



SEASONED TREE CONSULTING

ARBORICULTURAL IMPACT ASSESSMENT REPORT

Prepared for-
Clair and Peter Shilling

Site Address-
**Lot 1, 128 Elanora Road,
Elanora Heights, NSW 2101**

<u>Prepared by</u>	David Gowenlock AQF5 (Director of Seasoned Tree Consulting)
<u>Address</u>	PO BOX 3044 Asquith NSW 2077
<u>Mobile</u>	0415 961 074
<u>Email</u>	david@seasonedtreeconsulting.com.au
<u>ABN</u>	73 606 422 351
<u>Date</u>	6 February 2020

CONTENTS

EXECUTIVE SUMMARY	1
INTRODUCTION.....	2
SCOPE OF THE REPORT	3
METHODOLOGY	3
OBSERVATIONS	5
DEVELOPMENT IMPACT	7
GENERAL RECOMMENDATIONS	9
TREE PROTECTION PLAN	11
MITIGATION MEASURES	12
LIMITATIONS	13
APPENDIX A - Tree Inspection Schedule	14
APPENDIX B - Tree location Plan.....	15
APPENDIX C - Tree Protection Information graphics	16
APPENDIX D – Tree Condition Specifications.....	17
APPENDIX F Useful Life Expectancy (ULE).....	19
REFERENCES AND BIBLIOGRAPHY	20

EXECUTIVE SUMMARY

Seasoned Tree Consulting has been engaged by Clair and Peter Shilling to prepare an Arboricultural Impact Assessment report for a new house construction with landscaping and driveway at Lot 1, 128 Elanora Road, Elanora Heights, NSW 2101.

The site is within Northern Beaches Council Local Government Area (LGA). The site consists of a newly subdivided block, clear of any structures. There are 2 trees located on site that could be impacted by the proposed plans.

A site inspection was undertaken on Thursday 30th January 2020 to determine the trees present and visually inspect them.

Trees identified are assessed in Appendix A and tree numbers are noted on a Tree location Plan in Appendix B. There is a total of 2 trees that are on or adjacent to the site.

Tree # 1, a mature *Eucalyptus microcorys* (Tallow Wood) is located close to the front fence line and would have a moderate amount of impact due to the proposed plans. There is an encroachment into the SRZ that can be mitigated through pier and beam style construction method.

The tree would be expected to suffer no loss of health or loss of structural stability as long as extensive arboricultural supervision is undertaken for any works within the TPZ.

Tree # 2 is a semi-mature *Banksia integrifolia* (Coastal Banksia) located in the front left hand corner of the block. The tree is outside of any construction encroachment and is recommended to be retained.

There are other small palms and strelitzias surrounding both trees. All these palms and strelitzias are exempt species under the Northern Beaches Council tree management policy and can be removed if required without permission. As such they are not mentioned in this report.

All the proposed works that could have a negative impact on the 2 site trees can be mitigated via tree protection methods and extensive arboricultural supervision of any works within the TPZ of the trees to be retained.

INTRODUCTION

The site is a cleared, recently subdivided block, gently sloping downhill to the west. The only vegetation is the 2 trees in the north east corner, surrounded by lower growing plants/palms/strelitzias.

Construction proposed includes a new construction of a residential double storey dwelling, driveway and landscaping package.

