

arboricultural impact assessment report

AIA-01

Revision A, Issued for SSDA
26 June, 2024



PROJECT

SummitCare – Jamisontown

366 Jamison Road
Jamisontown, NSW, 2750

CLIENT / PRINCIPAL

SummitCare

c/o - Centurion Project Management
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Acknowledgements & Qualifications

This document has been prepared by Arterra Design Pty Ltd, using the expertise of our in-house (AQF Level 5), consulting arborist, Robert Smart.

Robert Smart is a member of the International Society of Arboriculture (ISA), an accredited member of the Institute of Australian Consulting Arboriculturists (IACA), a Registered Consulting Arborist with Arboriculture Australia (AA) and a licenced Quantified Tree Risk Assessment (QTRA) practitioner. Robert Smart has over 25 years' experience in assessing and managing trees in complex development sites. Robert is also a Registered Landscape Architect with over 30 years' experience.



Disclaimer

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i EXECUTIVE SUMMARY

This report supports a State Significant Development Application (SSDA) submitted to consent authority for the redevelopment of SummitCare Jamisontown, Residential Care (RC) at 366 Jamison Road, Jamisontown (the site) on behalf of SummitCare (the client). Arterra was engaged by Centurion Project Management (CPM) on behalf of the client to undertake an arboricultural assessment of the site and prepare the relevant reports and plans to help guide the re-development.

A detailed tree assessment was first completed on 1 October 2021 then updated on 7 December 2023. A tree impact assessment schedule was completed for the trees on and immediately adjacent the site. (Refer to Appendix 4.2 – Tree Impact Assessment Schedule). The trees were photographed, given a unique identification number and plotted onto a scaled survey base plan for referencing and identification throughout the report and for future discussions and co-ordination with contractors and other stakeholders.

A total of **109** trees were assessed for this report. These are the trees that would be considered 'trees' under Penrith Council's DCP, having a height of 3.5 metres or more or a trunk diameter exceeding 100mm at 1400mm above ground level. Very small trees, shrubs (<3.5m) and dead trees have typically not been included in the assessment. Following is a summary of the trees on the site and some relevant factors regarding the development.

Table i – Tree Retention Values and Tree Disposition

Tree Retention Values	Total Trees	Trees Recommended for Removal	Trees Retained
High	nil	nil	nil
Moderate	21	9	12
Low	63	61	2
Nil/Should Remove	25	25	nil
TOTAL	109	95	14

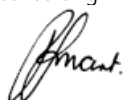
The following points are summarised from the impact assessment:

- There are **no trees** considered of **High** retention value on the site.
- **12 Moderate** value trees (57%) are being retained and protected.
- **95** trees are suggested for **removal** – Of the 95 trees proposed for removal:
 - **86** (91%) are rated with a Low or Nil/ Remove retention value – predominantly exotic, invasive and weed species,
 - These trees are in the footprint of the proposed works (construction and the extensive and required re-grading)

The works will result in major, sitewide level changes to raise the landscape levels to meet and match the elevated building entry levels required for flood mitigation. The majority of the site will also be excavated to accommodate the extensive basement beneath the new buildings. Most trees within the site require removal to facilitate the project.

The trees to be retained and protected are neighbouring trees and those on the periphery of the site or outside the areas that are most impacted by the proposed works. By retaining and protecting these trees within consolidated Tree Protection Areas, the proposed development will continue to maintain some mature screening from the surrounding houses, with the new buildings softened by the retained mature trees integrated within the proposed new landscape.

As with all aspects in the development and construction process, the tree related constraints have to be weighed up against many other relevant development opportunities and constraints. The retention of the trees on the site must also consider economic, social, environmental, construction and practical realities. This document has been prepared by Arterra Design Pty Ltd, using the expertise of our in-house consulting arborist (AQF Level 5), Robert Smart. Robert is a member of the International Society of Arboriculture - Australian Chapter and is also a Registered Consulting Arborist with Arboriculture Australia.



Robert Smart AAILA , ISA, AA

Director, Registered Landscape Architect (054),
Registered Consulting Arborist (1804).

1.0 INTRODUCTION

1.1 Background

This report supports a State Significant Development Application (SSDA) for the redevelopment of SummitCare Jamisontown, Residential Aged Care (RAC) at 366 Jamison Road, Jamisontown (the site) on behalf of SummitCare (the client). Arterra was engaged by Centurion Project Management (CPM) on behalf of the client to undertake an arboricultural assessment of the site and prepare the relevant reports and plans to help guide the re-development. This assessment was restricted to the trees within, or immediately adjacent to the site that were likely to be impacted by the proposed works. Other trees outside the extent of the proposed works and unlikely to be impacted, are not addressed as part of this report.

The client proposes the demolition and redevelopment of the existing RAC to create a modern, architectural aged care precinct that promotes ageing in place. The new development will 93 independent living apartments (ILAs) and 5 residential care rooms (RACF) with integrated administrative and communal facilities.

The site currently has several existing buildings, car parking, scattered established trees, pathways and other infrastructure throughout. All existing buildings and associated infrastructure are to be demolished and the site regraded to raise the new buildings above flood levels. The surrounding site will be regraded so the new landscape treatment will meet and match the raised levels of the new buildings. It is likely that the construction work for the extensive basement and new buildings, together with the site-wide re-grading will have a range of impacts on the surrounding established trees.

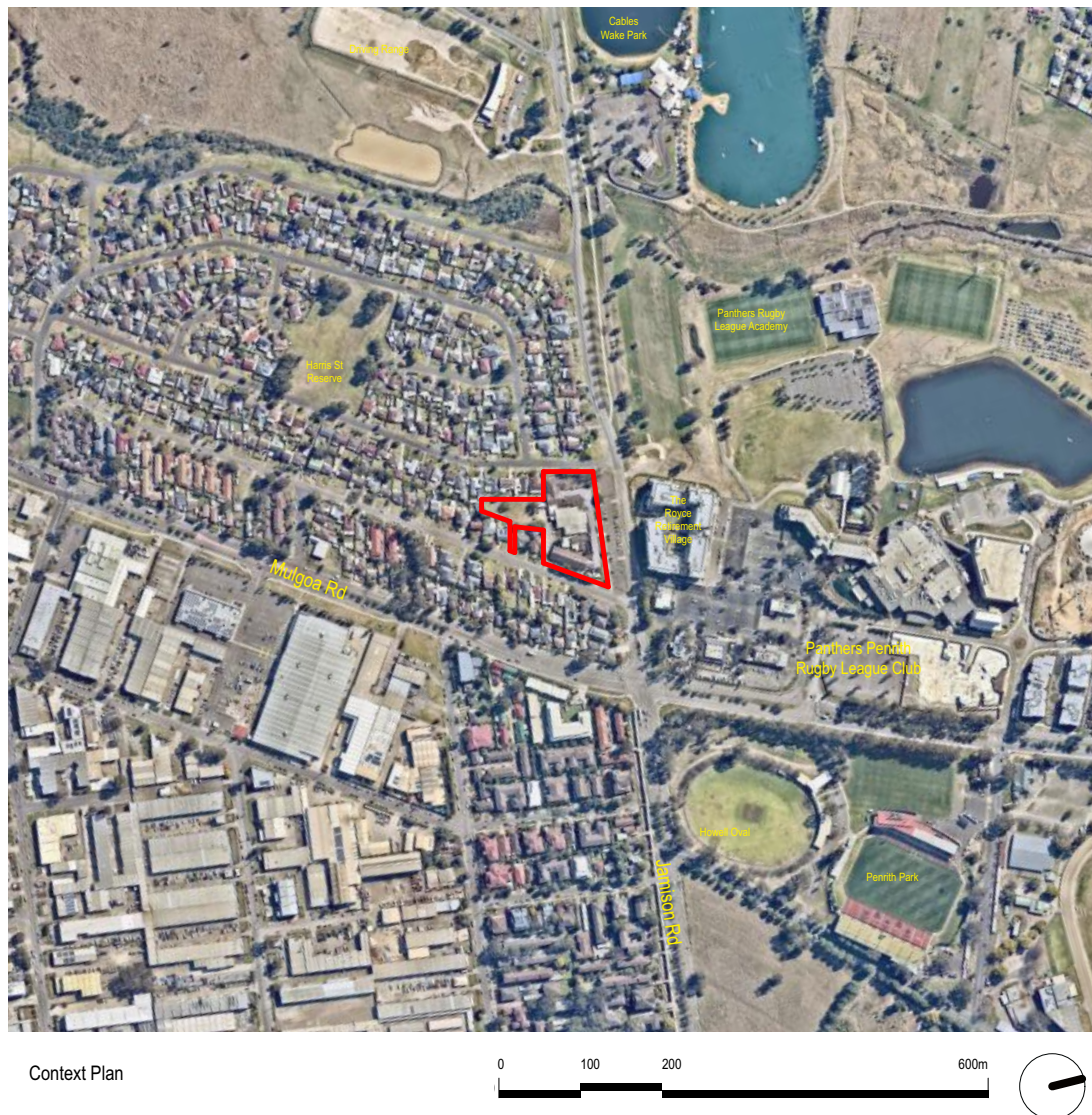


Figure 1 – Site context – approximate site outline shown in red. (Source: Nearmap/ Arterra)

This impact assessment has been prepared to identify the trees to be retained and removed as part of the development and so that the client can take a proactive approach to managing the trees to be retained by implementing appropriate measures to manage and protect them during the construction.



Figure 2 – Typical photo of the site and conditions. View from McNaughton St and Jamison Rd intersection, west towards the Nepean River. (Photo: Arterra 15/11/23)



Figure 3 – Typical site and conditions. Privet and Photinia along the McNaughton Street boundary (Photo: Arterra 14/10/21)

1.2 Aims of This Report

The aim of this report is to assess the impact of the new development on the existing trees within the site. Specifically, the report aims to:-

- Assess the health and condition of the trees;
- Accurately record information relevant to the existing trees;
- Assess the significance, Safe Useful Life Expectancy (SULE) and retention values of the existing trees;
- Provide clear recommendations as to which trees should ideally be retained and protected;
- Identify the proposed Tree Protection Zones (TPZ) of the tree being retained and identify and assess the likely arboricultural impacts of the development on the trees; and
- Provide preliminary advice on the tree protection measures that will be required during construction to ensure the trees are successfully retained.

The following limitations apply to this report's use: -

1. Plans: All plans are based on information provided to Arterra. They should only be used relating to tree issues and are not suitable for any other purpose.
2. Notification of proposed alterations to disturbance within TPZs: Arterra must be clearly notified of any proposed alterations to the plans or additional disturbance in TPZs, so that we can advise on the implications before any work is undertaken.

1.3 Relevant Controls or Legislation

The Penrith City Council DCP 2014 – **Section C2 – Vegetation Management** declares trees and other vegetation under Part 3 of State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 (the Vegetation SEPP). While some areas of Penrith are zoned rural, for the purposes of State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 all land within the City of Penrith is considered as a non-rural area of the State.

The following is an extract from the PCC DCP 2014, **Section C2 – Vegetation Management**:

D. Controls

1. Approval Requirements

Vegetation means "a tree or other vegetation, whether or not it is native vegetation." Native Vegetation has the same meaning as defined in Part 5A of the Local Land Services Act 2013.

General Approval Requirements

a) A person must not remove, clear, prune or otherwise cause harm to any tree or other vegetation prescribed by this Plan without an appropriate approval. This includes the following activities in relation to trees and other vegetation which are not permitted without approval:

- Removal by cutting down, clearing, under scrubbing, thinning or any other method
- Removal of bark around part of or full circumference of a tree trunk (i.e. ring-barking)
- Cutting off the top of a tree to reduce its height (i.e. topping)
- Cutting off branches on one side of a tree (i.e. lopping)
- Cutting off or pruning branches greater than 50mm diameter
- Cutting, removal or otherwise damaging the roots or root system
- Poisoning or any other activity which causes harm or injury

2. Prescribed Vegetation

a) Prescribed trees or other vegetation covered by this section of the Plan includes:

- I. Any native tree (both living and dead) or other vegetation that is on land zoned E2 Environmental Conservation in the Penrith LEP 2010 Land Zoning Map, or on natural resources sensitive land identified in the Penrith LEP 2010 Natural Resources Sensitivity Land Map.
- II. In all areas, any native vegetation community including remnant native vegetation.
- III. In all areas, any tree or other vegetation whether native or introduced having a height of 3.5 metres or more or a trunk diameter exceeding 100mm at 1400mm above ground level.
- IV. Any tree or other vegetation that is, or forms part of, a heritage item or is within a heritage conservation area.
- V. Any tree or other vegetation that is culturally, socially or biologically significant or a unique specimen and has been formally recognised by an appropriate government authority (e.g. a significant tree or vegetation register).

3. Vegetation Permit Exemptions

This clause sets out a range of exemptions to the requirement for a vegetation permit and includes the following items that are relevant to this project:

- i) a tree that is dead and is not habitat for native fauna;
- v) an exempt tree species published by Council (refer to website)
Relevant examples include:
 - Cotoneaster sp.
 - Celtis sinensis
 - Nerium oleander
 - Ligustrum spp.
 - Prunus spp. and cvs.
- xi) a tree or other vegetation that produce an edible fruit, excluding Australian natives and ornamental fruit trees

- xii) a tree or other vegetation where works are carried out in accordance with a Development Consent, or approval issued by the Native Vegetation Panel
- xvi) a tree or other vegetation declared as weeds and covered by a Biosecurity Priority Weeds Plan prepared under the Biosecurity Act 2015 and Biosecurity Regulation 2017 (see the Department of Primary Industries and Hawkesbury River County Council websites)

1.4 Conduct and Author Qualifications

Given the above stated aims of this report, as author of this report, Arterra confirms that Robert Smart is a suitably qualified (AQF Level 5) Consulting Arborist, to provide comment and the required arboricultural advice pertaining to these matters. Robert Smart is a member of the International Society of Arboriculture - Australian Chapter, a Registered Consulting Arborist with Arboriculture Australia and a licenced Quantified Tree Risk Assessment practitioner. Robert Smart has more than 25 years' experience in managing trees in complex development sites.

Furthermore, Mr Smart confirms that he has read and agrees to be bound by the NSW Uniform Civil Procedure Rules 2005, Part 31 Division 2 Provisions, Schedule 7 - Expert witness code of conduct.

Arterra provides specialist consulting arborist services only and does not provide any physical tree services such as climbing, pruning, removal, root investigations or root pruning. Our advice is based on impartial professional assessment only, as we do not derive any financial benefit from specifying pruning or other physical services. We will not specify any such activities unless we determine them to be essential to ongoing tree health or stability.

1.5 Key Definitions and Abbreviations

The following abbreviations are used throughout this report.

"TPZ" = Tree Protect Zone

This is the area as defined by AS 4970 – "Protection of Trees on Development Sites" and means the typical minimum area above and below ground at a given distance from the trunk to provide for protection of the tree. Most importantly it represents the root zone required to be left undisturbed to maintain a healthy and viable tree. Please note, that roots will usually extend well beyond this zone, so this represents the minimum remaining root zone required, assuming all others are lost or damaged due to construction. It is typically calculated as a circle centred on the trunk unless existing site conditions can be assessed and indicate otherwise.

"TPA" = Tree Protection Area

Although based on the nominal TPZ described above, this is a consolidated and often simplified area to be applied during construction for tree protection. This area is often shaped to deal with practical construction realities whilst maintaining appropriate protection of the nominal TPZ (i.e fencing a nominal circular TPZ can be difficult and impractical. TPA areas often define a square or rectangular shape which includes the area calculated as the nominal TPZ). It often amalgamates and simplifies tree protection zones, particularly when they are overlapping and can be amended for items such as buildings, walls, pathways and existing fences. It also protects areas that are contiguous to the calculated nominal TPZ, which are to be applied when the nominal TPZ is not completely circular due to structures potentially impeding root growth, or when there is a necessary incursion calculated within the TPZ.

"SRZ" = Structural Root Zone

This is the area as defined by AS 4970 – "Protection of Trees on Development Sites" and means the area immediately around the base of the tree at a given distance from the trunk within which the woody roots and soil cohesion are considered vital to the structural stability of the tree. Disturbance, damage or removal of soil and roots within this area will typically render the tree unstable and require its removal. It is typically calculated as a circle, centred on the trunk, unless existing site conditions can be assessed and indicate otherwise.

DBH = Diameter at Breast Height

This is the diameter of the trunk measured at 1.4m above ground level.

DGL = Diameter at Ground Level

This is the diameter of the trunk measured at ground level, but just above any root flare.

Non-Destructive Digging

This is the process of safely excavating the ground surface to minimise the risk of damage to existing tree roots. This method is used to map and locate existing tree roots within the TPZ and/or SRZ and helps to guide and inform the installation and/or construction of proposed services and/or structures which are in close proximity to retained trees. This is often achieved through hand digging using a shovel, trowel and/or fork with care not to damage the bark and wood of any roots. Compressed air (air spade) or water vacuum extraction are appropriate non-destructive alternatives to hand digging. Much reduced pressures may be required to avoid stripping root bark and

other live tissue. When this work occurs within a TPZ and/or SRZ of a tree to be retained, a qualified consulting arborist should always be present to monitor the works.

Inclusion or Included Bark Branch Union

Growth of bark at the interface of two or more branches on the inner side of the branch union which is unable to be lost from the tree and accumulates, or is trapped, between the acutely divergent branches. This can form a weakened branch union in some species.

