Arboricultural Impact Assessment

Figure 1 Tree 1 *Brachychiton acerifolius*.

Site Address: 127 New England Hwy Lochinvar

Client: Brown Commercial Building Pty Ltd

Date: June 2025

Prepared by Ian Hills - Associate Diploma Horticulture
Certificate III Arboriculture
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1.0 Summary

Accurate Tree Assessment has been commissioned by Brown Commercial Building Pty Ltd to provide an arboricultural impact assessment for nine (9) trees located on the subject property at 127 New England Hwy Lochinvar where it is proposed to construct proposed mixed-use development including a childcare centre with off-street parking.

The trees are subject to the provisions of Maitland DCP-2011-Part-B5 'Tree Management'.

Conclusions

Nine (9) trees numbered on the survey plan and located on the subject site have been considered in this assessment.

Six (6) trees are proposed for removal due to major encroachment.

Three (3) trees the site are proposed for retention and will be protected from adverse impacts for the duration of the project

Recommendations

That Trees 2, 3 *Jacaranda mimosifolia,* 4 *Quercus robur,* 5 *Pyrus sp.,* 6 *Eucalyptus scoparia and* 7 *Corymbia citriodora* are approved for removal subject to the provision of suitable compensatory replacement planting.

That Trees 1 *Brachychiton acerifolius* 8 and 9 *Eucalyptus saligna* are retained and protected for the duration of the project.

That temporary fencing is installed at 4 metres radius from the trunk of Tree 1 and across the rear of the property adjacent to the sewer easement to create a Tree Protection Zone covering the rear of the property.

That temporary fencing is installed prior to the commencement of any works in accordance with the Tree Protection Plan at appendix 11.3 and the provisions of AS4970 at appendix 11.4.A.

2.0 Disclaimer

This report is to be read and considered in its entirety. The subject trees were inspected from the ground using Visual Tree Assessment methodology, no aerial investigations; underground or internal investigations were undertaken. It is the responsibility of the client to implement all recommendations contained in this report; Council consent may be required for substantial pruning and tree removal.

The assessment is made having regard for the prevailing site conditions; and does not account for the effects that extreme weather events may have on trees.

Assessment is limited to those trees numbered on the survey plan.

Information contained in this report reflects the condition of the trees at the time of the inspection. As trees are living organisms their condition will change over time, there is no guarantee that problems or deficiencies of the subject trees may not arise in the future. It must be accepted that living near trees involves some level of risk.

This report is for the use of the client and their sub-contractors to assist in determining the tree management measures to be undertaken in conjunction with the proposed development of the site. Distribution to other parties is not permitted except with the express permission of the author, Ian Hills.

3.0 Brief

Accurate Tree Assessment has been commissioned by Brown Commercial Building Pty Ltd to provide an arboricultural impact assessment for nine (9) trees located on the subject property at 127 New England Hwy Lochinvar where it is proposed to construct proposed mixed-use development including a childcare centre with off-street parking.

4.0 Method

A ground based site inspection was carried out on 17 June 2025; the assessment of the trees was made using Visual Tree Assessment (VTA) procedure (Matheny & Clark, 1994), (Mattheck & Breloer, 2004) having regard for the provisions of AS4970-2025, 'Protection of Trees on Development Sites'.

Tree dimensions have been measured using a standard arboricultural diameter tape and Nikon Forestry Pro® laser hypsometer.

Tree numbers are marked on the site survey and will be used as refence throughout this report.

4.1. Documents

The client has provided copies of the following documents which are relied upon and have been used in the preparation of this assessment:

- Site Survey prepared by Delfs Lascelles Surveyors Project No. 24145, Revision F, dated 13 March 2025 (Appendix 11.2)

- Site Plan prepared by Brown Commercial Building Project Ref. BCP1150, Drawing No. 02, Revision 7, dated 21 May 2025 (Appendix 11.3)

5.0 Site Conditions

The property is zoned R1 General Residential and is occupied by a single dwelling and ancillary structures, the trees are subject to the provisions of Maitland DCP-2011-Part-B5 'Tree Management'

According to data from the Office of Environment and Heritage the soil landscape is mapped as Lochinvar– (SI5601lv), which has the following characteristics:

- Soils - The main soils are Non-calcic Brown Soils on the gentle slopes with Brown Clay Soils) on the steeper areas. There are Yellow solodic soils on the mid to lower slopes of the steeper hills and in some drainage lines. Severe erosion hazard.

