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ARBORICULTURAL IMPACT ASSESSMENT REPORT

Prepared for; Simon Green

For the address of; No. 27 Addison Street, SHELLHARBOUR

Prepared by; Geoff Beisler, consulting arborist

Diploma of Arboriculture

ISA TRAQ Qualification

Date of report; November 2024

Contents

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Disclaimer

The author has no affiliation with any party involved with the site inspected in this report.

Green Earth Trees provides ethical tree reports, without bias nor favour toward any party- all reports produced are based solely on tree condition and/ or factors relevant to the report. We do not advocate for the client, nor produce tree reports to suit individual or professional agendas.

All care has been taken to assess potential hazards regarding the subject trees, with visual methods only. No subterranean, aerial, or comprehensive internal inspection was undertaken. Trees always pose an inherent risk and are subject to both human activities and extreme/ freak weather events. Any tree inspected could have possibly severe internal defects that are not evident through visual inspection. Trees are also subject to potentially rapid decline, especially when subject to site changes such as development. Any observations or recommendations given are in no way a guarantee of complete tree safety or ongoing good health and/or condition. The trees in this report have been assessed solely their merit at the time, with no consideration given to any further potential site changes or development.

1.0 Introduction

1.1 This report has been requested by Simon Green, for the lot of No. 27 Addison Street, Shellharbour. The proposal includes construction of a mixed use, four storey development (including basement parking); commercial premises (street level) and unit residences.

1.2 The purpose of this report is to deliver comments on the impacts from the proposed development on the subject trees, that being seven (7) trees; neighbouring trees or council owned trees that may be impacted.

1.3 The report shall address, for the trees included:

* species, condition, health, tree protection zones and general characteristics

* Safe Useful Life Expectancy (SULE) and Significance of a Tree Assessment Rating System (STARS) ratings

* Comments and discussion on the impacts of any proposed works on each tree.

* Tree protection specifications for any tree recommended for retention.

1.4 The trees mentioned within this report are within the Shellharbour City Council (SCC) local government area (LGA), and therefore subject to that councils' rules and regulations.

2.0 Conditions and standards

2.1 This report shall be made available to all relevant parties for the tendering/ quotation process and for the duration of the works, as required by relevant parties.

2.2 It is the responsibility of the property owner/ project manager to make all relevant details contained within this report available to relevant parties/ workers as required.

2.3 All works related to trees must be guided by the following standards:

* Australian Standard AS4970-2009; *Protection of Trees on Development Sites*

* Australian Standard AS4373-2007; *Pruning of Amenity Trees*

* Guide to Managing Risks of Tree Trimming and Removal Work.

* Any person undertaking works on any tree must qualified to a minimum AQF level 3 qualification.

* Any works conducted in the vicinity of electrical lines, the arborist must hold the relevant tickets and qualifications

3.0 Methodology

3.1 The site and trees were inspected by this author[1], on the 14th November 2024, utilising the method of visual tree assessment[2], and level 2 assessment[3] was undertaken.

3.2 The trees and site were inspected, and all relevant data was collected via handwritten notes and a voice recorder. Photographs were taken using a digital camera- these are available upon request.

3.3 Handwritten and verbal notes were collated into report format.

3.4 The survey supplied was utilised to create the site map/ tree locations.

3.5 The trees were given the following ratings in relation to hazard, expected longevity and significance:

- Safe Useful Life Expectancy (SULE) rating (see Appendix 1)

-Significance of a Tree Assessment Rating System STARS (see Appendix 2)

3.6 Measurements for the diameter at breast height, (DBH) were taken using a tree measuring tape

3.7 The report is composed of the following format, based on guidelines supplied by the International Society of Arboriculture (ISA):

3.7.1 Tree location/ site map; this is an aerial photograph sourced online or a copy of the survey provided, see Section 4.0

3.7.2 Table 1: Tree Data; this is a comprehensive table of all relevant tree data and comments on tree morphology, issues etc. see Section 5.0

3.7.3 Site Assessment; comments on relevant site factors that may have ramifications on proposed works and/or root zones of trees i.e., restrictions or attractions to adventitious root development, see Section 6.0

3.7.4 Impacts by the proposed works, see Section 7.0 and 9.0.

3.7.5 Protection specifications; strategies and requirements for trees listed for retention, see section see Section 8.0-8.3.

[1] Diploma of Arboriculture (level 5)
[2] Mattheck, C. and Breloer, H. 1994. *The Body Language of Trees, a handbook for failure analysis*. The Stationary Office, London.
[3] Dunster, J. A. 2013. *Tree Risk Assessment Manual*. ISA, USA.

3.8 Documentation supplied

The following documentation has been supplied to this author;

3.8.1 **Survey**

Supplied by: CEH Consulting Pty. Ltd.

Date: 12/8/2023

Reference: not referenced

Drawing No.: A3-D223404, sheet 1 of 1

Note; see Section 3.8.5.

3.8.2 **Design/ plans**

Supplied by: Couvaras Architects

Date: 19/7/2024

Reference: 23023

Drawing No.: DA 10 and DA21, issue I.

Note; see Section 3.8.6.

3.8.3 **Storm water/ drainage**

No drainage drawings have been supplied.