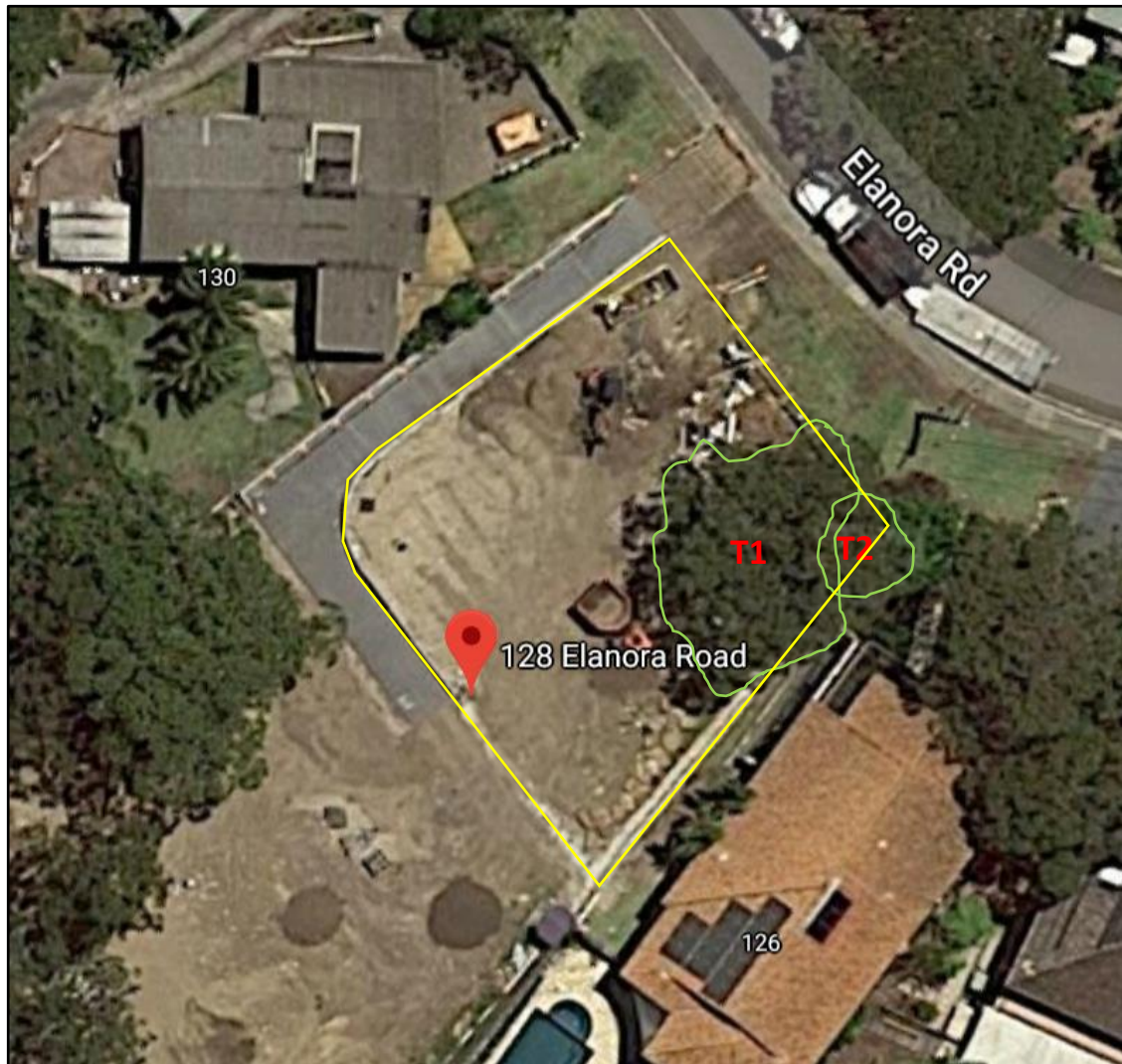


Figure 1- Aerial Image of the site with approximate boundary marked in yellow (Google Maps 2020)

A site inspection was undertaken on Thursday 30th January 2020 to assess the trees within and adjacent to the proposed area as well as existing structures. This report assesses the health and condition of the surveyed trees, identifies the potential impacts the proposed development may have on those trees and provides recommendations for tree retention or removal. The report also provides guidelines for tree protection and maintenance.

SCOPE OF THE REPORT

This report has been undertaken to meet the following objectives:

- a. Conduct a comprehensive visual inspection of the site and its environment.
For the purpose of this report, trees identified and surveyed are described as
 - having a height of 5m or more (Pittwater Council DCP 2014- B4.22 Preservation of Trees and Bushland Vegetation).
- b. Determine the condition and structure of the trees on the site.
- c. To assess any potential impacts on the identified trees during demolition and construction of the proposed new house.
- d. Provide recommendations for mitigating construction impacts for the tree to be retained.

METHODOLOGY

- a. In preparation for this report, ground level, *visual tree assessments* of the site trees, and general visual observations of the vegetation and built structures on adjoining properties were undertaken on Thursday 30th January 2020.
- b. Tree heights were visually estimated and are expressed in metres. In some cases, a Leica Disto [™] laser distance meter is used to assist tree height estimates.
- c. Tree crown spreads were measured by the assessor standing at the outer edge of the dripline, using a Leica Disto [™] laser distance meter to measure the distance from the assessor to the tree stem at the trees approximate Diameter at Breast Height (DBH).
- d. Unless otherwise noted in this report, the DBH of a tree is measured at 1.4 m above ground level, using a Yamiyo® diameter tape.
- e. The vigour (health) of the tree is assessed by visual observation of the crown density, leaf colour and size, presence of epicormic shoots, degree of dieback, and the tree's ability to withstand predation by pests or disease. The observations result in a rating of Good, Fair or Poor for each assessed tree.
- f. The condition of the tree is assessed by visual observation of the crown form and the trees growth habit, as modified by its growing environment. The condition of the tree at the time of inspection is recorded as Good, Fair, Poor or High Risk.
- g. Unless otherwise noted in this report, no aerial inspections, root mapping or woody tissue testing were undertaken as part of the tree assessments. Tree inspections may include minor excavation around the root crown if any defects are suspected.
- h. This report is not intended to be a comprehensive hazard or risk assessment of the subject trees; however, the report may make recommendations, where

appropriate, for further assessment or testing of trees where potential structural problems have been identified, or where below ground investigation may be required.

- i. Field observations were recorded and written down on paper. All CAD (including all plotting and incursion calculations) work was completed with Bluebeam Revue™. Photographs of trees and other site and locality features were taken using an iPhone 8 camera.
- j. The information contained in this tree report covers only the trees that were examined and reflects the health and condition of those trees at the time of inspection.
- k. Plans and documents (All produced by the Rubix Collective) referenced for the preparation of this report include-