- Landscape - Undulating rises with elevation ranging from 20 – 80 m. Local relief is around 20 m, with slope gradients of 4 – 6%. Average slope lengths are 800 – 1,000 m. Drainage lines occur at 400 – 800 m intervals.

- Vegetation - A woodland community of White Box with Silvertop stringybark, Yellow Box and Red Gum. Much has been cleared for grazing of improved pastures. There is rural residential subdivision in the area. *(NSW Environment and Heritage, 2025)*

According to climate data from the Cessnock Airport, which is approximately 14 kilometres from the site, the district experiences prevailing winds from the North-west, with infrequent occurrences of winds above 40km/h (Willy Weather, 2025). The taller trees are exposed due to their canopy projection above nearby vegetation and structures.

Figure 2 Subject Site (Sixmaps, 2025)

6.0 Tree Assessment

No.	Species (Common name)	DSH (M)	NRZ (M Radius)	SRZ (M Radius)	HEIGHT (M)	SPREAD (M)	Vigour	Age Class	SULE	Retention value	Comments (Encroachment %)	Proposal
1	*Brachychiton acerifolius (Illawarra Flame tree)*	0.4	4.8	2.47	9	6	g	m	1a	High	Appears structurally sound, 3.7m from existing dwelling. (5% NRZ, proposed parking)	Retention
2	*Jacaranda mimosifolia (Jacaranda)*	0.65	7.8	2.93	10	10	av	m	2a	Moderate	Excessive deadwood noted, 4.2m from existing dwelling (60% NRZ, 71% SRZ, proposed parking)	Removal
3	*Jacaranda mimosifolia (Jacaranda)*	0.4, 0.3	6.0	2.47	10	10	gm	1a	2a	Moderate	Appears structurally sound, 4.8m from existing dwelling (60% NRZ, 75% SRZ, proposed building)	Removal
4	*Quercus robur (English oak)*	0.7	8.4	3.01	9	10	g	m	1a	Moderate	appears structurally sound (57% NRZ,70% SRZ, proposed building)	Removal
5	*Pyrus sp. (Pear)*	0.25	3.0	1.85	4	4	g	m	1a	Moderate	appears structurally sound (100%NRZ/SRZ, proposed driveway)	Removal
6	*Eucalyptus scoparia (Wallangarra White Gum)*	0.67	8.0	0.00	16	10	av	m	2a	High	Large diameter deadwood noted, extensive epicormic growth (60%NRZ/SRZ, proposed driveway)	Removal
7	*Corymbia citriodora (Lemoin-scented Gum)*	0.4	4.8	2.47	12	10	g	sm	1a	High	Appears structurally sound (80%NRZ/SRZ, proposed driveway)	Removal
8	*Eucalyptus saligna (Sydney Blue Gum)*	0.32, 0.57	7.8	2.93	14	9	g	m	1a	High	Appears structurally sound (Nil)	Retention

No.	Species (Common name)	DSH (M)	NRZ (M Radius)	SRZ (M Radius)	HEIGHT (M)	SPREAD (M)	Vigour	Age Class	SULE	Retention value	Comments (Encroachment %)	Proposal
9	*Eucalyptus saligna (Sydney Blue Gum)*	1.0	12.0	3.57	20	15	g	m	1a	High	Appears structurally sound (Nil)	Retention

DSH – Trunk diameter at 1.4 metres
Vigour - P = Poor, F = Fair, Av = Average, G =Good, Ex = excellent
Age class – J = Juvenile, SM =Semi-mature M = Mature, OM= Over mature

NRZ = Tree Protection Zone (calculated in accordance with AS4970-2025)
SRZ = Structural Root Zone (calculated in accordance with AS4970-2025)
SULE = Safe Useful Life Expectancy (Barrel, J. 1993-5)

7.0 Development impact

All parts of a tree may be damaged by construction activities, and the effects of damage are often cumulative meaning that seemingly minor damage to the tree can have adverse effects that may not become apparent until well after the project has been completed.

