driveway crossover and management of any roots encountered.

8.4 **T2, T3 and T6 (total of 3 trees)** will require tree protection measures to be installed prior to the construction certificate being granted.

8.5 **T1, T4 and T5 (total of 3 trees- of which T1 and T4 are groups of shrubs and small trees) will require removal for the works to proceed**. T1 and T4 are exempt species under the Northern Beaches Council Tree Management policy. Some small trees and shrubs may be desired to be retained by the client, these must be flagged for retaining and protecting so they don't get removed during demolition.

8.6 **All demolition, excavation and landscaping works within TPZ and SRZ of all trees is recommended** to be carried out in consultation with the project Arborist who is to monitor the condition of the tree and the site activities throughout the development process.

8.7 Tree protection measures are recommended to be installed prior to the commencement of any site activity, inclusive of demolition and installed in accordance with the recommendations made within this report and be compliant to AS4970 Protection of Trees on Development Sites (2009).

8.8 All construction activity is to comply with Australian Standard AS4970 Protection of Trees on Development Sites (2009), sections 7, 10 and 11 of this report.

8.9 No services plan has been assessed as part of this report. All underground services located inside the TPZ of any tree to be retained must be installed via tree sensitive techniques. This should include either directional drilling methods or manual excavations to minimise the impact to trees identified for retention. Section 4.5.5 of AS4970-2009 says that 'The directional drilling bore should be at least 600 mm deep. The project Arborist should assess the likely impacts of boring and bore pits on retained trees. For manual excavation of trenches the project Arborist should advise on roots to be retained and should monitor the works'.[5]

8.10 This report does not provide approval for tree removal or pruning works. All recommendations in this report are subject to approval by the relevant authorities and/or tree owners. This report should be submitted as supporting evidence with any tree removal/pruning or development application.

[5] Council of Standards Australia, *AS 4970 Protection of trees on development sites* (2009) page 18.

9. ARBORICULTURAL WORK METHOD STATEMENT (AWMS) AND TREE PROTECTION REQUIREMENTS

9.1 **See Appendix 1A for detailed tree protection guidance.**

9.2 **Use of this report:** All contractors must be made aware of the tree protection requirements prior to commencing works at the site and be provided a copy of this report.

9.3 **Tree protection Specifications:** It is the responsibility of the principle contractor to install tree protection prior to works commencing at the site (prior to demolition works) and to ensure that the tree protection remains in adequate condition for the duration of the development. The tree protection must not be moved without prior agreement of the project Arborist. The project Arborist must inspect that the tree protection has been installed in accordance with this document and AS4970-2009 prior to works commencing.

9.4 **Project Arborist:** Prior to any works commencing at the site a project Arborist should be appointed. The project Arborist should be qualified to a minimum AQF level 5 and/or equivalent qualifications and experience, and should assist with any development issues relating to trees that may arise. If at any time it is not feasible to carryout works in accordance with this, an alternative must be agreed in writing with the project Arborist.

9.5 **Tree work:** All tree work must be carried out by a qualified and experienced Arborist with a minimum of AQF level 3 in arboriculture, in accordance with NSW Work Cover Code of Practice for the Amenity Tree Industry (1998) and AS4373 Pruning of amenity trees (2007).

9.6 **Variations to protective fencing:** Where it is not feasible to install fencing at the specified location due to factors such restricting access to areas of the site or for constructing new structures, an alternative location and protection specification must be agreed with the project Arborist. Where the installation of fencing in unfeasible due to restrictions on space, trunk and branch protection will be required (see below). The protective fencing must be constructed of 1.8 metre ‘cyclone chainmesh fence’. The fencing must only be removed for the landscaping phase and must be authorised by the project Arborist. Any modifications to the fencing locations must be approved by the project Arborist.

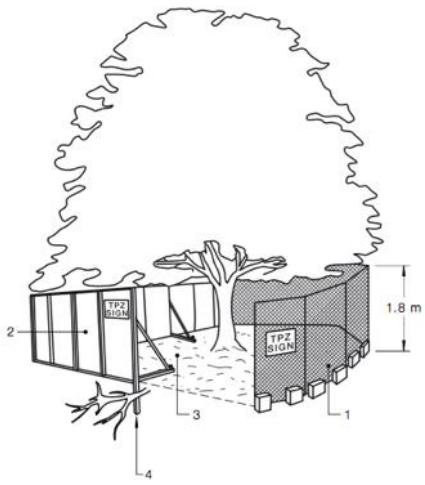
9.7 **TPZ signage:** Tree protection signage is to be attached to the protective fencing, displayed in a prominent position and the sign repeated at 10 metres intervals or closer where the fence changes direction. Each sign shall contain in a clearly legible form, the following information:

- Tree protection zone/No access.
- This fence has been installed to prevent damage to the tree/s and their growing environment both above and below ground. Do not move fencing or enter TPZ without the agreement of the project Arborist.
- The name, address, and telephone number of the developer/builder and project Arborist

9.8 **Trunk and Branch Protection:** The trunk must be protected by wrapped hessian or similar material to limit damage. Timber planks (50mm x 100mm or similar) should then be placed around tree trunk. The timber planks should be spaced at 100mm intervals, and must be fixed against the trunk with tie wire, or strapping and connections finished or covered to protect pedestrians from injury. The hessian and timber planks must not be fixed to the tree in any instance. The trunk and branch protection shall be installed prior to any work commencing on site and shall be maintained in good condition for the entire development period.

