

Arborist Report

Client: Kaine Tarlinton

Address: 29 – 33 Cessnock Road,
GILLESTON HEIGHTS N.S.W 2321



Bradley Magus

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1.0 *Executive Summary*

- Abacus Tree Services have been requested to undertake a site inspection on eleven (11) trees in relation to the proposed development at 29 - 33 Cessnock Road, Gilleston Heights. The applicant proposes to undertake a child care centre development as outlined in Appendix 1. In order for the development to proceed in its current format will require the removal of Trees 3 – 6, 9 & 10. Trees 1, 2, 7, 8 & 11 can be retained and incorporated into the development. Conditions and recommendations are outlined in section 7 of the report.

2.0 Arborist Details

<p>Bradley Magus</p> <p>Contact Details:</p> <p>P.O Box 333 Newcastle 2300 Ph: 0425 203 049</p> <p>Email: abacustrees@gmail.com or bradmagus1@bigpond.com Web: www.abacustreeservices.com</p>	<p>Qualifications</p> <ol style="list-style-type: none">1. Diploma Horticulture (1993)2. Bachelor of Horticulture Science (1996)3. Masters Land Economics (2002)4. Diploma Horticulture (Arboriculture) (AQF 5) 2007 (Dux)5. International Society of Arboriculture Certified Arborist (2007)6. QTRA Assessor – 2011 & 2013
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2.1 Introduction

Abacus Tree Services was commissioned by Kaine Tarlinton to assist in the preparation of an arborist report. An assessment was made on eleven (11) trees located within the confines of 29 - 33 Cessnock Road, 1 Heyes Street & 2 Thomas Street, Gilleston Heights. There is in total eleven (11) trees located at 29 - 33 Cessnock Road, 1 Heyes Street & 2 Thomas Street, Gilleston Heights that were assessed as per the applicant's instructions.

The purpose of this report is to provide information and guidance to the applicant in relation to eleven (11) trees only. The information in this report is to be used in correlation with other reports identified by Maitland Council and will provide Maitland Council with a framework for determining the development application (D.A).

This report and its recommendations are based upon a physical site inspection undertaken on the 11 July 2024.

The photographs included in this report were taken at the time of the inspection on the 11 July 2024.

2.2 Aims of this report/Procedure

The aim of this report is to assess the health and condition of eleven (11) trees (Trees 1 - 11). The condition of the trees was assessed from ground level using the VTA (Visual Tree Assessment) method as outlined by Mattheck & Breloer (1999). The following criteria will be assessed within this report –

- An assessment of the dimensions (age, class, height and Diameter at Breast Height (D.B.H))
- An assessment of the health and condition of the trees;
- An assessment of the Useful Life Expectancy (U.L.E)
- Compilation of an appropriate report detailing the results of the above assessments
- Trees earmarked for retention to be assessed as per Australian Standards 4970-2009
- Hazard Rating, Recommendations for each tree

The (U.L.E) method of tree assessment, as outlined by Jeremy Barrell (1999) has been adopted within this report. U.L.E categories give an indication of the useful life expectancy anticipated for the tree that has been adopted for this report. Several factors are considered in determining this rating such as species, location, age, condition and health of the tree. The five U.L.E categories are outlined in detail within Appendix 2.

3.0 Disclaimer

This assessment has been prepared for the exclusive use of the applicant (Kaine Tarlinton), for the preparation of a development application submission. Information in this report relates to eleven (11) trees within the premises of 29 - 33 Cessnock Road, 1 Heyes Street & 2 Thomas Street, Gilleston Heights only and should not be used in conjunction with any other property.

This assessment was carried out from the ground, and covers what was reasonably able to be assessed and available to the assessor at the time of the inspection. The assessor carried out no aerial inspections. Information contained in this report covers only the trees that were examined and reflects the condition of the trees at the time of the inspection; furthermore the inspection was limited to a visual examination of the subject trees without dissection, excavation, probing or coring. Trees are living things and their condition will change over time. Therefore there is no guarantee that problems or deficiencies of the subject tree may not arise in the future.

