Arboricultural Impact Assessment

Figure 1 Tree 1 *Melia azedarach* on the adjoining property.

Site Address: 27 Steam St Maitland

Client: Brown Commercial Building Pty Ltd

Date: April 2025

Prepared by Ian Hills - Associate Diploma Horticulture
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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 trees located on and adjoining the subject property at 27 Steam St Maitland where it is proposed to construct a new childcare centre and carpark.

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

Conclusions

Four (4) trees and groups of trees both on and adjoining the subject site have been considered in this assessment.

Two (2) trees including one exempt species are proposed for removal.

Two (2) trees adjoining the site are proposed for retention and will be protected from adverse impacts for the duration of the project

Recommendations

That Trees 1 *Melia azedarach* and 2 *Cinnamomum camphora* will be subject to major encroachment caused by the proposed development.

That the impacts of development on Trees 1 and 2 will need to be further assessed by undertaking exploratory excavation to determine the size, number and position of roots that may conflict with construction of the proposed retaining wall.

That if required the design is modified to accommodate retention of structural roots from Trees 1 and 2.

That Tree 3 *Ligustrum lucidum* is removed in accordance with Maitland City Council's exempt tree removal provisions.

That tree 4 *Eucalyptus crebra* is approved for removal subject to the provision of suitable replacement planting within the landscaping of the subject site.

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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.

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 trees located on and adjoining the subject property at 27 Steam St Maitland where it is proposed to construct a new childcare centre and carpark.

4.0 Method

A ground based site inspection was carried out on 28 April 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 AS4970-2009, 'Protection of Trees on Development Sites'.

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

Trees have been tagged with an identifying number which is also 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 David Cant Surveyors Job Ref. 13-68 Maitland, Revision 0, dated 24 May 2013 (Appendix 11.2)

- Upper Site Plan prepared by Brown Commercial Building Project Ref. BCO503, Drawing No. 01, Revision 22, dated 13 March 2025 (Appendix 11.3)

5.0 Site Conditions

The property is zoned MU1 Mixed use and vacant, 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 Hunter– (9232hu), which has the following characteristics:

- Soils - This soil landscape covers the floodplains of the Hunter River and its tributaries. The main soils are all formed in alluvium.

- Landscape - Level plains and river terraces of the Hunter River with elevations of 20 - 60 m. Slopes are 0 – 3%. The width of the plains ranges from 200 – 3,200 m. Local relief is generally less than 10 m.

- Qualities and Limitations - Minor stream bank erosion occurs on present watercourses with minor sheet and gully erosion on adjacent terraces. *(NSW Environment and Heritage, 2025)*

According to climate data from the Tocal AWS, which is approximately 11 kilometres from the site, the district experiences prevailing winds from the West to North-west, with infrequent occurrences of winds above 40km/h (Willy Weather, 2025). The subject trees are somewhat protected due to their close grouping.

Figure 2 Subject Site (NSW Govt. Spatial Map Viewer, 2025)

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6.0 Tree Assessment

No.	Species (Common name)	DBH (M)	TPZ (M)	SRZ (M)	HEIGHT (M)	SPREAD (M)	Vigour	Age Class	SULE	Retention value	Comments (Encroachment %)	Proposal
1	*Melia azedarach* (White Cedar)	0.2	2.4	2.0	9	5	G	M	2a	Moderate	Appears structurally sound located on adjoining property 0.0m from boundary **(19%TPZ, 14% SRZ)**	Retention
2	*Cinnamomum camphora* (Camphor Laurel)	1.0	12.0	3.4	15	8	G	M	2a	Moderate	Appears structurally sound located on adjoining property 5.0m from boundary **(16% TPZ)**	Retention
3a-c	*Ligustrum lucidum* (Large-leaved privet) x 3	0.3ea	3.6ea	2.25ea	8	5	G	M	3b	Very low	Exempt species, located centrally on subject site. **(70%TPZ/SRZ)**	Removal
4	*Eucalyptus crebra* (Narrow-leaved Ironbark)	0.53	6.36	2.76	9	12	G	M	1a	High	Appears structurally sound located on subject property within building footprint. **(40%TPZ, 28% SRZ)**	Removal