9.9 **Mulch:** Any areas of the TPZ located inside the subject site (only trees to be retained directly adjacent to site works must be mulched to a depth of 75mm with good quality composted wood chip/leaf mulch.

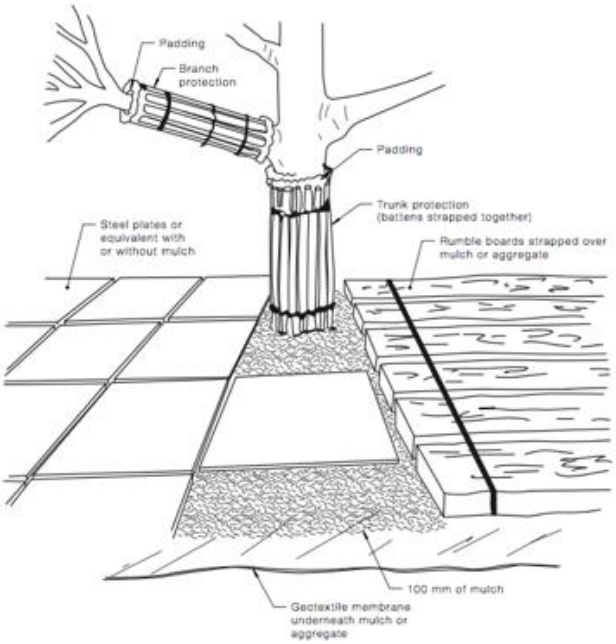
9.10 **Ground Protection:** Ground protection is required to protect the underlying soil structure and root system in areas where it is not practical to restrict access to whole TPZ, while allowing space for construction. Ground protection must consist of good quality composted wood chip/leaf mulch to a depth of between 150-300mm, laid on top of geo textile fabric. If vehicles are to be using the area, additional protection will be required such as rumble boards or track mats to spread the weight of the vehicle and avoid load points. Ground protection is to be specified by the project Arborist as required.



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.

An image from AS4970-2009,[6] with example tree protection.

[6] Council of Standards Australia, *AS4970 Protection of trees on development sites* (2009), page 16.

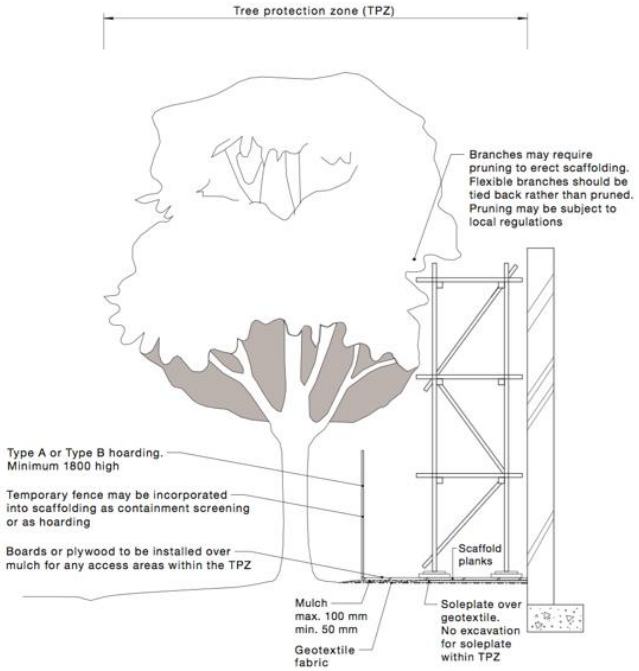


NOTES:

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.

An image from AS4970-2009,[7] with example tree protection.



NOTE: Excavation required for the insertion of support posts for tree protection fencing should not involve the severance of any roots greater than 20 mm in diameter, without the prior approval of the project arborist.

Image 3: An image from AS4970-2009,[8] with example tree protection involving scaffold.

[7] Council of Standards Australia, *AS4970 Protection of trees on development sites* (2009), page 17.

[8] Council of Standards Australia, *AS4970 Protection of trees on development sites* (2009), page 19.

9.11 **Root investigations:** Where major TPZ encroachments require demonstrating the viability of trees the following method for root investigations is to be used. Non-destructive excavations are to be carried out along the outer edge of proposed or existing structures within the TPZ (excavation methods include the use of pneumatic and hydraulic tools, high-pressure air or a combination of high-pressure water and a vacuum device). Excavations generally consist of a trench to a depth dictated by the location of significant roots, bedrock, unfavourable conditions for root growth, or the required depth for footings up to 1 metre. The investigation is to be carried out by AQF5 consulting Arborist who is to record all roots greater than 30 millimetres in diameter and produce a report discussing the significance of the findings. No roots 30 millimetres in diameter are to be frayed or damaged during excavation and the trench is to be backfilled as soon as possible to reduce the risk of roots drying out. In the event roots must be left exposed they are to be wrapped in hessian sack and regularly irrigated for the duration of exposure.

9.12 **Restricted activities inside TPZ:** The following activities must be avoided inside the TPZ of all trees to be retained unless approved by the project Arborist. If at any time these activities cannot be avoided an alternative must be agreed in writing with the project Arborist to minimise the impact to the tree.

A) Machine excavation.
B) Ripping or cultivation of soil.
C) Storage of spoil, soil or any such materials
D) Preparation of chemicals, including preparation of cement products.
E) Refueling.
F) Dumping of waste.
G) Wash down and cleaning of equipment.
H) Placement of fill.
I) Lighting of fires.
J) Soil level changes.
K) Any physical damage to the crown, trunk, or root system.
L) Parking of vehicles.