Crown damage often occurs when machinery impacts branches of the tree resulting in a loss of foliage. As the foliage is where the tree produces the sugars required for healthy growth it therefore stands to reason that any loss of foliage will affect the trees' ability to function normally.

In addition, when branches are torn or improperly pruned the trees' ability to recover is affected and pathogens that cause wood decay or disease have an increased opportunity to penetrate the trees' natural defenses.

Trunk damage is usually caused by mechanical impact, and again wounding predisposes the tree to infection by pathogens.

Root damage is the most common cause of damage to trees on development sites, and often has the most serious effects as it commonly goes unnoticed for some time. Damage can be caused by mechanical factors such as tearing during excavation, as well as factors such as chemical contamination, changes in hydrology and altering gaseous exchange rates by filling, and compaction during movement of equipment.

Australian Standard 4970, *Protection of Trees on Development Sites* was adopted in 2025 to provide Arborists and the construction industry with a guide to assist in the preservation of retained trees on all types of development sites.

To assist professionals working to protect trees the Standard proposes the following:

"*Notional Root Zone – zone enclosed by a radius of 12 times the DSH that is a primary trigger for arboricultural input on a development site*.

Tree Protection Zone - a specified zone above and below ground level and at a given offsets from the trunk set aside to protect a tree's roots and crown where these might be damaged by development.

The TPZ for each retained tree shall be shown on the Tree Protection Plan (TPP) and described in the Tree Protection Specification (TPS).

Structural Root Zone – a theoretical area around the base of a tree required for the tree's stability.

The woody root growth and soil cohesion in the SRZ are necessary to hold the tree upright. The SRZ is an area with the trunk at its centre and is expressed by its radius in metres.

The SRZ considers a tree's structural stability only, not the root zone required for a tree's vigour and long-term viability, which is typically a much larger area." (Ref. AS4970-2025)

Minor encroachment affects 10% or less of the NRZ, where no recent encroachments have occurred and is outside the SRZ.

Moderate encroachment affects greater than 10% and less than or equal to 20% of the NRZ and is outside the SRZ.

Major encroachment affects greater than 20% of the NRZ or is inside the SRZ.

To avoid a net loss of soil area and volume, an area equivalent to the encroachment shall be incorporated into the TPZ

8.0 Discussion

The impacts of development on the subject trees are assessed against the proposal to construct a new mixed-use development including a childcare centre with off-street parking. Six (6) trees on the subject site are proposed for removal.

Tree 1 *Brachychiton acerifolius* appears in good that and vigour and is assessed with thigh retention value. The tree is located adjacent to the front boundary fence and will be within the proposed landscaping; construction of the proposed carpark will cause a minor encroachment of the NRZ.

Tree 1 is therefore proposed for retention and will be protected by the installation of temporary fencing panels to enclose the TPZ at 4 metres radius from the trunk of the tree.

Trees 2, 3 *Jacaranda mimosifolia* and 4 *Quercus robur* are mature exotic trees in average to good health and vigour located between the existing dwelling and the Eastern boundary and are assessed with moderate retention value.

The trees will be within the plan area of the proposed car park and building conflicting with the proposed design. Consent is sought for the removal of the trees to allow the development to proceed as planned.

5 *Pyrus sp.* 6 *Eucalyptus scoparia* 7 *Corymbia citriodora* are mature exotic and native trees in average to good health and vigour located adjacent to the Western boundary and are assessed with moderate to high retention value.

The trees will be within the plan area of the driveway conflicting with the proposed design. Consent is sought for the removal of the trees to allow the development to proceed as planned.

The proposed removal of Trees 2 – 7 can be supported subject to the provision of suitable compensatory replacement planting which can be accommodated within the site landscaping and towards the rear of the property.