DBH – 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

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

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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 2009 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:

> "Tree Protection Zone - A specified area above and below ground level at a given distance from the trunk set aside for the protection of a tree's roots and crown to provide for the viability and stability of a tree to be retained where it is potentially subject to damage by development.
>
> *Structural Root Zone – The area around the base of a tree required for the tree's stability in the ground. The woody root growth and soil cohesion in this area are necessary to hold the tree upright. The SRZ is nominally circular with the trunk at its centre and is expressed by its radius in metres.*
>
> *This zone considers a tree's structural stability only, not the root zone required for a tree's vigour and long-term viability, which will usually be much larger."* (Ref. AS4970-2009)

Minor encroachment of the TPZ is sometimes unavoidable and at levels less than 10% of the total TPZ area can be tolerated if there is scope to increase the area of the TPZ contiguously about the unaffected perimeter. Where encroachment exceeds 10% further investigation will be required to determine the measures required to offset the incursion. Encroachment of the SRZ is not recommended as tree health and condition will almost certainly be adversely affected.

8.0 Discussion

The impacts of development on the subject trees are assessed against the proposal to construct a new childcare centre with off-street parking. Two (2) trees on the subject site one of which is an exempt species, are proposed for removal.

Trees 1 *Melia azedarach* and 2 *Cinnamomum camphora* are mature examples located on the adjoining property to the East of the subject site, accordingly the trees are required for retention as the property of an adjoining landowner.

Tree 1 is located against the boundary fence and will be subject to major encroachment caused by construction of the proposed building and concrete walkway. Exploratory excavation by hand or other non-destructive methods will be required within the subject site to expose tree roots so that they can be assessed by an AQF5 qualified consulting arborist.

It may be possible to selectively sever small roots under supervision of the arborist without adversely affecting the viability of Tree 1. However, if large diameter roots or large numbers of roots are found to conflict with the proposal it may be necessary to consider an amended design that provides an increased setback from the tree or a modified slab/footing that bridges over retained roots.

Tree 2 is setback from the boundary and will be subject to a level of encroachment that exceeds the 10% considered as acceptable under the provisions of AS4970. Exploratory excavation by hand or other non-destructive methods will be required in the position of the proposed retaining wall to expose tree roots so that they can be assessed by an AQF5 qualified consulting arborist.

It may be possible to selectively sever small roots under supervision of the arborist without adversely affecting the viability of Tree 2. However, if large diameter roots or large numbers of roots are found to conflict with the proposal it may be necessary to consider an amended design that provides an increased setback from the tree or a modified footing for the retaining wall that bridges over retained roots.

The trunks of Trees 1 and 2 will be adequately protected by retention of the existing timber boundary fence during the construction of the childcare centre. If the fence is replaced in conjunction with the development new posts are to be located in the same position as the existing posts to minimise the effects of excavation close to the trees.

Trees 3 a-c *Ligustrum lucidum* are located centrally on the subject site and will be within the proposed development area. This species is considered to be an environmental weed species due to the prolific production of fruits which become dispersed into the natural environment adversely affecting biodiversity values.

The species is listed in NSW Weedwise and therefore meets Council's criteria for removal as exempt development. Accordingly, the trees will be removed during the preparation of the site.

Tree 4 *Eucalyptus crebra* is a mature native tree that appears in good health and condition and is therefore assessed with high retention value. The tree is located centrally on the subject site and will be within the proposed development area.

Consent is sought for the removal of the tree to allow the development to proceed as planned, the removal can be supported subject to the provision of suitable compensatory planting of new native trees within the landscaping of the site.

It is noted that Jacarandas on the road reserve have been assessed under a separate application related to the relocation of the overhead powerlines along Allan Walsh Drive, the trees have not been considered in conjunction with the proposed development .

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9.0 Conclusions

Four (4) trees and groups of trees both on and adjoining the subject site have been considered in this assessment.

Two (2) trees including one exempt species are proposed for removal.