9.13 **Demolition:** The demolition of all existing structures inside or directly adjacent to the TPZ of trees to be retained must be undertaken in consultation with the project Arborist. Any machinery is to work from inside the footprint of the existing structures or outside the TPZ, reaching in to minimise soil disturbance and compaction. If it is not feasible to locate demolition machinery outside the TPZ of trees to be retained, ground protection will be required. The demolition should be undertaken inwards into the footprint of the existing structures, sometimes referred to as the ‘top down, pull back’ method.

9.14 **Excavations and root pruning:** The project Arborist must supervise and certify that all excavations and root pruning are in accordance with AS4373-2007 and AS4970-2009. For continuous strip footings, first manual excavation is required along the edge of the structures closest to the subject trees. Manual excavation should be a depth of 1 metre (or to unfavourable root growth conditions such as bed rock or heavy clay, if agreed by project Arborist). Next roots must be pruned back in accordance with AS4373-2007. After all root pruning is completed, machine excavation is permitted within the footprint of the structure. For tree sensitive footings, such as pier and beam, all excavations inside the TPZ must be manual. Manual excavation may include the use of pneumatic and hydraulic tools, high-pressure air or a combination of high-pressure water and a vacuum device. No pruning of roots greater 30mm in diameter is to be carried out without approval of the project arborist. All pruning of roots greater than 10mm in diameter must be carried out by a qualified Arborist/Horticulturalist with a minimum AQF level 3. Root pruning is to be a clean cut with a sharp tool in accordance with AS4373 Pruning of amenity trees (2007).[9] The tree root is to be pruned back to a branch root if possible. Make a clean cut and leave as small a wound as possible.

9.15 **Landscaping:** All landscaping works within the TPZ of trees to be retained are to be undertaken in consultation with a consulting Arborist to minimize the impact to trees. General guidance is provided below to minimise the impact of new landscaping to trees to be retained.

9.16 **Level changes should be minimised**. The existing ground levels within the landscape areas should not be lowered by more than 50mm or increased by more 100mm without assessment by a consulting Arborist.

9.17 **New retaining walls** should be avoided. Where new retaining walls are proposed inside the TPZ of trees to be retained, they should be constructed from tree sensitive material, such as timber sleepers, that require minimal footings/excavations. If brick retaining walls are proposed inside the TPZ, considerer pier and beam type footings to bridge significant roots that are critical to the trees condition. Retaining walls must be located outside the SRZ and sleepers/beams located above existing soil grades.

9.18 **The location of new plantings** inside the TPZ of trees to be retained should be flexible to avoid unnecessary damage to tree roots greater than 30mm in diameter.

9.19 **Sediment and Contamination:** All contamination run off from the development such as but not limited to concrete, sediment and toxic wastes must be prevented from entering the TPZ at all times.

9.20 **Tree Wounding/Injury:** Any wounding or injury that occurs to a tree during the construction process will require the project Arborist to be contacted for an assessment of the injury and provide mitigation/remediation advice. It is generally accepted that trees may take many years to decline and eventually die from root damage. All repair work is to be carried out by the project Arborist, at the contractor's expense.

9.21 **Completion of Development Works:** After all construction works are complete the project Arborist should assess that the subject trees have been retained in the same condition and vigour. If changes to condition are identified the project Arborist should provide recommendations for remediation.

[9] Council Of Standards Australia, *AS 4373 Pruning of amenity trees* (2007) page 18

10. HOLD POINTS

10.1 **Hold Points:** Below is a sequence of standard hold points requiring project Arborist certification throughout the development process**.**

10.2 It provides a list of hold points that must be checked and certified where specified by the Consent Authority.

10.3 Certification is recommended to be provided in written format upon completion of each point. The final certification must include details of any instructions for remediation undertaken during the development.

Hold Point	Stage	Responsibility	Certification	Complete Y/N and date
Project Arborist to hold pre construction site meeting with principle contractor to discuss methods and importance of tree protection measures and resolve any issues in relation to feasibility of tree protection requirements that may arise.	Prior to work commencing.	Principle contractor	Project Arborist	
Project Arborist to assess and certify that tree protection has been installed in accordance with section 11 and AS4970-2009 prior to works commencing at site.	Prior to development work commencing.	Principle contractor	Project Arborist	
Project Arborist to supervise and certify that the removal and replacement of the driveway crossover has been carried out in accordance with AS4373-2007.	Construction	Principle contractor	Project Arborist	
Project Arborist to certify that all underground services including storm water inside TPZ of any tree to be retained have been installed in accordance with AS4970-2009.	Construction	Principle contractor	Project Arborist	
All landscaping works/boundary walls within the TPZ of trees to be retained are to be undertaken in consultation with the project Arborist to minimize the impact to trees.	Landscape	Principle contractor	Project Arborist	
After all construction works are complete the project Arborist should assess that the subject trees have been retained in the same condition and vigor and authorize the removal of protective fencing. If changes to condition are identified the project Arborist should provide recommendations for remediation.	Upon completion of construction	Principle contractor	Project Arborist	
Any wounding or injury that occurs to a tree during the demolition/construction process will require the project arborist to be contacted for an assessment of the injury and provide mitigation/remediation advice. All remediation work is to be carried out by the project arborist, at the contractor's expense.	Ongoing throughout the development	Principle contractor	Project Arborist	