3.8.4 **Document; Additional Information Required**

Supplied by: SCC

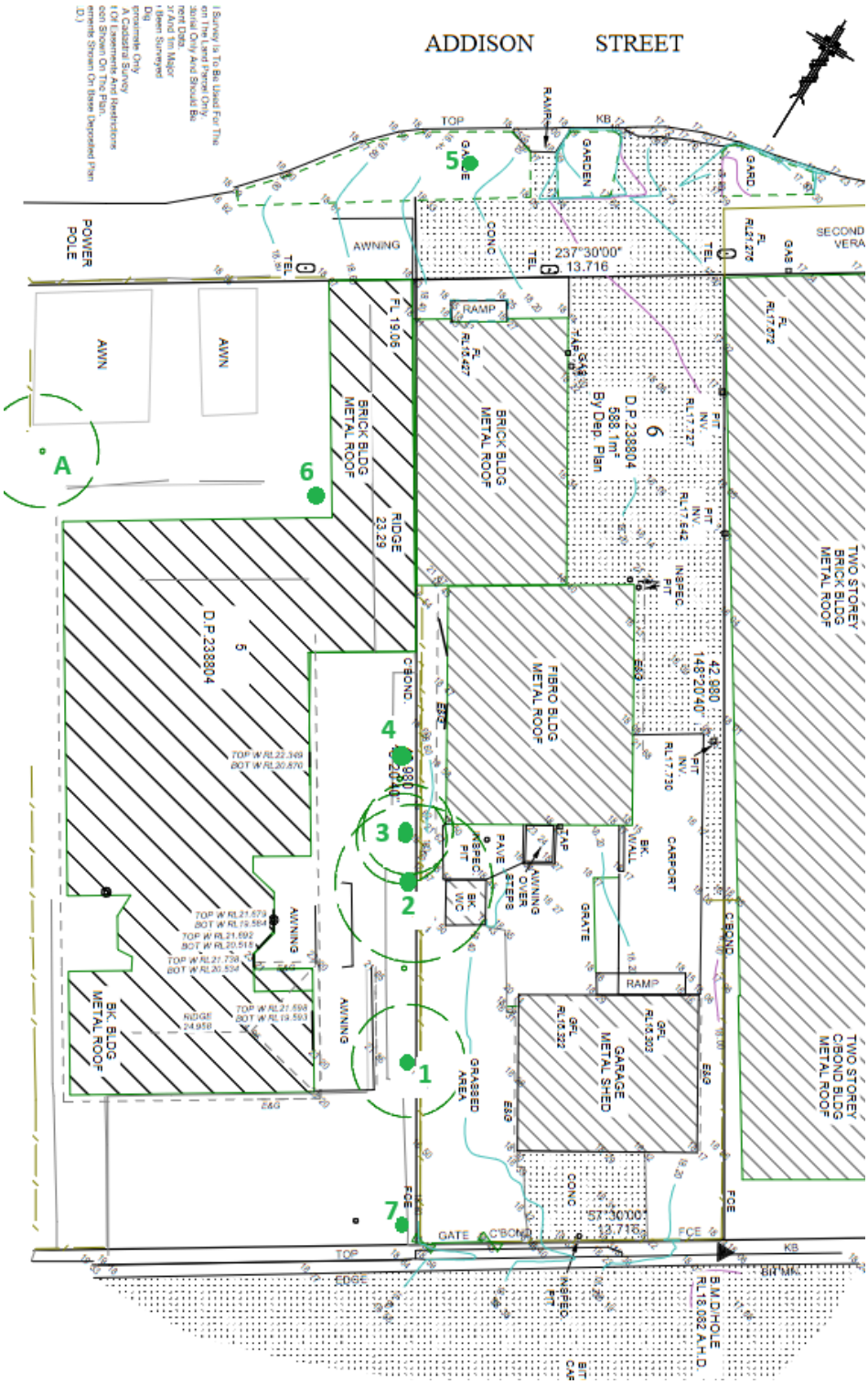
Date: 1/11/2024

Reference: (Development Application Number) DA0237/2024

3.8.5 Trees No. 4-7 have been omitted from the survey supplied, and therefore the location has been estimated by Green Earth Trees. Measurements have been taken from relevant landmarks where possible, however the possibility of inaccurate location exists, and this can increase the impacts upon a tree. This consultancy is not a registered surveyor and whilst every effort is made to accurately locate trees in relation to proposed works, the possibility of more/ less impact remains.

3.8.6 Trees No. 4, 6 and 7 have been omitted from the plans provided, and therefore the location has been estimated by Green Earth Trees. Measurements have been taken from relevant landmarks where possible, however the possibility of inaccurate location exists, and this can increase the impacts upon a tree. This consultancy is not a registered surveyor and whilst every effort is made to accurately locate trees in relation to proposed works, the possibility of more/ less impact remains.

4.0 Site map/ location of trees



Plan 1: site map/ location of trees.

Not to scale. Tree

labelled A, is removed from the proposal, see section 6.0.

Sourced from CEH Consultants Pty. Ltd., see Section 3.8.1.