Epicormic Growth

Juvenile shoots produced along branches or trunks from dormant or latent buds concealed beneath bark. Production can be stimulated by fire, pruning, wounding or root damage and when excessively produced may also be an indicator of tree stress or decline.

1.6 Documents Reviewed

Plans and documents referenced and reviewed as part of this tree impact assessment were:-

Pinnacle Land Surveyors:-

- Detail and Levels Survey of 366 Jamison Road (Lot 10, DP804382) Issued 6 April 2021)

Jackson Teece Architecture:-

- Architectural Plan Set for SSDA Rev P5 Dated 15 May 2024

TTW:-

- Civil Stormwater - Site Plan Drawings Rev X , Dated 24 June 2024

Arterra Design Pty Ltd

- Landscape Concept Plan Set (Drawings L-SD-00 to L-SD-16) dated 24 June 2024

Based on the proposed draft servicing and infrastructure assessments and the above architectural and engineering plans we are satisfied that the proposed servicing for the development can be achieved and designed to avoid major trenching or disturbance to the existing trees proposed to be retained. We understand that no new services are proposed to be extended into or through the proposed TPAs and any existing services that are no longer required will be capped off and left in situ if located under trees to be retained.

1.7 Site Location, History and Context

The site is in Jamisontown, within the Penrith City Council LGA, approximately 1.6km southwest from Penrith City Centre and 1.3km east of the Nepean River. The 1943 aerial image of the site shows it cleared for agriculture which remained so until the mid to late 1960s. The 1970 aerial shows the first significant building on the site. Development of the site continued through the 1980s and 1990s to achieve the current building configuration.

The site is currently operated by SummitCare as an aged care facility. It is bordered by Jamison Road to the north, Harris Street to the west, McNaughton Street to the east and low density residential development to the south.

Being situated on Jamison Road, the site falls within the "Riverlink Precinct" as defined in Section E13 Riverlink Precinct in the Penrith DCP 2014. The Precinct has the broad goal of creating a living, entertainment and working hub to link the City Centre to the Nepean River. It seeks to create a cohesive and well-connected precinct by implementing a number of key actions. Those with direct relevance to the site include:

- Incorporating sustainability best practice
- Connecting Riverlink pathways with the Great River Walk
- Encouraging views of the Blue Mountains from the public domain
- Encouraging design excellence and
- Improving connectivity through the Precinct.

1.8 Site Ownership and Zoning

The site is owned by SummitCare. It is identified as Lot 10 in DP 804382 with an approximate land area of 11,260m². The site is zoned part R2 Low Density Residential and Part R3 Medium Density Residential, under Penrith City Council LEP 2010 Land Zoning Map:
(https://eplanningprod.blob.core.windows.net/pdfmaps/6350_COM_LZN_006_020_20210301.pdf) accessed 17 November 2023.

1.9 Assessment Methodology

On the 1 October 2021 and 7 December 2023, Robert Smart of Arterra attended the site to undertake a detailed assessment of the trees within and immediately adjacent to the site and likely to be impacted by the proposed development. The trees' health and condition were assessed via a visual inspection undertaken from the ground

only. Requisite tree data (including DBH, DGL, height & canopy spread, condition & proximity to services) were recorded using an Apple iPad and Filemaker Pro database.

The basic health and condition criteria that were inspected for each tree is summarised as follows: -

- Tree size, broad age-class and general balance of the tree;
- Above ground obstructions;
- Evidence of recent site disturbance;
- Canopy foliage size, colour and density;
- Dieback and epicormic growth;
- Trunk or branch wounding, branch tear outs and pruning history;
- Structural defects such as any co-dominant stems, cracks, splits, included bark, decay and
- Pests and disease evidence or occurrence.

The trees were photographed, given a unique identification number and plotted onto a scaled base plan for referencing and identification throughout the report and for future discussions and co-ordination. The photographic record of trees and general site context was taken using the inbuilt Apple iPad camera and a Panasonic Lumix TZ220 digital camera. Files have been resized, dated, named and filed in accordance with normal office procedures and protocols. No other image manipulation has been undertaken.

Tree trunk diameters were measured using a metric diameter tape measure. Tree heights were measured using the two-point clinometer function of a Nikon Forestry Pro laser range finder. Canopy spreads were estimated by pacing out distances along the cardinal axis of the canopy and cross-referencing to survey information and aerial photos. Canopy position and extents were then altered on the plans to more accurately portray the canopy extent and position.

No specialised equipment or methods were employed to test for the extent of decay in any of the trees, apart from a nylon 'sounding' mallet. No plant samples were analysed or independently tested to verify or formally identify any pests or diseases.

Desktop Review and Research

Digital AutoCAD files of the proposed works were imported into Arterra's standard CAD software (ArchiCAD v24) and superimposed over the tree and site survey information. The extent of site disturbance was analysed for the proposed building works, landscaping, services and other site grading. An assessment was made of the likely extent of impacts on the TPZs, taking into account the likely construction impacts depending on the type of work being undertaken (ie: cut or fill, suspended slabs, decks, service trenches). Various area calculations and measurements were made in the CAD software of the likely incursions into the TPZs or SRZs.

Recent aerial photography data was obtained from the Nearmap website with aerial photos of the site dating from November 2023 imported into the above software for cross checking and assessment. (<http://www.nearmap.com/> accessed 12/11/2023)

Climatic data was obtained from the Bureau of Meteorology using statistics from Orchard Hills weather station which is approximately 5km northwest of the site. (<http://www.bom.gov.au/climate/data/> accessed 11/10/2021)

1.10 Pre-Development Tree Assessment – Tree Retention Values

The information gathered in the field was tabulated and the retention value assessed using a combination of techniques commonly used and recognised in the arboricultural industry. The tree life expectancy was established using the Safe Useful Life Expectance (SULE) system. A brief summary of these systems is provided below.

SULE

This is a system developed by Jeremy Barrell in 1993 that determines the time a tree may be expected to be retained based on its age, health, condition, safety and location. This is then moderated by the economics of maintenance or other costs of retaining the tree. A long SULE means the tree is presently expected to live longer than 40 years with minimal intervention and cost. A short SULE indicates a tree that is not expected to live longer than 5 years or may require substantial intervention or costs to retain it.

RETENTION VALUES

The proposed retention value of the trees was determined based on a considered combination of the size, age, condition and suitability of the tree. Each tree was then ranked according to one of 4 retention categories.

1. **"High" Retention Value** – these are trees that are typically in good or very good condition, large and visually prominent, historically or environmentally important. They may also be lesser quality trees, but part of an important grouping of trees. They should represent a serious physical constraint to the development and their removal avoided where possible and feasible.

2. **“Moderate” Retention Value** – these are trees that are in good to reasonable condition and should be retained where possible and feasible to do so. They may also be lesser trees, but part of an important grouping of trees and therefore warrant retention based on the group’s value.
3. **“Low” Retention Value** – these are trees that are in poor condition or have structural defects, are particularly small or commonplace, are not historically, environmentally or socially significant and should not be considered as a constraint to the development. They could be retained only if they are not likely to be impacted by, or constrain potential desirable, development outcomes.
4. **“Should Remove” / Nil Retention Value** – these are trees that are in very poor health, exhibit poor form, or have serious structural defects, are considered weeds or combination of all these, and therefore should be considered for removal regardless of any development.

Consideration has also been given to the relationship of the trees to one another and their proximity to the likely development areas on the site. For example, trees that are part of a closely spaced group, or are likely to be significantly misshapen or unstable with the removal of surrounding trees and structures are considered with these factors in mind.

1.11 Tree Assessment – Tree Protection Zones

In order to ensure the long-term survival and growth of any tree to be retained on the development site, a suitable area is required to be protected around the tree. This area should typically be as large as possible. It should also take into consideration: -

- The size and age of the tree;
- Above and below ground properties;
- The health and condition of the tree;
- The species of tree and its tolerance to disturbance;
- Soil conditions, type, depth and site hydrology and
- Site specific conditions and any existing obstructions to root development

The Tree Protection Zones (TPZs) have been calculated using the formula and criteria outlined in AS 4970-2009 Protection of Trees on Development Sites. In summary the standard applies the calculation for the radius of the TPZ as $12 \times$ (the tree trunk diameter (in metres) calculated at breast height (DBH)). DBH is taken at 1.4m above ground level.

A maximum TPZ radius will be 15m (unless crown protection is required) while the minimum TPZ radius shall be 2m. The TPZ is typically assumed to be radial and centred on the centre of the tree’s trunk unless other site factors or tree canopy size and location dictate an adjustment. Encroachments of up to 10% of the area may be accepted within the TPZ as long as it is outside of the Structural Root Zone (SRZ). This is known as a “minor encroachment”. Encroachments greater than this, known as “major encroachments” will only be accepted with additional specific evidence that the tree will not be unduly impacted.

Whenever an encroachment is made into a TPZ, a suitable compensation should be made elsewhere and physically contiguous to the remaining TPZ.

The Structural Root Zone (SRZ) is the area defined as the minimum area required to retain the structural stability of the tree. The formula for calculating the SRZ is outlined in AS 4970 Section 3.3.5. No encroachment into the SRZ shall typically be allowed.

2.0 KEY FINDINGS & OBSERVATIONS

2.1 The Proposed Development

The redevelopment of the site, in summary involves the following:

- Demolition of the existing buildings and surrounding infrastructure,
- Regrading of the site and excavation for extensive basement car parking and back of house infrastructure.
- Extension and augmentation of existing services and infrastructure as required.
- Construction of the new buildings including ILUs, RAC and administration facilities.
- Hard & soft landscaping, including new vehicular access, pedestrian circulation pathways and planting.

The proposed works will result in a major site disturbance which may have significant impacts on the trees within and adjacent to the site.

The proposed development will involve:-

- Major demolition works;
- Use of large scale civil and earthmoving equipment;
- Access to and from the site with large trucks and construction plant;
- Major excavations;
- Large stockpiles of excavated material and demolition waste;
- Stockpiles/ storage of building materials;
- Regrading and filling of the existing surface levels;
- Trenching for services;
- Major building works involving concreting, painting and general construction;
- Use of large cranes;
- Parking for site personnel and deliveries;
- Paving and retaining walls and
- Landscaping.

Key Assumptions:-

- All excavations and demolition work within the defined TPAs shall be done using hand tools and or other non-destructive methods and only under the oversight of an appropriately qualified consulting arborist. Roots of 40mm diameter or greater are not to be cut or damaged unless specifically approved by the supervising consulting arborist.
- Pedestrian paths within the TPAs shall be constructed at or above the existing surface levels to minimise surface root impacts.
- Temporary battering or grading is not to be applied in the designated TPAs.
- Despite the above, the line of disturbance outside of the building line has been typically estimated at a minimum of 1.0m from the face of the building to allow for provision of water proofing, services, access and scaffolding around the building during construction.
- All services for the building will enter and exit from either Jamison Road, McNaughton Street or Harris Street through existing hardstand areas and pathways and will typically be clear of any TPAs.
- All construction access and deliveries are to be made via existing site access from surrounding streets. Concrete will typically be pumped and will not require truck movements through TPAs.
- Where no spot levels or proposed contours are indicated it is assumed that the existing surface levels are retained.
- It is assumed that any new landscape grading within the nominated tree protection areas will be minimal and installed using high quality, imported manufactured topsoil. No cultivation of the existing soils shall be undertaken within the defined TPA.
- That retaining wall footings, when near trees, will be oriented away from the trees (ie: footings extending to the front of the face of the wall, away from the trees).
- Demolition and or excavations within any defined TPA will be under the supervision and direction of the project arborist.

2.2 Tree Assessment - General

A total of **109** trees were assessed for this report and were generally determined to be in fair to good health. They are predominantly located on the perimeter of the site, being along the Harris Street, McNaughton Street and Jamison Road frontages. Detailed information on each tree including heights, trunk diameters, canopy spreads, age classes and condition are all provided in Appendix 4.2 - 'Tree Impact Assessment Schedule'.

The following summarises the trees on and adjacent the site together with some relevant factors regarding the redevelopment. These are trees that would be considered 'prescribed trees' under the Council's DCP. Small trees, shrubs (<3.5m) and dead trees have typically not been included in our assessment.

Table 1 – Tree Retention Values

Tree Retention Values	Total Trees	Trees Recommended for Removal	Trees Retained
High	nil	nil	nil
Moderate	21	9	12
Low	63	61	2
Nil/Should Remove	25	25	nil
TOTAL	109	95	14

The following points are summarised from the impact assessment:

- There are **no trees** considered of **High** retention value on the site.
- **12 Moderate** value trees (57%) are being retained and protected.
- **95** trees are suggested for **removal** –Of the 95 trees proposed for removal:
 - **86** (91%) are rated with a Low or Nil/ Remove retention value – predominantly exotic, invasive and weed species,
 - All these trees are in the footprint of the proposed works (construction and extensive re-grading)



Figure 4 – View looking west from the Jamison Road carpark highlighting the 5 existing trees in the northwest corner of the site which are of moderate retention value. T66 (the tree furthest to the north) is proposed to be retained and protected. (Photo: Arterra 07 December 2023)

2.3 History and Significance of the Trees

The following aerial imagery shows the site from 1966 through to 1990. The images show the site was cleared farmland in the 1960s and 70s. These images illustrate that all trees on the site are either planted or self-sown and none are more than 50 years old.

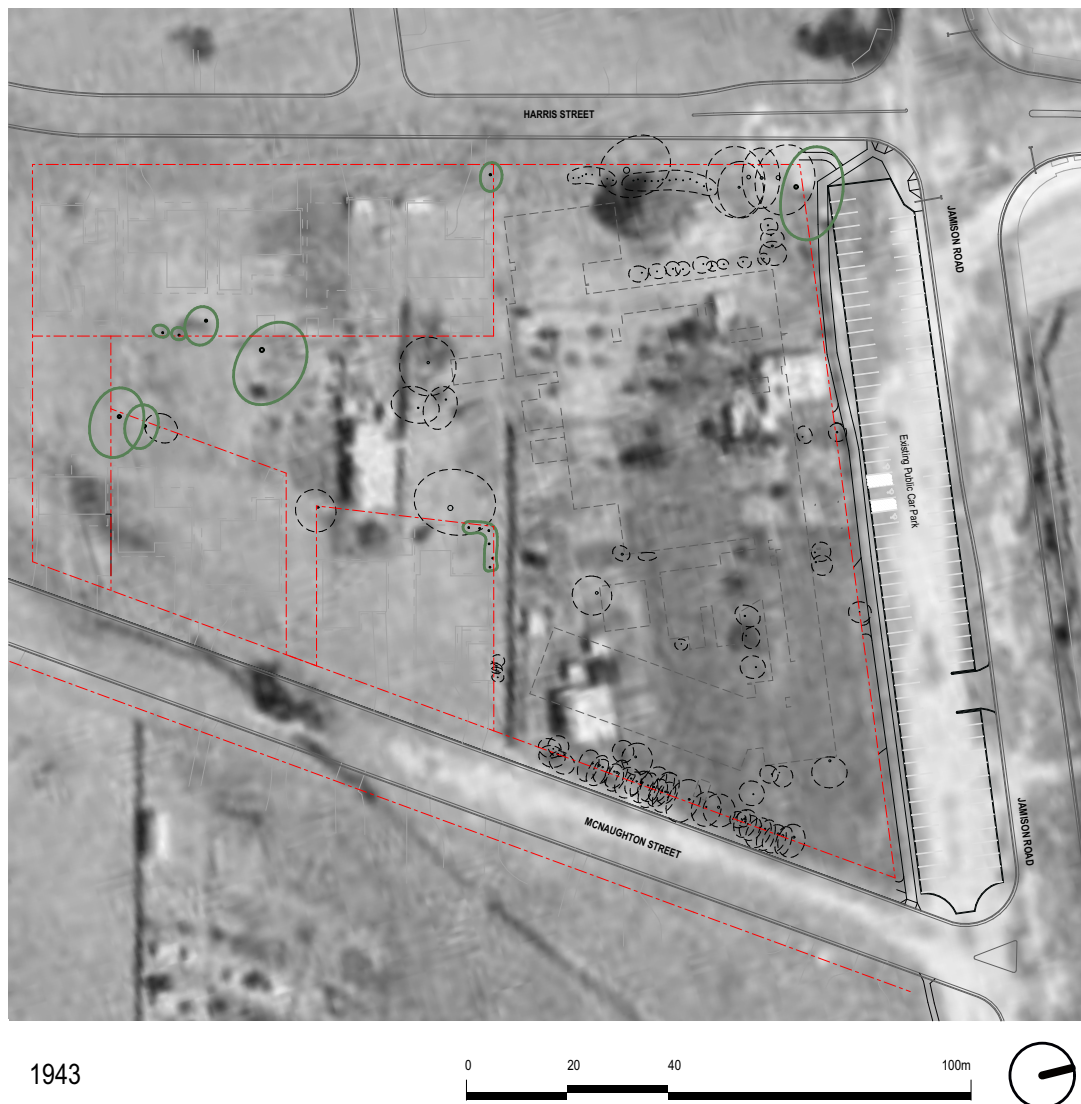


Figure 5 – Site context – Aerial photo from 1943 showing the site as cleared farmland. The site remained unchanged at least until 1965. (Source: NSW Spatial Services)