INDEX	LAYOUT	DRAWING		UPDATED DATE
		ID	NAME	
APPLICATION PACKAGE				
	A0 COVER PAGE		LOCATION PLAN	16/01/2020 1:31 PM
	A0 COVER PAGE		DRAWING LIST	15/01/2020 8:49 PM
	A0 COVER PAGE		FRONT RENDER	16/01/2020 1:32 PM
A1 SITE DRAWINGS				
	A1.1 SITE PLAN	1	SITE ANALYSIS	9/01/2020 3:41 PM
	A1.2 SITE ANALYSIS	3.	SITE ANALYSIS	8/01/2020 9:12 PM
A1.3 SHADOW PLANS				
	A1.301 JUNE SHADOW PLANS	01	SHADOW PLAN 21 JUN a...	16/01/2020 12:05 PM
	A1.301 JUNE SHADOW PLANS	02	SHADOW PLAN 21 JUN a...	16/01/2020 12:05 PM
	A1.301 JUNE SHADOW PLANS	03	SHADOW PLAN 21 JUN a...	16/01/2020 12:04 PM
	A1.302 DECEMBER SHADOW PLANS	04	SHADOW PLAN 21 DEC ...	16/01/2020 12:12 PM
	A1.302 DECEMBER SHADOW PLANS	05	SHADOW PLAN 21 DEC ...	16/01/2020 12:12 PM
	A1.302 DECEMBER SHADOW PLANS	06	SHADOW PLAN 21 DEC ...	16/01/2020 12:11 PM
A2 FLOOR PLANS				
	A2.1 LOWER GROUND FLOOR	0.	LOWER GROUND FLOOR	13/01/2020 2:57 PM
	A2.2 GROUND FLOOR	1.	GROUND FLOOR	9/01/2020 11:39 AM
	A2.3 FIRST FLOOR	2.	FIRST FLOOR	9/01/2020 2:55 PM
	A2.4 ROOF PLAN	3.	ROOF PLAN	9/01/2020 3:39 PM
A3 ELEVATIONS				
	A3.1 NORTH/EAST	E	ELEVATION	9/01/2020 10:13 PM
	A3.1 NORTH/EAST	N	ELEVATION	9/01/2020 10:13 PM
	A3.2 SOUTH/WEST	S	ELEVATION	9/01/2020 10:11 PM
	A3.2 SOUTH/WEST	W	ELEVATION	9/01/2020 10:11 PM
A4 SECTIONS				
	A4.1 SECTION A-A & B-B	A	SECTION	10/01/2020 10:23 AM
	A4.1 SECTION A-A & B-B	B	SECTION	10/01/2020 10:23 AM
A5 OTHER PLANS				
	A5.1 LANDSCAPE PLAN	3.	LANDSCAPE PLAN	13/01/2020 3:00 PM
	A5.2 EROSION & SEDIMENT CONTRO...	1	EROSION & SEDIMENT ...	15/01/2020 1:30 PM
	A5.3 EXCAVATION PLAN	3.	EXCAVATION & FILL PLAN	15/01/2020 1:23 PM
A6 SCHEDULES				
	A600 OPENINGS SCHEDULE	02.	WINDOW/SKYLIGHT SC...	15/01/2020 4:00 PM

No drainage or sewer plans have been viewed.

- l. The subject trees are shown on marked-up excerpts of the Classic Building and Design Site Plan.
- m. This marked up plan is attached as Appendix B Tree Location Plan.
- n. Referred legalities and regulations
 - AS4970-2009 "The Protection of Trees on Development Sites"
 - Pittwater Council Local Environment Plan (LEP) 2011
 - Pittwater Council Development Control Plan (DCP) 2011

OBSERVATIONS

Proposed for development is the construction of a new 2 story house with driveway and landscaping works front and back yard.

There are currently 2 trees on the subject site that could be affected by the proposed alterations and additions.

There are other small trees/ shrubs onsite under 5m in height that were not assessed, as well as some taller palms that are exempt species under the Northern Beaches Council tree management policy so can be removed if required without permission. As such they are not mentioned in this report.

Tree #1 is located along the front fence line and is a healthy mature *Eucalyptus microcorys* (Tallow Wood). The tree possesses a High Landscape Significance Rating and subsequently a very high retention value and must be retained and protected. The tree has a fair form as the crown spread is biased towards the west. The tree has deadwood throughout the crown that needs removal to lower the risk of falling dead branches.



Figure 2- T1 showing unbalanced canopy form

Tree # 2 is located beside T1, in the front left hand corner of the yard . The tree is a semi-mature *Banksia integrifolia* (Coastal Banksia), exhibiting good health and form.

The tree is located away from proposed construction impacts, and due to its species and good health and form is recommended to be retained.



Figure 3- T2 surrounded by small palms and strelitzias

DISCUSSION/Comment on roots and the protection of trees on development sites)

Tree roots grow opportunistically in response to their environment with oxygen as their greatest limiting factor. They generally radiate out from the trunk and are shallow to best access water, nutrients and air from above ground. (Gerhold et al, 2003).

For trees on development sites, direct physical damage to tree roots such as severing and indirect impacts through soil compaction, soil water changes and soil chemical changes can impact on large sections of the root system and interfere with the long term health of the tree. As damage occurs closer to the trunk, defence against pathogens and whole tree stability can decrease (Fite & Smiley 2009; Smiley, 2008).

Tree protection zones are applied to trees on construction sites to prevent damage to roots and the above ground parts of trees. The Australian Standards 4970 protection of trees on development sites provides formulas to calculate protection setback distances around trees. These distances are measured as radius from and approximate center of the trunk and are used to infer an area of expected root growth. Site changes within these zones can be possible depending on the type of change and the methods used to make the change (Matheny and Clark, 1998). Further, it is reasonable to consider existing site conditions and the limitations imposed on a 'typical' spread.

DEVELOPMENT IMPACT

Tree Protection Zones have been calculated for the subject trees in order to define the encroachment of the proposed development in accordance with the AS4970-2009. The tree protection zones (TPZ) required have been taken as a circular area with a radius 12 x the diameter at breast height of the tree. This requirement is in line with Australian Standard AS 4970-2009 Protection of Trees on Development Sites. This standard defines up to 10% encroachment to be a minimal level of impact on the tree. Any encroachment over 10% requires the site arborist to give consideration as to the viability of the tree due to the proposed development. The extent of impacts to the trees can be generally rated using the guideline in Table 1.

Table 1- Guideline to the rating of impacts on trees

TPZ IMPACT RATING	
O	<1% of root zone impacted – <i>no</i> impact of significance
L	1 to 10% of root zone impacted – <i>low</i> level of impact
L – M	>10 to 15% of root zone impacted – <i>low to moderate</i> level of impact
M	>15 to 20% of root zone impacted – <i>moderate</i> level of impact
M – H	>20 to 25% of root zone impacted – <i>moderate to high</i> level of impact
H	>25 to 35% of root zone impacted – <i>high</i> level of impact
S	>35% of root zone impacted – <i>significant</i> level of impact

Any identified encroachment into the SRZ, and the extent of encroachments into the TPZ of the trees, are summarised in Table 2 (located on the following page) and further discussed in detail below.