3.1 Site Map

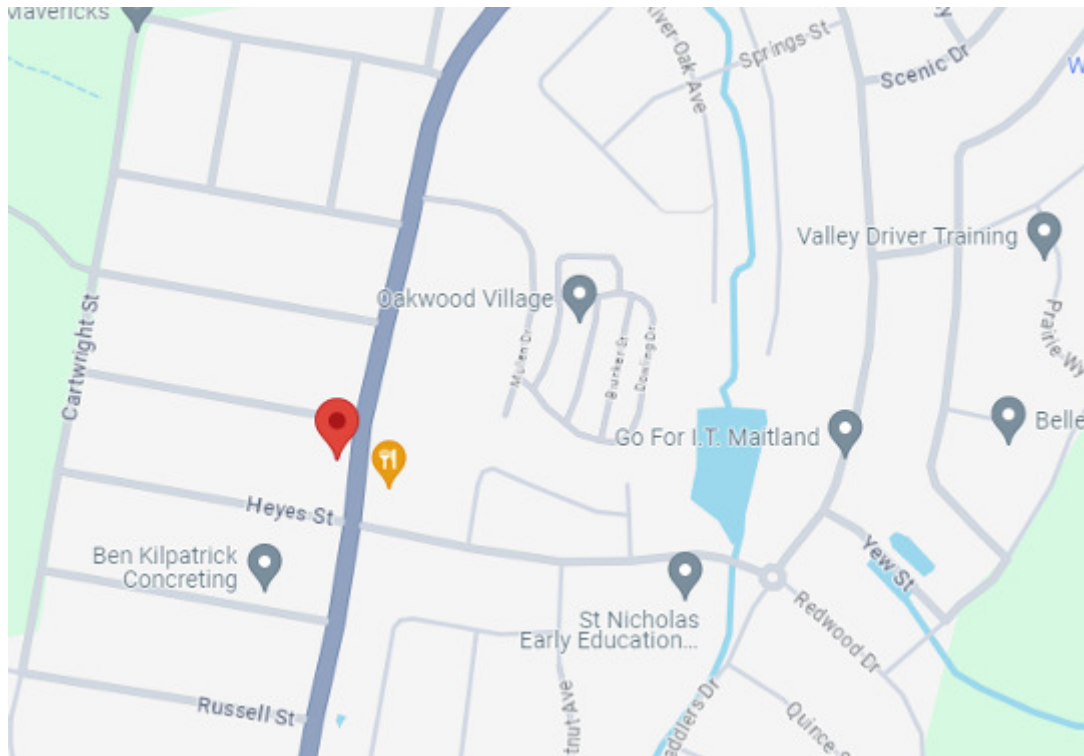


Figure 1

Location: Location of the subject property identified as 29 - 33 Cessnock Road, Gileston Heights

Source: www.googlemaps.com.au

3.2 Site Description

Trees 1 – 11 are located wholly within 29 - 33 Cessnock Road, 1 Heyes Street & 2 Thomas Street, Gileston Heights. The site is located in the municipality of Maitland Council. The species on site has been assessed against the requirements set out in Maitland Council's Local Environmental Plan (2011) pursuant to Section 5.9 & 5.9AA (repealed) & Development Control Plan (2011) (Part B.5 – Tree Management) I have assessed the property against Schedule 5 (Environmental Heritage) within Maitland LEP. The property is not listed in accordance with Part 1 (Heritage Items) and/or Part 2 (Heritage Conservation Area).

The subject property has also been assessed against the SEPP Policy (Biodiversity and Conservation) 2021. This property or council area is listed as being within Part 2 (Section 2.3) of the SEPP (Biodiversity and Conservation) 2021. All councils have items of local government and state heritage significance. These items are found in the NSW heritage website. The subject property has been assessed against the Heritage NSW database. In accordance with Heritage NSW listed items there are no listings (Items listed by Local Government & State Agencies) for the subject property. This also includes no trees of heritage significance for the subject property.

The sites are gently undulating with the immediate area being dominated by residential houses. The nearest major arterial road is. Trees 1 - 11 are located within the subject properties identified as 29 - 33 Cessnock Road, Gilleston Heights. The trees are located within close proximity to the subject property & proposed development.



Figure 2 – Location of the subject property identified as 29 - 33 Cessnock Road, Gilleston Heights
Source: Google Maps



Figure 3 – Location of the subject property identified as 31 Cessnock Road, Gilleston Heights

Source: Abacus Tree Services



Figure 4 – Location of the subject property identified as 33 Cessnock Road, Gilleston Heights

Source: Google Maps

4.0 Tree Schedule

Species & dimension requirements on Page 10. This page intentionally left blank

Tree No	Scientific Name	Common Name	DBH (MM)	Height (M)	AGE CLASS	Vigour	SPREAD N.E.S.W.	ULE	Comments
1	Pittosporum undulatum	Sweet Pittosporum	180	5.5	M	G	3,2,3,3	2a	Located 0.9 metres to the boundary fence. Symmetrical, LCR = 95 – 100%
2	Michelia figo	Port Wine Magnolia	MS (150)	3.5	M	G	1,2,1,2	2a	Located 0.4 metres to the boundary fence, Symmetrical, LCR = 95 – 100%
3	Araucaria cunninghamii	Hoop Pine	515	15	M	G	3,2,3,3	2a	Located 1.6 metres to the neighbours' property, Symmetrical, LCR = 95 – 100%
4	Schefflera actinophylla	Umbrella Tree	MS (520)	7	YM	G	2,4,3,3	2d	Located 1.2 metres to the neighbours' property, Symmetrical, LCR = 95 – 100%
5	Jacaranda mimosifolia	Jacaranda	475,550	10.5	M	G	8,5,8,8	2d	Bifurcated at 0.7 metres above ground level, Symmetrical, LCR = 95 – 100%
6	Mangifera indica	Mango Tree	MS (220)	4	YM	G	1,2,1,2	2a	Symmetrical, LCR = 95 – 100%
7	Photinia glabra	Photinia	MS (360)	5.5	M	G	3,4,4,4	2a	Symmetrical, LCR = 95 – 100%
8	Melaleuca quinquenervia	Broad Leaved Paperbark	340,320, 300	14	M	G	6,6,5,6	2d	Symmetrical, LCR = 95 – 100%
9	Callistemon viminalis	Weeping Bottlebrush	220,240	4	M	G	2,3,1,3	2d	Bifurcated at 0.75 metres above ground level, Symmetrical, LCR = 95 – 100%
10	Callistemon viminalis	Weeping Bottlebrush	265	4.5	M	G	2,3,3,2	2a	Symmetrical, LCR = 95 – 100%
11	Cupressus sempervirens	Italian Cypress	280	8	M	G	1,1,1,1	2a	Located 0.6 metres to the boundary fence, Symmetrical, LCR = 95 – 100%