Two (2) trees adjoining the site are proposed for retention and will be protected from adverse impacts for the duration of the project

10.0 Recommendations

That Trees 1 *Melia azedarach* and 2 *Cinnamomum camphora* will be subject to major encroachment caused by the proposed development.

That the impacts of development on Trees 1 and 2 will need to be further assessed by undertaking exploratory excavation to determine the size, number and position of roots that may conflict with construction of the proposed retaining wall.

That if required the design is modified to accommodate retention of structural roots from Trees 1 and 2.

That Tree 3 *Ligustrum lucidum* is removed in accordance with Maitland City Council's exempt tree removal provisions.

That tree 4 *Eucalyptus crebra* is approved for removal subject to the provision of suitable replacement planting within the landscaping of the subject site.

Ian Hills - Principal Arborist
Accurate Tree Assessment

Registered User

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Figure 3 Tree 2 *Cinnamomum camphora* on the adjoining property

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Figure 4 Trees 3 a-c *Ligustrum lucidum*

Figure 5 Tree 4 *Eucalyptus crebra*

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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.

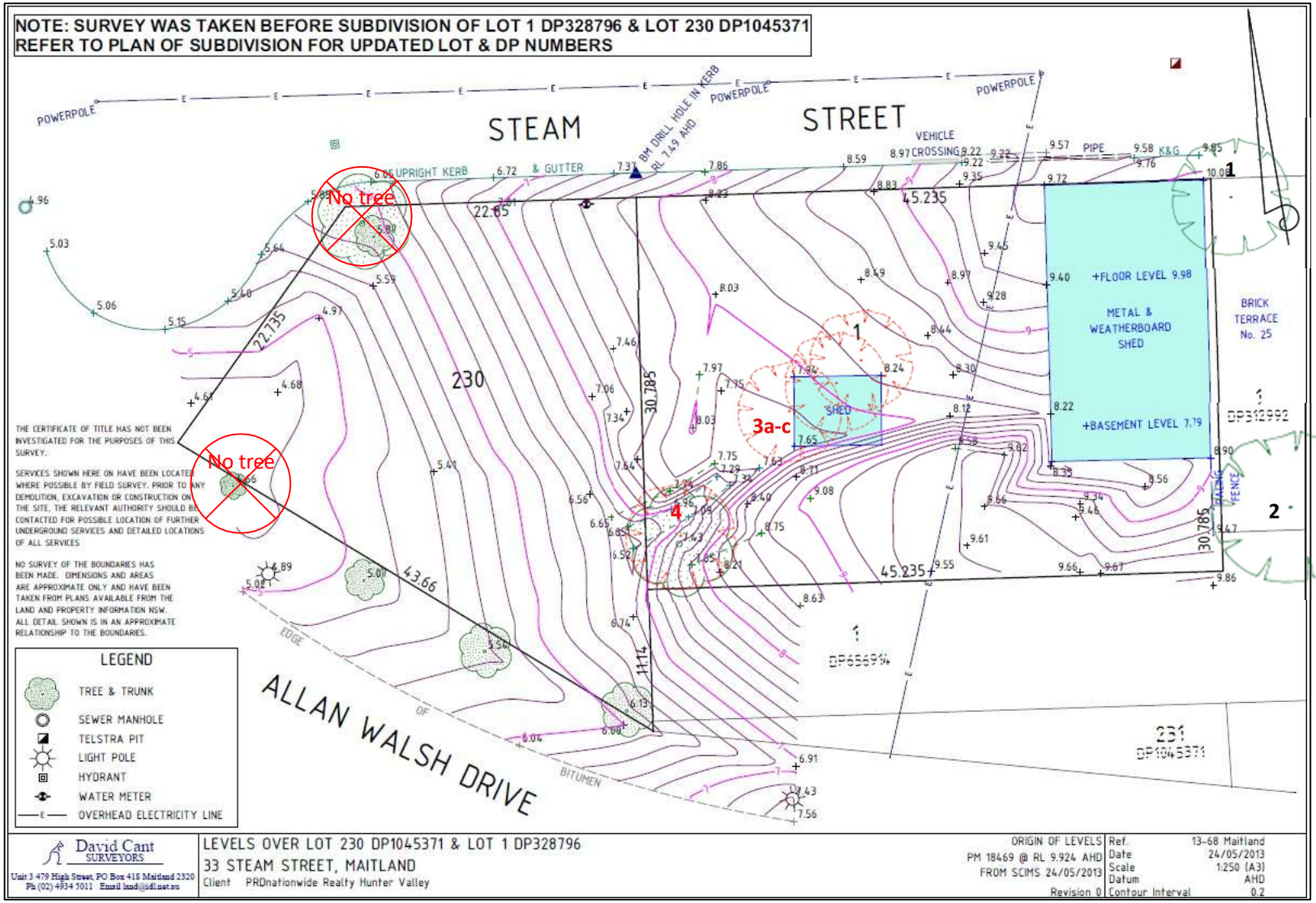
2: Medium SULE: Trees that appeared to be retainable at the time of assessment for 15–40 years with an acceptable level of risk.
(a) Trees that may only live between 15 and 40 more years.
(b) Trees that could live for more than 40 years but may be removed for safety or nuisance reasons.
(c) Trees that 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