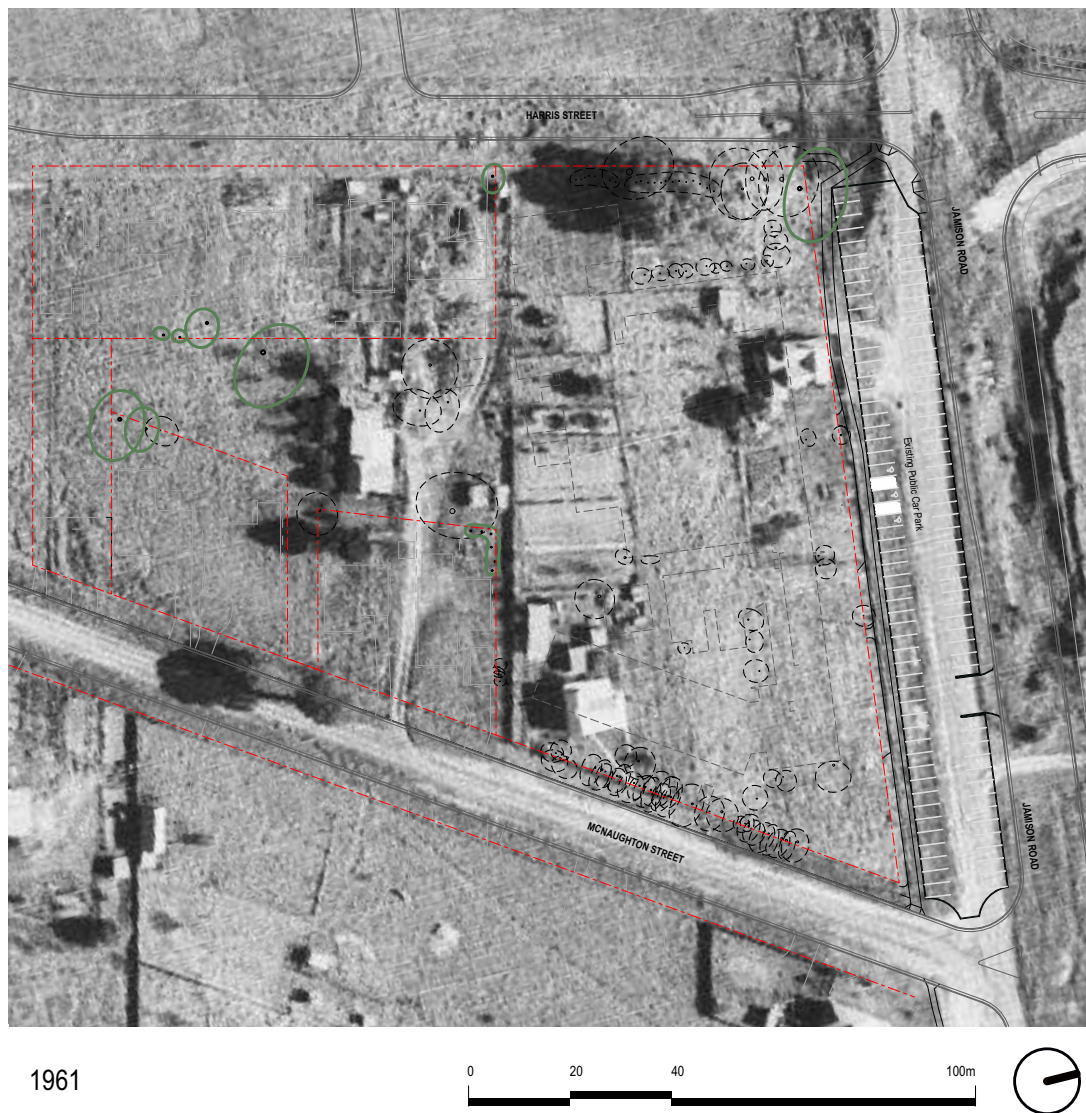


Figure 6 – Site context – 1961 Aerial photo showing site largely undeveloped with a few scattered residential dwellings. (Source: NSW Spatial Services)

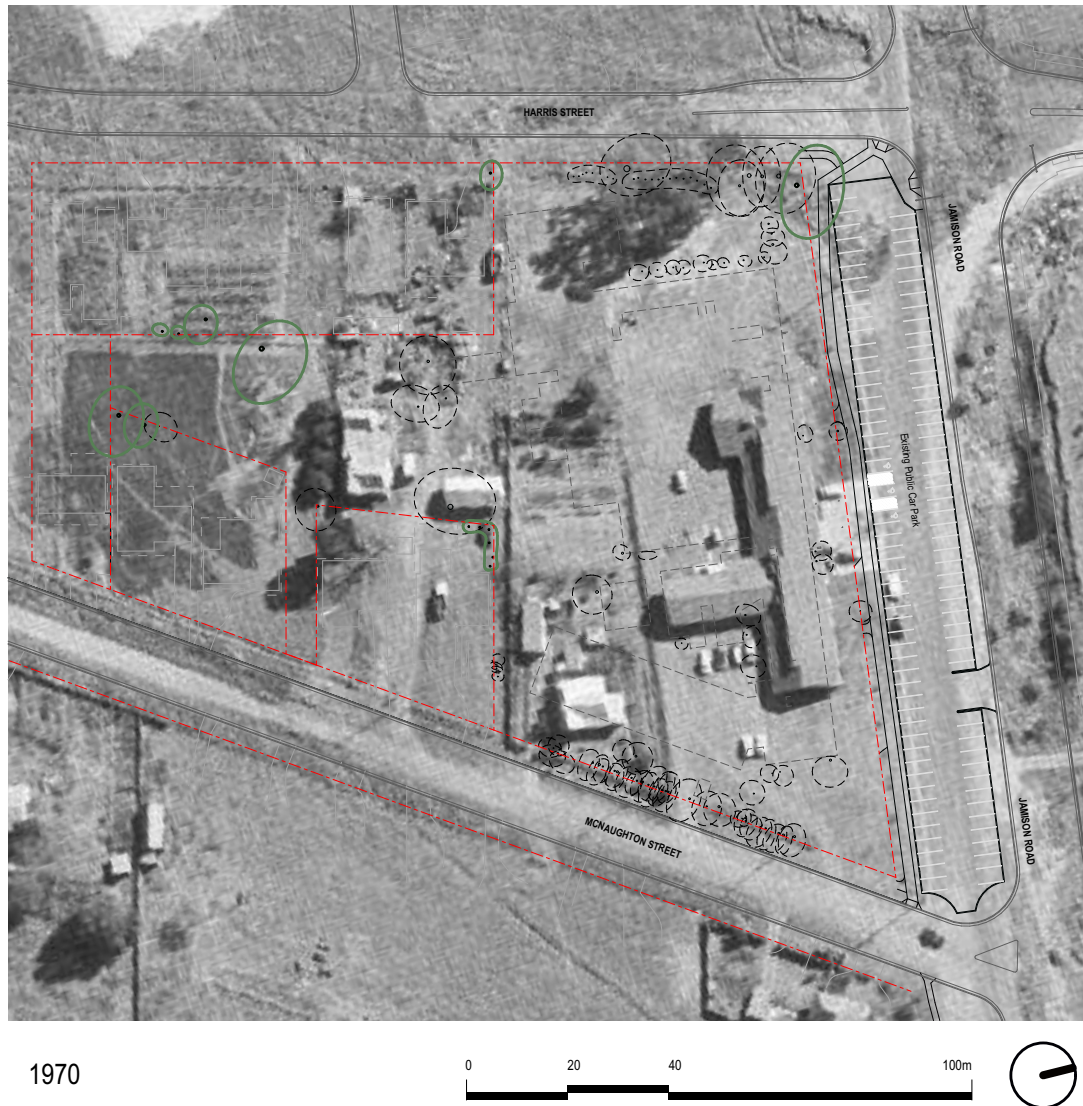


Figure 7 – Site context – 1970 Aerial photo showing the first building on the site. (Source: NSW Spatial Services)



1978

Figure 8 – Site context – 1978 Aerial photo shows continued expansion of facilities with some small trees visible. (Source: NSW Spatial Services)



Figure 9 – Site context – 1986 Aerial photo shows continued expansion of facilities on the site with some more established trees visible.
(Source: NSW Spatial Services)



2005



Figure 10 – Site context – 2005 Aerial photo shows current configuration of buildings with more established trees visible. (Source: NSW Spatial Services)



2009



Figure 11 – Site context – 2009 Aerial photo shows current site configuration. (Source: NearMap)

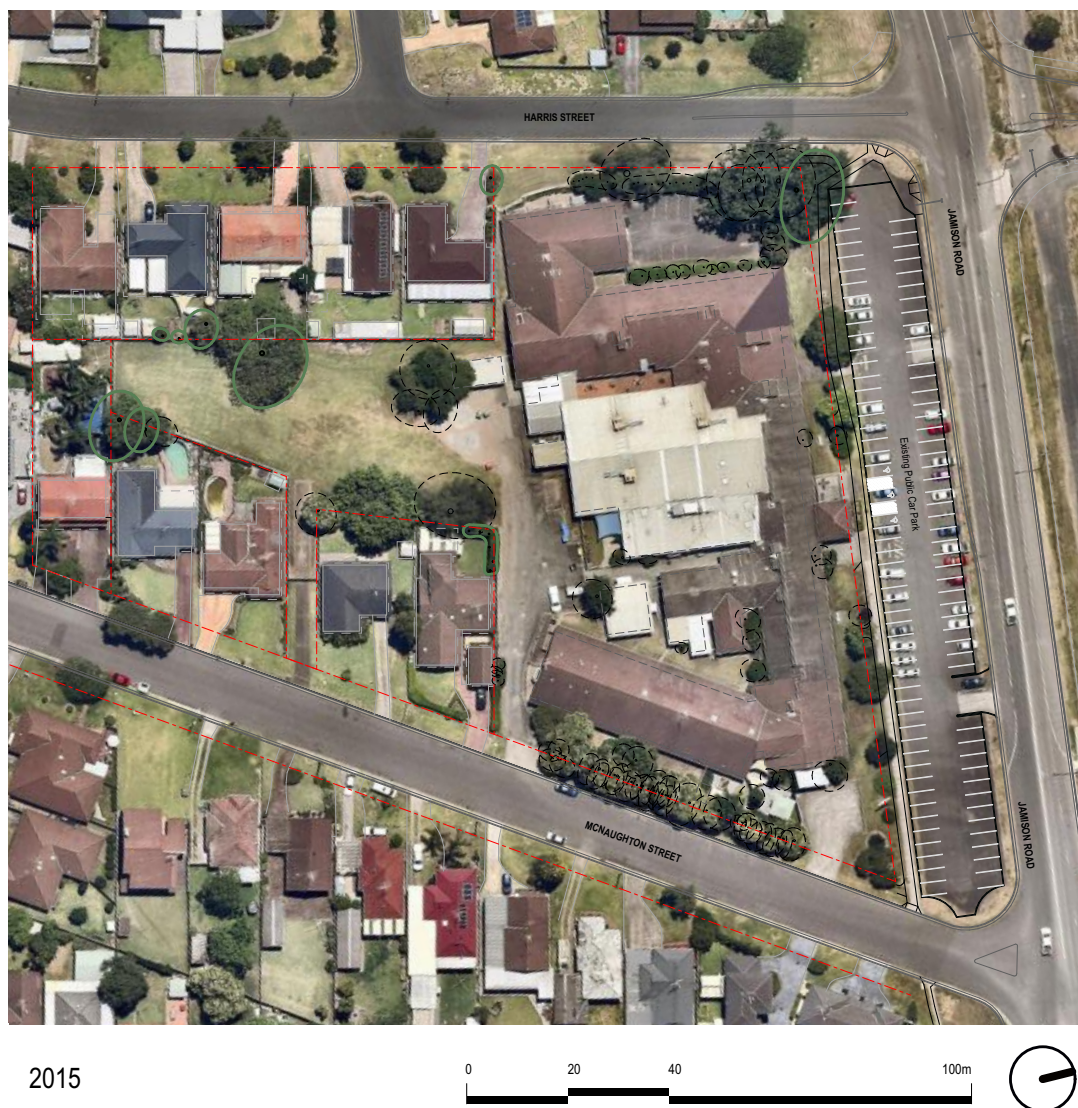


Figure 12 – Site context – 2015 Aerial photo shows current site configuration. (Source: NearMap)

2.4 Climate and Microclimate

Jamisontown is in Sydney's western suburbs and shares the general climate of this region with moderate temperatures, good rainfall and minimal climatic and weather extremes. It is typically described as a temperate climate with hot to warm summers and cool winters, with relatively uniform rainfalls greater than 800mm / year. There is no distinct dry season.

The site is approximately 5.0km from the Bureau of Meteorology automated weather station at Orchard Hills. It has an average annual rainfall of 822mm, fairly evenly spread across the year but with a slightly drier period during the late winter and early spring months. The highest rainfall period is usually February with an average of 110mm and the driest month being July with an average of 36mm.

Maximum average daily temperatures range from 28.5°C in December to 17.2°C in July. The minimum average daily temperatures range from a high of 17.4°C in February down to lows of 5.3°C in July.

The primary wind direction is from the south or east in the afternoons while it is predominantly from the south and south-west in the mornings. (Source: Australian Bureau of Meteorology)

The strongest winds (>40km/h) are normally experienced from the west or south-westerly directions and later in the day. There are no prominent microclimatic influences over the site.

2.5 Soils and Landform

The site is in an area mapped as forming part of the Richmond soil landscape, characterised as flat (slopes <1%) with areas of local relief to 3m and native tree cover almost completely cleared. Soil structure is described as, poorly structured orange to red clay loams, clays and sand, subject to localised flooding and localised seasonal waterlogging. The general fertility of this soil landscape is low to very low. The materials have very low CEC, low nutrient storage capacity, and high levels of aluminium, which gives a high potential for toxicity should the pH become lower.

The soils will provide little impediment to tree retention and landscaping. The key element to consider is the clay content of the subsoils that may lead to excessive compaction of the soils should they be trafficked when moist. Soil compaction can have serious impacts to tree roots and will need to be avoided around any trees to be retained.

2.6 Tree Biology and Tree Care Basics

Trees are dynamic living organisms. Trees can be very susceptible to damage, stress and declining rapidly if overly impacted by construction. Trees take decades to grow but can be injured and killed in a very short time frame. This is particularly due to the irreparable damage to the often shallow, extensive and unseen root systems. It is rarely possible to repair a stressed or damaged tree after the damage has occurred. Proper protection is the key to minimising construction related impacts. Severing of roots within the Structural Root Zone (SRZ) can also lead to potentially unsafe instability of the tree as a structure.

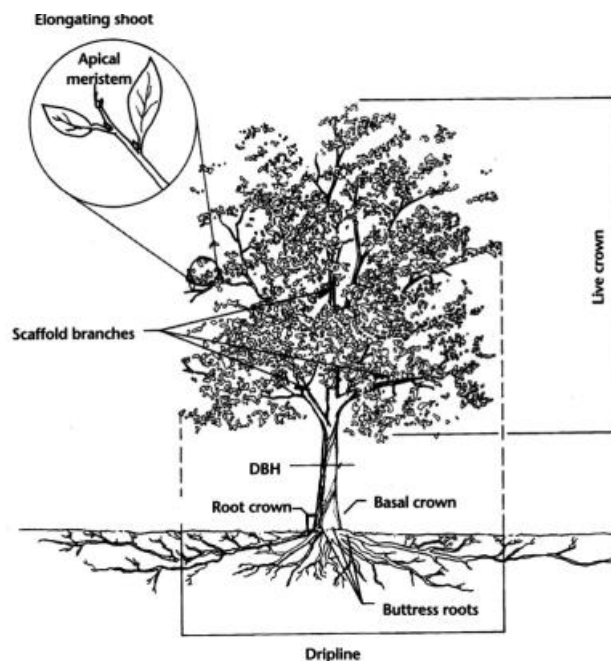


Figure 13 – Typical form and structure of a tree illustrating the typical form, location and extent of root growth (Source: Matheny and Clark, 1998)

Basic Tree Needs

As a living organism a tree remains alive by completing the following chemical reaction - Carbon Dioxide and water in combination with chlorophyll and light is converted to Glucose and Oxygen [$\text{CO}_2 + \text{H}_2\text{O} + \text{light} = \text{sugar (CH}_2\text{O [Glucose])} + \text{O}_2$]

The process ultimately leads to the plant cells 'respiring' and producing energy for survival, a natural requirement for all living cells. Anything that affects a plant's photosynthesis and then cellular respiration will affect the overall plant health. The limiting factors of photosynthesis and respiration will typically be the availability of oxygen, water and nutrients that make up the important chemical molecules and reactions.

Trees therefore have five basic requirements to survive and successfully grow:-

1. Oxygen (and particularly oxygen within the soil);
2. Water (a cellular necessity and primarily taken up by the tree roots);
3. Light & Sufficient Foliage (in order to photosynthesise and create the resources needed for cellular survival);
4. Soil (for physical anchorage and critical chemical nutrients) and
5. Physical Space (both above and below ground to grow).

Importantly, a minimum of 15% soil oxygen is required for active root growth and nutrient uptake. Less than 10% available soil oxygen starts to restrict root extension and growth and a minimum of 3% soil oxygen is required to just maintain root existence. Less than this will result in root death (Harris 1999).

The most insidious effects of construction on trees are often those of soil compaction or covering of root zones with impervious surfaces, as they:-

- Reduce infiltration rates of surface water;
- Reduce the availability of water to the roots as they can't naturally extract remaining moisture when soil becomes too dry;
- Reduce air to roots (roots cease to function properly and die without oxygen);
- Increase soil strength caused by compaction mean that roots need more energy to growth through it or can't even physically penetrate the soil;
- Roots are physically broken or crushed and there is increased potential for fungal and pathogen attack. (Harris 1999).