Trees 8 and 9 *Eucalyptus saligna* are mature native trees in apparently good health and vigour and are assessed with high retention value due to their large size which contributes significantly to amenity and environmental values in the local landscape.

The trees are located at the rear of the subject site and will not be affected by any element of the proposed development. Accordingly, the trees will be retained and protected by establishing a Tree Protection Zone (TPZ) covering the rear of the site.

The undeveloped area South of the sewer easement is to be fenced across the width of the property using temporary fencing panels prior to the commencement of any works on site to restrict access by pedestrians and machinery for the duration of the project.

Contaminated runoff, pedestrians any vehicles and the storage of materials and/or waste is not permitted within the TPZ.

All temporary fencing is to be installed prior to the commencement of works in accordance with the Tree Protection Plan at appendix 11.4 and the provisions of AS4970 at Appendix 11.5.A.

9.0 Conclusions

Nine (9) trees numbered on the survey plan and located on the subject site have been considered in this assessment.

Six (6) trees that will be subject to major encroachment are proposed for removal due to major encroachment.

Type equation here.

Three (3) trees on the subject site are proposed for retention and will be protected from adverse impacts for the duration of the project

10.0 Recommendations

That Trees 2, 3 *Jacaranda mimosifolia,* 4 *Quercus robur,* 5 *Pyrus sp.,* 6 *Eucalyptus scoparia and* 7 *Corymbia citriodora* are approved for removal subject to the provision of suitable compensatory replacement planting.

That Trees 1 *Brachychiton acerifolius,* 8 and 9 *Eucalyptus saligna* are retained and protected for the duration of the project.

That temporary fencing is installed at 4 metres radius from the trunk of Tree 1 and across the rear of the property adjacent to the sewer easement to create a Tree Protection Zone covering the rear of the property.

That temporary fencing is installed prior to the commencement of any works in accordance with the Tree Protection Plan at appendix 11.3 and the provisions of AS4970 at appendix 11.4.A.

Ian Hills - Principal Arborist
Accurate Tree Assessment

Figure 3 Trees 2 and 3 *Jacaranda mimosifolia*.

Figure 4 Trees 4 *Quercus robur*.

Figure 5 Tree 5 *Pyrus sp.*

Figure 6 Trees 6 *Eucalyptus scoparia* and 7 *Corymbia citriodora.*

Figure 7 Trees 8 and 9 *Eucalyptus saligna*.

11.0 Appendices

11.1. Safe Useful Life Expectancy Categories

1: Long SULE: Trees that appeared to be retainable at the time of assessment for more than 40 years with an acceptable level of risk.
(a) Structurally sound trees located in positions that can accommodate future growth.
(b) Trees that could be made suitable for retention in the long term by remedial tree care.
(c) Trees of special significance for historical, commemorative or rarity reasons that would warrant extraordinary efforts to secure their long-term retention.