Key:

Age class: Young = Y, Semi mature = SM, Mature = M, YM = Young Mature, Over mature = OM

DBH = Diameter at Breast Height LCR = Live Crown Ratio

Vigour = E = Excellent, G = Good, F = Fair, P = Poor, D = Dead, Do = Dormant

LDW = large deadwood over 40mm, MDW = Minor deadwood less than 40mm

N = north, E = east, W = west, S = south MS = multiple Stems

ULE = Useful Life Expectancy (See appendix 2 for guidelines)

MS = Multiple Stems S = Shrub

MC = Maitland Council

SRZ = Structural Root Zone TPZ = Tree Protection Zone

4.1 *Trees & Impact on Development*

Trees are living organisms and their root systems play an integral role in stability and providing nutrient storage as well as water uptake. The majority of tree roots for Dicotyledons occur within the first metre of the soil. Therefore construction works can have a profound effect on their health and longevity as well as their structural stability. Tree distances from excavation works must be taken into consideration at the planning stage to ensure that the tree is not damaged.

There are several main factors that occur at the construction phase that can have a negative impact on the trees health and stability. These practices can include but are not limited to –

- Parking of vehicles and heavy machinery within the drip line of the tree.
- Stockpiling of materials within the drip line of the tree.
- Excavating within the drip line and damaging the structural root system.
- Raising soil levels in and around the base of the tree therefore reducing the trees ability for gaseous exchange.
- Damage to the tree due to heavy machinery and equipment resulting in large bark tears or loss of branches and scaffolds.

To reduce the effects of construction it is imperative to provide an area underneath the tree where no works are undertaken. The area where supervised works are undertaken is referred to as the structural root zone (SRZ). The S.R.Z/T.P.Z is an area where no to minimal activities listed above should occur. All trees require an S.R.Z/T.P.Z and will vary from species to species but for the purposes of this report the Australian Standards 4970 has now been adopted.

In conclusion the Australian Standards like similar methods for protecting trees is only a guide. To ensure the health and longevity of trees within construction sites it is imperative to provide a large protection zone taking into consideration that the tree will also grow over time. The greater area that can be put aside where no works occur will aid in the preservation of the tree. The activities listed above should be kept to a minimum and encroachment within the SRZ/TPZ will require the supervision by a qualified AQF 5 arborist. These impacts will be taken into consideration in the discussion & recommendations section of this report.

5.0 Discussion & Compliance to Australian Standards 4970 – 2009, 4373 – 2007 & Rural Fire Service (RFS) 10:50 Code

Abacus Tree Services has been approached by Kaine Tarlinton to undertake an arborist (assessment) report on trees that come under the requirements of Maitland Council DCP (Part B.5 – Tree Management) & trees that will be affected by the proposed development. There are eleven (11) trees that have been assessed within the subject properties identified as 29 - 33 Cessnock Road, 1 Heyes Street & 2 Thomas Street, Gileston Heights. Trees 1, 2, 7, 8 & 11 are located in the backyard of 2 Thomas Street Gileston Heights. Trees 3 – 6 are located in the backyard of 29 Cessnock Road, Gileston Heights. Tree 9 is located in the backyard of 31 Cessnock Road, Gileston Heights. Tree 10 is located in the backyard of 1 Heyes Street, Gileston Heights. The applicant proposes to construct a child care centre within the subject property identified as 29 - 33 Cessnock Road, Gileston Heights (Appendix 1).

Abacus Tree Services has relied upon the sketch drawings provided by CKDS (Drawing number – 25053 Issue D) to formulate distances and setbacks in accordance with Australian Standards 4970 – 2025. I have relied upon this information to be true and accurate. Any changes to the sketching and drawings will require the calculations to be reassessed in accordance with Australian Standards 4970 – 2025.

The table below represents the S.R.Z (Structural Root Zone) and TPZ (Tree Protection Zone) figures based on Australian Standards 4970 - 2025.