5.0 Tree data

Tree No.	*Botanical name* common name	Height	DBH	Canopy spread	Vitality	Age	Crown bias	Crown class	SULE rating	STARS rating	TPZ	SRZ
1	*Pittosporum undulatum* Sweet Pittosporum	6	0.27 [C]	2 x 4	C	M	Sym	D	4A	Low	3.24	1.91
Assessment: this neighbouring tree presents excessive decline and is beyond remedial care.											**Development impact:** See Section 7.1 and 7.3	
2	*Ligustrum lucidum* Broad Leaved Privet	8	0.32	5 x 6	A	Y	Sym	C	2B	Low	3.84	2.05
Assessment: this neighbouring tree is an invasive and undesirable species, and would be an exempt tree if located within the lot of assessment. This tree is very poorly suited to retention in its location, based on the potential mature size (>20m tall and >15m wide), and significant negative impacts will result if the tree is allowed to mature in this location (adjacent structure and footpath). Crown ingress into the lot of assessment is approximately 2000mm between 3-7m. This species presents a risk based on the pollen during flowering. The pollen is a recognised allergen providing respiratory complaints, and particularly for persons susceptible to allergies and especially asthma.											**Development impact:** See Section 7.1 and 7.3	
3	*Ligustrum lucidum* Broad Leaved Privet	5	0.24 0.12 0.10 [C]	5 x 6	A	Y	Sym	C	2B	Low	3.48	1.97
Assessment: this neighbouring tree is an invasive and undesirable species, and would be an exempt tree if located within the lot of assessment. This tree is very poorly suited to retention in its location, based on the potential mature size (>20m tall and >15m wide), and significant negative impacts will result if the tree is allowed to mature in this location (adjacent structure and footpath). Crown ingress into the lot of assessment is approximately 500mm between 2-4m. This species presents a risk based on the pollen during flowering. The pollen is a recognised allergen providing respiratory complaints, and particularly for persons susceptible to allergies and especially asthma.											**Development impact:** See Section 7.1 and 7.3	
4	*Ligustrum lucidum* Broad Leaved Privet	5	0.13	4 x 4	A	Y	NW	C	2B	Low	2.00	1.50
Assessment: this neighbouring tree is an invasive and undesirable species, and would be an exempt tree if located within the lot of assessment. This tree is very poorly suited to retention in its location, based on the potential mature size (>20m tall and >15m wide), and significant negative impacts will result if the tree is allowed to mature in this location (adjacent structure and footpath). Crown ingress into the lot											**Development impact:** See Section 7.1 and 7.3	

Tree No.	*Botanical name* common name	Height	DBH	Canopy spread	Vitality	Age	Crown bias	Crown class	SULE rating	STARS rating	TPZ	SRZ
	of assessment is approximately 500mm between 2-4m. This species presents a risk based on the pollen during flowering. The pollen is a recognised allergen providing respiratory complaints, and particularly for persons susceptible to allergies and especially asthma.											
5	*Livistona chinensis* [A] Chinese Fan Palm	4	0.25 [C]	4 x 4	A	M	Sym	D	2A	Medium	2.00	1.50
Assessment: this council owned palm presents insufficient vegetative material (fruits or flowers) to confirm the identification. Installed within a raised garden bed that would be a barrier to root extension, however the nature of the monocot root mass[4] indicates this palm is well suited to the location.											**Development impact:** See Section 7.2	
6	*Agonis flexuosa* [A] Willow Myrtle	5	0.11 0.14 [C]	3 x 5	B	M	Sym	D	3D [C]	Low	2.16	1.61
Assessment: lack of access to the adjacent lot prevented assessment of this tree, and nullified the chance to confirm the identification. Regardless, decline is evident and this tree appears to be poorly suited to retention its location. The building to the east (and associated footing), suggest a barrier to root extension to the east.											**Development impact:** See Section 7.2 and 7.3	
7	*Olea spp.* [A] Olive	4	0.25 [B,C]	3 x 4	A	Y	Sym	D	2B	Low	3.00	1.85
Assessment: this neighbouring tree presents insufficient vegetative material (fruits or flowers) to confirm the identification. However, as an *Olea*, this tree appears poorly suited to retention in its location, based on the potential mature size(>15m tall and >15m wide), and expected associated negative impacts to its surrounds; lifting/ cracking of the adjacent road, kerb and driveway etc., and conflict with the adjacent laneway. Furthermore, this species is widely considered invasive and undesirable. Crown ingress into the lot of assessment is approximately 850mm, between 2-4m.											**Development impact:** See Section 7.1 and 7.3	

Table 1: tree data. All measurements are in metres.

A. Identification uncertain due to a lack of vegetative material (fruits and flowers)
B. Diameter taken below 1.4m due to tree morphology or site restrictions
C. Estimate due to the overgrown area and/ or lack of access

For an explanation of SULE rating, see Appendix 1. For an explanation of STARS rating, see Appendix 2. For an explanation of all other terminology, see Appendix 4.

[4] Varley, W. (Level 8 arborist). Pers Comms. 2017-2024.