Tree Tolerance

Typically, older and larger trees are less tolerant of construction impacts. Different species also have different tolerance of injury and disturbance. Importantly it needs to be stressed, that a tree does not "heal" from injury as animals do. Typically, any injury to a tree, results in the tree expending considerable energy reserves to create new growth that "seals" and surrounds a wound and then attempting to compensate structurally and physically for any losses. Impacts to trees are therefore cumulative and a series of otherwise small and unrelated impacts can easily result in the death of a tree.

A tree that is already compromised or showing signs of stress is far less likely to tolerate construction impacts due to its lower levels of energy reserves and already weakened state. Therefore, a tree that is only in a fair condition or poor condition is less likely to tolerate construction impacts than a young tree in good or excellent condition.

Weakened or stressed trees are also far less able to combat the myriad of normal environmental stresses and pathogens that are naturally imposed against them such as drought, decay, fungi, bacteria and insect pests.

2.7 Potential Tree Impacts

The potential impacts from the proposed construction and activity discussed above can be summarised as tree damage and 'reduced life expectancy' caused by:-

- Root loss and disturbance due to inappropriate excavation for the building and services;
- Compaction of the root zone from storage or stockpiling of materials;
- Contamination of the soil from; the preparation of chemicals, wash down/ cleaning of equipment, refuelling of vehicles and dumping of waste;
- Compaction of the root zones from haul roads and the parking or use of vehicles/ plant equipment;
- Root disturbances from unauthorised cut and fill and soil level changes;
- Physical damage to the tree trunks and branches from passing machinery;
- Damage to the tree roots from landscaping and pedestrian pathway construction; and
- Inappropriate or excessive pruning for construction access.

The following Section of this report provides the recommendations and proposed measures that aim to minimise and avoid these impacts as much as realistically possible.

2.8 Tree Impact Assessment

The intention of this assessment is to clearly illustrate the trees to be retained and removed as part of the development. It is also to determine any incursions into the retained trees' root zones and canopies by the proposed development and evaluate the likely impacts of the proposed works on the trees. A detailed listing of the incursions and likely impacts of the proposed development on each tree is shown in Appendix 4.2 – Tree Impact Assessment Schedule and Appendix 4.1 – Tree Plans.

It is to be noted that a total of 95 trees (87%) are to be removed. Of those 95 trees, 86 (91%) are rated with a Low or Very Low/ Remove retention value and all of them are within the footprint of the proposed works. The trees which are proposed to be removed are predominantly exotic species. Many of these trees are small in size, with some only just reaching the 3.5m height limit that triggers their protection under the Penrith City Council DCP 2014. A focus of the development has been to retain and protect the larger and more significant trees on the site and great effort has been made to ensure they are appropriately retained and protected.

Of the **14** trees that are to be retained and protected:-

- **10** trees have no or minimal foreseeable impact from construction related activity. These trees are not discussed further.

- **4 trees (T48, T49, T53 & T66)**, will require minor surface impacts to be managed during demolition and construction. These minor surface impacts are shown shaded on the Tree Retention and Removal Plan (T-02) and noted in the schedule. Trees likely to experience surface impacts and their management are discussed in **Section 2.8.1** below.
- **2 trees (T53 & T66)**, may require minor pruning of the canopy (<10%) for clearance to building and scaffolding during construction. Refer to **Section 3.2.1** below.
- **2 trees (T53 & T66)** have a '**minor encroachment**' (<10%) into the TPZ, as defined by AS4970-2009 Protection of Trees on Development Sites.
- **None of the retained trees have a 'major encroachment' (>10%) into the TPZ**, as defined by AS4970-2009 Protection of Trees on Development Sites.

The following table summarises the likely impacts on trees to be retained and protected.

Table 2 – Tree Impacts & TPZ Incursions (AS4970-2009)

Tree ID	Species	Common Name	TPZ % Incursion (AS4970)
T48	<i>Syzygium paniculatum</i>	Magenta Cherry	Minor Surface Impacts
T49	<i>Jacaranda mimosifolia</i>	Jacaranda	Minor Surface Impacts
T53	<i>Jacaranda mimosifolia</i>	Jacaranda	<5% Incursion + Minor Surface Impacts Minor Canopy Pruning (<10%)
T66	<i>Ulmus parvifolia</i>	Chinese Elm	Minor Surface Impacts Minor Canopy Pruning (<10%) Minor Incursion of 10% into TPZ

The more important trees, TPZ incursions and likely tree impacts anticipated as part of the re-development are discussed further in the notes below.

2.8.1 Surface and Other Impacts to be Managed During Demolition and Construction.

T48 *Syzygium paniculatum* (Magenta Cherry) and T49 *Jacaranda mimosifolia* (Jacaranda)

These trees are both 'Moderate' retention value trees located on the neighbouring property (19 McNaughton Street) adjacent to the south-eastern corner site boundary. The area to the west of these trees is to be retained at existing levels, with only minor surface impacts expected with the topping up of topsoil and the installation of mulch. A landscape footpath is proposed to be installed immediately adjacent, but outside of the TPA to the west of these trees. The footpath is proposed to be constructed at or above the existing levels to minimise surface impacts within the TPA. This surface impact is considered acceptable and is unlikely to result in any significant long term impacts to the condition of the trees.

To ensure the health of the trees is supported during construction works, mulch and temporary irrigation shall be applied within the TPA during construction. All Tree Protection Fencing is to remain in place during major building works and may only be removed to undertake final landscape works and to construct the concrete footpath.



Figure 14 – T48 *Syzygium paniculatum* (Magenta Cherry) to the left of the image and T49 *Jacaranda mimosifolia* (Jacaranda) to the right of the image are neighbouring trees located within 19 McNaughton Street and are to be retained and protected. (Photo: Arterra 07.12.23)

T53 *Jacaranda mimosifolia* (Jacaranda)

This tree is a 'Moderate' retention value tree growing within the site and close to the south-western boundary with its canopy extending predominately to the northeast. This tree is growing within a flat, open grassed area to the south of the site which has not seen any development since the 1980s. The new building is proposed to be built to the northeast of this tree and has been carefully positioned outside of the tree protection area (TPA) of this tree. Only very minor impacts are expected within the TPA from the proposed installation of a stormwater line and building works.

A landscape deck is proposed to the north-eastern side of this tree and is to be suspended above the existing ground levels. Care has been taken to appropriately design and location the deck to ensure that the existing ground levels can be retained and protected within the TPA to minimise disturbance to the tree. To further minimise disturbance, all decking posts are to be strategically located outside of the SRZ and their position finally tailored on site, during construction investigations as directed by the Project Consulting Arborist (AQF5).

Given all the proposed structures around the tree are to be suspended above the existing ground levels, only minor surface impacts are expected within the TPZ of this tree. This impact is considered acceptable and is unlikely to result in any significant impacts to the condition of the tree.

To ensure the health of the tree is supported during construction works, mulch and temporary irrigation shall be applied within the TPA during construction. Trunk protection is to be installed as specified (refer to Tree Plans and Tree Protection Specification) to ensure the trunk is protected during the construction of the suspended decking. All tree protection fencing is to remain in place during major building works and may only be removed to undertake final landscape works and to construct the deck.

Minor canopy pruning (<10%) is likely required for final pedestrian clearances to the deck. Canopy pruning is to be undertaken by a minimum AQF Level 3 Arborist and only at the direction of the Project Consulting Arborist. The extent of pruning is to be minimised where possible.



Figure 14 – T53 *Jacaranda mimosifolia* (Jacaranda) is a 'Moderate' retention value tree growing within the site and close to the south-western boundary. (Photo: Arterra 7.12.23)

T66 *Ulmus parvifolia* (Chinese Elm)

The tree is a 'Moderate' retention value tree growing on the north western site boundary and is clearly visible to the street at the intersection of Jamison Road and Harris Street. This tree is growing within a small, sparsely grassed embankment adjacent the verge and contributes positively to the streetscape of Harris Street. This tree is also growing in close proximity to other adjoining trees, and as a result, its canopy has predominantly favoured growth to the north. It is the authors opinion, that with the removal of the existing adjoining trees (T67), it is likely to improve not only the ground conditions but may also encourage additional canopy growth on the southern side.

The proposed building to the south of this tree has been sensitively designed to be setback to minimise impacts within the TPA of this tree and to limit impacts to the canopy. A minor incursion of 10% into the TPZ is expected to the south of this tree for the excavation required to construct the proposed basement of Building A and to the

north for the excavation to connect a new stormwater line. The new building ground floor terrace immediately adjacent the tree to the south, though closer to the tree than the basement extent, is proposed to be suspended above the existing ground levels minimising impacts to the tree and enabling the existing ground levels to be retained and protected. Given the above, the calculated incursion to the south of this tree is considered tolerable.

Apart from the minor incursion as mentioned above, and the proposed topping up of additional topsoil and the installation of mulch, the area around the tree is to be retained at existing levels. No benching or battering is expected to be undertaken within TPA to construct the new building, with all works undertaken in this location to be supervised by the Project Consulting Arborist.

To ensure the health of the tree is supported during construction works mulch and temporary irrigation are to be applied during construction. Tree protection fencing is to remain in place during all major building works and can only be removed to undertake final landscape works. Minor canopy pruning (<10%) may be required for building and scaffold clearances. Canopy pruning to be undertaken by a minimum AQF Level 3 Arborist and only at the direction of the Project Consulting Arborist. Pruning extent is to be minimised where possible.



Figure 15 – T66 view to north-west. New, suspended building terrace to be constructed immediately south of the tree. (Photo: Arterra 7.12.23)

3.0 TREE PROTECTION AND MANAGEMENT RECOMMENDATIONS

3.1 Project Design and Execution

Arterra reviewed the preliminary designs for the proposed works and provided ongoing and regular advice regarding proposed design amendments, and building and driveway locations, to mitigate the likely tree impacts, as far as reasonably practicable.

Appropriate tree protection areas will be established using suitable temporary tree protection fencing. These areas will typically be as large as possible within the limitations of the site and the required extent of works, to minimise the likelihood of damage to the trees both above and below ground and ensure the long-term health and ongoing viability of the trees.

As much as possible, all work, including trenching, road and driveway construction and intensive landscaping have been minimised within identified nominal Tree Protection Zones (TPZs). Where an incursion was unavoidable, this was limited to <10% or less of the nominal area. Commensurate compensatory areas are typically applied elsewhere, that are contiguous to the remaining TPZ (Refer to T-02 'Tree Protection and Removal Plan' for the proposed consolidated Tree Protection Areas)

Wherever feasible, the Moderate Retention Value trees have been retained (no High Retention Value trees were recorded related to the site). The trees that have been the focus of retention are:

- **T48** - *Syzygium paniculatum* (Magenta Cherry) rated with a 'Moderate' retention value located on the adjoining private property of 19 McNaughton Street.
- **T49** - *Jacaranda mimosifolia* (Jacaranda) rated with a 'Moderate' retention value located on the adjoining private property of 19 McNaughton Street.
- **T53** - *Jacaranda mimosifolia* (Jacaranda) rated with a 'Moderate' retention value located within the site on the southwestern boundary.
- **T66** - *Ulmus parvifolia* (Chinese Elm) rated with a 'Moderate' retention value located to the northwestern corner of the site fronting Harris Street.

3.2 Key Recommendations to Reduce Tree Impacts

The following recommendations are made to specifically reduce the negative construction impacts on the existing trees identified to be retained.

- Ensure that all work within the identified TPAs is carried out with appropriate skill and care to limit surface impacts. If roots greater than 40mm Ø are encountered, works shall cease and direction sought from the project arborist before proceeding further.
- Appropriately fence all TPAs outside of the already noted incursions for the duration of all major site construction work. See Appendix 4.1 Tree Plans for locations and extent.
- Carefully control and fence access to and from the construction areas so that movement does not occur through any TPAs other than for the already identified building incursions.
- Ensure all the new above and below ground services are excluded from running through any TPAs beyond any already noted incursions.
- Minimise the re-grading of the ground surface within the identified TPAs, beyond the noted building incursions, in order to meet and match proposed pathways and other building levels. Where it is required, limit it to a maximum depth of 300mm above existing ground levels and ensure it is only quality sandy manufactured organic garden mix or other suitable site topsoils. No excavation below existing levels shall typically be allowed.
- Mulching of the entire TPAs as specified in Tree Plans. This will aid tree health with moisture retention, limit possible compaction from pedestrian traffic, and improve soil conditions within the TPAs.
- Avoid digging into existing root zones for the installation of any proposed landscaping around the trees and the installation sizes of new plants to be 5L or less to ensure that excavations are less than 200mm in depth. It is recommended to build up soil levels for any new planting areas to a maximum of 200mm to enable the new planting to occur without disturbing existing tree roots.
- Do not allow storage or stockpiling of any materials or site sheds within established TPAs unless that it can be demonstrated that this will not impact on the tree retention and it is specifically approved in writing by the Project Consulting Arborist.

3.3 Canopy Pruning and Methodology

In order to construct the proposed buildings minor canopy pruning to **2** trees (T53 (*Jacaranda mimosifolia*) and T66 (*Ulmus parvifolia*)) will be required to provide building and construction clearances. The design team has made significant modifications to the building design and alignment during the design development phase to offset the

building appropriately to minimise pruning extents and ensure that they can be successfully retained without any disfiguring of the canopy. All pruning should be minimised, and branches pushed out of the way and secured to the outside of the scaffolding where possible. It is likely that the pruning will be less than 10% of the canopy and be minor branchlets only. In the authors opinion, this is considered acceptable. Should pruning be required, the following must be undertaken:

- A suitably qualified Tree Contractor/Utility Arborist shall be employed to undertake the pruning and they shall be a member of Arboriculture Australia or equivalent body. They are to be employed, instructed, and directly supervised in their activities by an Arborist with a minimum AQF level 4 qualification in arboriculture.
- The Head Contractor/Development Manager is to submit to the Project Consulting Arborist the name(s), relevant qualifications, trade certificates, first aid and memberships, licenses and experience of the chosen utility arborist personnel.
- Only the specified 'selective pruning' is to be undertaken as overseen and directed by the Project Consulting Arborist. Work shall be done 'incrementally' until the appropriate building or scaffold clearance is achieved.
- All pruning works are to be completed according to AS4373 Pruning of Amenity Trees.
- The Tree Contractor shall prune only the parts of trees as directed by the Project Consulting Arborist. The resulting pruning wounds are not to be treated.
- The Tree Contractor shall minimise the size and number of wounds resulting from all pruning and ensure the remaining canopy is balanced with appropriate foliage weight and crown distribution. They shall use only clean, sharp pruning implements for all pruning work, ensuring that cuts are made without damage, tearing, or bruising to remaining vascular tissue.
- Access to the foliage shall be from the ground using equipment with suitable reach to access the required canopy. This is considered possible once demolition is complete.
- Where the tree work can result in a danger to other workers on the site, 'spotter' personnel shall be placed to ensure the work is undertaken safely.
- All branches and foliage that is pruned is to be chipped and removed from the site. All chipping activities shall be undertaken within the site boundaries, where feasible.

3.4 Proposed Tree Protection & Construction Activity Sequencing

The following sequence of activities should be followed for this project: -

1. A Tree Protection Specification & Plan is to be prepared and issued as part of the construction contract prior to any construction work.
2. The Project Consulting Arborist, Landscape Architect, Civil and Structural Engineers, Client and Contractor Site Foreman are to meet prior to beginning any work on the site to discuss and review all work procedures, construction access routes, stockpiling and tree protection measures (ie: fence types and locations, access, craneage points, piling methods etc.).
3. Contractors to discuss locations and type of any sediment and erosion controls (if any) and install them with minimal tree impact when within or passing through the TPA.
4. Existing pathways, fences, driveways, furniture and shrubs are to be carefully removed from within the TPA.
5. Existing surrounding trees are to be removed. Stumps are to be ground when near remaining trees to avoid the use of excavators and the like from grubbing out stumps, which may lead to damage of any intertwined roots.
6. Designated TPAs are to be mulched with 75mm of recycled hardwood woodchip mulch to improve soil conditions around tree and remain in place until future final landscaping.
7. Trunk protection to be placed on all trees to be retained as shown on Tree Plans.
8. A utility Arborist is to undertake selective pruning of canopy or branches to facilitate construction of the building and provide pedestrian access clearances without accidental damage to the tree canopy. Pruning to be done in accordance with AS4373 - Pruning of Amenity Trees and performed by staff with appropriate qualifications and equipment.
9. The Construction Phase TPA is to be clearly defined and fenced off with a 1.8m high metal or plywood temporary fence prior to any further work within the vicinity of the trees as shown on the Tree Plans. Any required rumble boards shall be installed to protect TPA areas where access is required.
10. Plywood (or similar) is to be placed under any scaffolds or pedestrian works paths when they are running through any identified TPAs.
11. Building works to be completed (external).
12. Contractor to remove the TPA fencing and only then install final pathways and landscaping within the TPAs under the trees, but only after construction of the building exterior and all civil works are completed.

3.5 Demolition Work Near Trees or within TPAs

Demolition of paths and other structures required within a TPA shall be done with small tracked equipment or by hand, with care to limit surface damage and disturbance of the root zone. All such work within TPAs shall be supervised and overseen by a qualified Project Consulting Arborist.