Tree No	SRZ (metres)	TPZ (metres)
1	1.72	2.16
2	1.50	2.40
3	2.65	6.18
4	2.26	6.24
5	3.09	8.76
6	1.88	2.64
7	2.20	4.32
8	3.01	7.20
9	2.30	3.96
10	2.21	3.18
11	2.00	3.36

All trees require a S.R.Z and a T.P.Z with Australian Standards 4970- 2025 being used as a guideline. Tree 1 has been given an SRZ and TPZ of 1.72 & 2.16 metres in accordance with Australian Standards 4970 - 2025. Tree 1 is located 0.9 metres to the side boundary fence. Tree 1 is located outside of the proposed development. The first 1.26 metres inside the subject property within the TPZ will need to be at existing soil levels in order to retain Tree 1. This will include the first 1.26 metres of proposed open space. If this can be achieved will allow the retention of Tree 1. Tree 1 is earmarked for retention.



Figure 5 – showing the location of Trees 1, 2 & 11.

Tree 2 has been given an SRZ and TPZ of 1.50 & 2.40 metres in accordance with Australian Standards 4970 - 2009. Tree 2 is located 0.4 metres to the boundary fence. Tree 2 is located outside of the proposed development. In order to retain Tree 2 will require the first 2 metres inside the subject property within the TPZ to be retained at existing soil levels. This will include the first 2 metres of proposed open space. If this can be achieved will allow the retention of Tree 2. Tree 2 is earmarked for retention.

Tree 3 has been given an SRZ and TPZ of 2.65 & 6.18 metres in accordance with Australian Standards 4970 - 2009. Tree 3 is located towards the north western side of the subject property. Tree 3 is a young mature species with the potential for moderate future growth. Tree 3 is located 1.6 metres to the neighbour's property. This type of species has the potential to reach a TPZ of 12 metres (minimum) when fully mature. This would extend the TPZ into the neighbours existing building by 84.21% on one side taken from the centre of the trunk. This has the potential to cause major damage to the building foundations in a mature phase. There is also the potential that this species has also suffered SRZ and TPZ loss as the neighbours building appears to be constructed in the past 10 years. Tree 3 is located in the private open space area. If retained would require existing soil levels to be retained inside the TPZ. No below ground excavation works could be undertaken inside the TPZ. If this can be achieved will allow the retention of Tree 3. This species has the potential to be considered exempt on the proviso that it meets the requirements of Maitland DCP (Section 1.1). Tree 3 is earmarked for removal.



Figure 6 – Tree 3 has had SRZ/TPZ removed due to the neighbouring property. This species if left unabated would impede on the neighbouring development.

Tree 4 has been given an SRZ and TPZ of 2.26 & 6.24 metres in accordance with Australian Standards 4970 - 2025. Tree 4 is located outside of the proposed development. Tree 4 would be located in the proposed private open space area. Tree 4 is classified as a weed species in accordance with the Department of Primary Industries. This species also is identified as a species with extensive root plates. This species has a very low retention value. Tree 4 is earmarked for removal due to being an environmental weed. Tree 4 is earmarked for removal.



Figure 7 – Trees 3 & 4 are growing near the northern boundary fence within the subject property. These trees will outgrow there available growing space due to the location to the neighbours building. Tree 4 is also classified as a noxious weed in NSW with low landscape significance.

Tree 5 has been given an SRZ and TPZ of 3.09 & 8.76 metres in accordance with Australian Standards 4970 - 2025. Tree 5 is located inside the proposed outdoor play area. All proposed rock climbing, slide and seating areas are a minimum of 4 metres from the tree. There is the potential to retain Tree 5 however no change in the soil profile could occur in the SRZ. No change in the soil profile could occur up to the ancillary structures such as the rock climbing walls and seating areas. This will include retaining the existing soil levels up to these zones. No excavation works could be undertaken for a minimum of 5 metres from the trunk. If this can be achieved will allow the retention of Tree 5. The current layout and design will require below ground excavation works within both the SRZ and TPZ. These works would not allow the retention of Tree 5. In order to construct the proposed development will require the removal of Tree 5. Tree 5 is earmarked for removal



Figure 8 - showing the location of Tree 5 in the backyard of 29 Cessnock Road. Tree 5 will require removal in order to allow civil and excavation works to take place

Tree 6 has been given an SRZ and TPZ of 1.88 & 2.64 metres in accordance with Australian Standards 4970 - 2025. Tree 6 is a small fruit tree that would not be suitable inside the playground area. Tree 6 is earmarked for removal before commencement of building works on site.



Figure 9 – showing the location of Trees 5 & 6

Tree 7 has been given an SRZ and TPZ of 2.20 & 4.32 metres in accordance with Australian Standards 4970 - 2025. Tree 7 is located in the neighbour's backyard. Tree 7 is located 0.4 metres to the back boundary fence. There is also 3 metres of canopy that extends into the subject property as noted in Figure 10. The proposed development including the undercover area, extension storeroom and rock climbing is 0.9 metres to the back boundary fence. AS 4970 – 2025 highlights that the TPZ is taken from the centre of the trunk. This leaves a distance of 1.51 metres from the centre of the trunk to the civil works. The overall loss of TPZ has been calculated at 28.21% that is considered a large encroachment into the TPZ. If retained will require no change in the soil profile within the green space and private open space. Tree 7 is earmarked for retention. Tree 7 will require moderate pruning works in accordance with AS 4373 – 2007. Tree 7 will require a minimum of 2.38 metres of the soil profile protected where no civil works occur. This will include all private open space areas to remain at existing soil levels within the 2.38 metre zone from the back boundary fence inside the TPZ..