Table 2- Estimated SRZ and TPZ encroachments

Tree No.	SRZ encroachment	TPZ Area (approx. m ²)	TPZ encroachment (approx. m ²)	TPZ encroachment (approx. %)	TPZ Impact Rating
1	Yes for front deck walkway- proposed to be above ground though	211.24	22.4 sqm + 14.8sqm = 37.2	17.6%	Moderate
5	Nil	21.9	Nil	0%	0

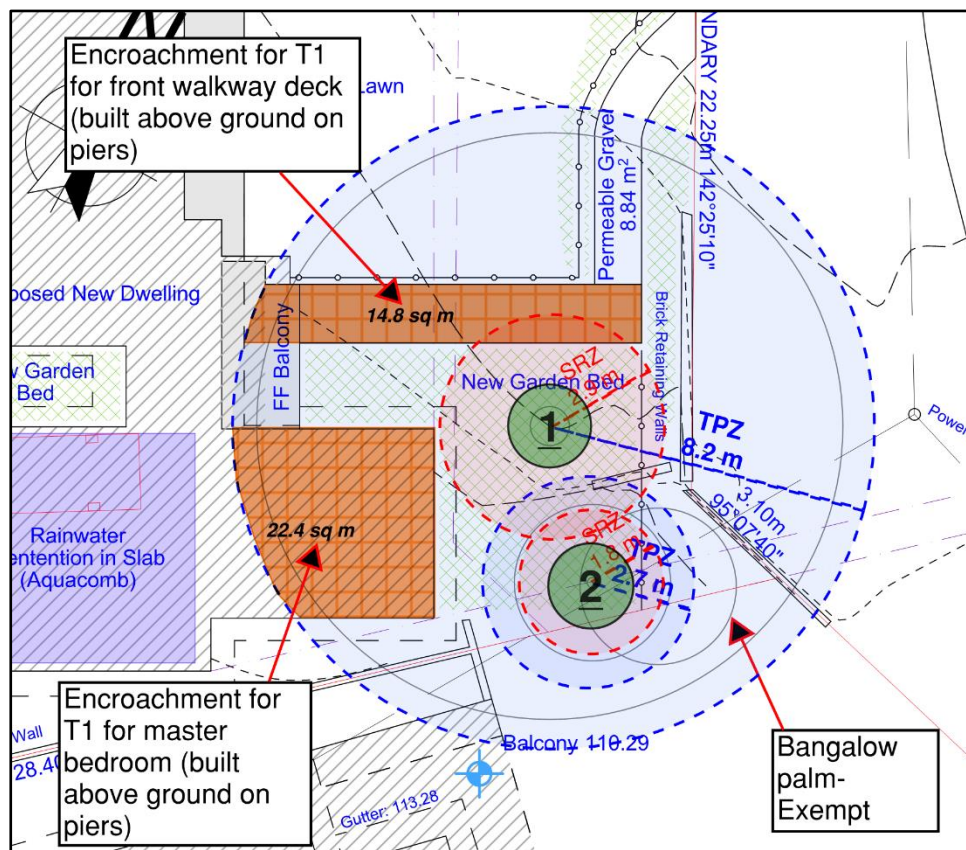
IMPACT DISCUSSION-

Tree # 1 has a calculated amount of impact of 17% (37.2 sq metres- see diagram below). This is due to the proposed front walkway and siting of the bedroom.

As the front walkway passes through the SRZ of T1, this is technically deemed a major impact and would trigger the need for further investigation to be undertaken.

But as the proposed front walkway will be built on a pier and floating deck building style (above ground level), it could be built with no impact within the SRZ.

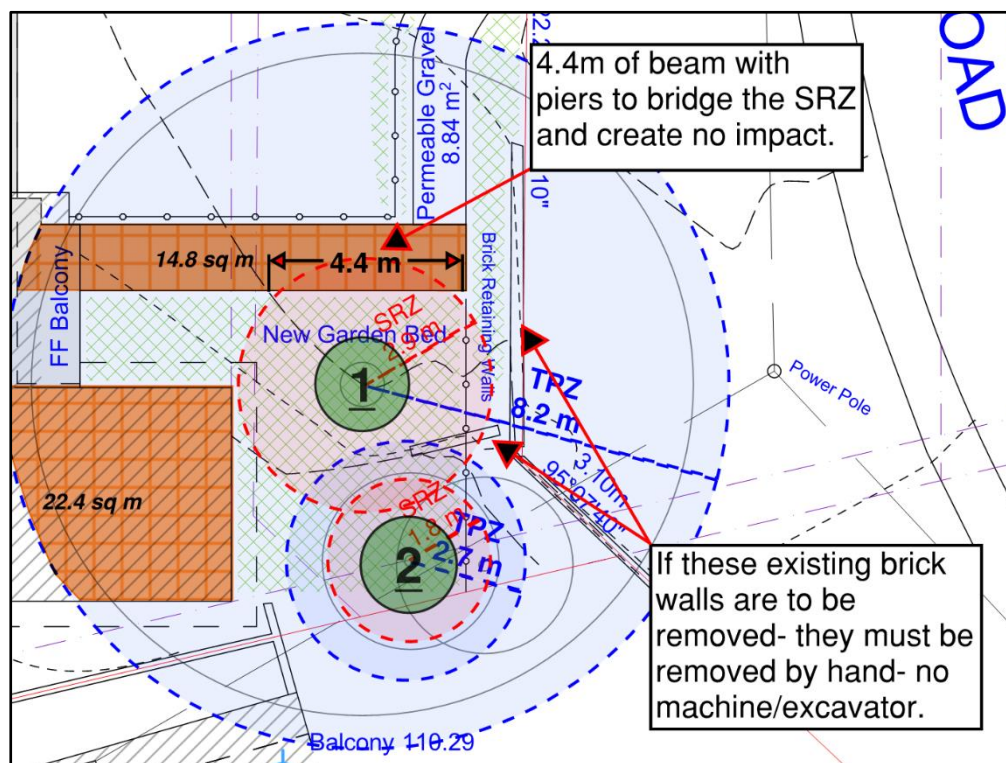
As such further investigation work is not recommended. The style of building method will also lower the overall calculated TPZ encroachment. The bedroom is likewise proposed to be built on a pier and suspended floor style building method (above ground level)- likewise lowering the encroachment calculation.