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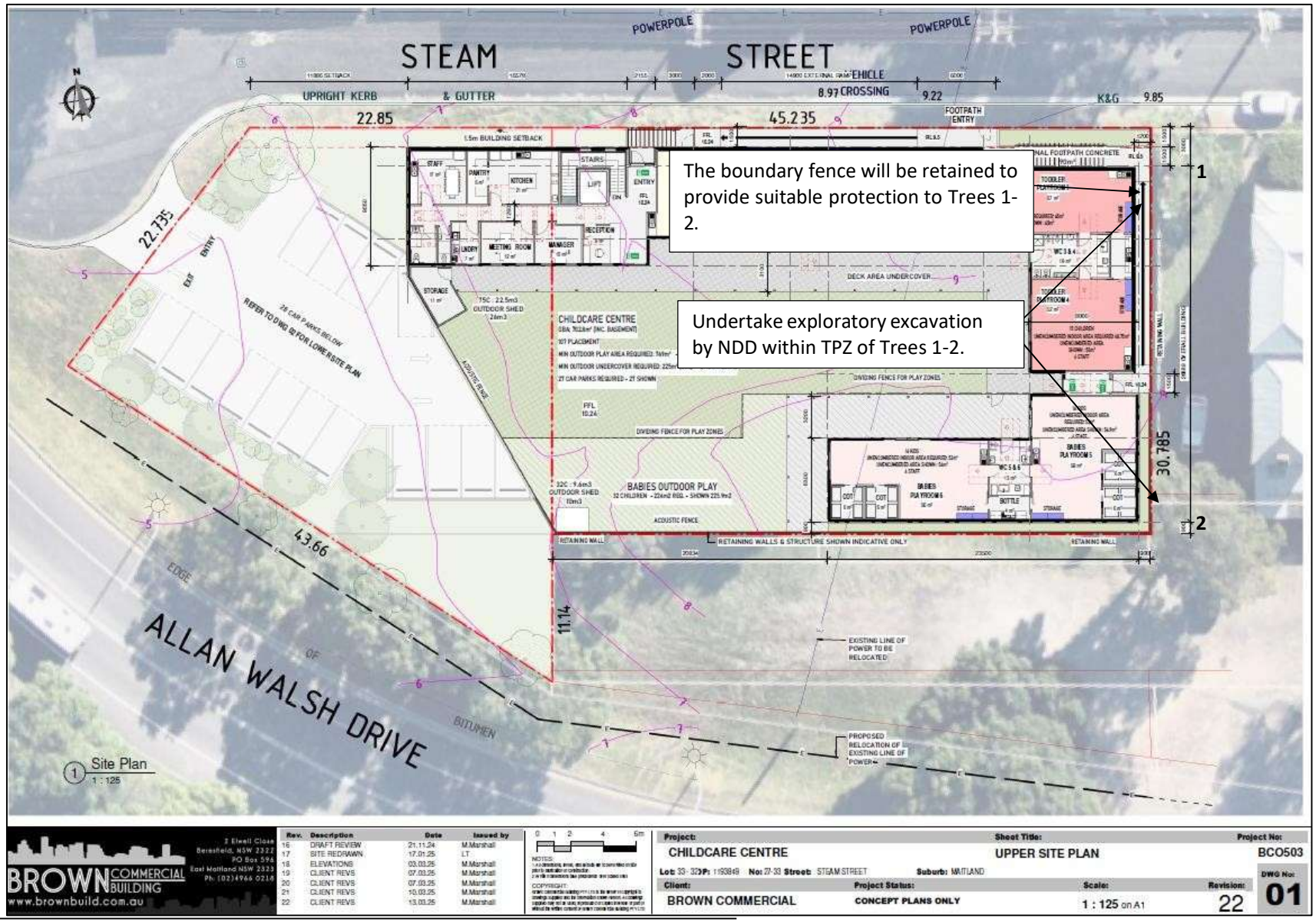
11.3 Upper Site Plan Sheet + Tree protection