11. BIBLIOGRAPHY/REFERENCES

- Council of Standards Australia, *AS4970 Protection of trees on development sites* (2009).
- Council of Standards Australia, *AS4373 Pruning of amenity trees* (2007).
- Mattheck, C. & Breloer, H., *The body language of trees - A handbook for failure analysis*, The Stationary Office, London, England (1994).
- Barrell Tree Consultancy, *SULE: Its use and status into the New Millennium*, TreeAZ/03/2001, http://www.treeaz.com/.
- Barrell Tree Consultancy, *Tree AZ version 10.10-ANZ*, http://www.treeaz.com/.
- State Environmental Planning Policy (SEPP) (Biodiversity and Conservation Act 2021)

12. LIMITATIONS AND ASSUMPTIONS

12.1 Observations and recommendations are based on one site inspection. The findings of this report are based on the observations and site conditions at the time inspection. All observations were carried out from ground level. No detailed additional testing was carried out on trees or soil on site and none of the surrounding surfaces were lifted for investigation.

12.2 Where access was not available to neighbouring trees, their dimensions have been estimated from within the property boundary or from public land.

12.3 It is possible that root decay and defects can be present below ground with no visual indication above ground. It is impossible to know the extent of any root damage caused by mechanical damage such as underground root cutting during the installation of services without undertaking detailed root investigation or being present at the time of the works. Any form of tree failure due to these occurrences is beyond the scope of this assessment.

12.4 The report reflects the subject tree(s) as found on the day of inspection. Any changes to the growing environment of the subject tree, or tree management works beyond those recommended in this report may alter the findings of the report. There is no warranty, expressed or implied, that problems or deficiencies relating to the subject tree, or subject site may not arise in the future.

12.5 Tree identification is based on accessible visual characteristics at the time of inspection. As key identifying features are not always available the accuracy of identification is not guaranteed. Where tree species is unknown, it is indicated with a spp.

12.6 Seasoned Tree Consulting neither guarantees, nor is responsible for, the accuracy of information provided by others that is contained within this report.

12.7 Trees useful life expectancy has been estimates however this report is not an assessment of risk or probability of failure.

12.8 Trees stated as ‘retainable’ in this report may only be retained in a viable condition in the event they are correctly managed as per the recommendations and specifications in this report. In the event deviations occur the level of impact will increase and likely further impact the trees.

12.9 The ultimate safety of any tree cannot be categorically guaranteed. Even trees apparently free of defects can collapse or partially collapse in extreme weather conditions. Trees are dynamic, biological entities subject to changes in their environment, the presence of pathogens and the effects of ageing. These factors reinforce the need for regular inspections. It is generally accepted that hazards can only be identified from distinct defects or from other failure-prone characteristics of a tree or its locality.

12.10 Alteration of this report invalidates the entire report.

13. PHOTOGRAPHS

Image a: T1 (Multiple shrubs/ hedges)

T2

Image b: T3,

T4 (Multiple shrubs/ small trees)

Site Address: 21 Arthur St Forestville
Client Name: Clarendon Homes
Date prepared: 5 December 2024
Revision: 001

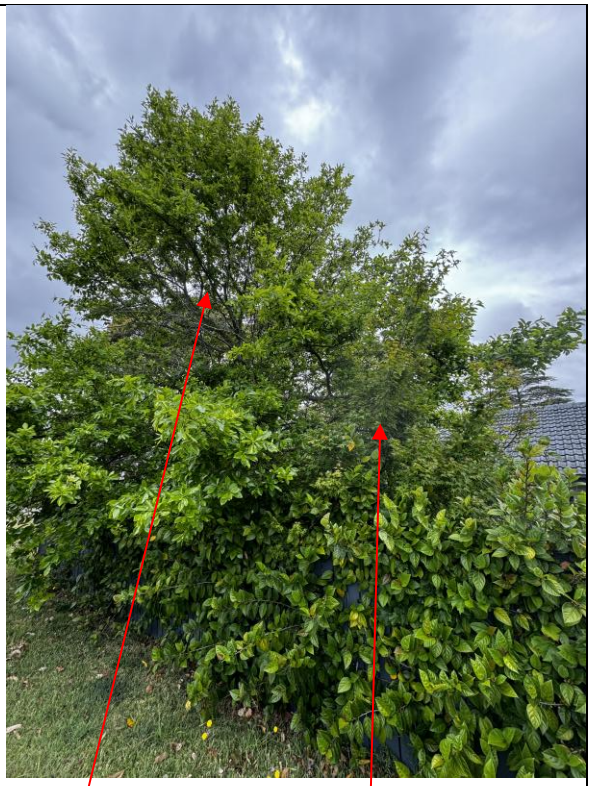


Image c: T5, T6 T5, T6

Image d: T7 (Multiple shrubs/ hedges) T8

14. LIST OF APPENDICIES

The following are included in the appendices:

Appendix 1 – Existing Site Plan
Appendix 1A – Proposed Site Plan and Tree Protection Plan
Appendix 2 - Tree inspection schedule
Appendix 3 – Health
Appendix 4 – Structural Condition
Appendix 5 – Age Class
Appendix 7 – SULE Categories
Appendix 8 – Trees AZ Field Sheet
Appendix 9 – TPZ Encroachment Examples