Tree #2 has nil encroachment into the TPZ due to its position in relation to the proposed works.

GENERAL RECOMMENDATIONS

Tree ID no.	Recommendations	Reasons
1	<p>Tree to be retained and protected to the AS4970 with Tree protection fencing to be installed as per the Tree Protection Plan (Page 11)</p> <p>Direct arboricultural supervision will be required during any pier hole excavation/ ground works within the TPZ.</p> <p>It is recommended to bridge the SRZ with a pier and beam style raised deck (beam to be minimum 4.4m in length to bridge the SRZ)- <u>see diagram this page.</u></p> <p>Posts for the proposed deck will need to be installed on a flexible post placement, under direct supervision by a project arborist.</p> <p>If the existing old brick retaining walls are to be removed- this work must be done by hand (no excavator) to avoid damage to structural roots- <u>see diagram this page.</u></p> <p>Deadwood to be pruned out, with a minor reduction prune of the branches growing due west to balance the aesthetics of the tree. If this pruning is kept under 10% of the canopy to be removed then council approval is not required.</p>	<p>Tree is in good overall condition and has a high landscape significance rating. Impact ratings are lower than calculated due to above ground works.</p>
2	<p>Tree to be retained- protected by the TPZ fencing for T1.</p>	<p>Tree is sited outside of proposed works.</p>



CONCLUSION

A new double storey house is proposed for the site at Lot 1, 128 Elanora Rd, Elanora Heights. Proposed work includes a new driveway and landscape features.

There are 2 trees all located on the site that have been recorded and inspected.

Both trees must be retained and protected.

Tree #1 has moderate level of impact from the proposed front walkway deck and master bedroom. This moderate level of impact has been revised down due to the style of construction (pier and beam)

With correct tree protection measures installed and extensive arboricultural supervision during any excavation and construction within the TPZ, the 2 trees to be retained will see no loss of physical health and no loss of structural stability.

RECOMMENDATIONS AND TREE PROTECTION METHODS

Assigning a site arborist

Before work commences on site, a project arborist must be appointed. The project arborist must hold a minimum AQF5 level of qualification in Arboriculture. The project arborist will periodically attend the site to gather information needed for the issuing of certificates of compliance for the duration of the build.

Duties of the project arborist will include:

- Oversee the correct implementation of tree protection measures listed below
- Recording of tree health and vigour on a quarterly basis, if the trees are showing any form of decline in health then solutions will need to be sought to improve the health of the tree
- Be witness to any excavation works within the tree protection zones and advise upon the discovery of roots above 40mm in diameter.
- Numbering the trees and advising contractors which trees are to be protected.

Tree Protection

The 2 trees to be retained will require Tree protection measures, which include Tree protection fencing (See Tree Protection Plan Page 18)

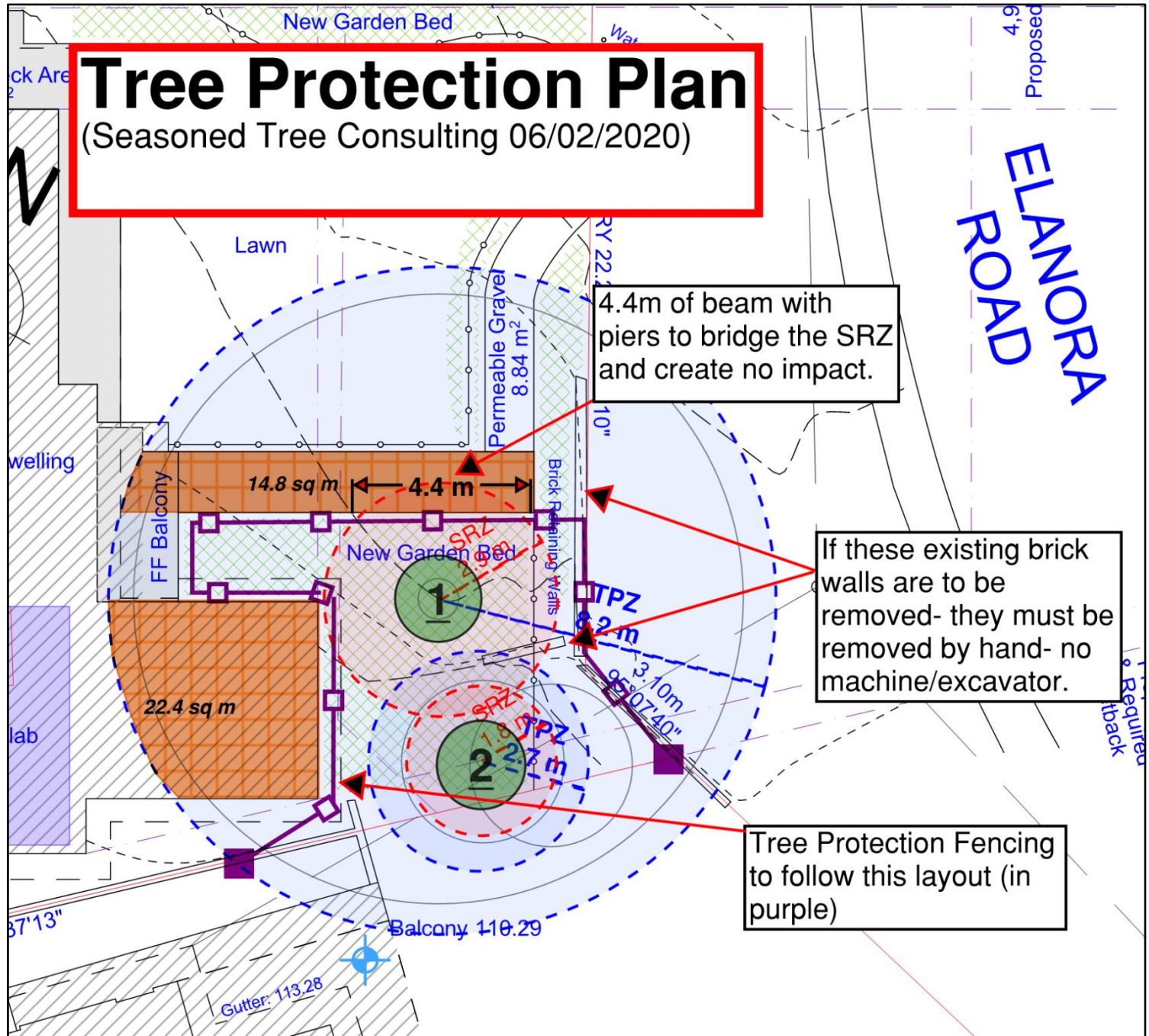
Supervision of excavation works within the TPZ of retained trees-