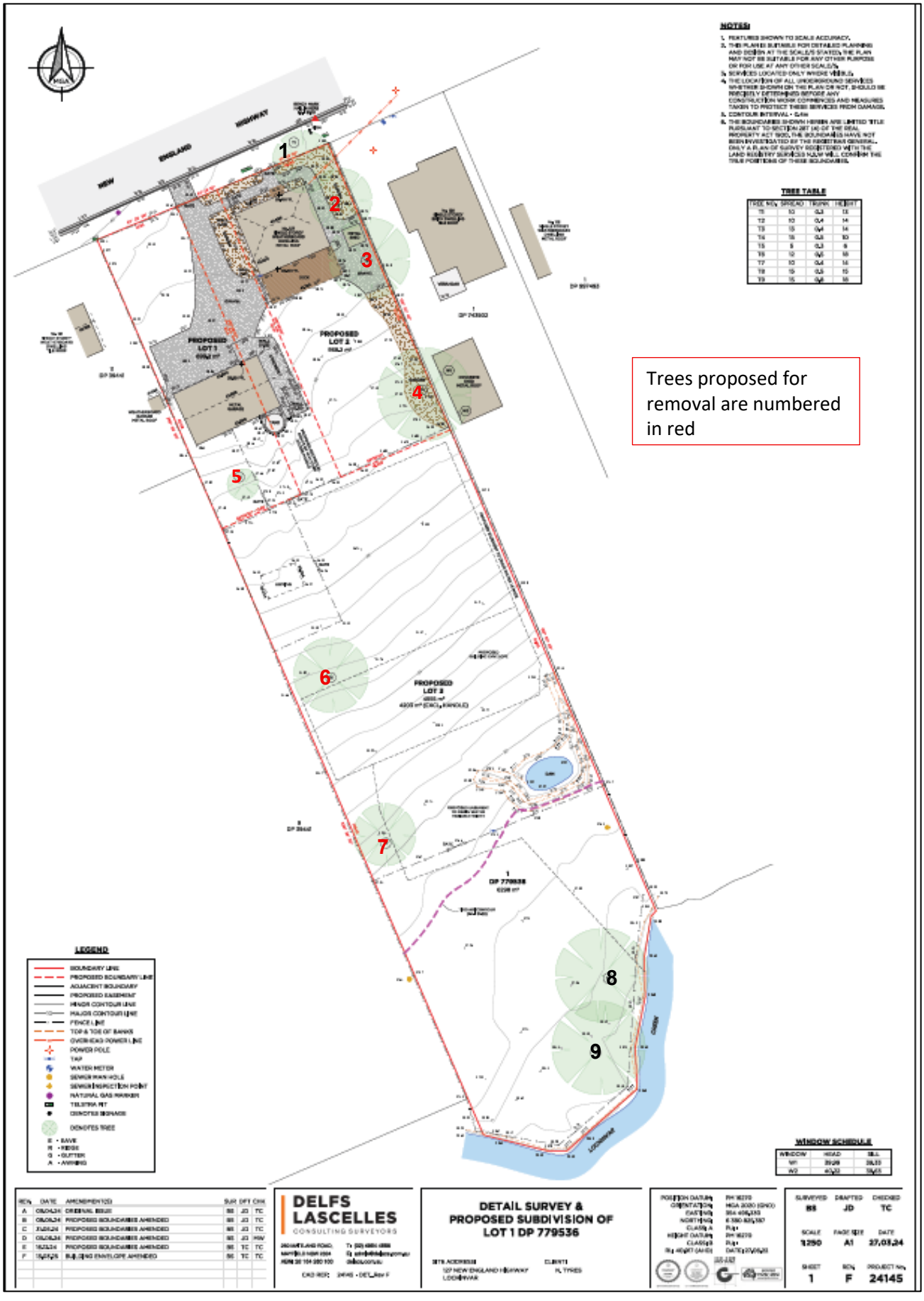
2: Medium SULE: Trees that appeared to be retainable at the time of assessment for 15–40 years with an acceptable level of risk.
(a) Trees that may only live between 15 and 40 more years.
(b) Trees that could live for more than 40 years but may be removed for safety or nuisance reasons.
(c) Trees that could live for more than 40 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting.
(d) Trees that could be made suitable for retention in the medium term by remedial tree care.

3: Short SULE: Trees that appeared to be retainable at the time of assessment for 5–15 years with an acceptable level of risk.
(a) Trees that may only live between 5 and 15 more years.
(b) Trees that could live for more than 15 years but may be removed for safety or nuisance reasons.
(c) Trees that could live for more than 15 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting.
(d) Trees that require substantial remedial tree care and are only suitable for retention in the short term.