3.6 Tree Protection Fencing & Definition of TPAs

Establish a clearly defined tree protection zone as indicated in Appendix 4.1 Tree Plans. Install a 1.8m high temporary fence with either plywood hoarding or temporary steel mesh or chain wire fencing with adequate lateral bracing. Fencing shall comply with the requirements of AS 4687-2007 Temporary fencing and hoardings. These areas around the trees shall be delineated as a "Tree Protection Zone" during the remaining construction process, via appropriate weatherproof signage at not more than 30m spacing. Access will typically be excluded from these zones and the levels will be left largely at the existing levels with the exception of the installation of the 75mm of mulch. No stockpiling, excavation, trenching, re-fuelling or material storage should be allowed in this area.

3.7 Ground Protection within TPAs

Vehicular movement and access shall typically not be required or approved through the TPAs. If it is absolutely necessary and it is proposed to create any access or haul road, or similar, within the TPA of a retained tree, the Contractor shall install rumble strips / boards over the designated TPA ground surface. No excavation shall be allowed. Contractor shall first place a suitable permeable geotextile to the extent required and then a 100mm thick layer of wood chip mulch or coarse no-fines gravel over the extent to be covered with the rumble strip / boards. Then place hardwood boards (minimum 3600 x 200 x 75mm) on their flat edge, side by side, with a 30 - 50mm gap to form a rumble strip. These boards are to be held together with three galvanised metal bracing straps nailed to each board. The two outer straps are to be approximately 200mm in from the ends of the boards. The third strap is to be along the centre line of the boards.



Figure 16 – Example of acceptable Tree Protection Area ground protection (Photo: Arterra)

3.8 Trunk and Lower Branch Protection

A trunk barrier is to be erected around the circumference of the tree trunk and root buttress where shown. This barrier will consist of two to three 'rings' of 50mm diameter socked ag-line wrapped around tree trunk or branch and the ends cable tied to secure in place. A layer of battens is to be placed over and tight to the ag-lines. The battens are to have a maximum spacing of 50mm. The height of the battens is to be at least 2.4 metres or to the height of the first branches. Lower large branches may require the same protection if likely to be damaged by passing vehicles or equipment. Secure battens in place with galvanised steel bracing straps. Do not nail or screw into or otherwise injure the trunk or bark. Battens may be made from any suitable waste timber of similar sizes and depths. All sharp or protruding edges are to be properly covered with tape or similar padding.



Figure 17 – Example of acceptable Trunk Protection batten installation. (Photo: Arterra)

3.9 Provision of Temporary Irrigation

A temporary and automated (battery powered timer is sufficient) watering system is needed to be placed within the TPAs to maintain adequate water to the retained trees and help maintain their healthy condition. This can be a surface mounted 'residential-style' soaker hose and/or surface sprinkler systems. It is to be surface visible and spray delivered so that its operation can be easily visible and verified. It should be on a designated supply line, separate from other construction related water supplies to minimise its likelihood of being disconnected.

Typically, during spring and summer months it should be set to run for a minimum of 30 minutes every day, in the early morning. During autumn and winter months it should be set to run for 1 hour once every week. The operation can be suspended temporarily in periods of extensive and/or prolonged rain.

The system is to remain in place for the duration of construction, or until the Project Consulting Arborist approves its removal. It may be removed to allow the final landscape treatments to proceed. If accidentally disturbed or damaged by construction activities, it is to be reinstated as soon as practicable.

3.10 Final Landscaping within TPZs

Once final levels are set by the finished structural elements. The final trimming and landscaping shall be judiciously undertaken. The final pedestrian pavements shall be installed without undue excavation or compaction to the soil and all soft landscaping within the tree protection zone will be installed with care to avoid root disturbance via irrigation trenching, lighting installation and the planting of larger plants. The installation of 100-200mm of new garden mix topsoil over the pre-existing soil will provide a suitable medium in which to plant new plants without damage to existing tree roots. Permanent irrigation (if used) shall be installed as spray heads located outside of TPAs and spraying inwards. All other services such as electrical services shall also be designed and installed to avoid any excavation or trenching around the trees.

3.11 Final Building and Pedestrian Clearance Pruning

Once the final levels and finishes are in place the Project Consulting Arborist shall direct and supervise any remaining selective pruning of any lower peripheral branches to the retained trees to achieve any clearances for final pedestrian or building access. This shall be minimised as much as possible. It is anticipated that the final pruning of any of the retained trees will be less than 5% of the existing canopy and will not have any serious impact to the tree's health or habit.

The branches of the tree shall only be pruned as specifically needed and directed by the Project Consulting Arborist. Work is to be in strict accordance with AS4373 - Pruning of Amenity Trees. Do not treat wounds. Only clean,

sharp pruning implements shall be used for all pruning work, ensuring that cuts are made without damage, tearing or bruising of the vascular tissue.

3.12 Other Tree Protection Measures to be Implemented

The following is a summary of the main measures that will be required during construction. These should be adopted for the Construction Contract and conditioned by Council.

Controlled Construction Access & Parking

Construction access points and stockpiling and storage areas shall be clearly identified and fenced where appropriate. Uncontrolled access points and parking of vehicles outside of designated areas is to be avoided. If temporary access is required through a tree protection zone, ground protection shall be employed to limit soil compaction and root damage and disturbance.

Clearing and Removal of Trees to be Removed

Removal and clearing of existing trees should be done by qualified arboricultural staff with care not to impact or damage other surrounding trees throughout the process. Existing stumps should be grubbed out or ground in a controlled fashion to remove wood that may decay and promote unwanted pathogens.

Communication - Tool Box Meetings and Construction Inductions

All contractors and subcontractors shall be inducted prior to working on the site. All inductions shall include description and identification of the Tree Protection Zones and the restriction on work and activities with regard to trees. The site foreman shall ensure that all new staff and contractors are appropriately inducted and that brief "tool box" meetings are conducted regularly to ensure Tree Protection is maintained at the forefront of all construction workers minds.

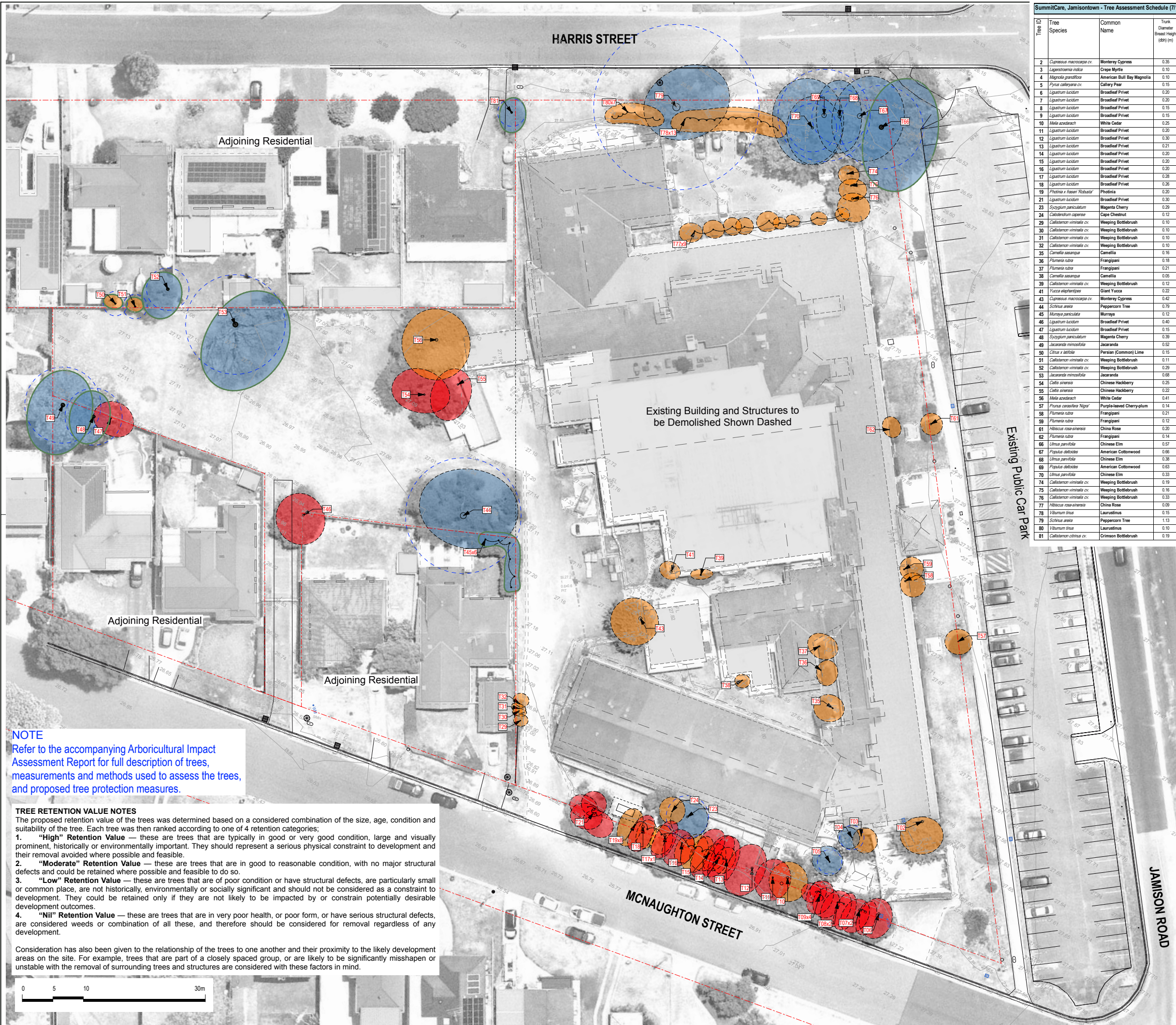
3.13 References

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- End of report.

4.0 APPENDICES

4.1 Tree Plans



SummitCare, Jamisontown - Tree Assessment Schedule (7/12/23)									
ID	Tree Species	Common Name	Trunk Diameter (dbh) (m)	Trunk Diameter Breast Height (dbh) (m)	Nominal TPZ radius (m)	Nominal SRZ radius (m)	Retention Value	Recommendation	
2	Cupressus macrocarpa cv.	Monterey Cypress	0.35	0.41	4.20	2.28	Low	Remove	
3	Laguncularia indica	Crope Myrtle	0.10	0.12	2.00	1.36	Low	Remove	
4	Magnolia grandiflora	American Bull Bay Magnolia	0.10	0.12	2.00	1.36	Moderate	Remove	
5	Pyrus calleryana cv.	Callery Pear	0.15	0.20	2.00	1.68	Moderate	Remove	
6	Ligustrum lucidum	Broadleaf Privet	0.20	0.40	2.40	2.25	Nil / Remove	Remove	
7	Ligustrum lucidum	Broadleaf Privet	0.20	0.40	2.40	2.25	Nil / Remove	Remove	
8	Ligustrum lucidum	Broadleaf Privet	0.15	0.25	2.00	1.85	Nil / Remove	Remove	
9	Ligustrum lucidum	Broadleaf Privet	0.15	0.18	2.00	1.61	Nil / Remove	Remove	
10	Melaleuca alternifolia	White Cedar	0.25	0.42	3.00	2.30	Low	Remove	
11	Ligustrum lucidum	Broadleaf Privet	0.20	0.22	2.40	1.75	Nil / Remove	Remove	
12	Ligustrum lucidum	Broadleaf Privet	0.30	0.35	3.60	2.13	Nil / Remove	Remove	
13	Ligustrum lucidum	Broadleaf Privet	0.21	0.28	2.52	1.94	Nil / Remove	Remove	
14	Ligustrum lucidum	Broadleaf Privet	0.20	0.34	2.40	2.10	Nil / Remove	Remove	
15	Ligustrum lucidum	Broadleaf Privet	0.20	0.26	2.40	1.88	Nil / Remove	Remove	
16	Ligustrum lucidum	Broadleaf Privet	0.20	0.26	2.40	1.88	Nil / Remove	Remove	
17	Ligustrum lucidum	Broadleaf Privet	0.28	0.40	3.36	2.25	Nil / Remove	Remove	
18	Ligustrum lucidum	Broadleaf Privet	0.26	0.45	3.12	2.37	Nil / Remove	Remove	
19	Photinia x fraseri Robusta	Photinia	0.20	0.25	2.40	1.85	Low	Remove	
21	Ligustrum lucidum	Broadleaf Privet	0.30	0.30	3.60	2.00	Nil / Remove	Remove	
23	Syzygium paniculatum	Magenta Cherry	0.29	0.35	3.48	2.13	Moderate	Remove	
24	Calodendrum capense	Cape Chestnut	0.12	0.17	2.00	1.57	Low	Remove	
29	Callistemon viminalis cv.	Weeping Bottlebrush	0.10	0.15	2.00	1.49	Low	Remove	
30	Callistemon viminalis cv.	Weeping Bottlebrush	0.10	0.15	2.00	1.49	Low	Remove	
31	Callistemon viminalis cv.	Weeping Bottlebrush	0.10	0.15	2.00	1.49	Low	Remove	
32	Callistemon viminalis cv.	Weeping Bottlebrush	0.10	0.15	2.00	1.49	Low	Remove	
35	Camellia sasanqua	Camellia	0.16	0.19	2.00	1.65	Low	Remove	
36	Plumeria rubra	Frangipani	0.18	0.18	2.16	1.61	Low	Remove	
37	Plumeria rubra	Frangipani	0.21	0.25	2.52	1.85	Low	Remove	
38	Camellia sasanqua	Camellia	0.05	0.10	2.00	1.26	Low	Remove	
39	Callistemon viminalis cv.	Weeping Bottlebrush	0.12	0.16	2.00	1.53	Low	Remove	
41	Fraxus elaeagnifolia	Giant Yucca	0.22	0.40	2.64	2.25	Low	Remove	
43	Cupressus macrocarpa cv.	Monterey Cypress	0.42	0.54	5.04	2.55	Low	Remove	
44	Schinus molle	Peppercorn Tree	0.79	1.00	9.48	3.31	Moderate	Remove	
45	Murphya paniculata	Murphy	0.12	0.15	2.00	1.49	Moderate	Retain and Protect	
46	Ligustrum lucidum	Broadleaf Privet	0.40	0.40	4.80	2.25	Nil / Remove	Remove	
47	Ligustrum lucidum	Broadleaf Privet	0.15	0.20	2.00	1.68	Nil / Remove	Remove	
48	Syzygium paniculatum	Magenta Cherry	0.39	0.49	4.68	2.45	Moderate	Retain and Protect	
49	Jacaranda mimosifolia	Jacaranda	0.52	0.80	6.24	2.67	Moderate	Retain and Protect	
50	Citrus x latifolia	Parian (Common) Lime	0.15	0.20	2.00	1.68	Low	Retain and Protect	
51	Callistemon viminalis cv.	Weeping Bottlebrush	0.11	0.20	2.00	1.68	Low	Retain and Protect	
52	Callistemon viminalis cv.	Weeping Bottlebrush	0.29	0.42	3.48	2.30	Moderate	Retain and Protect	
53	Jacaranda mimosifolia	Jacaranda	0.68	0.80	8.16	3.01	Moderate	Retain and Protect	
54	Callistemon viminalis cv.	Chinese Hackberry	0.25	0.30	3.00	2.00	Nil / Remove	Remove	
55	Callistemon viminalis cv.	Chinese Hackberry	0.22	0.27	2.64	1.91	Nil / Remove	Remove	
56	Melaleuca alternifolia	White Cedar	0.41	0.47	4.92	2.41	Low	Remove	
57	Plumeria rosea-sasanqua	Purple-leaved Cherry-plum	0.14	0.14	2.00	1.45	Low	Remove	
58	Plumeria rubra	Frangipani	0.21	0.25	2.52	1.85	Low	Remove	
59	Plumeria rubra	Frangipani	0.12	0.20	2.00	1.68	Low	Remove	
61	Hibiscus rosa-sinensis	China Rose	0.20	0.30	2.40	2.00	Low	Remove	
62	Plumeria rubra	Frangipani	0.14	0.16	2.00	1.53	Low	Remove	
66	Ulmus parvifolia	Chinese Elm	0.57	0.71	6.84	2.87	Moderate	Retain and Protect	
67	Populus deltoides	American Cottonwood	0.66	0.80	7.92	3.01	Moderate	Remove	
68	Ulmus parvifolia	Chinese Elm	0.38	0.56	4.56	2.59	Moderate	Remove	
69	Populus deltoides	American Cottonwood	0.63	0.73	7.56	2.90	Moderate	Remove	
70	Ulmus parvifolia	Chinese Elm	0.33	0.40	3.96	2.25	Moderate	Remove	
74	Callistemon viminalis cv.	Weeping Bottlebrush	0.19	0.25	2.28	1.85	Low	Remove	
75	Callistemon viminalis cv.	Weeping Bottlebrush	0.16	0.22	2.00	1.75	Low	Remove	
76	Callistemon viminalis cv.	Weeping Bottlebrush	0.33	0.37	3.96	2.18	Low	Remove	
77	Hibiscus rosa-sinensis	China Rose	0.09	0.18	2.00	1.61	Low	Remove	
78	Viburnum tinus	Laurustinus	0.15	0.20	2.00	1.68	Low	Remove	
79	Schinus molle	Peppercorn Tree	1.13	1.20	13.56	3.57	Moderate	Remove	
80	Viburnum tinus	Laurustinus	0.10	0.15	2.00	1.49	Low	Remove	
81	Callistemon viminalis cv.	Crimson Bottlebrush	0.19	0.26	2.28	1.88	Moderate	Retain and Protect	

NOTE
Refer to the accompanying Arboricultural Impact Assessment Report for full description of trees, measurements and methods used to assess the trees, and proposed tree protection measures.

