Arboricultural Impact Assessment Report

64-70 Stapleton Avenue Casino NSW –Land & Housing Corporation NSW

Prepared for: Brewster Murray

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Prepared By: Michael Hallinan

Diploma in Arboriculture - AQF Level 5
Associate Diploma in Horticulture (Arboriculture)
Bachelor of Applied Science - Environmental Resource Management

Arbor Ecological

Professional Ecologist & Consulting Arborist Services

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1. Introduction

1.1. Background

Arbor Ecological was engaged by Brewster Murray to undertake an arboricultural/ tree impact assessment and prepare an associated Arboricultural Impact Assessment Report (AIAR) in relation to for three properties at 64-70 Stapleton Avenue Casino NSW in the Richmond Valley Local Government Area, hereafter referred to as *the site*.

This assessment followed a preliminary arboricultural/ tree impact assessment and report, including Visual Tree Assessments (VTAs)[1] and Tree Retention Value (TRV) scores, to guide development design. Finalised development design plan versions were subsequently provided for comment identifying trees and shrubs (hereafter referred to as the *subject trees*) plotted in relation to proposed buildings and infrastructure; and subject trees proposed to be retained and removed.

Subject tree impacts from the proposed development centre on potential impacts to health, condition and ongoing vitality associated with development and construction works.

1.2. Aim

This assessment report aims to gather, analyse and present information on the impact of the proposed development to inform recommendations including tree removal, tree retention, tree pruning, and protection of trees to be retained for ongoing tree vitality.

1.3. Objectives

- To identify subject trees on the site with high potential to be substantially impacted by the proposal.
- To assess the impacts of the proposed development on the subject trees based on Visual Tree Assessment findings and finalised design drawings (refer to **Figure 1**) showing the location of the subject trees in relation to the development footprint, and TPZ encroachment details.
- To prepare an arborist report in accordance with the Australian Standard *AS4970 2009 Protection of Trees on Development Sites*[2] as a primary reference and guide for tree protection and management, and with reference to the Richmond Valley Development Control Plan.
- To provide recommendations regarding tree removal, tree retention, tree pruning, tree protection measures and other vegetation management measures.

[1] **Visual Tree Assessment (VTA)** is a standard method for tree inspection from ground level of overall vitality, health, stability and defect symptoms. Inspection may be undertaken with the aid of binoculars, probes and sounding mallet, and includes inspection of the soil conditions around the tree; root flare and roots (where readily accessible); bark, trunk; scaffold limbs; branches; leaves; and tree form. More detailed tree part inspection may be recommended as a result of VTA (Mattheck, C & Breloer, H 1994, *The body language of trees, a handbook for failure analysis*, TSO Her Majesty's Stationary Office, London, England).

[2] **Standards Australia 2009**, *AS4970-2009 Protection of trees on development sites*, Standards Australia, Sydney.

1.4. Site Description

The site consists of residential dwellings and associated structures and infrastructure. Subject trees and shrubs are mostly landscape plantings with varying levels of maintenance and care.

The land is mostly gently sloping, and sandy loam soil provides good growing conditions.

Richmond Valley Council does not attribute the site with any mapped *Terrestrial Biodiversity (BIO)* values.

Similarly, the site is not mapped as *Biodiversity Values*, under the NSW Government *Biodiversity Values Map and Threshold Tool*. The *Biodiversity Values (BV) Map*[3] identifies land with high biodiversity value that is particularly sensitive to impacts from development and clearing including mapped core Koala habitat and Areas of Outstanding Biodiversity Value (AOBV) under the NSW *Biodiversity Conservation Regulation 2017*.

2. Assessment Methods

As part of the preliminary assessment, Visual Tree Assessments were undertaken on 10/01/23 by AQF level 5 arborist, Michael Hallinan and trainee Jordan Rockford. The subject trees were identified to species level where practicable and were numbered in line with tree numbering on the supplied survey plan.

Measurements were made of tree dimensions, i.e. Diameter at Breast Height (DBH)[4] and Diameter immediately Above the Root Buttress (DARB)[5] in case of a Tree Protection Zone encroachment. Visual estimates were made tree height and average crown spread.

[3] NSW Department of Planning and Environment (DPE) 2022, Biodiversity Values Map and Threshold Tool. www.lmbc.nsw.gov.au/

[4] **Diameter at Breast Height (DBH)** refers to the diameter of the trunk at breast height (1.4m above the ground) measured with diameter tape (Matheny, NP & Clark, JR 1994, *A Photographic Guide to the Evaluation of Hazard Trees in Urban Areas*, 2nd edn., International Society of Arboriculture, Illinois, USA).

[5] **Diameter Above the Root Buttress (DARB)** is used to calculate the Structural Root Zone (SRZ) of a tree, rounded to the nearest centimetre.

Visual Tree Assessments (VTAs) focused on tree health[6], condition[7], structural defects[8], load[9] factors and age class[10]. Trees displaying low vigour[11], weakly formed codominant stems[12], substantial leans[13], over-extended branches or other structural defects were noted where they were detected.

Binoculars were used to view upper parts of trees; a fibreglass sounding hammer to assess tree hollowness; and a pointed metal probe to lift bark, examine the extent of any suspected points of decay, and to assess soil conditions. Diameter tape was used to measure DBH and DARB.

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[6] **Tree Health** – Categorised as:
Good: A tree with good health exhibits one or more of the following: Crown full and dense; foliage of good colour and with minimal or no insect or disease damage; typical growth indicators slightly abnormal for species, e.g. extension growth, leaf size and crown foliage density; no or minimal crown die-back; good woundwood and/or response growth development. Associated with high tree vigour.
Fair: A tree with fair health exhibits one or more of the following: Has less than 12% dead wood; has minor crown dieback; foliage mostly with good colour and/or minor to moderate insect or disease damage, minor pathogen damage present; typical growth indicators slightly abnormal for species, e.g. extension growth, leaf size and crown foliage density.
Poor – Very Poor: A tree with poor health exhibits one or more of the following: Has greater than 12% dead wood; significant crown dieback present; foliage discoloured or distorted leaves; excessive epicormic growth; poor woundwood and/or response growth development; substantial wood decay affecting health; signs of strain leading to tree decline. Associated with low tree vigour.
Dead: A tree that is still standing but no longer shows signs of being alive.

[7] **Tree Condition** refers to a tree's structural form or habit and is expresses as:
Good: A tree with good structural form or habit and free from or with only negligible/minor structural defects, e.g. upright or with a slight lean; apparently stable; well tapered stems; full and balanced/symmetrical crown; free from or with only slight signs of pests and structural wood decay; nil or slight crown/branch dieback.
Fair: A tree with moderately good structural form or habit typical of the species and/or minor to moderate structural defects, e.g. slight to moderate lean, over-extended branches or signs of pests and structural wood decay; slight crown/branch dieback or stem cracks; semi-full crown; slightly unbalanced/asymmetrical crown; codominant stems.
Poor: A tree with moderately poor structural form or habit atypical of the species and/or substantial structural defects, e.g. moderate to high lean (uncorrected), crown/branch dieback, stem cracks, wounds, cavities, signs of pests and structural wood decay, epicormic shoot development, over-extended branches or unbalanced/asymmetrical crown; poorly tapered stems; weakly formed codominant stems; deformed stems; roots that are shallow, exposed, twisted or broken.
Very Poor: A tree with substantially poor structural form or habit atypical of the species and/or substantial structural defects and signs of failure of the tree or tree parts, refer to poor condition examples above.
Dead: A tree that is still standing but no longer shows signs of being alive.