6.0 Site assessment

The area of assessment appears to have previously been a private lot, however, has had a structural addition (see comments below) and then included commercial premises at the front (north western) portion of the lot. A single story, fibro dwelling is located approximately centrally on the lot, with a slight bias to the western boundary; this has facilitated vehicular access adjacent the eastern boundary, to the car port attached to the eastern portion of the dwelling and the detached, double garage located to the south east. An old-fashioned brick 'outhouse' is located immediately south of the fibro dwelling. The cross over and driveway are continuous concrete slab from Addison Street to the double garage, and extends to the footings of the adjacent two storey commercial premises to the east. The fibro dwelling has been installed on individual piers to facilitate the consistent slight-medium gradient, north easterly aspect. A brick structure (the apparent commercial premises), has been installed within the north western portion of the lot. It appears this commercial premises is no longer utilised. The afore mentioned cross over is single lane (however the driveway widens to two lanes), and the council owned and maintained garden beds, in conjunction with the pedestrian crossing located immediately in front of the commercial premises, indicates an apparent restriction to possible expansion of the cross over. Vehicle access is also possible at the rear (southern portion) of the lot, via the existing laneway (not named) servicing a car parking area. A cross over is present on the southern boundary (south western corner), however no driveway is present in this southern portion (rear yard). A small grade change exists between the lot of assessment and the lot to the west (mixed commercial premises), however the small timber retaining wall appears to have no footing, and a such is not believed to be a barrier to root extension. All subject trees are neighbouring trees (trees No. 1-4, 6 and 7), or council owned trees (tree No. 5). The council owned tree (palm) is installed within a raised garden bed, that is a permanent restriction to root extension, however being a palm, the root mass is restricted by the nature of the monocot root system[5]. A tree indicated on the survey is well removed from the proposal, and as such is outside the scope of works; this tree has been labelled as 'A' within Plan 1, Section 4.0. Specimens <3m are located in the lot to the west, however, are exempt based on the size, and have not been considered. One of the subject trees (tree No. 3) is composed of multiple stems and appears to have been indicated by separate tree icons on the survey , however, is a single tree.

Trees labelled A; trees located on the survey however are removed from the proposal and therefore outside the scope of works.

7.0 Proposed development

The development proposal is as follows:

- Demolition of existing site structures (the existing dwelling, commercial premises, carport and garage)
- Construction of a new mixed use, four storey development; commercial premise and unit dwellings
- Basement parking and associated vehicular access
- Associated drainage infrastructure (assumed, no drawings have been supplied).

This report includes seven (7) trees potentially impacted by the works. This includes neighbouring trees (privately owned or local council assets) where any part of the tree may be impacted.

[5] A dense, fibrous, regenerating root system smaller than that expected of woody roots.

Assumption 1, basement cut; the excavation required to facilitate the proposed basement will need to be outside of the footprint of the basement wall as indicated on the drawings supplied, to allow for construction of the wall, waterproofing and drainage. Therefore, the actual cut is assumed to be up to 600mm beyond the footprint of the basement wall, as indicated in the drawings supplied. Taking into account that the basement wall is proposed to be a minimum distance from the boundary of 450mm, the cut has been assumed to be on the boundary line. All calculations for encroachment of any zone of protection (TPZ, SRZ) has been based on this assumption.

The calculations/ impacts stated for each tree are based on supplied drawings only, and do not consider:

- Any excavation or sub-surface utility where specifications have not been supplied, this includes the replacement/ upgrading of existing infrastructure.
- Work methods/ construction techniques that potentially require a larger 'footprint' than that stated in the plans, e.g., significant excavation.
- Any scaffolding or associated requirements such as stockpiles, site sheds, amenities etc, unless these are specified.

Council owned trees; tree No. 5 is a council owned tree (palm), and therefore requires retention and protection from major encroachments unless permission for removal is granted by SCC.

Neighbouring trees; trees No. 1-4, 6 and 7 are located in the adjacent neighbouring lot, and therefore requires retention and protection from major encroachments unless permission for removal is granted by the tree owner and SCC. Permission from SCC is not required for exempt species.

7.1 Trees subject to major encroachment (>10%)

Trees No. 1-4 and 7

These trees are subject to an encroachment >10% of the TPZ. The nature of the encroachment, the percentage and the ramifications are discussed:

Tree No. 1: Encroachment of 46%, based on drawing DA21, issue I. The encroachment is generated by the basement cut. This is excessive, and includes encroachment within the SRZ. The current design will not accommodate this tree, however this tree is a poor specimen and does not justify retention. Regardless, this is a neighbouring tree and therefore permission must be obtained from the tree owner and SCC for removal.

Tree No. 2: Encroachment of 48%, based on drawing DA21, issue I. The encroachment is generated by the basement cut. This is excessive, and includes encroachment within the SRZ. Also, excessive crown modification would be required. The current design will not accommodate this tree, however this tree is an invasive and undesirable species, poorly suited to its location and does not justify retention. Regardless, this is a neighbouring tree and therefore permission must be obtained from the tree owner for removal. No permission would be required from SCC as this is an exempt species.

Tree No. 3: Encroachment of 44%, based on drawing DA21, issue I. The encroachment is generated by the basement cut. This is excessive, and includes encroachment within the SRZ. Also, significant crown modification would be required. The current design will not accommodate this tree, however this tree is an invasive and undesirable species, poorly suited to its location and does not justify retention. Regardless, this is a neighbouring tree and therefore permission must be obtained from the tree owner for removal. No permission would be required from SCC as this is an exempt species.

Tree No. 4: Encroachment of 40%, based on drawing DA21, issue I. The encroachment is generated by the basement cut. This is excessive, and includes encroachment within the SRZ. Also, significant crown modification would be required. The current design will not accommodate this tree, however this tree is an invasive and undesirable species, poorly suited to its location and does not justify retention. Regardless, this is a neighbouring tree and therefore permission must be obtained from the tree owner for removal. No permission would be required from SCC as this is an exempt species.