Regards

David Gowenlock- Seasoned Tree Consulting

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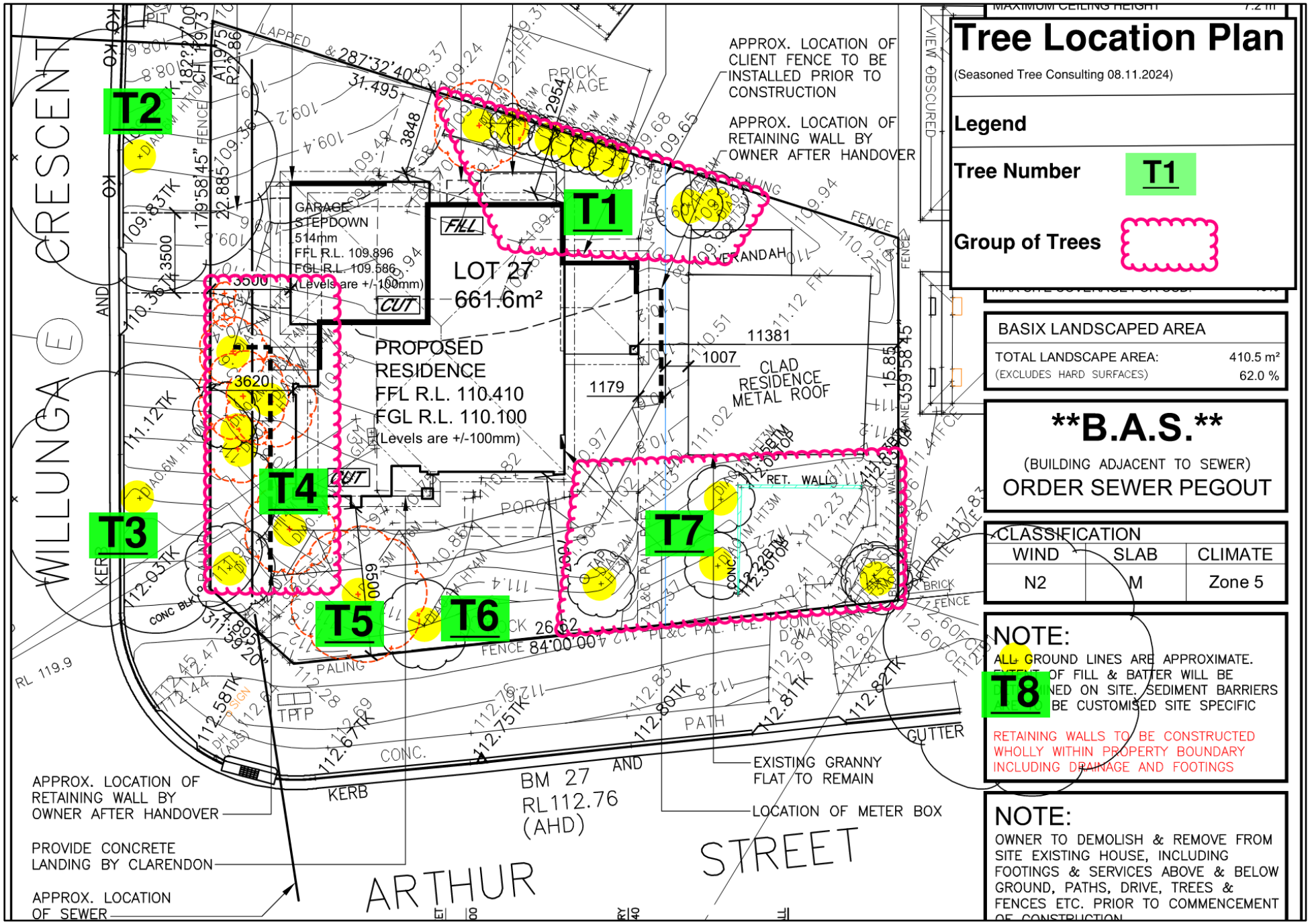
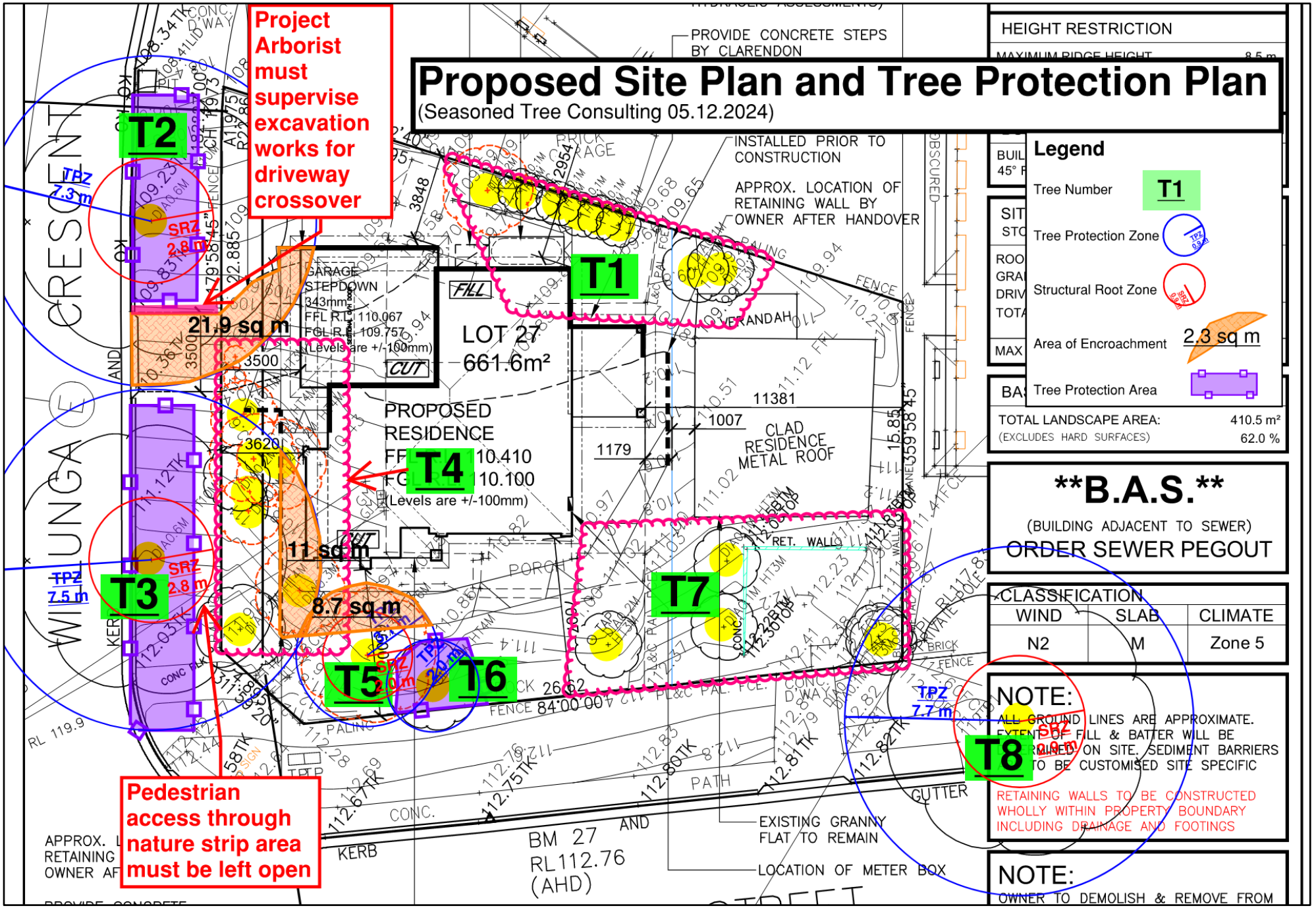
APPENDIX 1 – TREE LOCATION PLAN