[8] **Structural defects** are physiological weaknesses, faults or features that detract from tree condition or the uniform distribution of mechanical stress. They may be either naturally occurring e.g. from storm damage, pests, pathogens, wind and gravity forces; or from human activities, e.g. poor planting or pruning practices. Structural defects can include leans; unbalanced or poorly formed crowns; wounds; cavities; weakly formed codominant stems; included bark; poor structural branch attachments; over-extended branches; poorly tapered stems; crown or branch dieback; stem cracks; roots that are shallow, exposed, twisted or broken; excessive epicormic shoot development and the effects of pests, diseases and poor pruning practices.

[9] **Loads** include dynamic load from wind and static load from gravity acting on a tree. These two loads can interact and are affected by factors including wind exposure, crown size relative to trunk diameter; crown density, abundance of interior branches, vines or mistletoe; and recent of planned changes affecting load (Dunster, JA, Smiley, ET, Matheny, N & Lilly, S, 2013, *Tree Risk Assessment Manual*, International Society of Arboriculture, Illinois, USA).

[10] **Age class** categories: (J) Juvenile refers to a young or juvenile, established tree; (SM) Semi-mature refers to a tree between immaturity and full size; (M) Mature refers to a full size tree with capacity for some further growth; (OM) Over-mature refers to a tree in decline; (D) Dead refers to a tree that is still standing but no longer shows signs of being alive.

[11] **Vigour** refers to a tree's capacity to resist strain and continue to grow; overall health, condition and resilience on a qualitative scale from high to low (Wilson P, 2021, *A-Z of tree terms*: *A companion to British arboriculture, 3rd Ed.*).

[12] **Codominant stems** are stems that originate at about the same position on a stem and are approximately the same diameter. The structure is defective in various circumstances because the only way trunk xylem can grow around a branch, and form a strong attachment, is for the trunk to be larger in diameter than the branch attachment. Co-dominant stems typically lack overlapping tissue present in a collar and often have narrow angles between stems and included bark between stems which can lead to failure at the point of attachment. Additionally, the weight and leverage of the co-dominant stems increases with age, intensifying the stress on the attachment (Harris RW, Clark JR & Matheny NP, 1999 *Arboriculture: Integrated Management of Landscape Trees, Shrubs, and Vine*s, Prentice Hall, NJ USA).

[13] **Lean** refers to the deviation in the vertical angle of the main stem/s categorised in this instance as: Slight: up to 5^0; Moderate: 6^0 to 12^0; High: 13^0 to 20^0; and Severe: >21^0. Leans can originate from different points along the stem/s and are caused by factors such as competition for light, slope, prevailing winds and genetics. Leans may be static, progressive or corrected. They may be hazardous, particularly when other defects are present (Smiley TE, Matheny N & Lilly S 2011, *Tree Risk Assessment, Best Management Practices*, International Society of Arboriculture (ISA), Illinois, USA; and Dunster et al 2013).

To guide project design and tree and shrub retention and removal considerations, Tree Retention Value (TRV) scores were assigned to subject trees based on categories (best fit) modified from Morton (2006)[14], refer to **Section 2.1.**

Subject trees with *Very Low* Tree Retention Value scores are recommended to be removed where they were identified as hazardous or environmental weed species. Otherwise, tree and shrub retention, removal, pruning and protection recommendations have been guided by development design.

To detect any significant heritage values for the site, searches were made of the *Richmond Valley Local Environmental Plan 2012* (*S. 5.10, Heritage Conservation*), the NSW *State Heritage Inventory*, and the *Australian Heritage Database*.

Tree impact assessment included preparation of a tree removal, tree retention and tree protection plan drawing with TPZ encroachment details, refer to **Table 1 and Figure 1**. Various recommendations, particularly in relation to tree protection, are outlined below in **Section 4**.

2.1. Tree and Shrub Retention Value Assessment Criteria

Tree Retention Value (TRV) scores for subject trees and shrubs based on categories modified from Morton (2006) are as follows, refer to **Table 1 and Figure 1**.

For consistency, commonly occurring ornamental shrubs have been assigned Tree Retention Value (TRV) scores in line with the criteria used for trees. It may be argued that ornamental shrubs have lower retention values since they are more easily replaced than established trees, with advanced nursery stock as part of a development landscaping plan.

1. Very High

- Local, State or Commonwealth listed threatened species, rare, uncommon, or having substantial botanical, heritage, or cultural values.
- Known fauna habitat tree, recognised as providing an important habitat resource for threatened species, e.g. food, shelter, or breeding resources.
- Remnant tree or representative of the original vegetation of an area prior to development.
- Very large live crown size for the species.
- Visually prominent in the landscape or having landmark values.
- Very good form and habit typical of the species and makes a significant contribution to the amenity and visual character of an area.
- Vigorous and in good health and condition.
- Structurally stable tree that may require remedial works to reduce hazards and enable the tree to be retained with vitality and safety.

[14] Morton A, 2006, *Determining the retention value of trees on development sites*. Treenet Journal.

2. High

- Likely fauna habitat tree, suspected as providing an important habitat resource for threatened species, e.g. food, shelter, or breeding resources.
- Naturally occurring, indigenous species endemic to an area.
- Large live crown size for the species.
- Good form and habit typical of the species; makes a significant contribution to the amenity and visual character of an area.
- Vigorous and in fair to good health and condition.
- Structurally stable tree with minor defects that may require remedial works to reduce hazards and enable the tree to be retained with vitality and safety.
- Not readily replaced with new tree planting from advanced nursery stock.

3. Moderate

- Generalist fauna habitat tree, providing habitat resources for native fauna.
- Moderately large live crown size for the species.
- Moderate form and habit for the species; may exhibit minor to moderate deviations from typical species form and habit.
- Makes a fair contribution to the visual character and amenity of an area.
- Moderately vigorous and in fair health and condition.
- Structurally stable tree with defects that may require remedial works to reduce hazards and enable the tree to be retained with vitality and safety.

4. Low

- Poor form and habit; not representative of the species or showing significant deviations from the typical form and habit.
- Small live crown size for the species.
- Not visibility prominent in the landscape.
- Makes a negligible contribution or has a negative impact on the amenity and visual character of an area.
- Low vigour and in poor to fair health and/ or condition.
- Structurally defective, unstable, and/or hazardous tree that may require substantial remedial works to reduce hazards and enable the tree to be retained with vitality and safety.
- Landscape or other planting readily replaced with a new planting from advanced nursery stock.

5. Very Low

- Environment weed species recognised as being invasive.
- Nuisance tree or species due to its position relative to buildings or infrastructure.
- Low vigour and in poor to very poor health and/ or condition.
- Structurally defective, unstable, and/or hazardous tree that cannot practicably be retained with vitality and safety through remedial works.

3. Impact Assessment Findings

Table 1 provides a tree schedule and findings in relation to Visual Tree Assessments, TPZ encroachment details, recommendations, observations, comments & plates.

Figure 1 illustrates subject trees; tree retention and removal; TPZ encroachments for trees to be retained; and project TPZ fence locations in relation to the development.