Tree No. 7: Encroachment of 44%, based on drawing DA21, issue I. The encroachment is generated by the basement cut and associated entry. This is excessive, and includes encroachment within the SRZ. Also, significant crown modification would be required. The current design will not accommodate this tree, however this tree is an invasive and undesirable species, poorly suited to its location and does not justify retention. Regardless, this is a neighbouring tree and therefore permission must be obtained from the tree owner and SCC for removal.

7.2 Trees removed from the proposal/ no impacts

Trees No. 5 and 6

These trees have individual TPZ's outside of the proposed works, and as such can be retained with no expected impacts.

7.3 Trees with limited life expectancy/ low retention value; compromised by structural defect or disease, undesirable species, or poorly suited to their location

Trees No. 1-4, 6 and 7

These trees exhibit significant decline, are an undesirable species, are poorly suited to their location, or have structural issues or infection/ infestation. These trees are defined by their individual SULE rating (see Appendix 1).

Note; trees 1-4 and 7 are neighbouring trees and therefore require permission for removal or major impacts from the tree owner and/ or SCC, regardless of the condition and retention value.

8.0 General matters (generic)

8.1 Sub surface utilities

No specifications have been supplied for sub surface utilities. No trenching shall take place within any TPZ, without the permission and supervision of the project arborist, and shall be avoided, if possible, i.e., via under boring. Any excavation within any TPZ shall be undertaken with non-destructive methods, that is, hand excavation, under boring, hydraulic blasting (at the lowest possible pressure) or air spading. Sub terranean services shall be routed outside of any TPZ where possible.

8.2 Protection measures

Tree protection measures shall be required during the proposed works, during both demolition and construction. A project arborist shall be engaged at the confirmation of the final design, and/or granting of approval from local council, for the instruction and installation of the tree protection measures. Tree protection measures shall include, however not be limited too;

- Soil levels shall remain the same within any TPZ, unless previously considered and allowed by the project arborist. Options for fill soil exist (grade increase), however shall be at the consideration and instruction of the project arborist.

- Foundations and/ or footings shall not be strip type, instead shall utilise individual pier type footings or screw pilings, to minimise or completely avoid damage to any retained trees' root system.
- Neighbouring trees (including local council owned trees) shall be retained and protected from any site works as is practicable. No neighbouring tree shall be removed or subjected to encroachment greater than 10% of the TPZ, unless written permission is granted by both the tree owner and local council. Ramifications and retention possibilities for major encroachments on neighbouring trees shall be considered on an individual basis.
- Sub surface utilities shall be routed outside of any trees TPZ where possible. Any installation required within the TPZ of any tree nominated for retention, shall be installed via under boring, hand excavation, air spading or low-pressure hydraulic blasting, or a combination of these methods- any such activities shall be at the instruction of the project arborist and under the super vision of same. Any root pruning shall be undertaken by the project arborist.
- Crown pruning can be accommodated, however must conform to AS 4373, *Pruning of Amenity Trees,* and be undertaken by an arborist qualified to a minimum standard of Australian Qualifications Framework (AQF) level 3. No more than 10% of the foliar should be removed (some variation for species may exist) No neighbouring tree (or local council owned tree) shall be pruned without the written permission of the owner. Any pruning undertaken should be at the instruction of the project arborist.
- No excess water shall be directed to any trees TPZ.
- No sediment, slurry, chemical or other foreign material shall be disposed of or stored within any trees TPZ.
- No site sheds, stockpiles, amenities etc. shall be installed within any TPZ of a retained tree.
- The project arborist shall be qualified to a minimum standard AQF cert. 5 (Diploma) Arboriculture.

9.0 Summary of Impacts

The following summary of design impacts is based on the documentation supplied (see Section 3.8.2).

9.1 Trees subject to a major encroachment

Trees No. 1-4 and 7

These trees are subject to a major encroachment and cannot be retained based on the proposed design. Note; trees No. 1-4, and 7 are located in the adjacent neighbouring lot, and therefore require retention and protection from major encroachments unless permission for removal is granted by the tree owner and SCC. Permission from SCC is not required for exempt species.

9.2 Trees removed from the proposal (no impacts)

Trees No. 5 and 6

These trees are removed from the proposal, and can be retained with no impacts expected.

9.3 Trees providing limited life expectancy/ compromised trees

Trees No. 1-4, 6 and 7

These trees exhibit significant decline, are undesirable species, are poorly suited to their location, or have structural issues or infection/ infestation. These trees are defined by their individual SULE rating (see appendix 1).

Note; trees 1-4 and 7 are neighbouring trees and therefore require permission for removal or major impacts from the tree owner and/ or SCC, regardless of the condition and retention value.