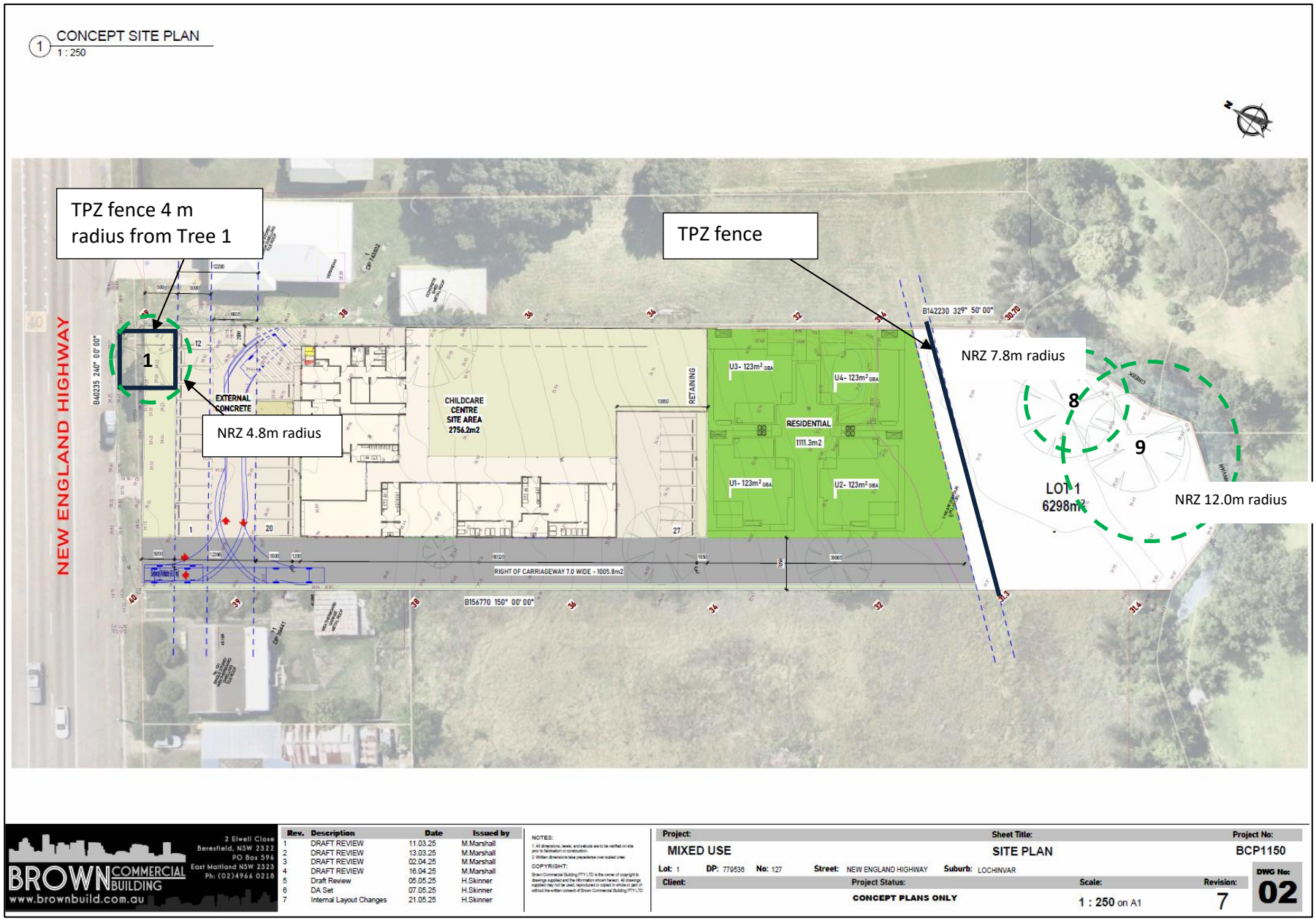
4: Remove: Trees that should be removed within the next 5 years.
(a) Dead, dying, suppressed or declining trees because of disease or inhospitable conditions.
(b) Dangerous trees because of instability or recent loss of adjacent trees.
(c) Dangerous trees because of structural defects including cavities, decay, included bark, wounds or poor form.
(d) Damaged trees that are clearly not safe to retain.
(e) Trees that could live for more than 5 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting.
(f) Trees that are damaging or may cause damage to existing structures within 5 years.
(g) Trees that will become dangerous after removal of other trees for the reasons given in (a)to(f)
(h) Trees in categories (a) to (g) that have a high wildlife habitat value and, with appropriate treatment could be retained subject to regular review.