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Rev.	Description	Date	Issued by
16	DRAFT REVIEW	21.11.24	M.Marshall
17	SITE REDRAWN	17.01.25	LT
18	ELEVATIONS	03.03.25	M.Marshall
19	CLIENT REVS	07.03.25	M.Marshall
20	CLIENT REVS	07.03.25	M.Marshall
21	CLIENT REVS	10.03.25	M.Marshall
22	CLIENT REVS	13.03.25	M.Marshall

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NOTES:

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Project:	Sheet Title:	Project No:
CHILDCARE CENTRE	UPPER SITE PLAN	BCO503
Lot: 33 - 323 Pt: 1193849 No: 27-33 Street: STEAM STREET Suburb: MAITLAND		DWG No: 01
Client: BROWN COMMERCIAL	Project Status: CONCEPT PLANS ONLY	Scale: 1 : 125 on A1
		Revision: 22

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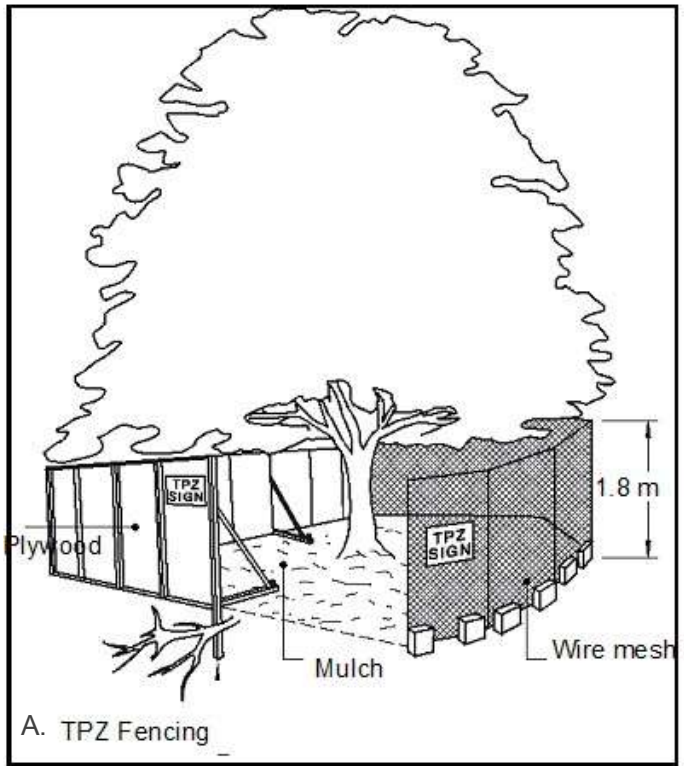
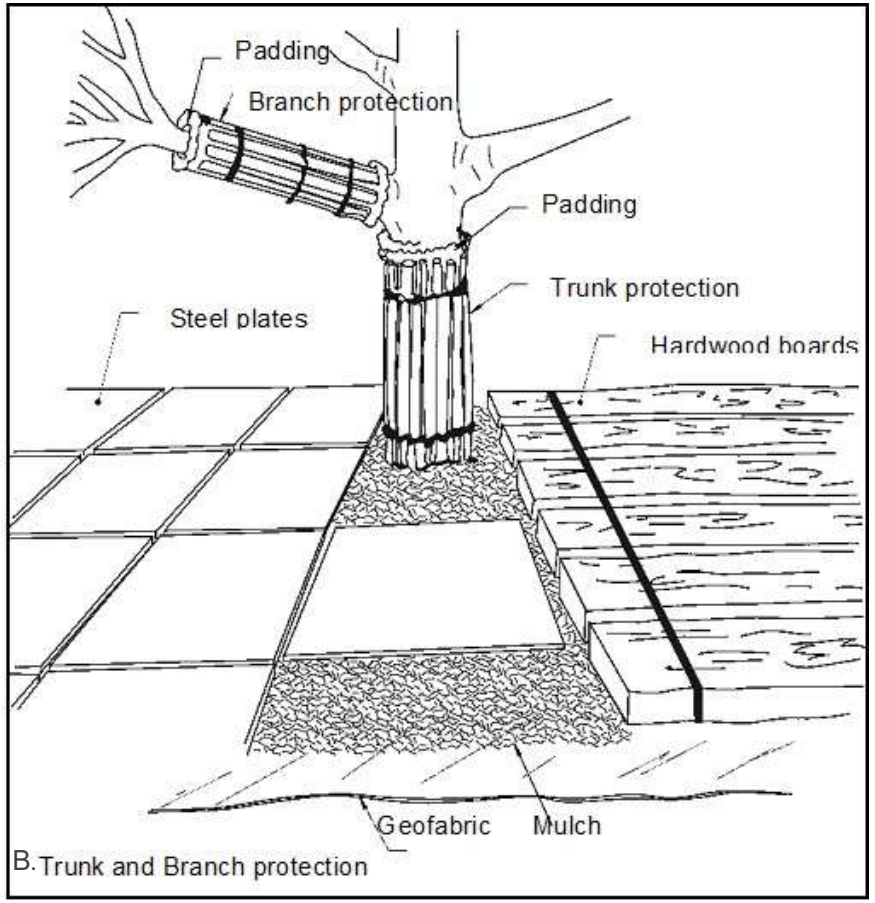
11.4 Tree, Trunk and Branch Protection Methods (Source AS4970-2009)