Figure 10 – showing the location of Tree 7. The canopy associated with Tree 7 extends into the subject property by 3 metres. Tree 7 will require a minimum of 2.38 metres of the soil profile protected where no civil works occur.

Tree 8 has been given an SRZ and TPZ of 3.01 & 7.20 metres in accordance with Australian Standards 4970 - 2025. Tree 8 is located in the neighbour's property as outlined in Figure 11. Tree 8 is located 3.3 metres to the back boundary fence. Majority of civil works and structures will occur 4.3 metres from the trunk. This leaves a distance of 8.80 metres from the trunk to the development. The development is outside of the TPZ. In order to retain Tree 8 and comply with AS 4970 – 2025. AS 4970 – 2025 highlights that the TPZ is taken from the centre of the trunk. This leaves a distance of 4.77 metres from the centre of the trunk to the proposed development. All civil works and development will be located outside of the SRZ. The loss of TPZ has been calculated at 11.15% that is considered a small loss of TPZ. All SRZ is located inside the neighbour's property. No change will occur in this zone. The loss of 11.51% can be compensated for within the neighbour's property. Tree 8 is earmarked for retention.



Figure 11 – showing the location of Tree 8 inside the backyard of the neighbour's property.

Tree 9 has been given an SRZ and TPZ of 2.30 & 3.96 metres in accordance with Australian Standards 4970 - 2009. Tree 9 is located in the backyard of 31 Cessnock Road. Tree 9 is located inside the proposed building footprint. In order to construct the proposed development will require the removal of Tree 9. Tree 9 is earmarked for removal before commencement of building works on site.



Figure 12 – showing the location of Tree 9. Tree 9 is located inside the proposed development.

Tree 10 has been given an SRZ and TPZ of 2.21 & 3.18 metres in accordance with Australian Standards 4970 - 2009. Tree 10 is located in the backyard of the neighbour's property. Tree 10 is located 1 metre to the boundary fence. The proposed development and associated civil works are located 1 metre to the trunk. AS 4970 – 2025 highlights that the TPZ is taken from the centre of the trunk. This leaves a distance of 1.11 metres from the centre of the trunk to the proposed development. The overall loss of TPZ has been calculated at 28.24% that is considered a moderate loss of TPZ. The current layout and design would have an impact on Tree 10. Preferred option is to remove Tree 10 and replace with native trees. Tree 10 is earmarked for removal.



Figure 13 – showing the location of Trees 9 & 10. Tree 9 is located in the backyard of the subject property. Tree 10 is located

Tree 11 has been given an SRZ and TPZ of 2.00 & 3.36 metres in accordance with Australian Standards 4970 - 2009. Tree 11 is located in the neighbour's backyard as indicated in Figure 5. Tree 11 is a small conifer located 0.6 metres to the back boundary fence. The proposed development is located outside of the TPZ. All the TPZ will be located in private open space. No change in the soil profile is to occur for 1.56 metres from within the subject property inside the TPZ where no change to the soil profile occurs. If this can be achieved will allow the retention of Tree 11. Tree 11 is earmarked for retention.