Appendix 1; SULE

	1. Long	2. Medium	3. short	4. Removal	5. Moved or replaced
	Trees that appear to be retainable at the time of assessment for more than 40 years with an acceptable level of risk	Trees that appear to be retainable at the time of assessment for 15-40 years with an acceptable level of risk	Trees that appear to be retainable at the time of assessment for 5-15 years with an acceptable level of risk	Trees that should be removed within the next 5 years	Trees which can be reliably moved or replaced
A	Structurally sound trees located in positions that can accommodate future growth	Trees that may only live between 15-40 years	Trees that may only live between 5-15 years	Dead, dying suppressed or declining trees through disease or inhospitable conditions	Small trees less than 5m in height
B	Trees that could be made suitable in the long term by remedial tree care	Trees that may live for more than 40 years but could be removed for safety or nuisance reasons	Trees that may live for more than 15 years but could be removed for safety or nuisance reasons	Dangerous trees through instability or recent loss of adjacent trees	Young trees less than 15 years old but over 5m in height
C	Trees of special significance for historical, commemorative or rarity reasons that would warrant extraordinary efforts to secure their long-term retention	Trees that may live for more than 40 years but would be removed to prevent interference with more suitable individuals or to provide space for new plantings	Trees that may live for more than 15 years but would be removed to prevent interference with more suitable individuals or to provide space for new plantings	Damaged trees through structural defects including cavities, decay, included bark, wounds or poor form.	Trees that have been pruned to artificially control growth
D		Trees that could be made suitable for retention in the medium term by remedial tree care	Trees that require substantial remedial tree care and are only suitable for retention in the short term	Damaged trees that are clearly not safe to retain	
E				Trees that may live for more than 5 years but should be removed to prevent interference with more suitable individuals or to provide space for new plantings	
F				Trees that are damaged or may cause damage to existing structures within 5 years	
G				Trees that will become dangerous after removal of other trees for reasons given in (A) to (F)	

Safe Useful Life expectancy (SULE) Barrel, J. 2009 Barrel Tree Consultancy.

Appendix 2; STARS

STARS; Significance of a Tree Assessment Rating System (IACA 2010) ©

The landscape significance of a tree is an essential criterion for establishing the importance that a particular tree may have on a site. However, rating the significance of a tree becomes subjective and difficult to ascertain in a consistent and repetitive fashion due to assessor bias. It is therefore necessary to have a rating system utilising structured qualitative criteria to assist in determining the retention value for a tree. This rating system will assist in the planning processes for proposed works, above and below ground where trees are to be retained on or adjacent a development site. The system uses a scale of High, Medium and Low significance in the landscape. Once the landscape significance and Useful Life Expectancy of an individual tree has been defined, the retention value can be determined.

Tree Significance - Assessment Criteria
1. High Significance in landscape.

- The tree is in good condition and good vigour;
- The tree has a form typical for the species;
- The tree is a remnant or is a planted locally indigenous specimen and/or is rare or uncommon in the local area or of botanical interest or of substantial age;
- The tree is listed as a Heritage Item, Threatened Species or part of an Endangered ecological community or listed on Councils significant Tree Register;
- The tree is visually prominent and visible from a considerable distance when viewed from most directions within the landscape due to its size and scale and makes a positive contribution to the local amenity;
- The tree supports social and cultural sentiments or spiritual associations, reflected by the broader population or community group or has commemorative values;
- The tree's growth is unrestricted by above and below ground influences, supporting its ability to reach dimensions typical for the taxa *in situ* - tree is appropriate to the site conditions.

2. Medium Significance in landscape.

- The tree is in fair-good condition and good or low vigour;
- The tree has form typical or atypical of the species;
- The tree is a planted locally indigenous or a common species with its taxa commonly planted in the local area;
- The tree is visible from surrounding properties, although not visually prominent as partially obstructed by other vegetation or buildings when viewed from the street;
- The tree provides a fair contribution to the visual character and amenity of the local area;
- The tree's growth is moderately restricted by above or below ground influences, reducing its ability to reach dimensions typical for the taxa *in situ*

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3. Low Significance in landscape.

- The tree is in fair-poor condition and good or low vigour;
- The tree has form atypical of the species;
- The tree is not visible or is partly visible from surrounding properties as obstructed by other vegetation or buildings;

- The tree provides a minor contribution or has a negative impact on the visual character and amenity of the local area;
- The tree is a young specimen which may or may not have reached dimension to be protected by local Tree Preservation orders or similar protection mechanisms and can easily be replaced with a suitable specimen;
- The tree's growth is severely restricted by above or below ground influences, unlikely to reach dimensions typical for the taxa *in situ* - tree is inappropriate to the site conditions;
- The tree is listed as exempt under the provisions of the local Council Tree Preservation Order or similar protection mechanisms;
- The tree has a wound or defect that has potential to become structurally unsound.

Environmental Pest / Noxious Weed Species:

- The tree is an Environmental Pest Species due to its invasiveness or poisonous/ allergenic properties;
- The tree is a declared noxious weed by legislation.

Hazardous/Irreversible Decline:

- The tree is structurally unsound and/or unstable and is considered potentially dangerous;
- The tree is dead, or is in irreversible decline, or has the potential to fail or collapse in full or part in the immediate to short term.

The tree is to have a minimum of three (3) criteria in a category to be classified in that group.

Note: The assessment criteria are designed for individual trees however can be applied to a monoculture stand in its entirety e.g., hedge.

In the development of this document IACA acknowledges the contribution and original concept of the Footprint Green Tree Significance & Retention Value Matrix, developed by Footprint Green Pty Ltd and Andrew Morton in June 2001.

IACA, 2010, *IACA Significance of a Tree, Assessment Rating System* (STARS)

Appendix 3; Definition of terminology

Age: an estimate of the expected lifespan of the species, in three categories;

Young (Y): Trees less than 20% of life expectancy has elapsed.

Mature (M): Trees aged between 20% to 80% of their life expectancy.