A. TPZ Fencing



B. Trunk and Branch protection

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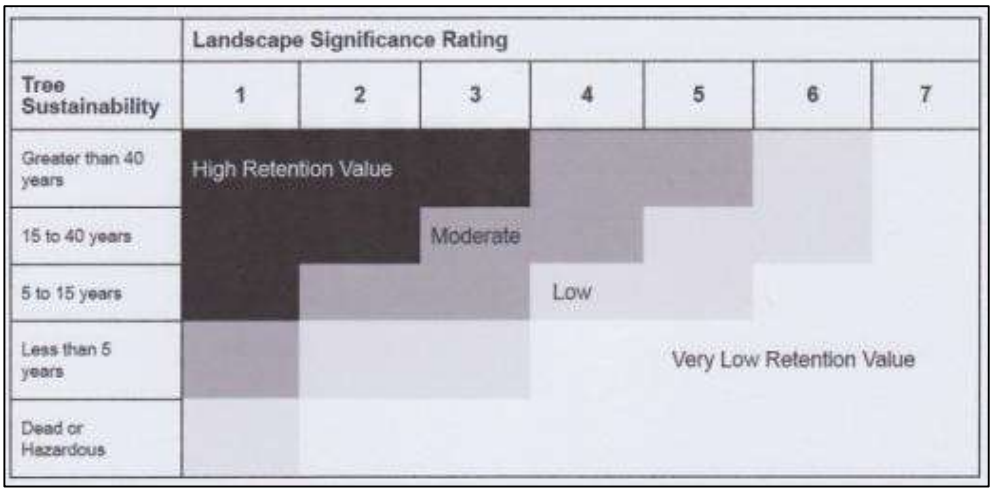
11.5 Calculating Tree retention Value



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

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Available at: http://www.treetec.net.au/TPZ_SRZ_DBH_calculator.php [accessed 19 April 2025]

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