6.0 Conclusions

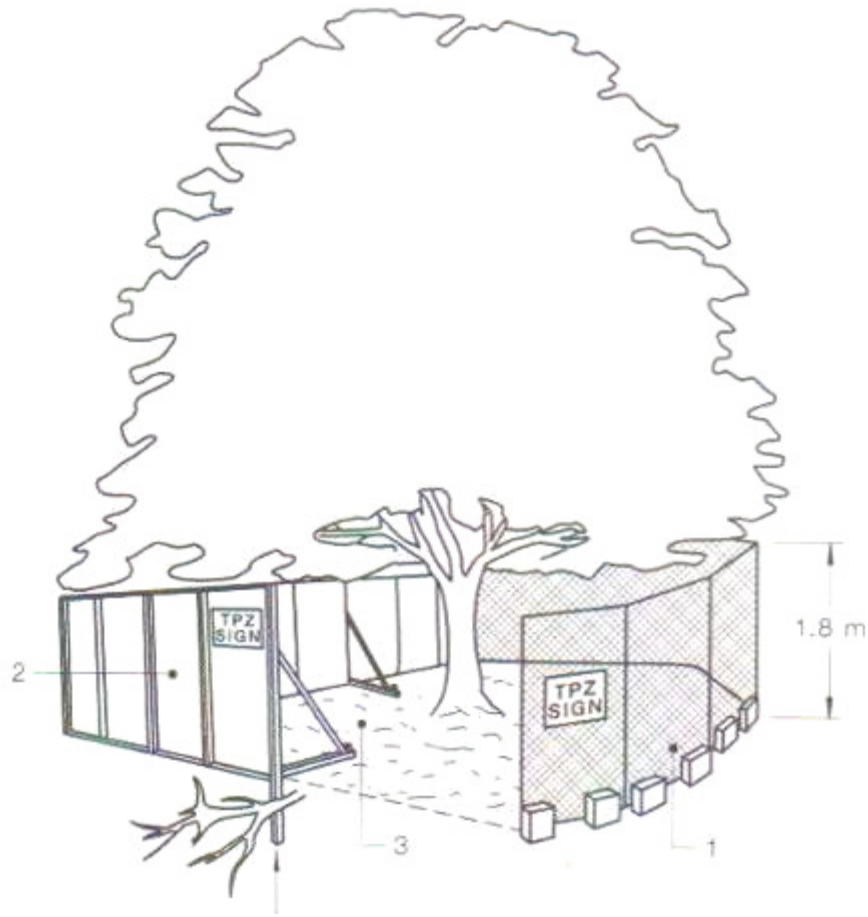
- Abacus Tree Services has been approached by Kaine Tarlinton to undertake an arborist (assessment) report on trees that come under the requirements of Maitland Council DCP (Part B.5 – Tree Management) & trees that will be affected by the proposed development. There are ten (10) trees that have been assessed within the subject properties identified as 29 - 33 Cessnock Road, 1 Heyes Street & 2 Thomas Street, Gilleston Heights. Trees 1, 2, 7, 8 & 11 are located in the backyard of 2 Thomas Street Gilleston Heights. Trees 3 – 6 are located in the backyard of 29 Cessnock Road, Gilleston Heights. Tree 9 is located in the backyard of 31 Cessnock Road, Gilleston Heights. Tree 10 is located in the backyard of 1 Heyes Street, Gilleston Heights. The applicant proposes to construct a child care centre within the subject property identified as 29 - 33 Cessnock Road, Gilleston Heights (Appendix 1). Trees 1 - 11 have been assessed in accordance with Australian Standards 4970 – 2025.
- Trees 1 – 11 are located wholly within 29 - 33 Cessnock Road, 1 Heyes Street & 2 Thomas Street, Gilleston Heights. The site is located in the municipality of Maitland Council. The species on site has been assessed against the requirements set out in Maitland Council's Local Environmental Plan (2011) pursuant to Section 5.9 & 5.9AA (repealed) & Development Control Plan (2011) (Part B.5 – Tree Management). I have assessed the property against Schedule 5 (Environmental Heritage) within Maitland LEP. The property is not listed in accordance with Part 1 (Heritage Items) and/or Part 2 (Heritage Conservation Area).
- The subject property identified as 29 - 33 Cessnock Road, Gilleston Heights is not located in a Rural Fire Service (RFS) 10:50 area. Therefore all trees have been assessed in accordance with council requirements with no exemptions under RFS 10:50 legislation. The search was undertaken on the 29 July 2024. Rules and regulations in relation to the RFS 10:50 can change and it is therefore up to the applicant to ensure they comply with the 10:50 code and any updates that may occur.
- Protection fencing for retained trees has been considered due to the close proximity to the development and to protect both the root plate and canopy of selected trees. It is also recommended to retain all boundary fences throughout the civil and construction phase. The boundary fences will act as a barrier and will minimise damage to the trunk. Trees 1, 2, 7, 8, & 11 (5 in total) will require retention in accordance with Australian Standards 4970 – 2025. Protection fencing for Tree 7 will extend a minimum of three metres to include the canopy edge.

- Trees 1, 2, 7, 8, & 11 have the potential for future growth and therefore the canopy and root plate have the potential for future growth. All measures have been taken to minimise damage to the proposed buildings and hardstand areas however future growth has the potential to cause damage to the proposed buildings and/or hardstand areas.
- The applicant has therefore assessed all trees within 5 metres of the proposed development. This includes all trees on neighbouring properties within 5 metres of the proposed development. The applicant has assessed all trees necessary for the development to meet the requirements of Maitland DCP & Australian Standards 4970 – 2025.
- In order for the development to proceed in its current format will require the removal of Trees 3 – 6, 9 & 10 (6 in total). This includes all trees inside the proposed development, hardstand areas and those that do not pass the requirements of AS 4970 – 2025. Trees 3 & 4 are being removed due to the proximity to the neighbours dwelling. Trees 3 & 4 have the potential to be considered exempt as they are within 3 metres to the neighbours dwelling on the proviso that they meet all other council requirements. Tree 4 is classified as a weed species in NSW. Tree 4 has a very low landscape significance. Trees 1, 2, 7, 8 & 11 (5 in total) can be retained and incorporated into the development. Conditions and recommendations in relation to retained trees will be outlined in section 7 of the report.