Over-mature (O): Trees aged over 80% of their life expectancy with possible(probable) indicators of senescence.

Canopy Spread: A measurement (in metres) of the crown mass in 2 dimensions i.e., north-south, east-west.

Crown bias: The position of the crown mass in relation to the stem, i.e., the cardinal direction.

Symmetrical: this is where the crown mass is roughly centred equally over the stem.

North, South, East, and West indicates majority (or significant) crown mass to that cardinal point

Crown Class:

The crown habit of the individual tree, expressed in the following categories:

Dominant*:* The tree crown is receiving uninterrupted sunlight from above and sides

Codominant: The tree crown is receiving light from above and one side of the crown.

Intermediate: Crown is receiving light from above but not the sides of the crown.

Suppressed: Crown has been shadowed by the surrounding elements and receives no light from above or sides.

Forest: Indicated by a tall, slender stem, little taper and few to no branches emerging from the lower and mid stem. A small, condensed branch structure comprises the crown.

DBH: a measurement of tree trunk diameter, usually at 1.4mt

Height: the vertical measurement (in metres) of the entire tree.

Levels of assessment

Level 1: Limited visual: a limited, ground based visual assessment, frequently 'walk by' or 'drive by' to (usually) assess large populations of trees, looking for obvious, imminent risks.

Level 2: Basic assessment: a comprehensive, ground-based assessment, inspecting all visible parts of the tree and surroundings. This may include the use of simple tools such as probes, sounding mallets and hand trowels/ spade etc.

Level 3: Advanced assessment: a specialised assessment, utilising specialised equipment such as diagnostic technology e.g., Resistograph™, or climbing equipment. Usually undertaken by individuals who specialise within the specific areas of assessment. May also include forensic testing or root mapping.

TPZ (Tree Protection Zone): an area around the tree set aside for the protection of the tree

Vitality Rating

Vigour (vitality): the ability of a tree to sustain its life forces in three categories;

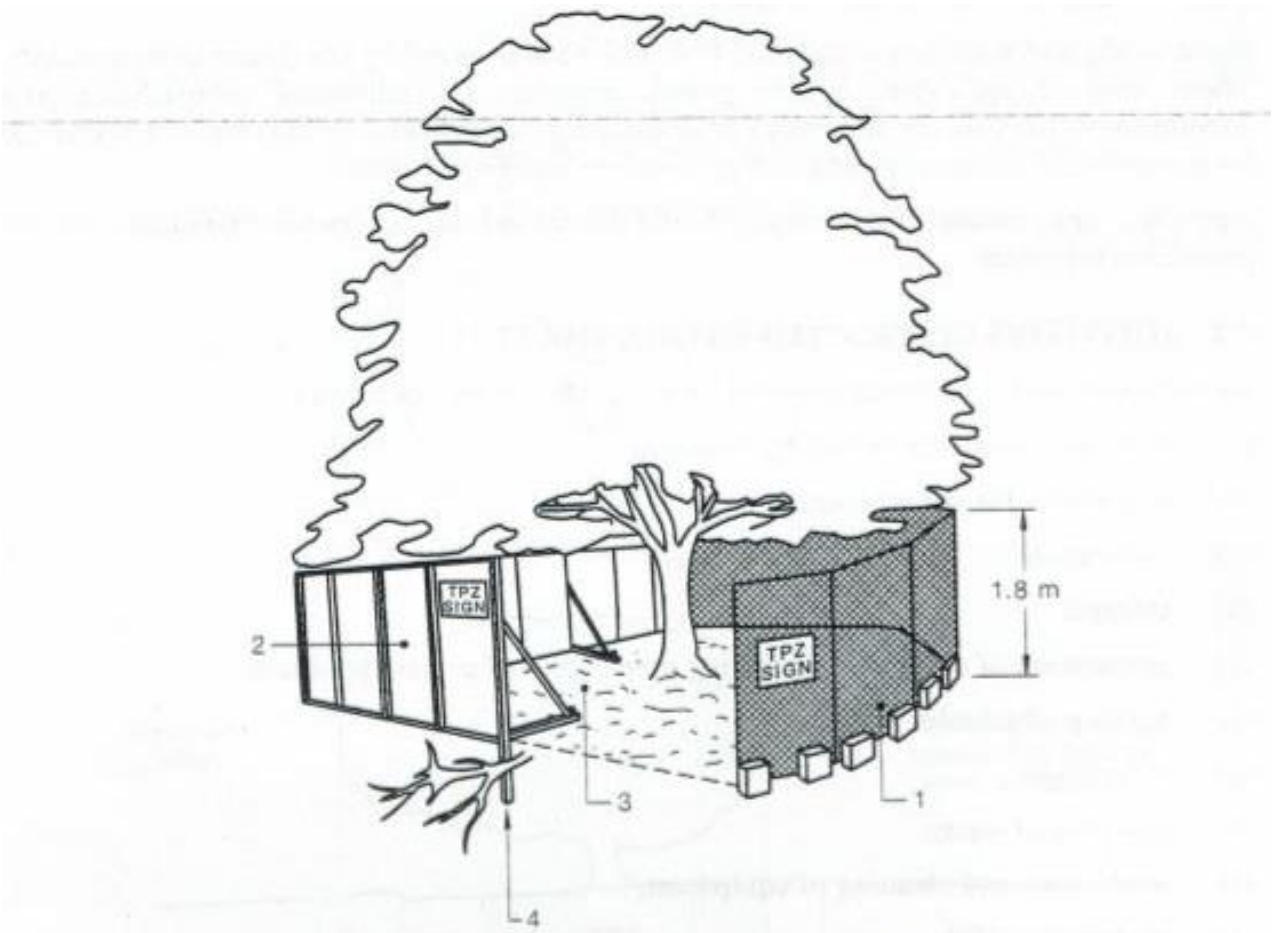
A: Normal vitality, typical for the species

B: Below average vitality, possibly temporary loss of health, partial symptoms.