Excavation and any work around protected trees must:

- Be done with hand tools only. No excavation around protected trees is to be undertaken with machinery to limit the chance of accidental damage to the tree.
- To minimise the disturbance of roots within the Protection Zones of trees it is advised that trees or shrubbery planted within their TPZ's come in a maximum pot size of 200mm.

Tree Protection Plan

ELANORA
ROAD



MITIGATION MEASURES

General recommendation.

Tree protection devices

The tree protection devices are to be in accordance with the following:

- a. AS4970 (Examples detailed in Appendix C)
- b. Tree protection devices must be in place prior to any site works commencing, including clearing, demolition or grading.
- c. The most appropriate fencing for tree protection is 1.8m chain-link with 50mm metal pole supports. During installation, care must be taken to avoid damage to significant roots. The practicality of providing this fencing on this site must be addressed by the arborist.
- d. Any areas of the TPZ outside fenced protection areas must, where practicable, be covered in thick, coarse mulch to a depth of 100mm to reduce soil compaction and soil moisture losses.
- e. Construction traffic areas (including foot traffic) within the TPZ are to be protected by wide timber planks over the mulch, or similar means of providing access whilst avoiding soil compaction.
- f. Any tree roots (under 50mm) that must be severed must be cut cleanly with a sharp handsaw. Tearing of roots is not acceptable. If significant roots (ie greater than 50mm) are encountered, the level 5 arborist and Northern Beaches Council is to be contacted.
- g. The exposed soil at the face of an excavation within the TPZ radius of a tree must be kept moist to prevent drying out. This may be achieved by carefully pinning layers of hessian against the cut face and regular light watering as advised by the arborist.
- h. Nothing should occur inside the TPZ, so therefore all access to personnel and machinery, storage of fuel, chemicals, cement or site sheds is prohibited.
- i. No washing or rinsing of tools is to be carried out within eight metres of the trees.
- j. Signage should explain exclusion from the area defined by TPZ and carry a contact name for access or advice.
- k. The tree protection devices cannot be removed, altered, or relocated without the project arborist approval

LIMITATIONS

- a. The trees and immediate environment were inspected from the ground only, using the methodology detailed in this report on the following page.
- b. The findings of this report are based on the observations made at the time of inspection of Thursday 30th January 2020.
- c. The report reflects on the site as found on the day of inspection. Any changes to the growing environment of the site or remedial works beyond those recommended by this report may alter the findings of the report.
- d. Care has been taken to obtain all information from reliable sources. All data has been verified as far as possible; however, the author can neither guarantee nor be responsible for the accuracy of information provided by others.
- e. The recommendations proposed in this report are subject to approval by Northern Beaches Council.

Regards



David Gowenlock

Diploma of Arboriculture AQF5

Diploma of Conservation and Land Management AQF5

TRAQ (ISA – Tree Risk Assessment Qualification)

QTRA (Quantified Tree Risk Assessment System- User no. 5459)

AQF2 + AQF3 Arboriculture

Tree Safety Assessment and Evaluation Workshop- (Frank Rinn Nov 2018)

APPENDIX A - Tree Inspection Schedule

Tree Inspection Site: Lot 1, 128 Elanora Road, Elanora Heights, NSW 2101

Surveyed by: David Gowenlock

Date of Inspection: Thursday 30th January 2020

Tagged: No

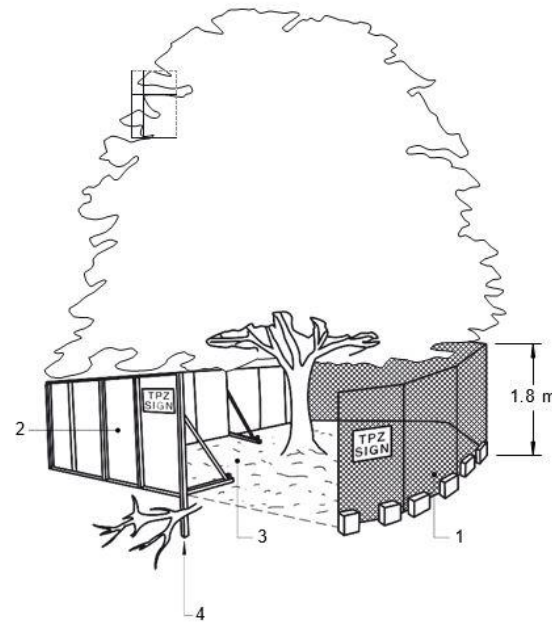
Tree ref no.	Species	Age Class	DBH (cm)	DARB (cm)	Height (m) x Canopy spread (m)	Vigour/ Physiological Condition	Structural Condition (See Appendix D)	Landscape Significance Value (See Appendix E)	Useful Life Expectancy (ULE) (See Appendix F)	Comments
T1	<i>Eucalyptus microcorys</i> Tallow Wood	Mature	68	77	15 x 14	Good	Good	High	Long	Co-dominant leaders, minor deadwood throughout crown Prune deadwood and weight reduction prune on western side of foliage to balance tree Protect with TPZ fencing
T2	<i>Banksia integrifolia</i> Coastal Banksia	Semi-mature	22	25	8 x 4	Good	Good	Moderate	Medium	Retain- outside of any construction impacts