Key assessment findings are as follows:

- A total of 82 trees, shrubs and clumps were assessed within the area of the site.
- Seven trees (one being a shrub) are recommended to be retained, of which, no substantial impact is expected for three trees.
- Four trees to be retained have a Major[15] TPZ encroachment of greater than 10%, three of which are marginally inside the Structural Root Zone (SRZ)[16], which is critical for tree stability.
    - Tree 72 has a Major 22% TPZ encroachment marginally inside the SRZ from building construction and lesser from installation of stormwater infrastructure and cut earthworks along the northern façade of unit 9.
    - Tree 67 has a Major 31% TPZ encroachment marginally inside the SRZ from installation of stormwater infrastructure, also building and pathway construction.
- Works are considered to be tolerable for the ongoing vitality of Trees 72, 67. Also for Trees 78 and 82 with Major TPZ encroachments of 15% and 11%, as well as other trees to be retained. All trees to be retained are expected to cope with construction activities, remain viable and maintain health, condition and vitality provided tree protection measures are effectively implemented as outlined below in **Section 4**.
- No trees have Minor[17] TPZ encroachments of less than 10%.
- It is understood that there are no substantial cut or fill works proposed near any retained trees on site.
- The remaining trees and shrubs are recommended to be removed for construction and environmental weed status.
- Trees and shrubs to be removed are mostly landscape plantings with varying levels of maintenance and care and generally readily replaceable with new landscape plantings.
- No significant heritage values were detected in relation to site vegetation from searches of the *Richmond Valley Local Environmental Plan 2012* (*S. 5.10, Heritage Conservation*), the NSW *State Heritage Inventory*, and the *Australian Heritage Database*.
- Site access for demolition and construction machinery is considered able to be routed around Tree Protection Zones so as to not impact trees to be retained.

[15] A **Major TPZ encroachment** occurs where an incursion greater than 10% of the TPZ area or within the SRZ is proposed (Standards Australia 2009).

[16] **Structural Root Zone (SRZ)** is the radius of the area required for tree stability. It only needs to be calculated (using the formula SRZ radius = $(D \times 50)^{0.42} \times 0.64$) when major encroachment into a TPZ is proposed. A larger area than the SRZ is required to maintain tree viability (Standards Australia 2009). The SRZ only needs to be calculated when a Major encroachment into a TPZ is proposed.

[17] A **Minor TPZ encroachment** occurs where an incursion less than 10% of the TPZ area outside the SRZ is encroached by proposed works (Standards Australia 2009).

For Major TPZ encroachments, Standards Australia (2009) note that the Project Arborist[18] must demonstrate that trees would remain viable if they are to be retained. Consideration should be given to factors such as:

- The location and distribution of roots and likely root loss. Detailed root investigations may or may not be required.
- Tree species and tolerance to root disturbance.
- Age, vigour and size of the tree.
- Lean and stability of the tree.
- Soil characteristics, topography and drainage.
- Design factors.

In regard to the Major TPZ encroachments proposed for Trees 72, 67, 78 and 82, consideration was given to likely construction impacts; tree structure and condition; tree health, maturity and size; known tree species susceptibility to root disturbance or loss; and matters relating to load affecting tree stability. Other impact mitigating factors are as follows:

- The project arborist is recommended to monitor excavation works (as a minimum) within TPZs; advise on tree impact avoidance and minimisation; and cleanly cut any exposed tree roots >4cm diameter that would be lost due to construction.
- No substantially large surface roots were observed in the area of the proposed encroachments.
- Mostly only one side of tree root zones are likely be impacted by works and the areas lost to encroachments are compensated for elsewhere on other sides that are unlikely to be impacted by works.
- Proposed construction works are considered unlikely to substantially increase exposure of trees to prevailing winds and storms.

4. Recommendations

4.1. General Tree Protection Recommendations

Trees have been recommended to be retained where it is considered that they have conservation values; are not substantially defective or hazardous; and where development impacts can be sufficiently avoided and/ or minimised to maintain tree vitality.

Establishment and maintenance of Project Tree Protection Zones (TPZs) throughout the construction process is important to protect tree roots and crowns; and maintain tree health and condition into the future.

Based on the proposed works, the following recommendations are made, refer to **Table 1** and **Figure 1**:

[18] The **Project Arborist** should have minimum AQF Level 5 (Diploma level) qualifications and suitable experience in tree protection (Standards Australia 2009).

- In line with AS4970 and best practice, a Project Arborist should be engaged to guide implementation of tree protection measures.
- Tree protection should comply with Section 4, Tree Protection Measures, of Australian Standard 4970 – 2009 *Protection of trees on development sites* unless otherwise noted in this report or recommended by the Project Arborist.
- The Project Arborist should assist with establishment of project TPZ fences.
- The Project Arborist should be consulted to review any changes to design and construction plans in relation to tree protection and other recommendations.
- The Project Arborist should advise on tree impact avoidance and minimisation, and tree protection for construction works within TPZs; and be onsite to monitor potential tree impacts for excavation works (as a minimum) within TPZs.
- Mulch up to 12cm depth and/ or lightweight load-sharing/ weight distribution mats, boards, planks or plates should be used in consultation with the Project Arborist if construction machinery are required to work within or pass through project TPZs.
- TPZ fences should be in place prior to the commencement of all works, including demolition and tree removal works, and before construction machinery and materials are brought onto the site.
- Tree protection fences are to be maintained in good condition during construction works and kept in place until after completion of construction works, including landscaping, or as otherwise advised by the Project Arborist.
- Any use of bobcat/ skid steer machinery for landscaping construction works are to be avoided where practicable within TPZ or otherwise monitored by the Project Arborist
- During any excavation works within tree TPZs, tree roots exposed >4cm diameter that would be lost due to construction, and coming from the general direction of retained trees, should be cleanly cut with a sharp handsaw or chainsaw.
- The role and importance of tree protection measures should be addressed with all construction staff during site inductions and toolbox talks.
- A copy of the TPZ Plan drawing (i.e. **Figure 1**) and this report should be retained on site with other construction drawings throughout the construction phases for reference as required.

The following activities should not be carried out within TPZs unless in consultation with the Project Arborist:

- Machinery access including excavators, bobcats, etc.
- Disposal of chemicals and liquids including concrete and mortar slurry, solvents, paint, fuel or oil.
- Stockpiling, storage or mixing of sand, gravel or other building materials.
- Refuelling, parking, storing or washing tools, equipment, machinery or vehicles.
- Soil excavation, trenching, placement of fill, or changes to soil levels.
- Installation of temporary offices, structures, or underground services.
- Erection of scaffolding.
- Tree removal or tree pruning.

4.2. Project Tree Protection Zone (TPZ) Fence Specifications

The project Tree Protection Zones (TPZs) are the areas dedicated to tree protection. **Figure 1** shows the recommended project TPZ fence locations in relation to retained trees and the construction footprint.

Project TPZs are a variation to that of AS4970 (Standards Australia 2009), designed to ensure tree protection under the existing site conditions and construction requirements. The project TPZs may be only partially enclosed by tree protection fences and are considered to be appropriate in this instance to exclude construction impacts.

Recommended Project TPZ fence specifications are as follows:

- Minimum flexible plastic barrier mesh TPZ fencing, refer to **Figure 2**. The fencing should be secure and fastened to prevent unassisted movement. Steel mesh construction fencing, refer to **Figure 3**, may be used as an alternative or as required.
- A minimum of one TPZ sign every 10m of project TPZ fence should be installed indicating "*Tree Protection Zone, No Access*" or similar, refer to **Figures 4 and 5**. Each sign shall be weather resistant; a minimum size of 29.7mm x 420mm; and include the name and contact details of the Project Manager and/or the Project Arborist. The signs shall be visible from the main work areas of the site.