TREE RETENTION VALUE NOTES
The proposed retention value of the trees was determined based on a considered combination of the size, age, condition and suitability of the tree. Each tree was then ranked according to one of 4 retention categories;
1. **“High” Retention Value** — these are trees that are typically in good or very good condition, large and visually prominent, historically or environmentally important. They should represent a serious physical constraint to development and their removal avoided where possible and feasible.
2. **“Moderate” Retention Value** — these are trees that are in good to reasonable condition, with no major structural defects and could be retained where possible and feasible to do so.
3. **“Low” Retention Value** — these are trees that are of poor condition or have structural defects, are particularly small or common place, are not historically, environmentally or socially significant and should not be considered as a constraint to development. They could be retained only if they are not likely to be impacted by or constrain potentially desirable development outcomes.
4. **“Nil” Retention Value** — these are trees that are in very poor health, or poor form, or have serious structural defects, are considered weeds or combination of all these, and therefore should be considered for removal regardless of any development.

Consideration has also been given to the relationship of the trees to one another and their proximity to the likely development areas on the site. For example, trees that are part of a closely spaced group, or are likely to be significantly misshapen or unstable with the removal of surrounding trees and structures are considered with these factors in mind.

Tree Retention Value Legend

- High Retention value
- Moderate Retention value
- Low Retention value
(Note: no TPZ's shown for these trees)
- Nil Retention value
(should remove)
(Note: no TPZ's shown for these trees)

Nominal Tree Protection Zone (TPZ)

Extent of canopy as verified by site measure and aerial photos

Tree Identification Number

REVISION	DESCRIPTION	CHD	DATE
A	For SSDA Submission	RWS	12/06/24
P2	For Information	RWS	15/01/24
P1	For Information	RWS	11/11/21

PROJECT & CLIENT
SummitCare - Jamisontown ILUs and RAC

SummitCare
DRAWING TITLE
Tree Retention Value Plan

Project No	: 21.29	
Designed	: RWS/CLB	
Drawn	: RWS/CLB/BT	
Scale	: 1:300@A1/1:600@A3	

T53 (*Jacaranda mimosifolia*) - Surface impacts to be managed.
Area around the tree to be retained at existing levels, apart from the topping up of topsoil and installation of mulch. New landscape decking to the east of the tree to be suspended above the existing ground levels. Posts for decking are to be located outside of the SRZ and are to be tailored on site based on root investigations and as directed by the Project Consulting Arborist. Building piers and/or footings to be located outside of the TPZ. Mulch and temporary irrigation to be applied during construction. Fencing to remain in place during major building works and can only be removed to undertake final landscape works and to construct the deck. Minor <5% incursion for stormwater connection, otherwise only minor surface impacts expected. Install trunk and lower branch protection. Minor canopy pruning (<5%) is required for final clearances. Canopy pruning to be undertaken by a minimum AQF Level 3 Arborist and only at the direction of the Project Consulting Arborist. Pruning extent is to be minimised where possible.

Minor incursion 6% to T66 (*Ulmus parvifolia*)
Area around the tree to be retained at existing levels, apart from the topping up of topsoil and installation of mulch. Minor incursion expected for the excavation required to construct the basement and stormwater connection. Small low height excavator to be used when under canopy for trenching. No benching or battering to be undertaken within TPA to construct new building. New building terrace immediately adjacent the tree (to the south) is to be suspended above the existing ground levels. Works undertaken in this location are to be supervised by the Project Consulting Arborist. Mulch and temporary irrigation to be applied during construction. Fencing to remain in place during major building works and can only be removed to undertake final landscape works. Install trunk and lower branch protection. Minor canopy pruning (<10%) may be required for building and scaffold clearances. Canopy pruning to be undertaken by a minimum AQF Level 3 Arborist and only at the direction of the Project Consulting Arborist. Pruning extent is to be minimised where possible.

T48 (*Syzygium paniculatum*) and T49 (*Jacaranda mimosifolia*) - Surface impacts to be managed.
Area around the trees to be retained at existing levels, apart from the topping up of topsoil and installation of mulch. Fencing to remain in place during major building works and can only be removed to undertake final landscape works and to construct the footpath. Footpath to be construction at or above existing levels with only minor surface impacts expected. Provide temporary irrigation if directed by Arborist.

NOTE
Contours and spot heights shown on the plan are existing surveyed contours and spot heights.

NOTE
Refer to the accompanying Arboricultural Impact Assessment Report for full description of trees, measurements and methods used to assess the trees, and proposed tree protection measures.



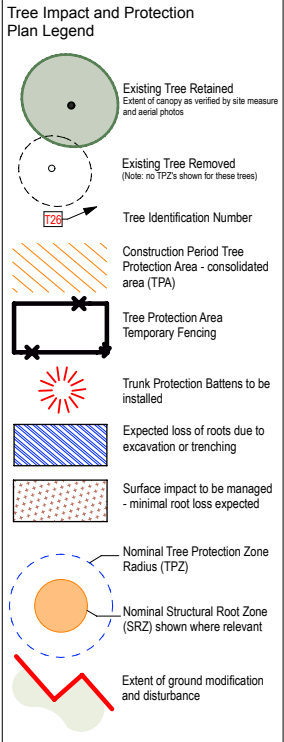
HARRIS STREET

TREES NEED TO BE REMOVED FOR BUILDING/GRADING AND SERVICES CONNECTION

MCNAUGHTON STREET

JAMISON ROAD

SummitCare, Jamisontown - Tree Assessment Schedule (7/12/23)									
Tree ID	Tree Species	Common Name	Trunk Diameter Breast Height (m)	Trunk Diameter at base (m)	Nominal TPZ radius (m) 120dbh (AS 4670)	Nominal SRZ radius (m) (AS 4670)	Retention Value	Recommendation	
2	<i>Cupressus macrocarpa</i> cv.	Monterey Cypress	0.35	0.41	4.20	2.28	Low	Remove	
3	<i>Laportea indica</i>	Cape Myrtle	0.10	0.12	2.00	1.35	Low	Remove	
4	<i>Magnolia grandiflora</i>	American Bull Bay Magnolia	0.10	0.12	2.00	1.35	Moderate	Remove	
5	<i>Pyrus calleryana</i> cv.	Callery Pear	0.15	0.20	2.00	1.68	Moderate	Remove	
6	<i>Ligustrum lucidum</i>	Broadleaf Privet	0.20	0.40	2.40	2.25	Nil / Remove	Remove	
7	<i>Ligustrum lucidum</i>	Broadleaf Privet	0.20	0.40	2.40	2.25	Nil / Remove	Remove	
8	<i>Ligustrum lucidum</i>	Broadleaf Privet	0.15	0.25	2.00	1.85	Nil / Remove	Remove	
9	<i>Ligustrum lucidum</i>	Broadleaf Privet	0.15	0.18	2.00	1.61	Nil / Remove	Remove	
10	<i>Melia azadirach</i>	White Cedar	0.25	0.42	3.00	2.30	Low	Remove	
11	<i>Ligustrum lucidum</i>	Broadleaf Privet	0.20	0.22	2.40	1.75	Nil / Remove	Remove	
12	<i>Ligustrum lucidum</i>	Broadleaf Privet	0.30	0.35	3.60	2.13	Nil / Remove	Remove	
13	<i>Ligustrum lucidum</i>	Broadleaf Privet	0.21	0.28	2.52	1.94	Nil / Remove	Remove	
14	<i>Ligustrum lucidum</i>	Broadleaf Privet	0.20	0.34	2.40	2.10	Nil / Remove	Remove	
15	<i>Ligustrum lucidum</i>	Broadleaf Privet	0.20	0.28	2.40	1.88	Nil / Remove	Remove	
16	<i>Ligustrum lucidum</i>	Broadleaf Privet	0.20	0.28	2.40	1.88	Nil / Remove	Remove	
17	<i>Ligustrum lucidum</i>	Broadleaf Privet	0.28	0.40	3.36	2.25	Nil / Remove	Remove	
18	<i>Ligustrum lucidum</i>	Broadleaf Privet	0.28	0.45	3.12	2.37	Nil / Remove	Remove	
19	<i>Photinia x fraseri</i> 'Robusta'	Photinia	0.20	0.25	2.40	1.85	Low	Remove	
20	<i>Ligustrum lucidum</i>	Broadleaf Privet	0.30	0.30	3.60	2.00	Nil / Remove	Remove	
21	<i>Syzygium paniculatum</i>	Magenta Cherry	0.28	0.35	3.48	2.13	Moderate	Remove	
22	<i>Calidstenon viminalis</i> cv.	Cape Chestnut	0.12	0.17	2.00	1.57	Low	Remove	
23	<i>Calidstenon viminalis</i> cv.	Weeping Bottlebrush	0.10	0.15	2.00	1.49	Low	Remove	
24	<i>Calidstenon viminalis</i> cv.	Weeping Bottlebrush	0.10	0.15	2.00	1.49	Low	Remove	
25	<i>Calidstenon viminalis</i> cv.	Weeping Bottlebrush	0.10	0.15	2.00	1.49	Low	Remove	
26	<i>Calidstenon viminalis</i> cv.	Weeping Bottlebrush	0.10	0.15	2.00	1.49	Low	Remove	
27	<i>Calidstenon viminalis</i> cv.	Weeping Bottlebrush	0.10	0.15	2.00	1.49	Low	Remove	
28	<i>Camellia assanqua</i>	Camellia	0.16	0.19	2.00	1.65	Low	Remove	
29	<i>Plumeria rubra</i>	Frangipani	0.18	0.18	2.16	1.61	Low	Remove	
30	<i>Plumeria rubra</i>	Frangipani	0.21	0.25	2.52	1.85	Low	Remove	
31	<i>Camellia assanqua</i>	Camellia	0.06	0.10	2.00	1.26	Low	Remove	
32	<i>Calidstenon viminalis</i> cv.	Weeping Bottlebrush	0.12	0.16	2.00	1.53	Low	Remove	
33	<i>Yucca elephantipes</i>	Giant Yucca	0.22	0.40	2.64	2.25	Low	Remove	
34	<i>Cupressus macrocarpa</i> cv.	Monterey Cypress	0.42	0.54	5.04	2.55	Low	Remove	
35	<i>Schinus molle</i>	Peppercorn Tree	0.79	1.00	9.45	3.31	Moderate	Remove	
36	<i>Muraya paniculata</i>	Muraya	0.12	0.15	2.00	1.49	Moderate	Retain and Protect	
37	<i>Ligustrum lucidum</i>	Broadleaf Privet	0.40	0.40	4.80	2.25	Nil / Remove	Remove	
38	<i>Ligustrum lucidum</i>	Broadleaf Privet	0.15	0.20	2.00	1.68	Nil / Remove	Remove	
39	<i>Syzygium paniculatum</i>	Magenta Cherry	0.39	0.49	4.68	2.45	Moderate	Retain and Protect	
40	<i>Jacaranda mimosifolia</i>	Jacaranda	0.52	0.60	6.24	2.67	Moderate	Retain and Protect	
41	<i>Citrus x aurantium</i>	Persian (Common) Lime	0.15	0.20	2.00	1.68	Low	Retain and Protect	
42	<i>Calidstenon viminalis</i> cv.	Weeping Bottlebrush	0.11	0.20	2.00	1.68	Low	Retain and Protect	
43	<i>Calidstenon viminalis</i> cv.	Weeping Bottlebrush	0.29	0.42	3.48	2.30	Moderate	Retain and Protect	
44	<i>Jacaranda mimosifolia</i>	Jacaranda	0.68	0.80	8.16	3.01	Moderate	Retain and Protect	
45	<i>Celtis sinensis</i>	Chinese Hackberry	0.25	0.30	3.00	2.00	Nil / Remove	Remove	
46	<i>Celtis sinensis</i>	Chinese Hackberry	0.22	0.27	2.64	1.91	Nil / Remove	Remove	
47	<i>Melia azadirach</i>	White Cedar	0.41	0.47	4.92	2.41	Low	Remove	
48	<i>Platanus occidentalis</i> 'Nigra'	Purple-leaved Cherryplum	0.14	0.14	2.00	1.45	Low	Remove	
49	<i>Plumeria rubra</i>	Frangipani	0.21	0.25	2.52	1.85	Low	Remove	
50	<i>Plumeria rubra</i>	Frangipani	0.12	0.20	2.00	1.68	Low	Remove	
51	<i>Hibiscus rosa-sinensis</i>	China Rose	0.20	0.30	2.40	2.00	Low	Remove	
52	<i>Plumeria rubra</i>	Frangipani	0.14	0.16	2.00	1.53	Low	Remove	
53	<i>Ulmus parvifolia</i>	Chinese Elm	0.57	0.71	6.84	2.87	Moderate	Retain and Protect	
54	<i>Populus deltoides</i>	American Cottonwood	0.66	0.80	7.92	3.01	Moderate	Remove	
55	<i>Ulmus parvifolia</i>	Chinese Elm	0.38	0.56	4.56	2.59	Moderate	Remove	
56	<i>Populus deltoides</i>	American Cottonwood	0.63	0.73	7.56	2.90	Moderate	Remove	
57	<i>Ulmus parvifolia</i>	Chinese Elm	0.33	0.40	3.96	2.25	Moderate	Remove	
58	<i>Calidstenon viminalis</i> cv.	Weeping Bottlebrush	0.19	0.25	2.28	1.85	Low	Remove	
59	<i>Calidstenon viminalis</i> cv.	Weeping Bottlebrush	0.16	0.22	2.00	1.75	Low	Remove	
60	<i>Calidstenon viminalis</i> cv.	Weeping Bottlebrush	0.33	0.37	3.96	2.18	Low	Remove	
61	<i>Hibiscus rosa-sinensis</i>	China Rose	0.09	0.18	2.00	1.61	Low	Remove	
62	<i>Laurumn frax</i>	Laurustrinus	0.15	0.20	2.00	1.68	Low	Remove	
63	<i>Schinus molle</i>	Peppercorn Tree	0.13	0.20	13.56	3.57	Moderate	Remove	
64	<i>Viburnum tinus</i>	Laurustrinus	0.10	0.15	2.00	1.49	Low	Remove	
65	<i>Calidstenon viminalis</i> cv.	Crimson Bottlebrush	0.19	0.28	2.28	1.88	Moderate	Retain and Protect	