Tree inspection schedule continued- SRZ and TPZ calculations

Tree ref no.	Tree	Diameter @ breast height (cm)	TPZ Calculated radius	Diameter immediately above root flare (cm)	SRZ Calculated radius in metres = (Diameter x 50) to the power of 0.42 x 0.64	TPZ area calculated (square metres)
T1	<i>Eucalyptus microcorys</i> Tallow Wood	68	8.2	77	2.97	211.24
T2	<i>Banksia integrifolia</i> Coastal Banksia	22	2.64	25	1.85	21.9

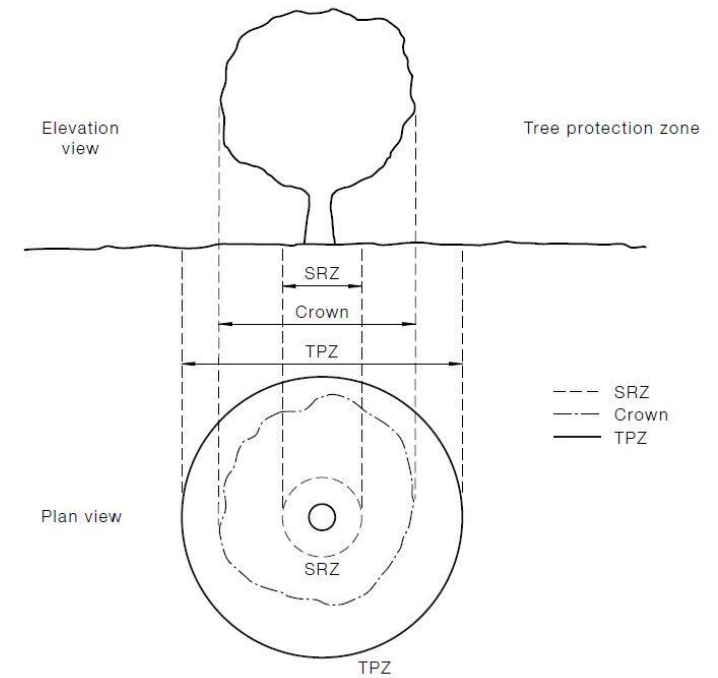
[illegible]

APPENDIX C - Tree Protection Information graphics



EGEND:

Chain wire mesh panels with shade cloth (if required) attached, held in place with concrete feet.
 Alternative plywood or wooden paling fence panels. This fencing material also prevents building materials or soil entering the TPZ.
 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.
 Bracing is permissible within the TPZ. Installation of supports should avoid damaging roots.



**Tree
Protection
Zone**



NO ACCESS

Contact:

APPENDIX D – Tree Condition Specifications

(Draper BD and Richards PA 2009)

Condition A tree's crown form and growth habit, as modified by its environment (aspect, suppression by other trees, soils), the stability and viability of the root plate, trunk and structural branches (first (1st) and possibly second (2nd) order branches), including structural defects such as wounds, cavities or hollows, crooked trunk or weak trunk/branch junctions and the effects of predation by pests and diseases. These may not be directly connected with vigour and it is possible for a tree to be of normal vigour but in poor condition. Condition can be categorized as *Good Condition*, *Fair Condition*, *Poor Condition* and *Dead*.

GOOD Condition Tree is of good habit, with crown form not severely restricted for space and light, physically free from the adverse effects of predation by pests and diseases, obvious instability or structural weaknesses, fungal, bacterial or insect infestation and is expected to continue to live in much the same condition as at the time of inspection provided conditions around it for its basic survival do not alter greatly. This may be independent from, or contributed to by vigour.

FAIR Condition Tree is of good habit or misshapen, a form not severely restricted for space and light, has some physical indication of decline due to the early effects of predation by pests and diseases, fungal, bacterial, or insect infestation, or has suffered physical injury to itself that may be contributing to instability or structural weaknesses, or is faltering due to the modification of the environment essential for its basic survival. Such a tree may recover with remedial works where appropriate, or without intervention may stabilise or improve over time, or in response to the implementation of beneficial changes to its local environment. This may be independent from, or contributed to by vigour.

POOR Condition Tree is of good habit or misshapen, a form that may be severely restricted for space and light, exhibits symptoms of advanced and irreversible decline such as fungal, or bacterial infestation, major die-back in the branch and foliage crown, structural deterioration from insect damage e.g. termite infestation, or storm damage or lightning strike, ring barking from borer activity in the trunk, root damage or instability of the tree, or damage from physical wounding impacts or abrasion, or from altered local environmental conditions and has been unable to adapt to such changes and may decline further to death regardless of remedial works or other modifications to the local environment that would normally be sufficient to provide for its basic survival if in good to fair condition. Deterioration physically, often characterised by a gradual and continuous reduction in vigour but may be independent of a change in vigour, but characterised by a proportionate increase in susceptibility to, and predation by pests and diseases against which the tree cannot be sustained. Such conditions may also be evident in trees of advanced senescence due to normal phenological processes, without modifications to the growing environment or physical damage having been inflicted upon the tree. This may be independent from, or contributed to by vigour.