Figure 2. Example project Tree Protection Zone plastic barrier mesh fence

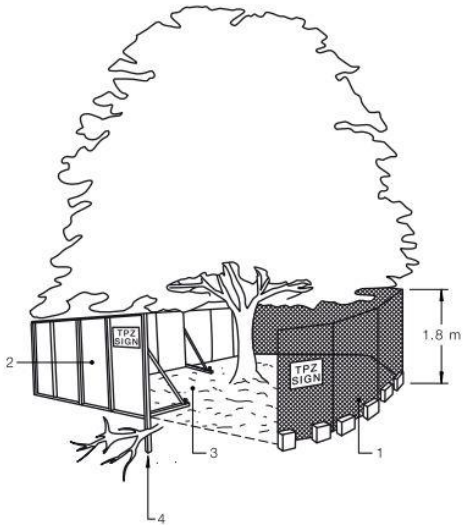


Figure 3. Example Tree Protection Zone steel/ wire mesh fence, Standards Australia (2009)

Figure 4. Example Tree Protection Zone sign, Standards Australia (2009)

Figure 5. Example Tree Protection Zone sign

4.3. Other Recommendations

- Any new landscape plantings for the site should consist of non-invasive species selections and endemic native species should be considered.
- To promote tree health, consider application (where practical) of forest mulch or tea tree mulch around drip zones of retained trees to a depth of up to 100mm and up to 0.5m from tree bases.
- Any tree pruning should be done in accordance with relevant sections (e.g. Section 5.4, Final Cut) of the Australian Standard AS4373 Pruning of amenity trees, and by a minimum AQF level 3 qualified arborist with appropriate experience.
- A rapid Visual Tree Assessment of all site trees by a minimum AQF Level 5 qualified arborist is recommended to be organised by the landholder/s every three years and following severe thunderstorms[19].

5. General Assumptions and Limitations

- Information in this report relates only to the subject trees examined and reflects their condition at the time of inspection.
- Information presented in this report relies on information supplied by the client.
- No risk assessments were included as part of this assessment and no recommendations are made in regard to risk management.
- This assessment was limited to visual examination of accessible items without climbing, coring, dissecting or excavating. No responsibility is assumed for any tree defects that could only reasonably have been discovered by performing climbing, coring, dissecting or excavating.
- Michael Hallinan and Arbor Ecological bear no responsibility for the actions and consequences of any party that performs works associated with recommendations outlined in this report.

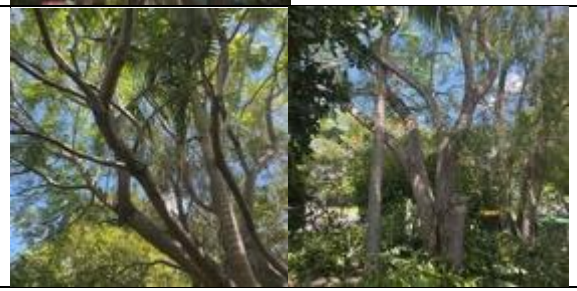
[19] **Severe thunderstorms** produce any of the following: Large hail (2cm in diameter or larger); damaging wind gusts (generally wind gusts exceeding 90 km/h); heavy rainfall which may cause flash flooding; and/or Tornadoes (Australian Government Bureau of Meteorology, No Date, *Severe Thunderstorm Warning Services*, accessed 06/04/13 http://www.bom.gov.au/catalogue/warnings/).

Table 1. Visual Tree Assessment findings, TPZ encroachment details, recommendations, observations, comments & plates, refer to Figure 1.

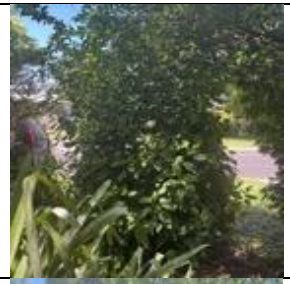
Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T1 Mango Tree *Mangifera indica* Planted; Exotic fruit tree **TCV Low**	34 40 6 4	Semi-Mature Fair Poor	4.1 2.3	**REMOVE** tree for construction and due to Poor condition and Low TRV Major TPZ encroachment 1.9m within SRZ from retaining wall construction Spreading; Multi-stemmed, Overly close shrub spacing, Severe lean to the S, Exposed large woody roots in TPZ, High volume deadwood[22] to ~5cmØ	
T2 Bangalow Palm *Archontophoenix cunninghamiana* Planted; Native rainforest palm **TCV Moderate**	28 35 2 1	Semi-Mature Good Fair	3.4 2.1	**REMOVE** palm for construction Tree base is entirely within the construction footprint Upright; Multi-stemmed, Severe lean to the N, Low volume deadwood	 

[20] **Recommendations.** Refer to Section 4 of this report for detailed recommendations.
[21] **Nature of any AS4970 TPZ encroachment** noted where relevant and may include the TPZ percentage encroachment and/ or SRZ encroachment distance from the most substantial incursion/ encroachment as per design drawings.
[22] **Deadwood** refers to dead branches and crown sections categorised as a percentage of crown mass as low volume (up to 5%), moderate volume (6% to 12%), high volume (13% to 20%) and very high volume (>20%). Maximum deadwood diameter size estimate is generally noted only where greater than 8cm.

Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T3 Illawarra Flame Tree *Brachychiton acerifolius* Planted; Native rainforest tree **TCV Moderate**	22 24 8 2	Semi- Mature Fair Fair	2.5 2.0	**REMOVE** tree for construction Tree base is entirely within the construction footprint Upright; Slight lean to the NW, Moderate tip dieback, Top of crown dead, Low volume deadwood	
T4 Bangalow Palm *Archontophoenix cunninghamiana* Planted; Native rainforest palm **TCV Moderate**	14 25 7 2	Semi- Mature Good Good	3.1 2.0	**REMOVE** palm for construction Palm base is entirely within the construction footprint Upright; Low volume deadwood	
T5 Umbrella Tree *Schefflera actinophylla* Planted; native ornamental tree species from NQ, Environmental weed species in NSW **TCV Very Low**	26 31 7 4	Mature Good Good	3.1 2.0	**REMOVE** tree for construction and environmental weed status Tree base is entirely within the construction footprint Spreading; Multi-stemmed from base, High lean to the SW, Low volume deadwood	

Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T6 Bracelet Honey Myrtle *Melaleuca armillaris* Planted; native ornamental tree **TCV Moderate**	33 37 9 4	Semi- Mature Fair Fair	4.0 2.2	**REMOVE** tree for construction Tree base is entirely within the construction footprint Upright; Multi-stemmed, One stem dead, Light reaching to W, Low mistletoe infestation, Low volume deadwood	
T7 Bangalow Palm *Archontophoenix cunninghamiana* Planted; Native rainforest palm **TCV Moderate**	25 30 7 2	Semi- Mature Good Good	3.0 2.0	**REMOVE** tree for construction Palm base is entirely within the construction footprint Upright; Crown in canopy of Jacaranda (T8), Low volume deadwood	
T8 Jacaranda *Jacaranda mimosifolia* Planted; Exotic ornamental tree, Environmental weed species **TCV Low**	45 51 9 12	Mature Fair Fair	5.4 2.5	**REMOVE** tree for construction and environmental weed status Tree base is entirely within the construction footprint Spreading; Codominant stems with narrow V-shaped union, Slight lean to S, Crown concentrated to S, Low volume deadwood	