7.0 Recommendations

- It is recommended that Kaine Tarlinton embark on a management program for eleven (11) trees (Trees 1 – 11) before commencement of the proposed building and constructions works as follows:
- It is recommended that Trees 3 – 6, 9 & 10 (6 in total) be removed immediately (before commencement of building works) by a qualified arborist (minimum certificate 2 in arboriculture). It is recommended that professional indemnity and public liability insurances be current and sighted before commencement of works begin. The level of cover has to be one in agreement between Kaine Tarlinton and the arborist.
- It is recommended that Tree 1, 2, 7, 8 & 11 (5 in total) be retained and incorporated into the development. It is recommended that an area be set aside within the subject property within the TPZ. This will include an area where no change to the soil profile or excavation works occur within the section of TPZ. This includes 1.26 metres (Tree 1), 2 metres (Tree 2), 2.38 metres (Tree 7), 1.25 metres (Tree 8), & 1.56 metres (Tree 11) from the back boundary within the TPZ.
- The proposed greenspace, rock climbing and undercover area is to be retained at existing soil levels within the TPZ inside the TPZ (Trees 7 & 8). It is recommended that the paved area be permeable inside the TPZ (Tree 8). It is recommended that the existing grass be retained up to the proposed rock climbing, undercover area and paving area within the TPZ (Trees 7 & 8). Removal of the grass inside the designated TPZ protection zone is to be undertaken at the landscaping phase after completion of all civil, building and hardstand areas. Replacement grass or garden beds are to be undertaken by non-mechanised methods inside the TPZ. Replacement boundary fences if required are to be undertaken using isolated footings. All fences are to avoid strip footings inside the TPZ.
- It is recommended that Tree 7 be pruned by no greater than 15 - 20%. This is to include directional pruning to the eastern quadrant. All directional pruning works are to be undertaken by a qualified arborist (minimum certificate 2 in arboriculture). It is recommended that professional indemnity and public liability insurances be current and sighted before commencement of works begin. The level of cover has to be one in agreement between Kaine Tarlinton and the arborist.

- It is recommended that protection measures be put in place that aid in the preservation of Trees 1, 2, 7, 8, & 11 (6 in total). It is recommended that 1.8 metre inter locking chain wire fencing be installed before commencement of all civil and building works on site as indicated in Figures 14 & 15. Protection fencing is to be installed a minimum of 2.5 metres from the back boundary fence (Trees 1, 2 & 11). Protection fencing is to be installed to the edge of the rock climbing space (Trees 7 & 8). This will allow for canopy and protection of the root plate of the larger trees. Protection fencing is to be installed before commencement of all civil & building works and remain in place until the release of the occupation certificate.
- It is recommended that all civil contractors that enter the site are made aware of the importance of preserving Trees 1, 2, 7, 8, & 11 and understand the tree protection measures that are put in place to preserve Trees 1, 2, 7, 8, & 11.
- All stockpile sites and storage of materials are to be maintained outside the TPZ of retained trees including all fenced zones.
- It is recommended that all parking of vehicles and use of machinery is to be kept outside the TPZ and all fenced areas of retained trees during civil and construction works. No placement or use of machinery is allowed within the designated TPZ fenced area.
- This report is not for publication to the internet and submission of this report in the submission phase set out by Council is to be taken down upon completion of the development application.



- Figure 14 – showing the proposed fencing that is to be put in place before the commencement of building works on site (Trees 1, 2, 7, 8 & 11 only).
Source: Australian Standards 4970 - 2009

Bradley Magus (Member ISAAC & LGTRA)
Consulting Arborist/Certified Arborist (ISAAC 2007)
Diploma in Horticulture (Arboriculture) (AQF 5) (Dux)
Bachelor of Horticulture Science

8.0 References

AS4373-2007 Pruning of Amenity Trees. Standards Australia

AS 4970 – 2009 Protection of trees on development sites

Clark R.J & Matheny N (1998) Trees & Development – A technical guide to Preservation of trees during land development: International Society of Arboriculture

Mattheck C., Breloer, (1999) The Body Language of Trees – a handbook for failure analysis 5th ed., London: The Stationery Office, U.K

Internet Sites

www.googlemaps.com.au

www.heritagensw.gov.au

www.rfs.nsw.gov.au

www.maitland.nsw.gov.au

www.planningportal.nsw.gov.au

9.0 APPENDIX 1 Site Maps



Figure 15 - Close up of the subject property and canopy area of Trees 1 - 11.
Protection fencing to be a minimum of 2.5 metres from the back boundary fence to protect Trees 1, 2 & 11 during all civil and building works. Fencing for Trees 7 & 8 is outlined in red. Not to scale
Source: CKDS

APPENDIX 2 *U.L.E (Useful Life Expectancy) Categories and Subgroups*

Useful Life Expectancy – Classification

1. Long ULE > 40 Years

- a. Structurally sound and can accommodate future growth
- b. Long term potential with minor remedial treatment
- c. Trees of special significance which warrant extra care