C: Poor vitality; obvious decline, potentially irreversible

SRZ (Structural Root Zone): the minimal radial distance around a tree required for stability in the ground

Appendix 4; Tree protection fencing



1. Fencing; option 1: 1.8m high chain wire mesh panels held in place with concrete feet and prefereably secured to the ground.
2. Fencing; option 2: Plywood or wooden panel fence, 1.8m high.
3. Maximum 100mm, minimum50mm depth of mulch or similar.
4. Bracing is permissable, however must avoid tree roots >30mm diamater

Image 1; TPZ fencing.

Source: Australian Standard 4970-2009 *Protection of Trees on Development Site.*

Appendix 5; Stem and ground protection

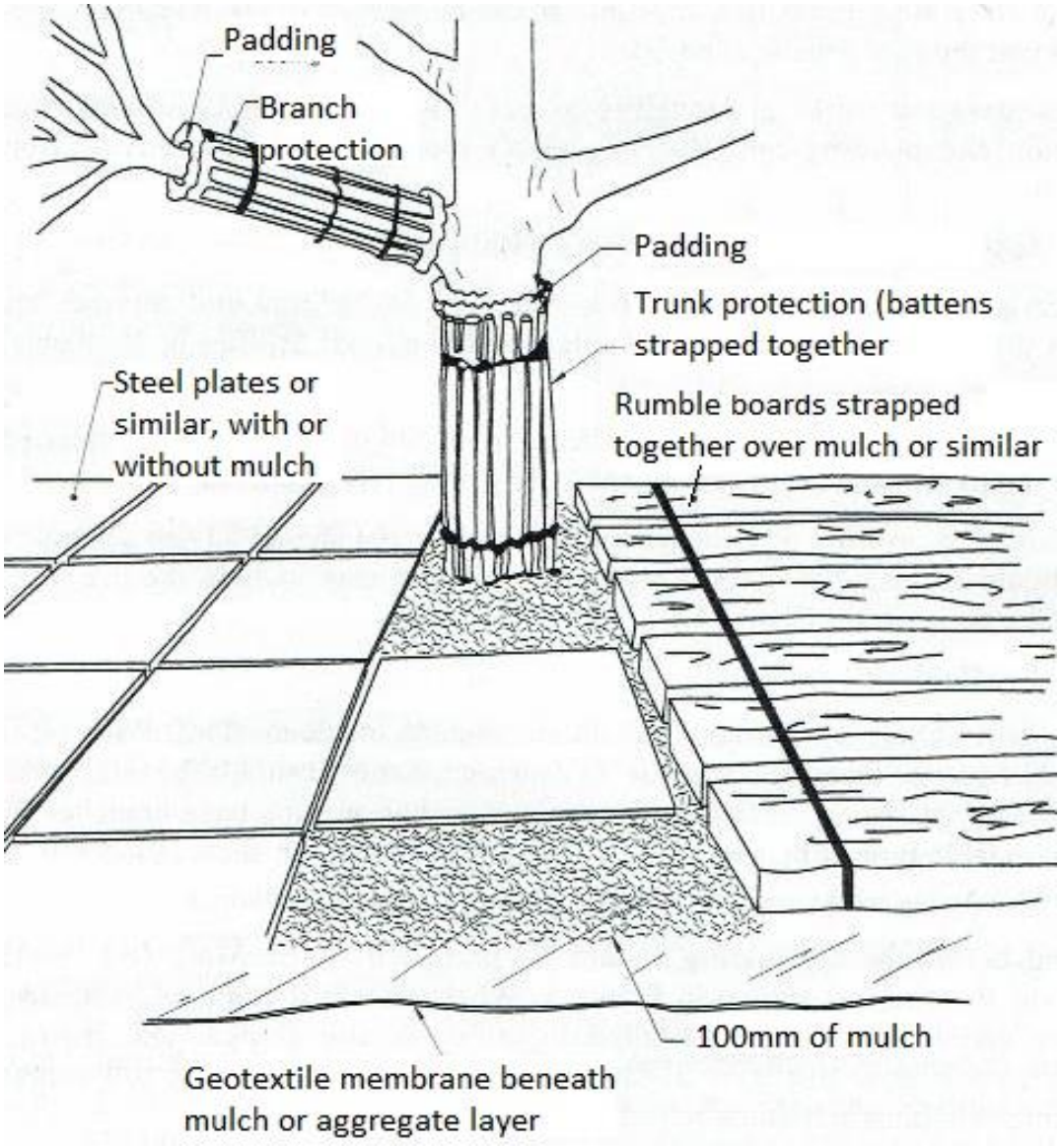


Image 2; Stem and ground protection.

Source: Australian Standard 4970-2009 *Protection of Trees on Development Site.*

References

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