5: Small, young, or regularly pruned: Trees that can be reliably moved or replaced.
(a) Small trees less than 5m in height.
(b) Young trees less than 15 years old but over 5m in height.
(c) Formal hedges and trees intended for regular pruning to artificially control growth.

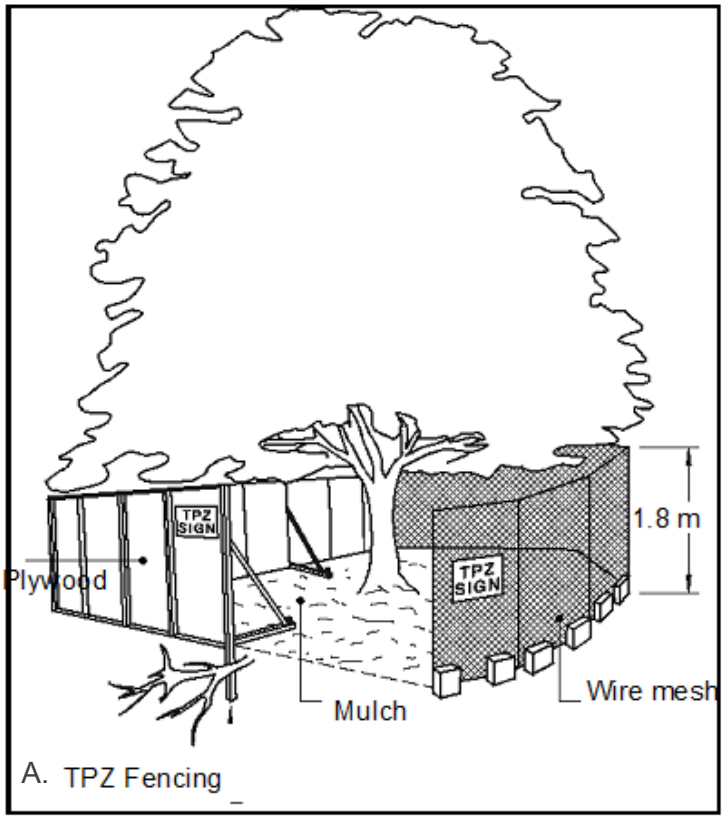
11.2 Site Survey + Tree Locations



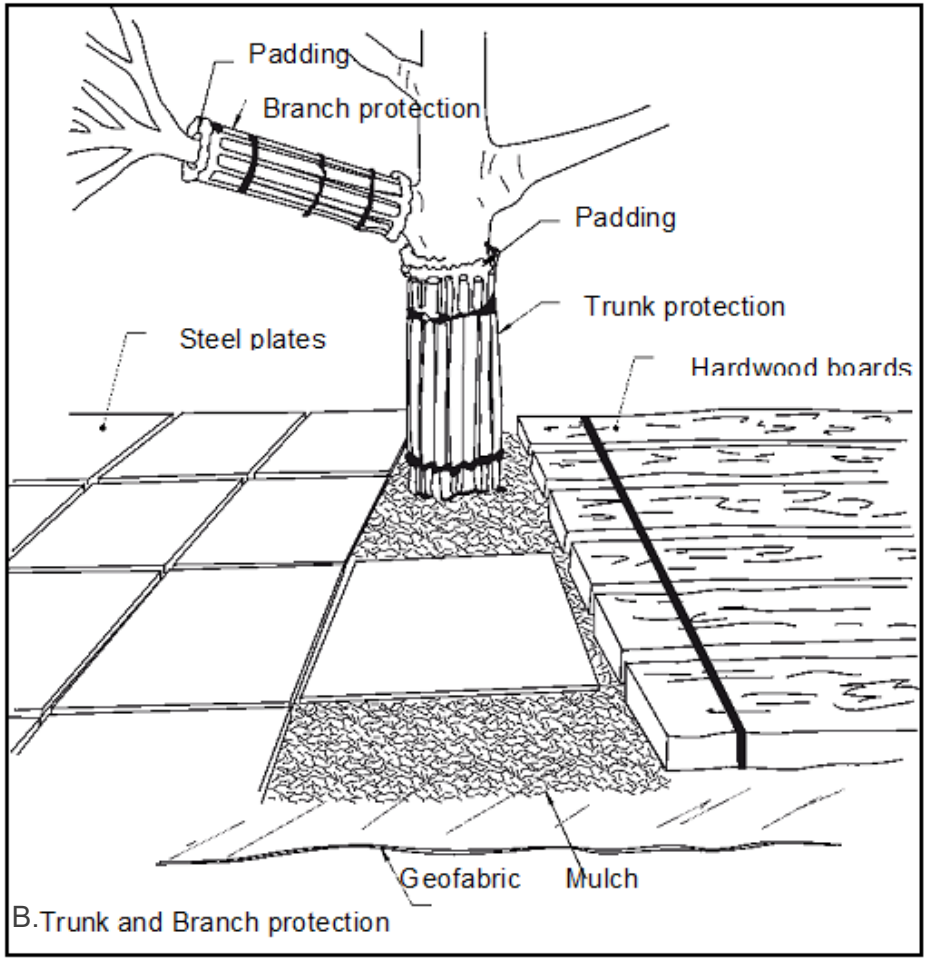
11.3 Site Plan Sheet + Tree protection



11.4 Tree, Trunk and Branch Protection Methods (Source AS4970-2009)

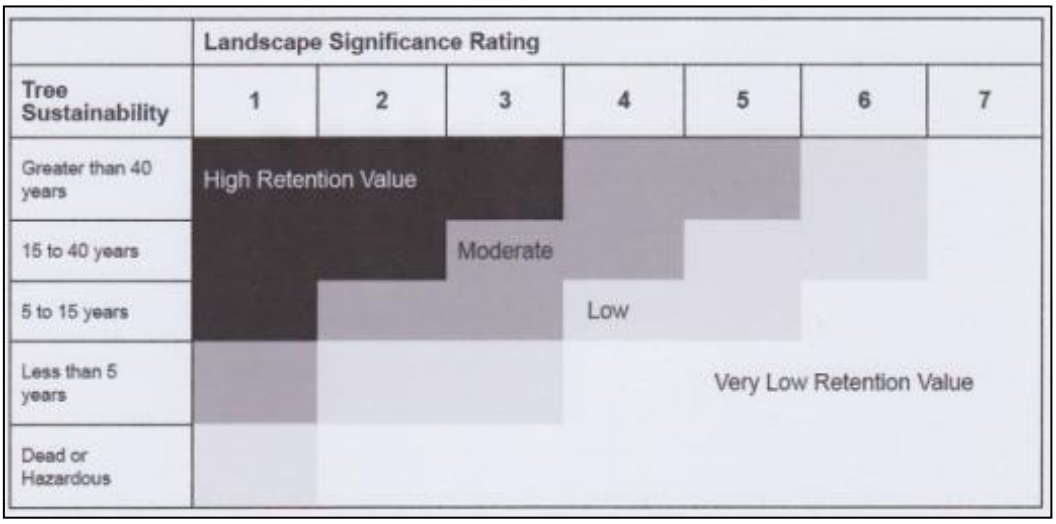


A. TPZ Fencing



B. Trunk and Branch protection

11.5 Calculating Tree retention Value



(Source NUFTM) Modified by A Morton from Couston and Howden (2001) Tree retention values table Footprint Green Pty Ltd Australia)

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11.7 Qualifications – Ian Hills

Associate Diploma Horticulture	Ryde TAFE 1984
AQF3 Horticulture (Arboriculture)	Ourimbah TAFE 1998
AQF5 Diploma Horticulture (Arboriculture)	Kurri Kurri TAFE 2009 (Dux) Cert No. 5934155
QTRA Registered User 2083	December 2013
QTRA Advanced User 4469	March 2018
Working with Children Check Number	WWC1780469E
National Coordinated Criminal History Check Certificate	CAD5579CB8
QTRA Advanced User 4469	March 2020
QTRA Advanced User 4469	April 2023
QTRA Advanced User 4469	April 2025