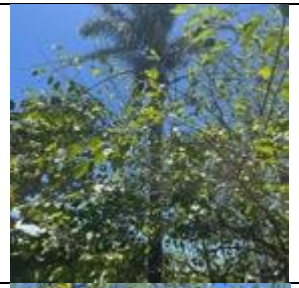
Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T9 Tuckeroo *Cupaniopsis anacardioides* Planted; Native rainforest tree **TCV Moderate**	24 29 6 4	Mature Fair Fair	2.9 2.0	**REMOVE** tree for construction Major TPZ encroachment 0.8m within SRZ from building construction Upright; Slight lean to NE, Crown concentrated to NE as light response, Historic crown lift pruning, Low volume deadwood	
T10 Golden Rain Tree *Koelreuteria paniculata* Planted; Exotic ornamental tree, Environmental weed species **TCV Very Low**	14 18 5 4	Semi-Mature Fair Fair	2.0 1.5	**REMOVE** tree due to environmental weed status NA Spreading; High tip dieback, Moderate volume deadwood to ~8cmØ, regenerating seedlings throughout local area, Minimum SRZ and TPZ under AS4970	
T11 Weeping Bottlebrush *Callistemon viminalis* Planted; Native ornamental and forest tree **TCV Very Low**	8 16 2.5 1	Semi-Mature Very Poor Poor	2.0 1.5	**REMOVE** tree for construction Tree base is entirely within the construction footprint Spreading; Near dead, Stunted, Slight lean to S, Low crown foliage density, Small leaf size, Moderate volume deadwood to ~10cmØ, Minimum SRZ and TPZ under AS4970	

Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T12 A Hibiscus *Hibiscus sp.* Planted; Exotic ornamental shrub **TCV Low**	11 16 3 2	Mature Good Fair	2.0 1.5	**REMOVE** shrub for construction Major TPZ encroachment 0.9m within SRZ from pathway construction Spreading, Low volume deadwood, Minimum SRZ and TPZ under AS4970	
T13 A Calothamnus *Calothamnus sp.* Planted; Native ornamental shrub **TCV Low**	17 24 3 4	Semi-Mature Fair Fair	2.0 1.8	**RETAIN** shrub; install TPZ fence; Project Arborist to advise on tree impact avoidance and minimisation; and monitor excavation works within TPZ No substantial impact expected Spreading; Multi-stemmed from base, Target avoidance pruning, Low volume deadwood, Minimum TPZ under AS4970	
T14 Golden Rain Tree *Koelreuteria paniculata* Planted; Exotic ornamental tree, Environmental weed species **TCV Very Low**	9 11 2 1	Juvenile Fair Fair	2.0 1.5	**REMOVE** tree due to environmental weed status NA Spreading; Codominant stems with narrow V-shaped union at 1m, Moderate lean to E, Crown concentrated to E, Powerlines through crown, Low volume deadwood, regenerating seedlings throughout local area, Minimum SRZ and TPZ under AS4970	

Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T15 Crepe Myrtle *Lagerstroemia indica* Planted; Exotic ornamental tree **TCV Very Low**	25 29 4 5	Mature Poor Poor	3.0 2.0	**REMOVE** tree due to Poor health and condition and Very Low TRV NA Spreading; Multi-stemmed, Stunted, Low foliage density, Dead sections, Poor past pruning, Historic lopping and topping and target avoidance pruning, Exotic Golden Rain Tree weed growing near base, High volume deadwood ~8cmØ	
T16 Bignonia Bignonia sp. Planted; exotic ornamental shrub **TCV Low**	19 25 3 4	Mature Fair Fair	2.3 1.9	**REMOVE** shrub for construction Shrub base is entirely within the construction footprint Spreading; Climbing, Low volume deadwood	
T17 Cherry Guava *Psidium cattleianum* Planted; Exotic ornamental tree, Environmental weed species **TCV Very Low**	11 14 4 3	Semi-Mature Poor Poor	2.0 1.5	**REMOVE** tree for construction and environmental weed status Tree base is entirely within the construction footprint Spreading; Multi-stemmed, Poor form, Low crown foliage density, Smothered by surrounding weed plants, Light reaching, Leaves concentrated at branch ends, Low volume deadwood, Minimum SRZ and TPZ under AS4970	

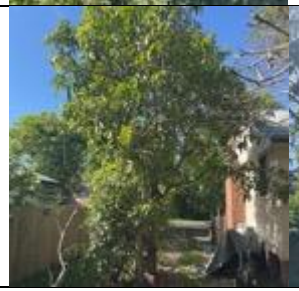
Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T18 Weeping Fig *Ficus benjamina* Planted; Native NQ rainforest tree – not locally endemic **TCV Low**	52 65 8 11	Semi-Mature Good Fair	6.2 2.8	**REMOVE** tree for construction Tree base is entirely within the construction footprint Spreading; Multi-stemmed, Invasive root system typical to species, Moderate volume deadwood ~8cmØ	
T19 African Tulip Tree *Spathodea campanulata* Likely planted; Exotic ornamental tree, Environmental weed species **TCV Very Low**	18 22 5 1	Semi-Mature Poor Near Dead Poor Near Dead	2.2 1.8	**REMOVE** tree for construction and environmental weed status Tree base is entirely within the construction footprint Upright; Slight lean in lower trunk upper trunk corrected, Large dead sections, Severely defoliated.	
T20 Weeping Bottlebrush *Callistemon viminalis* Planted; Native ornamental and forest tree **TCV Very Low**	14 17 4 3	Semi-Mature Poor Very Poor	2.0 1.6	**REMOVE** tree for construction and Poor health and Very Poor condition Tree base is within the construction footprint Upright; Stunted, Low crown foliage density, Crown concentrated to SW, Moderate defoliation, Poor past pruning, Historic lopping and topping and target avoidance, Moderate mistletoe infestation, High volume deadwood ~10cmØ, Minimum TPZ under AS4970	

Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T21 Ice Cream Bean *Inga edulis* Likely planted; Exotic fruit tree, Environmental weed species **TCV Very Low**	38 43 5 7	Semi- Mature Good Poor	4.6 2.3	**REMOVE** tree for construction and environmental weed status Tree base is entirely within the construction footprint Spreading; Crown concentrated to N, Severely leaning on fence line to E, Low volume deadwood	
T22 A Callistemon *Callistemon* sp. Planted; Native ornamental, shrub **TCV Low**	12 17 2.5 4	Semi- Mature Poor Poor	2.0 1.5	**REMOVE** tree for construction and Poor health and condition Tree base is entirely within the construction footprint Spreading; Multi-stemmed, Poor form, Foliage concentrated at branch ends, Moderate exotic Cats Claw weed infestation, High volume deadwood ~5cmØ, Minimum SRZ and TPZ under AS4970	
T23 Mango Tree *Mangifera indica* Planted; Exotic fruit tree **TCV Low**	39 45 5 4	Semi- Mature Fair Fair	4.7 2.4	**REMOVE** tree for construction Tree base is entirely within the construction footprint Spreading; Co-dominant stems with narrow V-shaped union at 0.4m, Moderate tip dieback, Poor past pruning, Historic formative and target avoidance pruning, Moderate volume deadwood~8cmØ	