APPENDIX 1A – PROPOSED SITE PLAN AND TREE PROTECTION PLAN



APPENDIX 2- TREE INSPECTION SCHEDULE

Tree Inspection Site: 21 Arthur Street, Forestville

Surveyed by: David Gowenlock Date of Inspection: 5th November 2024 Tagged: No

Tree ID	Tree Species	DBH (CM)	TPZ radius (M)	TPZ Area (Sq.M)	DAB (CM)	SRZ radius (M)	Height (M)	Spread (M)	Age Class	Health	Structure	Amenity value	SULE (yrs.)	TreeAZ retention Value	Comments
1	All shrubs 2-3 m in height	-	-	-	-	-	3	2	-	-	-	-	-	Z1	All small.
2	*Lophostemon confertus,* Brushbox	61	7.32	168.3	65	2.8	12	10	Mature	Fair	Fair	High	15 > 40	A2	Street tree , Minor canopy decline and deadwood
3	*Lophostemon confertus,* Brushbox	63	7.56	179.6	67	2.8	12	11	Mature	Good	Good	High	>40	A1	Street tree
4	All shrubs and small trees under 5m in height	-	-	-	-	-	5	3	-	-	-	-	-	Z1	All small.
5	*Nyssa sylvatica,* Tupelo	26	3.12	30.6	31	2	9	7	Semi-mature	Good	Good	Medium	>40	A1	
6	*Acer palmatum,* Japanese maple	15	2	12.6	18	1.6	4	2	Semi-mature	Good	Fair	Low	>40	Z1	Suppressed under T5
7	*Camellia spp.* + shrubs all under 3m in height	-	-	-	-	-	3	2	-	-	-	-	-	Z1	All small.
8	*Liquidambar styraciflua,* Liquidamber	64	7.68	185.3	72	2.9	14	13	Mature	Good	Fair	High	>40	A2	Street tree

Explanatory Notes

Tree Species - Botanical name followed by common name in brackets. Where species is unknown it is indicated with an '*spp'*.
Diameter at Breast Height (DBH) - Measured with a DBH tape or estimated at approximately 1.4m above ground level. Where DBH has been estimated it is indicated with an 'Est'.
Tree Protection Zone (TPZ) - DBH x 12. Measured in radius from the center of the trunk. Rounded to nearest 0.1m. For monocots, the TPZ is set at 1 meter outside the crown projection.
TPZ Area (Sq.M)- The area of the TPZ calculated in square metres.
Diameter Above root Buttresses (DAB): Measured with a DBH tape or estimated above root buttresses (DAB) for calculating the SRZ.
Structural Root Zone (SRZ) - $(DAB \times 50)^{0.42} \times 0.64$. Measured in radius from the center of the trunk. Rounded up to nearest 0.1m.
Height - Height from ground level to top of crown. All heights are estimated unless otherwise indicated.
Spread - Radius of crown at widest section. All tree spreads are estimated unless otherwise indicated.
Age Class - Over mature (OM), Mature (M), Early mature (EM), Semi mature (SM), Young (Y), Dead (D).
Health - Good/Fair/Poor/Dead
Structure - Good/Fair/Poor
Amenity Value - Very High/High/Medium/Low/Very Low.
Safe Useful Life Expectancy (SULE) - 1. Long (40+years), 2. Medium (15 - 40 years), 3. Short (5 - 15 years), 4. Remove (under 5 years), 5. Small/young.
TreeAZ retention Value- See Appendix 10