4.2 Tree Impact Assessment Schedule

SummitCare, Jamisontown - Tree Assessment Schedule (7/12/23)																			
Tree ID	Trees in Group	Tree Species	Common Name	Height (m)	Average Spread (m)	Trunk Diameter Breast Height (dbh) (m)	Trunk Diameter at base (dg) (m)	Nominal TPZ radius (m) (AS 4970)	Nominal SRZ radius (m) (AS 4970)	Age Class	Current Vigour	Current Form	Tree Origin	Noted Defects	SULE Rating	Retention Value	General Comments and Notes	Incursion and Impact	Recommendation
2	1	<i>Cupressus macrocarpa</i> cv.	Monterey Cypress	8.0	6.0	0.35	0.41	4.20	2.28	Mature	Fair	Average	Exotic		Medium (15-40 years)	Low	Adjacent building.	Within work and building footprint	Remove
3	1	<i>Lagerstroemia indica</i>	Crepe Myrtle	4.0	3.0	0.10	0.12	2.00	1.36	Mature	Fair	Average	Exotic		Replaceable (Small/Young)	Low		Within work and building footprint	Remove
4	1	<i>Magnolia grandiflora</i>	American Bull Bay Magnolia	6.0	3.0	0.10	0.12	2.00	1.36	Mature	Good	Average	Exotic		Long (>40 years)	Moderate		Within work and building footprint	Remove
5	1	<i>Pyrus calleryana</i> cv.	Callery Pear	7.0	4.0	0.15	0.20	2.00	1.68	Mature	Good	Average	Exotic		Medium (15-40 years)	Moderate		Within work and building footprint	Remove
6	1	<i>Ligustrum lucidum</i>	Broadleaf Privet	6.0	5.0	0.20	0.40	2.40	2.25	Mature	Fair	Average	Weed	Co-dominant Stems	Remove (<5 years)	Nil / Remove	Exempt.	Exempt and within work and building footprint	Remove
7	2	<i>Ligustrum lucidum</i>	Broadleaf Privet	6.0	5.0	0.20	0.40	2.40	2.25	Mature	Fair	Average	Weed	Co-dominant Stems	Remove (<5 years)	Nil / Remove	Exempt.	Exempt and within work and building footprint	Remove
8	2	<i>Ligustrum lucidum</i>	Broadleaf Privet	6.0	5.0	0.15	0.25	2.00	1.85	Mature	Fair	Average	Weed	Co-dominant Stems	Remove (<5 years)	Nil / Remove	Exempt.	Exempt and within work and building footprint	Remove
9	4	<i>Ligustrum lucidum</i>	Broadleaf Privet	6.0	5.0	0.15	0.18	2.00	1.61	Mature	Fair	Average	Weed		Remove (<5 years)	Nil / Remove	Exempt.	Exempt and within work and building footprint	Remove
10	1	<i>Melia azedarach</i>	White Cedar	7.5	7.0	0.25	0.42	3.00	2.30	Mature	Fair	Average	Endemic	Co-dominant Stems Inclusions	Long (>40 years)	Low	Somewhat invasive species.	Within work and building footprint	Remove
11	1	<i>Ligustrum lucidum</i>	Broadleaf Privet	6.0	5.0	0.20	0.22	2.40	1.75	Mature	Fair	Average	Weed		Remove (<5 years)	Nil / Remove	Exempt.	Exempt and within work and building footprint	Remove
12	1	<i>Ligustrum lucidum</i>	Broadleaf Privet	6.0	5.0	0.30	0.35	3.60	2.13	Mature	Fair	Average	Weed	Co-dominant Stems	Remove (<5 years)	Nil / Remove	Exempt.	Exempt and within work and building footprint	Remove
13	1	<i>Ligustrum lucidum</i>	Broadleaf Privet	6.0	5.0	0.21	0.28	2.52	1.94	Mature	Fair	Average	Weed	Co-dominant Stems	Remove (<5 years)	Nil / Remove	Exempt.	Exempt and within work and building footprint	Remove
14	1	<i>Ligustrum lucidum</i>	Broadleaf Privet	6.0	5.0	0.20	0.34	2.40	2.10	Mature	Fair	Average	Weed		Remove (<5 years)	Nil / Remove	Exempt.	Exempt and within work and building footprint	Remove
15	1	<i>Ligustrum lucidum</i>	Broadleaf Privet	6.0	5.0	0.20	0.26	2.40	1.88	Mature	Fair	Average	Weed		Remove (<5 years)	Nil / Remove	Exempt.	Exempt and within work and building footprint	Remove
16	1	<i>Ligustrum lucidum</i>	Broadleaf Privet	6.0	5.0	0.20	0.26	2.40	1.88	Mature	Fair	Average	Weed	Co-dominant Stems	Remove (<5 years)	Nil / Remove	Exempt.	Exempt and within work and building footprint	Remove
17	1	<i>Ligustrum lucidum</i>	Broadleaf Privet	6.0	5.0	0.28	0.40	3.36	2.25	Mature	Fair	Average	Weed	Co-dominant Stems	Remove (<5 years)	Nil / Remove	Exempt.	Exempt and within work and building footprint	Remove
18	1	<i>Ligustrum lucidum</i>	Broadleaf Privet	6.0	5.0	0.26	0.45	3.12	2.37	Mature	Fair	Average	Weed		Remove (<5 years)	Nil / Remove	Exempt.	Exempt and within work and building footprint	Remove
19	8	<i>Photinia x fraseri 'Robusta'</i>	Photinia	5.5	4.0	0.20	0.25	2.40	1.85	Mature	Fair	Poor	Exotic		Long (>40 years)	Low	Hedge planting now overgrown and interspersed with Privet. Over 5m in height so recorded as a group. Some smaller specimens to north not recorded due to being less than 3m.	Within work and building footprint	Remove
21	4	<i>Ligustrum lucidum</i>	Broadleaf Privet	6.0	5.0	0.30	0.30	3.60	2.00	Mature	Fair	Average	Weed		Remove (<5 years)	Nil / Remove	Closely spaced group of 4. Largest specimen measured. Exempt.	Exempt and within work and building footprint	Remove
23	1	<i>Syzygium paniculatum</i>	Magenta Cherry	8.0	6.0	0.29	0.35	3.48	2.13	Mature	Good	Average	Native		Long (>40 years)	Moderate		Within work and building footprint	Remove
24	1	<i>Calodendrum capense</i>	Cape Chestnut	6.0	4.0	0.12	0.17	2.00	1.57	Semi-mature	Fair	Poor	Exotic	Very Asymmetric Form	Medium (15-40 years)	Low		Within work and building footprint	Remove
29	1	<i>Callistemon viminalis</i> cv.	Weeping Bottlebrush	3.0	2.0	0.10	0.15	2.00	1.49	Mature	Fair	Poor	Native		Medium (15-40 years)	Low		Within work and building footprint	Remove
30	1	<i>Callistemon viminalis</i> cv.	Weeping Bottlebrush	3.0	2.0	0.10	0.15	2.00	1.49	Mature	Fair	Poor	Native		Medium (15-40 years)	Low		Within work and building footprint	Remove
31	1	<i>Callistemon viminalis</i> cv.	Weeping Bottlebrush	3.0	2.0	0.10	0.15	2.00	1.49	Mature	Fair	Poor	Native		Medium (15-40 years)	Low		Within work and building footprint	Remove
32	1	<i>Callistemon viminalis</i> cv.	Weeping Bottlebrush	3.0	2.0	0.10	0.15	2.00	1.49	Mature	Fair	Poor	Native		Medium (15-40 years)	Low		Within work and building footprint	Remove
35	1	<i>Camellia sasanqua</i>	Camellia	4.0	4.0	0.16	0.19	2.00	1.65	Mature	Good	Poor	Exotic	Very Asymmetric Form	Medium (15-40 years)	Low	Heavily pruned to north side.	Within work and building footprint	Remove
36	1	<i>Plumeria rubra</i>	Frangipani	3.0	3.0	0.18	0.18	2.16	1.61	Mature	Fair	Poor	Exotic	Co-dominant Stems, Very Asymmetric Form, Tip Dieback	Medium (15-40 years)	Low	Growing in garden against building.	Within work and building footprint	Remove
37	1	<i>Plumeria rubra</i>	Frangipani	3.0	3.0	0.21	0.25	2.52	1.85	Mature	Fair	Poor	Exotic	Co-dominant Stems, Very Asymmetric Form	Medium (15-40 years)	Low	Growing in garden against building. Smaller Camellia intergrown with tree.	Within work and building footprint	Remove
38	1	<i>Camellia sasanqua</i>	Camellia	2.5	2.0	0.05	0.10	2.00	1.26	Semi-mature	Fair	Average	Exotic		Replaceable (Small/Young)	Low	Very small tree.	Within work and building footprint	Remove
39	1	<i>Callistemon viminalis</i> cv.	Weeping Bottlebrush	3.0	3.0	0.12	0.16	2.00	1.53	Mature	Good	Average	Native		Medium (15-40 years)	Low		Within work and building footprint	Remove
41	1	<i>Yucca elephantipes</i>	Giant Yucca	5.0	1.0	0.22	0.40	2.64	2.25	Mature	Fair	Average	Exotic		Replaceable (Small/Young)	Low	Multi-trunked, adjacent building. Undesirable plant in aged care environment.	Within work and building footprint	Remove
43	1	<i>Cupressus macrocarpa</i> cv.	Monterey Cypress	8.5	7.0	0.42	0.54	5.04	2.55	Mature	Fair	Average	Exotic		Medium (15-40 years)	Low		Within work and building footprint	Remove
44	1	<i>Schinus areira</i>	Peppercorn Tree	12.0	14.0	0.79	1.00	9.48	3.31	Mature	Good	Average	Exotic	Co-dominant Stems, Decay-Minor, Epicormic Growth, Deadwood-Minor	Long (>40 years)	Moderate		Within work and building footprint	Remove
45	6	<i>Murraya paniculata</i>	Murraya	3.0	3.0	0.12	0.15	2.00	1.49	Mature	Good	Average	Exotic		Medium (15-40 years)	Moderate	Neighbouring property dense hedge. Provides good screen to neighbour. Levels approximately 200mm lower into neighbours property.	Neighbours tree. Nil impact expected.	Retain and Protect
46	1	<i>Ligustrum lucidum</i>	Broadleaf Privet	8.0	8.0	0.40	0.40	4.80	2.25	Mature	Fair	Average	Weed		Remove (<5 years)	Nil / Remove	Exempt weed species, but in neighbours yard. Should request neighbours permission to remove on their behalf.	Neighbours tree. Exempt weed species.	Remove
47	1	<i>Ligustrum lucidum</i>	Broadleaf Privet	5.0	4.0	0.15	0.20	2.00	1.68	Mature	Fair	Average	Weed	Very Asymmetric Form	Remove (<5 years)	Nil / Remove	Exempt weed species, but in neighbours yard. Should request neighbours permission to remove on their behalf.	Neighbours tree. Exempt weed species.	Remove
48	1	<i>Syzygium paniculatum</i>	Magenta Cherry	12.0	9.0	0.39	0.49	4.68	2.45	Mature	Fair	Average	Native	Epicormic Growth, Co-dominant Stems	Long (>40 years)	Moderate	Previously topped, most of canopy is extensive and now well aged epicormic re-growth.	Neighbours tree. Area around the trees to be retained at existing levels, apart from the topping up of topsoil and installation of mulch. Mulch and temporary irrigation to be applied during construction. Fencing to remain in place during major building works and can only be removed to undertake final landscape works and to construct the footpath. Footpath to be construction at or above existing levels with only minor surface impacts expected.	Retain and Protect
49	1	<i>Jacaranda mimosifolia</i>	Jacaranda	14.0	10.0	0.52	0.60	6.24	2.67	Mature	Fair	Average	Exotic	Epicormic Growth, Co-dominant Stems	Long (>40 years)	Moderate	Neighbouring property tree. Some branches have been historically lopped, otherwise large and prominent tree in good condition.	Neighbours tree. Area around the trees to be retained at existing levels, apart from the topping up of topsoil and installation of mulch. Mulch and temporary irrigation to be applied during construction. Fencing to remain in place during major building works and can only be removed to undertake final landscape works and to construct the footpath. Footpath to be construction at or above existing levels with only minor surface impacts expected.	Retain and Protect
50	1	<i>Citrus x latifolia</i>	Persian (Common) Lime	3.5	3.0	0.15	0.20	2.00	1.68	Mature	Good	Average	Exotic	Epicormic Growth	Medium (15-40 years)	Low	Small neighbouring property tree.	Neighbours tree. Nil impact expected.	Retain and Protect
51	1	<i>Callistemon viminalis</i> cv.	Weeping Bottlebrush	3.0	3.0	0.11	0.20	2.00	1.68	Mature	Good	Average	Native		Medium (15-40 years)	Low	Small neighbouring property tree.	Neighbours tree. Nil impact expected.	Retain and Protect
52	1	<i>Callistemon viminalis</i> cv.	Weeping Bottlebrush	8.0	5.0	0.29	0.42	3.48	2.30	Mature	Fair	Average	Native		Medium (15-40 years)	Moderate	Small neighbouring property tree.	Neighbours tree. Nil impact expected.	Retain and Protect
53	1	<i>Jacaranda mimosifolia</i>	Jacaranda	14.0	12.0	0.68	0.80	8.16	3.01	Mature	Fair	Average	Exotic	Co-dominant Stems	Long (>40 years)	Moderate	Area around the tree to be retained at existing levels, apart from the topping up of topsoil and installation of mulch. New building and landscape decking to the east of the tree to be suspended above the existing ground levels. Posts for decking are to be located outside of the SRZ and are to be tailored on site based on root investigations and as directed by the Project Consulting Arborist. Building piers to be located outside of the TPZ. Mulch and temporary irrigation to be applied during construction. Fencing to remain in place during major building works and can only be removed to undertake final landscape works and to construct the deck. Only minor surface impacts expected. Install trunk protection as specified in the Arboricultural Impact Assessment Report and T-03 Tree Protection Specifications. Minor canopy pruning (<10%) is required for pedestrian clearances to the deck. Canopy pruning to be undertaken by a minimum AQF Level 3 Arborist and only at the direction of the Project Consulting Arborist. Pruning extent is to be minimised where possible.	Area around the tree to be retained at existing levels, apart from the topping up of topsoil and installation of mulch. New building and landscape decking to the east of the tree to be suspended above the existing ground levels. Posts for decking are to be located outside of the SRZ and are to be tailored on site based on root investigations and as directed by the Project Consulting Arborist. Building piers to be located outside of the TPZ. Mulch and temporary irrigation to be applied during construction. Fencing to remain in place during major building works and can only be removed to undertake final landscape works and to construct the deck. Only minor surface impacts expected. Install trunk protection as specified in the Arboricultural Impact Assessment Report and T-03 Tree Protection Specifications. Minor canopy pruning (<10%) is required for pedestrian clearances to the deck. Canopy pruning to be undertaken by a minimum AQF Level 3 Arborist and only at the direction of the Project Consulting Arborist. Pruning extent is to be minimised where possible.	Retain and Protect
54	1	<i>Celtis sinensis</i>	Chinese Hackberry	9.0	7.0	0.25	0.30	3.00	2.00	Mature	Fair	Average	Invasive	Tip Dieback	Remove (<5 years)	Nil / Remove	Exempt.	Exempt and within work and building footprint	Remove
55	1	<i>Celtis sinensis</i>	Chinese Hackberry	8.5	7.0	0.22	0.27	2.64	1.91	Mature	Fair	Average	Invasive	Tip Dieback	Remove (<5 years)	Nil / Remove	Exempt.	Exempt and within work and building footprint	Remove
56	1	<i>Melia azedarach</i>	White Cedar	9.5	9.0	0.41	0.47	4.92	2.41	Mature	Fair	Average	Endemic		Long (>40 years)	Low	Somewhat invasive species. Covered in vines. 2 x Callistemon viminalis growing on either side, also covered in vines and are very poor forms.	Within work and building footprint	Remove
57	1	<i>Prunus cerasifera 'Nigra'</i>	Purple-leaved Cherry-plum	3.0	3.0	0.14	0.14	2.00	1.45	Mature	Good	Average	Exotic		Replaceable (Small/Young)	Low	Very small tree.	Within work and building footprint	Remove
58	1	<i>Plumeria rubra</i>	Frangipani	3.0	4.0	0.21	0.25	2.52	1.85	Mature	Fair	Poor	Exotic	Very Asymmetric Form, Lean-Minor	Medium (15-40 years)	Low	Growing against building.	Within work and building footprint	Remove
59	1	<i>Plumeria rubra</i>	Frangipani	3.0	3.0	0.12	0.20	2.00	1.68	Mature	Fair	Poor	Exotic	Very Asymmetric Form, Lean-Minor	Medium (15-40 years)	Low	Growing against building.	Within work and building footprint	Remove

Tree ID	Trees in Group	Tree Species	Common Name	Height (m)	Average Spread (m)	Trunk Diameter Breast Height (m)	Trunk Diameter at base (dg) (m)	Nominal TPZ radius (m) 12xdbh (AS 4970)	Nominal SRZ radius (m) (AS 4970)	Age Class	Current Vigour	Current Form	Tree Origin	Noted Defects	SULE Rating	Retention Value	General Comments and Notes	Incursion and Impact	Recommendation
61	1	<i>Hibiscus rosa-sinensis</i>	China Rose	3.0	3.0	0.20	0.30	2.40	2.00	Mature	Fair	Average	Exotic		Replaceable (Small/Young)	Low		Within work and building footprint	Remove
62	1	<i>Plumeria rubra</i>	Frangipani	3.0	3.0	0.14	0.16	2.00	1.53	Mature	Good	Poor	Exotic	Very Asymmetric Form, Lean-Major	Medium (15-40 years)	Low	Growing against building.	Within work and building footprint	Remove
66	1	<i>Ulmus parvifolia</i>	Chinese Elm	9.0	9.0	0.57	0.71	6.84	2.87	Mature	Good	Average	Exotic	Co-dominant Stems, Deadwood-Minor	Long (>40 years)	Moderate	Very low and spreading canopy, particularly to north-west.	Area around the tree to be retained at existing levels, apart from the topping up of topsoil and installation of mulch. Minor incursion expected for the excavation required to construct the basement. No benching or battering to be undertaken within TPA to construct new building beyond noted minor incursion of 6%. New building terrace immediately adjacent the tree (to the south) is to be suspended above the existing ground levels. Works undertaken in this location are to be supervised by the Project Consulting Arborist. Mulch and temporary irrigation to be applied during construction. Minor canopy pruning (<10%) may be required for building and scaffold clearances.	Retain and Protect
67	1	<i>Populus deltoides</i>	American Cottonwood	18.0	16.0	0.66	0.80	7.92	3.01	Mature	Good	Average	Exotic	Tip Dieback, Deadwood-Minor, Decay-Minor, Epicormic Growth	Medium (15-40 years)	Moderate		Building work would involve extensive disturbance to root system and extensive canopy pruning. Unable to realistically retain trees with current proposed built forms and incursions. Recommend removal of tree to allow good replacement and longer term planting.	Remove
68	1	<i>Ulmus parvifolia</i>	Chinese Elm	9.0	9.0	0.38	0.56	4.56	2.59	Mature	Good	Average	Exotic	Epicormic Growth	Long (>40 years)	Moderate	Growing in close proximity to adjoining Populus tree to south.	Building work would involve extensive disturbance to root system and extensive canopy pruning. Unable to realistically retain trees with current proposed built forms and incursions. Recommend removal of tree to allow good replacement and longer term planting.	Remove
69	1	<i>Populus deltoides</i>	American Cottonwood	18.0	14.0	0.63	0.73	7.56	2.90	Mature	Good	Average	Exotic	Tip Dieback, Epicormic Growth, Very Asymmetric Form, Root Impacts, Deadwood-Minor	Medium (15-40 years)	Moderate	Numerous exposed roots, many damaged via mowers etc.	Within work and building footprint	Remove
70	1	<i>Ulmus parvifolia</i>	Chinese Elm	9.0	9.0	0.33	0.40	3.96	2.25	Mature	Good	Suppressed	Exotic	Co-dominant Stems, Epicormic Growth	Long (>40 years)	Moderate		Within work and building footprint	Remove
74	1	<i>Callistemon viminalis cv.</i>	Weeping Bottlebrush	8.0	3.0	0.19	0.25	2.28	1.85	Mature	Fair	Poor	Native	Tip Dieback, Very Asymmetric Form, Lean-Minor, Co-dominant Stems	Medium (15-40 years)	Low		Within work and building footprint	Remove
75	1	<i>Callistemon viminalis cv.</i>	Weeping Bottlebrush	7.0	3.0	0.16	0.22	2.00	1.75	Mature	Fair	Poor	Native	Tip Dieback	Medium (15-40 years)	Low		Within work and building footprint	Remove
76	1	<i>Callistemon viminalis cv.</i>	Weeping Bottlebrush	6.0	3.0	0.33	0.37	3.96	2.18	Mature	Fair	Average	Native		Medium (15-40 years)	Low		Within work and building footprint	Remove
77	9	<i>Hibiscus rosa-sinensis</i>	China Rose	2.5	2.5	0.09	0.18	2.00	1.61	Mature	Fair	Average	Exotic		Medium (15-40 years)	Low	Heavily pruned hedge.	Within work and building footprint	Remove
78	13	<i>Viburnum tinus</i>	Laurustinus	2.0	2.0	0.15	0.20	2.00	1.68	Mature	Fair	Average	Exotic		Replaceable (Small/Young)	Low	Heavily pruned hedge	Within work and building footprint	Remove
79	1	<i>Schinus areira</i>	Peppercorn Tree	12.0	12.0	1.13	1.20	13.56	3.57	Mature	Good	Average	Exotic	Deadwood-Minor	Long (>40 years)	Moderate		Within work and building footprint. Excessive disturbance to root zone. Unable to retain.	Remove
80	7	<i>Viburnum tinus</i>	Laurustinus	2.0	2.0	0.10	0.15	2.00	1.49	Mature	Fair	Average	Exotic		Medium (15-40 years)	Low	Heavily pruned hedge	Within work and building footprint	Remove
81	1	<i>Callistemon citrinus cv.</i>	Crimson Bottlebrush	5.0	4.0	0.19	0.26	2.28	1.88	Mature	Fair	Average	Native	Co-dominant Stems	Medium (15-40 years)	Moderate	Small tree, just onto neighbours land.	Neighbours tree. Nil impact expected.	Retain and Protect

4.3 Tree Data Summary Sheets

ID # 02

Species: *Cupressus macrocarpa* cv.