2. Medium ULE of 15-40years

- a. Will live between 15 – 40 years
- b. Will live for more than 40 years but would be removed for safety or other reasons
- c. May live for more than 40 years but will interfere with more suitable specimens and need removal eventually
- d. More suitable for retention in the medium term with some remedial care

3. Short ULE of 5-15 years

- a. Trees that may only live between 5 – 15 more years
- b. May live for more than 15 years but would need removal for safety or other reasons
- c. Will live for more than 15 years but will interfere with more suitable specimens or provide space for replacement plantings
- d. Require substantial remedial care but are only suitable for short term retention

4. Remove tree within 5 years

- a. Dead, dying or seriously diseased
- b. Dangerous trees through instability or loss of adjacent trees
- c. Structural defects such as cavities
- d. Damaged that are clearly not safe to retain
- e. May live for more than 5 years but will need replacement to prevent interference or make space for more suitable trees
- f. May or are causing damage to structures
- g. That will become dangerous

5 Trees suitable to transplant

- a. Small trees can be reliably moved or replaced
- b. Young trees between 5 – 15 years
- c. Trees that have been regularly pruned to control growth

APPENDIX 3

Notes on Tree Assessment

Key	Criteria	Comments
Tree no		
Species	Relates to the ten on the site plan	
Remnant /planted Self Sown	May be coded – See Key for details	
Special Significance	A – Aboriginal C- Commemorative Ha- Habitat Hi- Historic M- Memorial R- Rare U- Unique form O- Other	May require specialist knowledge
Age Class	Y- Young- Recently Planted S-Semi mature (<20% of life expectancy) M- Mature (20-80% of life expectancy) O- Over mature (>80% of life expectancy)	
Height	In Metres	
Spread	Average diameter of canopy in metres	
Crown Condition	Overall vigour and vitality 0 – Dead 1 – Severe decline (<20% canopy, major deadwood 2 – Declining 20-60% canopy density, twig dieback 3- Average/low vigour (60-90% canopy density, twig dieback) 4- Good (90-100% crown cover, little or no dieback or other problems) 5- Excellent (100% crown cover, no deadwood or other problems	
Failure Potential	Identifies the most likely failure and rates the likelihood that the structural defects will result in failure within the inspection period. 1- Low – Defects are minor (eg dieback of twigs, small wounds with good wound development) 2 – Medium – Defects are present and obvious egg Cavity encompassing 10-25% of the circumference of the trunk) 3 High- Numerous and/or significant defects present (eg cavity encompassing 30-50% of the circumference of the trunk, major bark inclusions) 4- Severe- Defects are very severe (eg fruiting	Requires specialist knowledge

	bodies, cavity encompassing more than 50% of the trunk)	
Size of defective part	<p>Rates the size of the part most likely to fail. The larger the part that fails the greater the potential for damage.</p> <p>1- Most likely failure less than 150mm in diameter</p> <p>2- Most likely failure 150-450mm in diameter</p> <p>3- Most likely failure 450-750mm in diameter</p> <p>4- Most likely failure more than 750mm in diameter</p>	
Target rating	<p>Rates the use and occupancy that would be struck by the defective part:</p> <p>1. Occasional use (jogging, cycle track)</p> <p>2. Intermittent use (e.g picnic area, day use parking)</p> <p>3. Frequent use, secondary structure (eg seasonal camping, storage facilities)</p> <p>4. Constant use structures (year round use for a ten of hours each day, residences)</p>	
Hazard rating	<p>Failure potential + size of part + target rating</p> <p>Add each of the above sections for a ten out of 12</p>	<p>The final ten identifies the degree of risk. The next step is to determine a management strategy. A rating in this column does not condemn a tree but may indicate the need for more investigation and a risk management strategy.</p>
Root Zone	<p>C-Compaction</p> <p>D- Damaged/wounded roots</p> <p>E- Exposed roots</p> <p>Ga- Tree in graded bed</p> <p>Gi- Girdled roots</p> <p>Gr- Grass</p> <p>K-Kerb close to tree</p> <p>L+- Raised soil level</p> <p>L- Lowered soil level</p> <p>M- Mulched</p> <p>Pa- Paving concrete bitumen</p>	

	Pr- Roots pruned O-Other	
Defects	B-Borers C-Cavity D-Decay Dw-Deadwood E-Epicormics I-Inclusions L- Lopped LDCMP- Leaf damage by chewing mouthpiece insects M- Mistletoe/parasites MBA- Multi branch attachments PD- Parrot damage PFS- Previous failure sites S-Splits/Cracks T-Termites TL- Trunk lean TW- Trunk wound O-Other	
Services/adjacent structures	Bs- Bus stop Bu- Building within 3 metres Hvo- High voltage open wire construction Hvb- High voltage bundled (ABC) Lvo- Low voltage open wire construction Lvb- Low voltage bundled (ABC) Na- No services above Nb- No services below ground Si- Signage SL- Street light T- Transmission U- Underground services O- Other	More than one of these may apply