Appendix 3 – Assessment of Health

Category	Example condition	Summary
Good	• Crown has good foliage density for species. • Tree shows no or minimal signs of pathogens that are unlikely to have an effect on the health of the tree. • Tree is displaying good vigour and reactive growth development.	• The tree is in above average health and condition and no remedial works are required.
Fair	• The tree may be starting to dieback or have over 25% deadwood. • Tree may have slightly reduced crown density or thinning. • There may be some discolouration of foliage. • Average reactive growth development. • There may be early signs of pathogens which may further deteriorate the health of the tree. • There may be epicormic growth indicating increased levels of stress within the tree.	• The tree is in below average health and condition and may require remedial works to improve the trees health.
Poor	• The may be in decline, have extensive dieback or have over 30% deadwood. • The canopy may be sparse or the leaves may be unusually small for species. • Pathogens or pests are having a significant detrimental effect on the tree health.	• The tree is displaying low levels of health and removal or remedial works may be required.
Dead	• The tree is dead or almost dead.	• The tree should generally be removed.

Appendix 4 - Structural condition

Category	Example condition	Summary
Good	• Branch unions appear to be strong with no sign of defects. • There are no significant cavities. • The tree is unlikely to fail in usual conditions. • The tree has a balanced crown shape and form.	• The tree is considered structurally good with well developed form.
Fair	• The tree may have minor structural defects within the structure of the crown that could potentially develop into more significant defects. • The tree may a cavity that is currently unlikely to fail but may deteriorate in the future. • The tree is an unbalanced shape or leans significantly. • The tree may have minor damage to its roots. • The root plate may have moved in the past but the tree has now compensated for this. • Branches may be rubbing or crossing.	• The identified defects are unlikely cause major failure. • Some branch failure may occur in usual conditions. • Remedial works can be undertaken to alleviate potential defects.
Poor	• The tree has significant structural defects. • Branch unions may be poor or weak. • The tree may have a cavity or cavities with excessive levels of decay that could cause catastrophic failure. • The tree may have root damage or is displaying signs of recent movement. • The tree crown may have poor weight distribution which could cause failure.	• The identified defects are likely to cause either partial or whole failure of the tree.

Appendix 5 - Age class

Determining the exact age of a tree is difficult without carrying out potentially invasive testing. The age class of the subject tree has been estimated using the definitions below.

Category	Description
Young/Newly planted	• Young or recently planted tree.
Semi Mature	• Up to 20% of the usual life expectancy for the species.
Early mature/Mature	• Between 20% - 80% of the usual life expectancy for the species.
Over mature	• Over 80% of the usual life expectancy for the species.
Dead	• Tree is dead or almost dead.

Appendix 7 - Safe Useful Life Expectancy (SULE), (Barrel, 2001)

A trees safe useful life expectancy is determined by assessing a number of different factors including the health and vitality, estimated age in relation to expected life expectancy for the species, structural defects, and remedial works that could allow retention in the existing situation.

Category	Description
1. Long	Useful life expectancy over 40 years
2. Medium	Useful life expectancy 15 to 40 years
3. Short	Useful life expectancy 5 to 15 years
4. Remove	Useful life expectancy under 5 years
5. Small/Young	Trees that could be transplanted or replaced with similar specimen.
6. Unstable	Tree has become hazardous or structurally unstable.

Appendix 8 – Trees AZ Field Sheet

TreeAZ Categories (Version 10.04-ANZ)

CAUTION: TreeAZ assessments must be carried out by a competent person qualified and experienced in arboriculture. The following category descriptions are designed to be a brief field reference and are not intended to be self-explanatory. They must be read in conjunction with the most current explanations published at www.TreeAZ.com.

Category Z: Unimportant trees not worthy of being a material constraint

Local policy exemptions: Trees that are unsuitable for legal protection for local policy reasons including size, proximity and species	
Z1	Young or insignificant small trees, i.e. below the local size threshold for legal protection, etc
Z2	Too close to a building, i.e. exempt from legal protection because of proximity, etc
Z3	Species that cannot be protected for other reasons, i.e. scheduled noxious weeds, out of character in a setting of acknowledged importance, etc
High risk of death or failure: Trees that are likely to be removed within 10 years because of acute health issues or severe structural failure	
Z4	Dead, dying, diseased or declining
Z5	Severe damage and/or structural defects where a high risk of failure cannot be satisfactorily reduced by reasonable remedial care, i.e. cavities, decay, included bark, wounds, excessive imbalance, overgrown and vulnerable to adverse weather conditions, etc
Z6	Instability, i.e. poor anchorage, increased exposure, etc
Excessive nuisance: Trees that are likely to be removed within 10 years because of unacceptable impact on people	
Z7	Excessive, severe and intolerable inconvenience to the extent that a locally recognized court or tribunal would be likely to authorize removal, i.e. dominance, debris, interference, etc
Z8	Excessive, severe and intolerable damage to property to the extent that a locally recognized court or tribunal would be likely to authorize removal, i.e. severe structural damage to surfacing and buildings, etc
Good management: Trees that are likely to be removed within 10 years through responsible management of the tree population	
Z9	Severe damage and/or structural defects where a high risk of failure can be temporarily reduced by reasonable remedial care, i.e. cavities, decay, included bark, wounds, excessive imbalance, vulnerable to adverse weather conditions, etc
Z10	Poor condition or location with a low potential for recovery or improvement, i.e. dominated by adjacent trees or buildings, poor architectural framework, etc
Z11	Removal would benefit better adjacent trees, i.e. relieve physical interference, suppression, etc
Z12	Unacceptably expensive to retain, i.e. severe defects requiring excessive levels of maintenance, etc

NOTE: Z trees with a high risk of death/failure (Z4, Z5 & Z6) or causing severe inconvenience (Z7 & Z8) at the time of assessment and need an urgent risk assessment can be designated as ZZ. ZZ trees are likely to be unsuitable for retention and at the bottom of the categorization hierarchy. In contrast, although Z trees are not worthy of influencing new designs, urgent removal is not essential and they could be retained in the short term, if appropriate.