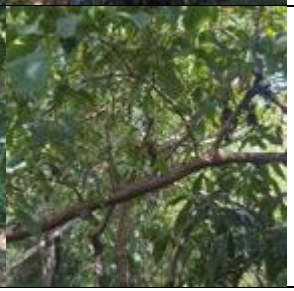
Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T24 Cocos Palm *Syagrus romanzoffiana* Planted; Exotic ornamental palm, Environmental weed species **TCV Very Low**	29 35 9 2	Over-Mature Fair Fair	3.5 2.1	**REMOVE** tree for construction and environmental weed status Tree base is entirely within the construction footprint Upright; Moderate tip dieback, Moderate exotic Cats Claw weed infestation, Low volume deadwood	
T25 Mulberry Tree *Morus alba* Planted; exotic fruit tree, Environmental weed species **TCV Low**	23 28 5 3	Mature Poor Poor	2.8 1.9	**REMOVE** tree for construction and environmental weed status Tree base is entirely within the construction footprint Upright; Multi-stemmed, Stunted, Moderate exotic Cats Claw weed infestation, Low volume deadwood	
T26 Umbrella Tree *Schefflera actinophylla* Likely planted; Native NQ tree, Environmental weed species **TCV Low**	12 16 5 3	Mature Good Fair	2.0 1.5	**REMOVE** tree for construction and environmental weed status Tree base is within the construction footprint Upright; Multi-stemmed with V-shaped union, Girdled roots present, Low volume deadwood, Minimum SRZ and TPZ under AS4970	

Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T27 Mango Tree *Mangifera indica* Planted; Exotic fruit tree **TCV Very Low**	49 54 5 NA	Dead Dead Dead	NA	**REMOVE** dead tree NA Upright; Multi-stemmed, Dead	
T28 Indian Coral Tree *Erythrina variegate* Planted; Exotic tree, Environmental weed species **TCV Very Low**	39 46 6 4	Semi- Mature Poor Poor	4.7 2.4	**REMOVE** tree due to environmental weed status NA Spreading; Multi-stemmed, High lean to NE, Crown concentrated to N, Moderate tip dieback, High exotic Cats Claw weed infestation, Moderate volume deadwood~8cmØ	
T29 Jacaranda *Jacaranda mimosifolia* Planted; Exotic ornamental tree, Environmental weed species **TCV Low**	17 22 5 1	Semi- Mature Fair Poor	2.0 1.8	**REMOVE** tree for construction and environmental weed status Tree base is entirely within the construction footprint Spreading; Multi-stemmed, Low crown foliage density, High lean to NE, Lower trunk lean upper crown corrected, Moderate exotic Cats Claw weed infestation, Moderate volume deadwood~8cmØ, Minimum TPZ under AS4970	

Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T30 Mango Tree *Mangifera indica* Planted; Exotic fruit tree **TCV Very Low**	14 19 4 2	Near Dead Very Poor Very Poor	2.0 1.7	**REMOVE** tree for construction Tree base is entirely within the construction footprint Upright; Majority of crown dead, Co-dominant stems with narrow V-shaped union near base, Minimum TPZ under AS4970	
T31 Mango Tree *Mangifera indica* Planted; Exotic fruit tree **TCV Very Low**	13 17 4 2	Semi-Mature Poor Poor	2.0 1.6	**REMOVE** tree for construction Tree base is entirely within the construction footprint Upright; Multi-stemmed, Stunted, Low crown foliage density, Moderate volume deadwood~5cmØ, Minimum TPZ under AS4970	
T32 Mango Tree *Mangifera indica* Planted; Exotic fruit tree **TCV Very Low**	10 12 3 2	Semi-Mature Poor Poor	2.0 1.5	**REMOVE** tree for construction Tree base is entirely within the construction footprint Upright; Multi-stemmed, Stunted, Low crown foliage density Multi-stemmed, Large dead section in crown, Moderate volume deadwood~8cmØ, Minimum SRZ and TPZ under AS4970	

Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T33 Mango Tree *Mangifera indica* Planted; Exotic fruit tree TCV Very Low	18 22 2.5 1	Dead Dead Dead	NA	REMOVE dead tree NA Upright; Multi-stemmed, Leafless	
T34 Mango Tree *Mangifera indica* Planted; Exotic fruit tree TCV Very Low	N/A N/A 1.5 N/A	Dead Dead Dead	NA	REMOVE dead tree NA Upright; Multi-stemmed, Leafless	
T35 & T36 Mango Tree *Mangifera indica* Planted; Exotic fruit tree TCV Low	29 35 5 5	Semi-Mature Fair Fair	3.5 2.1	REMOVE tree for construction Tree base is entirely within the construction footprint Upright; Multi-stemmed, Moderate tip dieback, Stunted, Low crown foliage density Southern Stem horizontal, Moderate volume deadwood~8cmØ	 

Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T37 Cherry Guava *Psidium cattleianum* Planted; Exotic ornamental tree, Environmental weed species **TCV Very Low**	25 31 4 2	Mature Poor Poor	3.0 2.0	**REMOVE** tree for construction and environmental weed status NA Upright; Multi-stemmed, High tip dieback, Exposed large woody roots in TPZ, Low volume deadwood~8cmØ	
T38 Mulberry Tree *Morus alba* Planted; exotic fruit tree, Environmental weed species **TCV Low**	13 16 5 4	Semi-Mature Fair Fair	2.0 1.5	**REMOVE** tree for construction and environmental weed status Tree base is entirely within the construction footprint Spreading; Excessively shaded, exotic Asparagus Fern weed in crown, Low volume deadwood, Minimum SRZ and TPZ under AS4970	
T39 Mango Tree *Mangifera indica* Planted; Exotic fruit tree **TCV Very Low**	24 29 3 2	Semi-Mature Very Poor Very Poor	2.9 2.0	**REMOVE** tree for construction Tree base is entirely within the construction footprint Upright; Multi-stemmed, Stunted, Low crown foliage density, Large dead sections in trunk and canopy, High volume deadwood~5cmØ	

Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T40 Mango Tree *Mangifera indica* Planted; Exotic fruit tree **TCV Low**	18 24 3 3	Semi- Mature Fair Fair	2.2 1.8	**REMOVE** tree for construction Tree base is entirely within the construction footprint Upright; Multi-stemmed, Excessively shaded, Low volume deadwood	
T41 Cherry Guava *Psidium cattleianum* Planted; Exotic ornamental tree, Environmental weed **TCV Very Low**	13 17 4 6	Mature Fair Poor	2.0 1.5	**REMOVE** tree for construction and environmental weed status Tree base is entirely within the construction footprint Spreading; Multi-stemmed, Slight lean to N/NE as a light response, Low volume deadwood, Minimum SRZ and TPZ under AS4970	 
T42 Mango Tree *Mangifera indica* Planted; Exotic fruit tree **TCV Low**	15 19 5 3	Semi- Mature Fair Fair	2.0 1.7	**REMOVE** tree for construction Tree base is entirely within the construction footprint Spreading; Multi-stemmed, Moderate tip dieback, exotic Cats Claw weed infestation in crown, Moderate volume deadwood~5cmØ	 

Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T43 Mango Tree *Mangifera indica* Planted; Exotic fruit tree **TCV Low**	11 13 2 2	Semi- Mature Fair Fair	2.0 1.5	**REMOVE** tree for construction Tree base is entirely within the construction footprint Upright; Stunted, Excessively shaded, Low volume deadwood, Minimum SRZ and TPZ under AS4970	
T44 Pecan Tree *Carya illinoinensis* Planted; Exotic fruit tree **TCV Moderate**	28 32 6 8	Semi- Mature Good Fair	3.4 2.1	**REMOVE** tree for construction Tree base is entirely within the construction footprint Spreading; Pseudo co-dominant stems with moderately narrow U-shaped union at base, Moderate volume deadwood~5cmØ	 
T45 Cheese Tree *Glochidion ferdinandi* Planted; Native rainforest tree **TCV Moderate**	36 42 6 8	Mature Good Fair	4.3 2.3	**REMOVE** tree for construction Tree base is entirely within the construction footprint Spreading; Multi-stemmed, Low volume deadwood	 

Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T46 Coffee Bush *Coffea arabica* Planted; Exotic fruit shrub, Environmental weed species **TCV Very Low**	 14 19 3 2	 Semi- Mature Poor Poor	 2.0 1.7	**REMOVE** tree for construction and environmental weed status Tree base is entirely within the construction footprint Spreading; Multi-stemmed, Excessively shaded, Low volume deadwood	
T47 Mango Tree *Mangifera indica* Planted; Exotic fruit tree **TCV Low**	 11 14 4 2	 Semi- Mature Fair Fair	 2.0 1.5	**REMOVE** tree for construction Tree base is entirely within the construction footprint Spreading; Multi-stemmed, Excessively shaded, Moderate volume deadwood to ~5cmØ, Minimum SRZ and TPZ under AS4970	
T48 Mango Tree *Mangifera indica* Planted; Exotic fruit tree **TCV Low**	 14 19 4 3	 Semi- Mature Fair Fair	 2.0 1.5	**REMOVE** tree for construction Major TPZ encroachment 1.4m within SRZ from building construction Spreading; Multi-stemmed, Excessively shaded, Moderate volume deadwood to ~5cmØ, Minimum SRZ and TPZ under AS4970	

Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T49 Mango Tree *Mangifera indica* Planted; Exotic fruit tree TCV Low	24 29 5 4	Semi- Mature Fair Fair	2.9 2.0	REMOVE tree for construction Tree base is entirely within the construction footprint Spreading; Poor form, Co-dominant stems with narrow U-shaped union near base, Tip dieback, Excessively shaded, Low volume deadwood	
T50 Mango Tree *Mangifera indica* Planted; Exotic fruit tree TCV Low	25 31 5 5	Semi- Mature Fair Fair	3.0 2.0	REMOVE tree for construction Tree base is within the construction footprint Spreading; Multi-stemmed, Moderate tip dieback, Low volume deadwood	
T51 Mulberry Tree *Morus alba* Planted; exotic fruit tree, Environmental weed species TCV Low	34 39 4 9	Mature Fair Fair	4.1 2.2	REMOVE tree for construction and environmental weed status NA Spreading; Multi-stemmed, Poor past pruning, Historic lopping and topping, crown lift and target avoidance pruning, Moderate exotic Cat's Claw weed infestation, Moderate exotic Asparagus Fern weed infestation, High volume deadwood to ~5cmØ	

Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T52 Mango Tree *Mangifera indica* Planted; Exotic fruit tree **TCV Low**	9 11 2 1	Semi-Mature Fair Fair	2.0 1.5	**REMOVE** tree for construction Tree base is entirely within the construction footprint Spreading; Poor form, Stunted, Excessively shaded, Low foliage crown density, High epicormic growth, Moderate exotic Cat's Claw weed infestation, Moderate volume deadwood ~5cmØ, Minimum SRZ and TPZ under AS4970	
T53 Mango Tree *Mangifera indica* Planted; Exotic fruit tree **TCV Very Low**	8 4 2 1	Semi-Mature Poor Poor	2.0 1.5	**REMOVE** tree for construction Tree base is entirely within the construction footprint Spreading; Poor form, Stunted, Excessively shaded, Low foliage crown density, High epicormic growth, Moderate exotic Cat's Claw weed infestation, Moderate volume deadwood ~5cmØ, Minimum SRZ and TPZ under AS4970	
T54 Mango Tree *Mangifera indica* Planted; Exotic fruit tree **TCV Very Low**	11 13 2 1	Semi-Mature Poor Poor	2.0 1.5	**REMOVE** tree for construction Tree base is entirely within the construction footprint Spreading; Poor form, Stunted, Severe lean Excessively shaded, Low foliage crown density, Large dead sections, High volume deadwood to ~5cmØ, Minimum SRZ and TPZ under AS4970	

Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T55 Mango Tree *Mangifera indica* Planted; Exotic fruit tree **TCV Very Low**	12 15 3 2	Semi- Mature Poor Poor	2.0 1.5	**REMOVE** tree for construction Tree base is entirely within the construction footprint Upright; Multi-stemmed, Stunted, Excessively shaded, Low crown foliage density, Moderate volume deadwood~5cmØ, Minimum SRZ and TPZ under AS4970	
T56 Mango Tree *Mangifera indica* Planted; Exotic fruit tree **TCV Very Low**	11 14 2 2	Semi- Mature Poor Poor	2.0 1.5	**REMOVE** tree for construction Tree base is entirely within the construction footprint Upright; Multi-stemmed, Stunted, Low crown foliage density , Moderate volume deadwood~5cmØ, Minimum SRZ and TPZ under AS4970	
T57 Mango Tree *Mangifera indica* Planted; Exotic fruit tree **TCV Very Low**	10 12 2 2	Semi- Mature Poor Poor	2.0 1.5	**REMOVE** tree for construction Tree base is entirely within the construction footprint Spreading; Poor form, Tip dieback, Excessively shaded, Low volume deadwood, Minimum SRZ and TPZ under AS4970	

Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T58 Mango Tree *Mangifera indica* Planted; Exotic fruit tree TCV Very Low	11 13 2 1	Semi- Mature Poor Poor	2.0 1.5	REMOVE tree for construction Tree base is entirely within the construction footprint Spreading; Poor form, High tip dieback, Excessively shaded, Low volume deadwood, Minimum SRZ and TPZ under AS4970	
T59 Mulberry Tree *Morus alba* Planted; exotic fruit tree species, Environmental weed TCV Very Low	19 22 6 5	Semi- Mature Poor Poor	2.3 1.8	REMOVE tree for construction and environmental weed status Tree base is entirely within the construction footprint Spreading; Low foliage crown density, Large dead sections, High volume deadwood ~5cmØ	
T60 Jacaranda *Jacaranda mimosifolia* Planted; Exotic ornamental tree, Environmental weed species TCV Very Low	15 17 9 3	Semi- Mature Poor Poor	2.0 1.5	REMOVE tree for construction and environmental weed status Tree base is entirely within the construction footprint Upright; Stunted, Small leaf size, Moderate lean to N, Crown concentrated to N, Low foliage density, Tip dieback, High volume deadwood, Minimum SRZ and TPZ under AS4970	

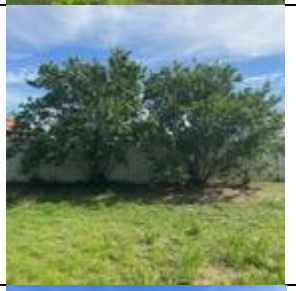
Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T61 Weeping Bottlebrush *Callistemon viminalis* Planted; Native ornamental and forest tree TCV Very Low	22 28 8 4	Semi-Mature Poor Poor	2.6 1.9	REMOVE tree for construction and Poor health and condition Tree base is entirely within the construction footprint Upright; Exposed large woody roots in TPZ, Moderate Mistletoe infestation, Low volume deadwood	
T62 Mango Tree *Mangifera indica* Planted; Exotic fruit tree TCV Low	21 25 6 4	Semi-Mature Fair Fair	2.5 1.9	REMOVE tree for construction Tree base is entirely within the construction footprint Spreading; Multi-stemmed, Poor form, Crown concentrated to N, Excessively shaded, Moderate volume deadwood to ~5cmØ	
T63 Cherry Guava *Psidium cattleianum* Planted; Exotic ornamental tree, Environmental weed TCV Very Low	32 38 5 6	Semi-Mature Fair Fair	3.8 2.2	REMOVE tree for construction and environmental weed status Tree base is entirely within the construction footprint Spreading; Multi-stemmed from base, Poor form, Crown concentrated to N, Excessively shaded, Moderate volume deadwood to ~5cmØ	

Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T64 Mango Tree *Mangifera indica* Planted; Exotic fruit tree TCV Low	26 31 5 4	Semi- Mature Fair Fair	3.1 2.0	REMOVE tree for construction Tree base is within the construction footprint Spreading; Multi-stemmed from base, Crown concentrated to N, Poor form, Moderate volume deadwood to ~5cmØ	
T65 Mango Tree *Mangifera indica* Planted; Exotic fruit tree TCV Low	12 16 2.5 2	Dead Dead Dead	2.0 1.5	REMOVE dead tree NA Spreading; Poor form, Dead, Minimum SRZ and TPZ under AS4970	
T66 Pecan Tree *Carya illinoinensis* Planted; Exotic fruit tree TCV High	40 46 8 10	Mature Good Good	4.8 2.4	REMOVE tree for construction Major TPZ encroachment 2.0m within SRZ from retaining wall construction Spreading; Multi-stemmed, Crown dominating front yard, Low volume deadwood	 

Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T67 Golden Shower Tree *Cassia fistula* Planted; Exotic ornamental deciduous tree **TCV High**	29 35 6 6	Semi-Mature Good Fair	3.5 2.1	**RETAIN** tree, install TPZ fence, Project Arborist to advise on tree impact avoidance and minimisation; and monitor excavation works within TPZ Major 31% TPZ encroachment marginally inside the SRZ from installation of stormwater infrastructure, also building and pathway construction Spreading; Multi-stemmed from base, crown lift and target avoidance pruning, low sooty mould present, Moderate volume deadwood to ~5cmØ	
T68 Camphor Laurel *Cinnamomum camphora* Exotic tree, Environmental weed species **TCV Very Low**	30 45 7 6	Mature Fair Fair	3.6 2.4	**REMOVE** tree for construction and environmental weed status Tree base is within the construction footprint Spreading; Crown concentrated to S, High epicormic growth, Poor past pruning, Golden Rain Tree at base leaning to E, Moderate volume deadwood to ~5cmØ	
T69 Camphor Laurel *Cinnamomum camphora* Exotic tree, Environmental weed species **TCV Very Low**	19 24 7 5	Semi-Mature Fair Poor	2.3 1.8	**REMOVE** tree due to environmental weed status NA Spreading; Multi-stemmed, Poor past pruning, Minor epicormic growth, Historic lopping and topping, crown lift and target avoidance pruning, Restricted by neighbouring trees, Low volume deadwood	

Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T70 Weeping Bottlebrush *Callistemon viminalis* Planted; Native ornamental and forest tree TCV Very Low	61 68 8 7	Over-Mature Poor Poor	7.3 2.8	REMOVE tree for construction and Poor health and condition Major TPZ encroachment 2m within SRZ from building construction Spreading; Multi-stemmed, Poor past pruning, Low crown foliage density, High mistletoe infestation, Moderate volume deadwood, Dead stem to the north	
T71 Camphor Laurel *Cinnamomum camphora* Exotic tree, Environmental weed species TCV Very Low	32 39 6 7	Semi-Mature Good Poor	3.8 2.3	REMOVE tree due to environmental weed status and ongoing health of adjacent Silky Oak (T72) NA Spreading; Multi-stemmed from near base, Moderate lean on Northern stem, Low volume deadwood, Competing with adjacent native Silky Oak (T72)	
T72 Silky Oak *Grevillea robusta* Planted; Native forest tree TCV High	83 91 11 8	Mature Good Fair	10.0 3.2	RETAIN tree, install TPZ fence, Project Arborist to advise on tree impact avoidance and minimisation; and monitor excavation works within TPZ Major 22% TPZ encroachment marginally inside the SRZ from building construction and lesser from cut earthworks and installation of stormwater infrastructure Upright; Multi-stemmed, Low volume deadwood to ~5cmØ	

Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T73 Mulberry Tree *Morus alba* Planted; exotic fruit tree, Environmental weed species **TCV Low**	 26 31 5 2	 Mature Poor Poor	 3.1 2.0	**REMOVE** tree for construction and environmental weed status Tree base is within the construction footprint Spreading; Multi-stemmed, Low crown foliage density, Slight lean to SW, Poor past pruning, Low crown foliage density, Low volume deadwood	
T74 Crepe Myrtle *Lagerstroemia indica* Planted; Exotic ornamental tree **TCV Moderate**	 19 26 3.5 5	 Mature Good Good	 2.3 1.9	**REMOVE** tree for construction Tree base is within the construction footprint Spreading; Multi-stemmed, Exotic Golden Rain Tree growing in middle, Low volume deadwood,	
T75 - T77 Crepe Myrtle *Lagerstroemia indica* Planted; Exotic ornamental tree **TCV Moderate**	 *Average* 11 15 3.5 1	 Semi- Mature Good Good	 2.0 1,5	**REMOVE** trees for construction T75 & T76 tree bases are entirely within the construction footprint. T77 has a Major TPZ encroachment 0.4m within the SRZ from building construction Spreading; Multi-stemmed, Low volume deadwood, Minimum SRZ and TPZ under AS4970	 

Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T78 A Citrus *Citrus sp.* Planted; exotic fruit tree, **TCV Moderate**	11 14 2 4	Mature Good Good	2.0 1.5	**RETAIN tree**, install TPZ fence, Project Arborist to advise on tree impact avoidance and minimisation; and monitor excavation works within TPZ Major 15% TPZ encroachment marginally inside SRZ from installation of stormwater drainage, also hot water system and building construction Spreading; Multi-stemmed, Root stock, Low volume deadwood, Minimum SRZ and TPZ under AS4970	
T79 -T80 Crepe Myrtle *Lagerstroemia indica* Planted; Exotic ornamental tree **TCV Moderate**	*Average* 29 34 4 5	Semi- Mature Good Good	3.5 2.1	**RETAIN trees**, install TPZ fence; Project Arborist to advise on tree impact avoidance and minimisation; and monitor excavation works within TPZ No substantial impact expected Spreading; Multi-stemmed, Low volume deadwood	
T81 Mango Tree *Mangifera indica* Planted; Exotic fruit tree **TCV Low**	37 43 6 8	Mature Poor Poor	4.4 2.3	**REMOVE** tree for construction Tree base is within the construction footprint Spreading; Multi-stemmed, Low crown foliage density, Moderate to high tip dieback, Moderate exotic Cat's Claw weed infestation in crown, High volume deadwood to ~5cmØ	

Tree Number & Identification Species Status and Values Tree Retention Values (TRVs)	DBH (cm) DARB (cm) Height & Spread (m)	Age Class Health Condition	TPZ (m) SRZ (m)	Recommendations[20] Nature of any AS4970 TPZ encroachment[21] Health & Condition Observations & Comments	Plates
T82 Riberry *Syzygium luehmannii* Planted; Native rainforest and ornamental tree **TCV High**	34 38 4 5	Mature Good Good	4.1 2.2	**RETAIN** tree, install TPZ fence; Project Arborist to advise on tree impact avoidance and minimisation; and monitor excavation works within TPZ Major 11% TPZ encroachment outside SRZ from installation of stormwater drainage, also hot water system and building construction Spreading; Multi-stemmed, Pseudo-Co-dominant stems with U-shaped union at base, Epiphytic orchids present, Low volume deadwood	

Figure 1. Tree removal, tree retention and tree protection plan drawing, refer to Table 1.