APPENDIX E -Landscape Significance Rating

Rating	Heritage value	Ecological value	Amenity value
1. SIGNIFICANT	The subject site is listed as a Heritage Item under the Local Environment Plan (LEP) with a local, state or national level of significance or is listed as a Significant Tree.	The subject tree is scheduled as a Threatened Species as defined under the <i>Threatened Species Conservation Act 1995 (NSW)</i> or the <i>Environmental Protection and Biodiversity Conservation Act 1999</i> .	The subject tree has a very large live crown size exceeding 100m ² with normal to dense foliage cover, is located in a visually prominent position in the landscape, exhibits very good form and habit typical of the species.
	The subject tree forms part of the curtilage of a Heritage Item (building /structure /artefact as defined under the LEP) and has important association with that item.	The tree is a locally indigenous species, representative of the original vegetation of the area and is known as an important food, shelter or nesting tree for endangered or threatened fauna species.	The subject tree makes a significant contribution to the amenity and visual character of the area by creating a sense of place or creating a sense of identity.
	The subject tree is a Commemorative Planting having been planted by an important historical person (s) or to commemorate an important historical event.	The subject tree is a Remnant Tree, being a tree in existence prior to development of the area.	The tree is visually prominent in view from surrounding areas, being a landmark or visible from a considerable distance.
2. VERY HIGH	The tree has a strong historical association with a Heritage Item (building/structure/artefact/garden etc) within or adjacent the property and/or exemplifies a particular era or style of landscape design associated with the original development of the site.	The tree is a locally-indigenous species, representative of the original vegetation of the area and is a dominant or associated canopy species of an Endangered Ecological Community (EEC) formerly occurring in the area occupied by the site.	The subject tree has a very large live crown size exceeding 60m ² ; a crown density exceeding 70% (normal-dense), is a very good representative of the species in terms of its form and branching habit or is aesthetically distinctive and makes a positive contribution to the visual character and the amenity of the area.

Rating	Heritage value	Ecological value	Amenity value
3. HIGH	The tree has a suspected historical association with a heritage item or landscape supported by anecdotal or visual evidence.	The tree is a locally-indigenous species and representative of the original vegetation of the area and the tree is located within a defined Vegetation Link / Wildlife Corridor or has known wildlife habitat value.	The tree is a good representative of the species in terms of its form and branching habit with minor deviations from normal (e.g. crown distortion/suppression) with a crown density of at least 70% (normal); the subject tree is visible from the street and/or surrounding properties and makes a positive contribution to the visual character and the amenity of the area.
4. MODERATE	The tree has no known or suspected historical association, but does not detract or diminish the value of the item and is sympathetic to the original era of planting.	The subject tree is a non-local native or exotic species that is protected under the provisions of this Development Control Plan.	The subject tree has a medium live crown size exceeding 25m ² ; the tree is a fair representative of the species, exhibiting moderate deviations from typical form (distortion/suppression etc) with a crown density of more than 50% (thinning to normal); and The tree is visible from surrounding properties, but is not visually prominent – view may be partially obscured by other vegetation or built forms. The tree makes a fair contribution to the visual character and amenity of the area.
5. LOW	The subject tree detracts from heritage values or diminishes the value of a Heritage Item.	The subject tree is scheduled as exempt (not protected) under the provisions of this Development Control Plan due to its species, nuisance or position relative to buildings or other structures.	The subject tree has a small live crown size of less than 25m ² and can be replaced within the short term (5-10 years) with new tree planting.
6. VERY LOW	The subject tree is causing damage to a Heritage Item.	The subject tree is listed as an Environment Weed Species in the Leichhardt Local Government Area, being invasive, or is a known nuisance species.	The subject tree is not visible from surrounding properties (visibility obscured) and makes a negligible contribution or has a negative impact on the amenity and visual character of the area. The tree is a poor representative of the species, showing significant deviations from the typical form and branching habit with a crown density of less than 50% (sparse).

APPENDIX F Useful Life Expectancy (ULE)

- **USEFUL LIFE EXPECTANCY (ULE).** The remaining Useful Life Expectancy of the tree is an estimate of the sustainability of the tree in the landscape, calculated based on an estimate of the average age of the species in an urban area, less its estimated current age. The life expectancy of the tree has been further modified where necessary in consideration of its current health and vigour, condition and suitability to the site. The estimated ULE of each tree is shown in Appendix A.

ULE Category	Description
Long	Greater than 40 years
Medium	Between 15 and 40 years
Short	Between 5 and 15 years
Transient	Less than 5 years
Dead or Hazardous	Dead or immediately hazardous

REFERENCES AND BIBLIOGRAPHY

Australian Standard 4970-2009 Protection of trees on development sites.

Draper BD and Richards PA 2009, Dictionary for Managing Trees in Urban Environments, Institute of Australian Consulting Arboriculturists (IACA), CSIRO Publishing, Collingwood, Victoria, Australia.

Fite, K & Smiley, ET 2009, 'Managing Trees During Construction - Pt 2', Arborist News, February 2009, pp. 12-16

Gerhold, HD & Johnson, AD 2003, 'Root Dimensions of Landscape Tree Cultivars', Journal of Arboriculture, vol 29, no. 6, pp. 322-325

Greg Chapman, Casey Murphy, Peter Tille, Glen Atkinson, Rick Morse, Soil landscapes of the Sydney 1:100000 sheet report – The soil conservation service of NSW 1989 reprinted 2009

Matheny, N & Clark, JR 1998, Trees and Development - A technical guide to preservation of trees during land development, International Society of Arboriculture, Champaign IL.

Smiley, ET 2008, 'Root Pruning and Stability of Young Willow Oak', Arboriculture & Urban Forestry, vol 34, no. 2, pp. 123-128

Six (Spatial Information Exchange) Viewer, 2019,
<https://six.nsw.gov.au/wps/portal>