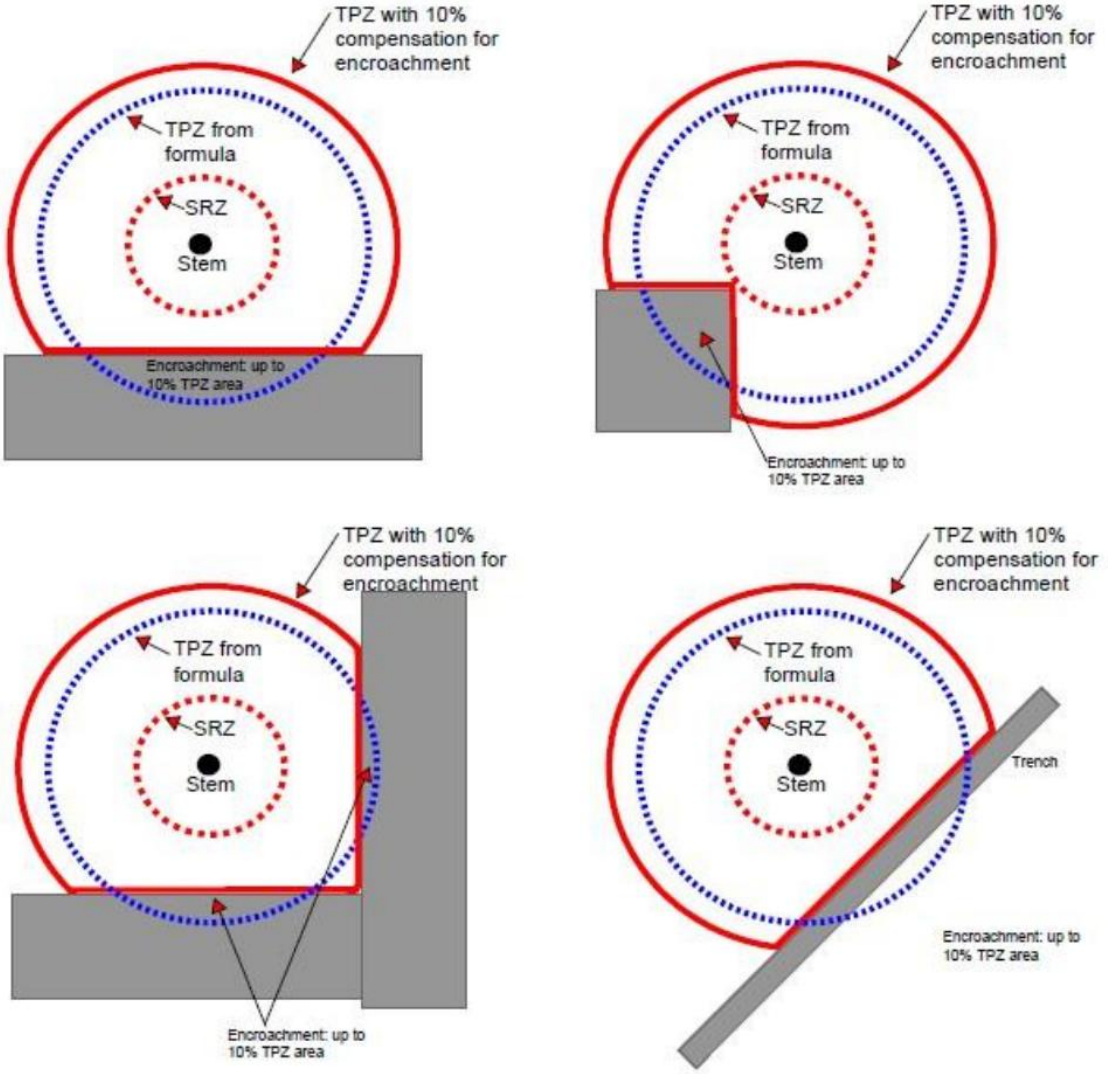
Category A: Important trees suitable for retention for more than 10 years and worthy of being a material constraint

A1	No significant defects and could be retained with minimal remedial care
A2	Minor defects that could be addressed by remedial care and/or work to adjacent trees
A3	Special significance for historical, cultural, commemorative or rarity reasons that would warrant extraordinary efforts to retain for more than 10 years
A4	Trees that may be worthy of legal protection for ecological reasons (Advisory requiring specialist assessment)

NOTE: Category A1 trees that are already large and exceptional, or have the potential to become so with minimal maintenance, can be designated as AA at the discretion of the assessor. Although all A and AA trees are sufficiently important to be material constraints, AA trees are at the top of the categorization hierarchy and should be given the most weight in any selection process.

Appendix 9- Examples of TPZ encroachment

Encroachment into the Tree Protection Zone is sometimes unavoidable. The following diagram shows examples of acceptable levels of encroachment and how they may be compensated for by providing additional space contiguous to the TPZ area.



Note: Less than 10% TPZ area and outside SRZ. Any loss of TPZ compensated for elsewhere.