Common: Monterey Cypress

Height (m): 8.00
DBH (m): 0.35 DGL (m): 0.41
TPZ (m): 4.2 SRZ (m): 2.28
Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Medium (15-40 years)

Retention Value: **Low**



ID # 06

Species: *Ligustrum lucidum*

Common: Broadleaf Privet

Height (m): 6.00
DBH (m): 0.20 DGL (m): 0.40
TPZ (m): 2.4 SRZ (m): 2.25
Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Remove (<5 years)

Retention Value: **Nil / Remove**



ID # 03

Species: *Lagerstroemia indica*

Common: Crepe Myrtle

Height (m): 4.00
DBH (m): 0.10 DGL (m): 0.12
TPZ (m): 2 SRZ (m): 1.5
Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Replaceable (<10 years)

Retention Value: **Low**



ID # 07

Species: *Ligustrum lucidum*

Common: Broadleaf Privet

Height (m): 6.00
DBH (m): 0.20 DGL (m): 0.40
TPZ (m): 2.4 SRZ (m): 2.25
Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Remove (<5 years)

Retention Value: **Nil / Remove**



ID # 04

Species: *Magnolia grandiflora*

Common: American Bull Bay Magnolia

Height (m): 6.00
DBH (m): 0.10 DGL (m): 0.12
TPZ (m): 2 SRZ (m): 1.5
Current Form: Average
Current Vigour: Good
Age Class: Mature
SULE: Long (>40 years)

Retention Value: **Moderate**



ID # 08

Species: *Ligustrum lucidum*

Common: Broadleaf Privet

Height (m): 6.00
DBH (m): 0.15 DGL (m): 0.25
TPZ (m): 2 SRZ (m): 1.85
Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Remove (<5 years)

Retention Value: **Nil / Remove**



ID # 05

Species: *Pyrus calleryana* cv.

Common: Callery Pear

Height (m): 7.0
DBH (m): 0.15 DGL (m): 0.20
TPZ (m): 2 SRZ (m): 1.68
Current Form: Average
Current Vigour: Good
Age Class: Mature
SULE: Medium (15-40 years)

Retention Value: **Moderate**



ID # 09

Species: *Ligustrum lucidum*

Common: Broadleaf Privet

Height (m): 6.00
DBH (m): 0.15 DGL (m): 0.18
TPZ (m): 2 SRZ (m): 1.61
Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Remove (<5 years)

Retention Value: **Nil / Remove**



ID # 10

Species: *Melia azedarach*

Common: White Cedar

Height (m): 7.50
DBH (m): 0.25 DGL (m): 0.42
TPZ (m): 3 SRZ (m): 2.3

Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Long (>40 years)

Retention Value: **Low**



ID # 14

Species: *Ligustrum lucidum*

Common: Broadleaf Privet

Height (m): 6.00
DBH (m): 0.20 DGL (m): 0.34
TPZ (m): 2.4 SRZ (m): 2.1

Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Remove (<5 years)

Retention Value: **Nil / Remove**



ID # 11

Species: *Ligustrum lucidum*

Common: Broadleaf Privet

Height (m): 6.00
DBH (m): 0.20 DGL (m): 0.22
TPZ (m): 2.4 SRZ (m): 1.75

Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Remove (<5 years)

Retention Value: **Nil / Remove**



ID # 15

Species: *Ligustrum lucidum*

Common: Broadleaf Privet

Height (m): 6.00
DBH (m): 0.20 DGL (m): 0.26
TPZ (m): 2.4 SRZ (m): 1.88

Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Remove (<5 years)

Retention Value: **Nil / Remove**



ID # 12

Species: *Ligustrum lucidum*

Common: Broadleaf Privet

Height (m): 6.00
DBH (m): 0.30 DGL (m): 0.35
TPZ (m): 3.6 SRZ (m): 2.13

Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Remove (<5 years)

Retention Value: **Nil / Remove**



ID # 16

Species: *Ligustrum lucidum*

Common: Broadleaf Privet

Height (m): 6.00
DBH (m): 0.20 DGL (m): 0.26
TPZ (m): 2.4 SRZ (m): 1.88

Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Remove (<5 years)

Retention Value: **Nil / Remove**



ID # 13

Species: *Ligustrum lucidum*

Common: Broadleaf Privet

Height (m): 6.00
DBH (m): 0.21 DGL (m): 0.28
TPZ (m): 2.52 SRZ (m): 1.94

Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Remove (<5 years)

Retention Value: **Nil / Remove**



ID # 17

Species: *Ligustrum lucidum*

Common: Broadleaf Privet

Height (m): 6.00
DBH (m): 0.28 DGL (m): 0.40
TPZ (m): 3.36 SRZ (m): 2.25

Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Remove (<5 years)

Retention Value: **Nil / Remove**



ID # 18

Species: *Ligustrum lucidum*

Common: Broadleaf Privet

Height (m): 6.00
DBH (m): 0.26 DGL (m): 0.45
TPZ (m): 3.12 SRZ (m): 2.37
Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Remove (<5 years)

Retention Value: Nil / Remove



ID # 24

Species: *Calodendrum capense*

Common: Cape Chestnut

Height (m): 6.0
DBH (m): 0.12 DGL (m): 0.17
TPZ (m): 2 SRZ (m): 1.57
Current Form: Poor
Current Vigour: Fair
Age Class: Semi-mature
SULE: Medium (15-40 years)

Retention Value: Low



ID # 19

Species: *Photinia x fraseri 'Robusta'*

Common: Photinia

Height (m): 5.50
DBH (m): 0.20 DGL (m): 0.25
TPZ (m): 2.4 SRZ (m): 1.85
Current Form: Poor
Current Vigour: Fair
Age Class: Mature
SULE: Long (>40 years)

Retention Value: Low



ID # 29

Species: *Callistemon viminalis cv.*

Common: Weeping Bottlebrush

Height (m): 3.00
DBH (m): 0.10 DGL (m): 0.15
TPZ (m): 2 SRZ (m): 1.5
Current Form: Poor
Current Vigour: Fair
Age Class: Mature
SULE: Medium (15-40 years)

Retention Value: Low



ID # 21

Species: *Ligustrum lucidum*

Common: Broadleaf Privet

Height (m): 6.00
DBH (m): 0.30 DGL (m): 0.30
TPZ (m): 3.6 SRZ (m): 2
Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Remove (<5 years)

Retention Value: Nil / Remove



ID # 30

Species: *Callistemon viminalis cv.*

Common: Weeping Bottlebrush

Height (m): 3.00
DBH (m): 0.10 DGL (m): 0.15
TPZ (m): 2 SRZ (m): 1.5
Current Form: Poor
Current Vigour: Fair
Age Class: Mature
SULE: Medium (15-40 years)

Retention Value: Low



ID # 23

Species: *Syzygium paniculatum*

Common: Magenta Cherry

Height (m): 8.00
DBH (m): 0.29 DGL (m): 0.35
TPZ (m): 3.48 SRZ (m): 2.13
Current Form: Average
Current Vigour: Good
Age Class: Mature
SULE: Long (>40 years)

Retention Value: Moderate



ID # 31

Species: *Callistemon viminalis cv.*

Common: Weeping Bottlebrush

Height (m): 3.00
DBH (m): 0.10 DGL (m): 0.15
TPZ (m): 2 SRZ (m): 1.5
Current Form: Poor
Current Vigour: Fair
Age Class: Mature
SULE: Medium (15-40 years)

Retention Value: Low



ID # 32

Species: *Callistemon viminalis* cv.

Common: Weeping Bottlebrush

Height (m): 3.00
DBH (m): 0.10 DGL (m): 0.15
TPZ (m): 2 SRZ (m): 1.5
Current Form: Poor
Current Vigour: Fair
Age Class: Mature
SULE: Medium (15-40 years)

Retention Value: **Low**



ID # 38

Species: *Camellia sasanqua*

Common: Camellia

Height (m): 2.50
DBH (m): 0.05 DGL (m): 0.10
TPZ (m): 2 SRZ (m): 1.5
Current Form: Average
Current Vigour: Fair
Age Class: Semi-mature
SULE: Replaceable

Retention Value: **Low**



ID # 35

Species: *Camellia sasanqua*

Common: Camellia

Height (m): 4.00
DBH (m): 0.16 DGL (m): 0.19
TPZ (m): 2 SRZ (m): 1.65
Current Form: Poor
Current Vigour: Good
Age Class: Mature
SULE: Medium (15-40 years)

Retention Value: **Low**



ID # 39

Species: *Callistemon viminalis* cv.

Common: Weeping Bottlebrush

Height (m): 3.00
DBH (m): 0.12 DGL (m): 0.16
TPZ (m): 2 SRZ (m): 1.53
Current Form: Average
Current Vigour: Good
Age Class: Mature
SULE: Medium (15-40 years)

Retention Value: **Low**



ID # 36

Species: *Plumeria rubra*

Common: Frangipani

Height (m): 3.00
DBH (m): 0.18 DGL (m): 0.18
TPZ (m): 2.16 SRZ (m): 1.61
Current Form: Poor
Current Vigour: Fair
Age Class: Mature
SULE: Medium (15-40 years)

Retention Value: **Low**



ID # 41

Species: *Yucca elephantipes*

Common: Giant Yucca

Height (m): 5.00
DBH (m): 0.22 DGL (m): 0.40
TPZ (m): 2.64 SRZ (m): 2.25
Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Replaceable

Retention Value: **Low**



ID # 37

Species: *Plumeria rubra*

Common: Frangipani

Height (m): 3.00
DBH (m): 0.21 DGL (m): 0.25
TPZ (m): 2.52 SRZ (m): 1.85
Current Form: Poor
Current Vigour: Fair
Age Class: Mature
SULE: Medium (15-40 years)

Retention Value: **Low**



ID # 43

Species: *Cupressus macrocarpa* cv.

Common: Monterey Cypress

Height (m): 8.5
DBH (m): 0.42 DGL (m): 0.54
TPZ (m): 5.04 SRZ (m): 2.55
Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Medium (15-40 years)

Retention Value: **Low**



ID # 44

Species: *Schinus areira*

Common: Peppercorn Tree

Height (m): 12.00
DBH (m): 0.79 DGL (m): 1.00
TPZ (m): 9.48 SRZ (m): 3.31

Current Form: Average
Current Vigour: Good
Age Class: Mature
SULE: Long (>40 years)

Retention Value: **Moderate**



ID # 48

Species: *Syzygium paniculatum*

Common: Magenta Cherry

Height (m): 12.00
DBH (m): 0.39 DGL (m): 0.49
TPZ (m): 4.68 SRZ (m): 2.45

Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Long (>40 years)

Retention Value: **Moderate**



ID # 45

Species: *Murraya paniculata*

Common: Murraya

Height (m): 3.00
DBH (m): 0.12 DGL (m): 0.15
TPZ (m): 2 SRZ (m): 1.5

Current Form: Average
Current Vigour: Good
Age Class: Mature
SULE: Medium (15-40 years)

Retention Value: **Low**



ID # 49

Species: *Jacaranda mimosifolia*

Common: Jacaranda

Height (m): 14.00
DBH (m): 0.52 DGL (m): 0.60
TPZ (m): 6.24 SRZ (m): 2.67

Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Long (>40 years)

Retention Value: **Moderate**



ID # 46

Species: *Ligustrum lucidum*

Common: Broadleaf Privet

Height (m): 8.00
DBH (m): 0.40 DGL (m): 0.40
TPZ (m): 4.8 SRZ (m): 2.25

Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Remove (<5 years)

Retention Value: **Nil / Remove**



ID # 50

Species: *Citrus x latifolia*

Common: Persian (Common) Lime

Height (m): 3.50
DBH (m): 0.15 DGL (m): 0.20
TPZ (m): 2 SRZ (m): 1.68

Current Form: Average
Current Vigour: Good
Age Class: Mature
SULE: Medium (15-40 years)

Retention Value: **Low**



ID # 47

Species: *Ligustrum lucidum*

Common: Broadleaf Privet

Height (m): 5.00
DBH (m): 0.15 DGL (m): 0.20
TPZ (m): 2 SRZ (m): 1.68

Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Remove (<5 years)

Retention Value: **Nil / Remove**



ID # 51

Species: *Callistemon viminalis cv.*

Common: Weeping Bottlebrush

Height (m): 3.00
DBH (m): 0.11 DGL (m): 0.20
TPZ (m): 2 SRZ (m): 1.68

Current Form: Average
Current Vigour: Good
Age Class: Mature
SULE: Medium (15-40 years)

Retention Value: **Low**



ID # 52

Species: *Callistemon viminalis* cv.

Common: Weeping Bottlebrush

Height (m): 8.00
DBH (m): 0.29 DGL (m): 0.42
TPZ (m): 3.48 SRZ (m): 2.3
Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Medium (15-40 years)

Retention Value: **Moderate**



ID # 56

Species: *Melia azedarach*

Common: White Cedar

Height (m): 9.50
DBH (m): 0.41 DGL (m): 0.47
TPZ (m): 4.92 SRZ (m): 2.41
Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Long (>40 years)

Retention Value: **Low**



ID # 53

Species: *Jacaranda mimosifolia*

Common: Jacaranda

Height (m): 14.00
DBH (m): 0.68 DGL (m): 0.80
TPZ (m): 8.16 SRZ (m): 3.01
Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Long (>40 years)

Retention Value: **Moderate**



ID # 57

Species: *Prunus cerasifera* 'Nigra'

Common: Purple-leaved Cherry-plum

Height (m): 3.00
DBH (m): 0.14 DGL (m): 0.14
TPZ (m): 2 SRZ (m): 1.5
Current Form: Average
Current Vigour: Good
Age Class: Mature
SULE: Replaceable

Retention Value: **Low**



ID # 54

Species: *Celtis sinensis*

Common: Chinese Hackberry

Height (m): 9.0
DBH (m): 0.25 DGL (m): 0.30
TPZ (m): 3 SRZ (m): 2
Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Remove (<5 years)

Retention Value: **Nil / Remove**



ID # 58

Species: *Plumeria rubra*

Common: Frangipani

Height (m): 3.00
DBH (m): 0.21 DGL (m): 0.25
TPZ (m): 2.52 SRZ (m): 1.85
Current Form: Poor
Current Vigour: Fair
Age Class: Mature
SULE: Medium (15-40 years)

Retention Value: **Low**



ID # 55

Species: *Celtis sinensis*

Common: Chinese Hackberry

Height (m): 8.50
DBH (m): 0.22 DGL (m): 0.27
TPZ (m): 2.64 SRZ (m): 1.91
Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Remove (<5 years)

Retention Value: **Nil / Remove**



ID # 59

Species: *Plumeria rubra*

Common: Frangipani

Height (m): 3.00
DBH (m): 0.12 DGL (m): 0.20
TPZ (m): 2 SRZ (m): 1.68
Current Form: Poor
Current Vigour: Fair
Age Class: Mature
SULE: Medium (15-40 years)

Retention Value: **Low**



ID # 61

Species: *Hibiscus rosa-sinensis*

Common: China Rose

Height (m): 3.00
DBH (m): 0.20 DGL (m): 0.30
TPZ (m): 2.4 SRZ (m): 2

Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Replaceable

Retention Value: Low



ID # 68

Species: *Ulmus parvifolia*

Common: Chinese Elm

Height (m): 9.00
DBH (m): 0.38 DGL (m): 0.56
TPZ (m): 4.56 SRZ (m): 2.59

Current Form: Average
Current Vigour: Good
Age Class: Mature
SULE: Long (>40 years)

Retention Value: Moderate



ID # 62

Species: *Plumeria rubra*

Common: Frangipani

Height (m): 3.00
DBH (m): 0.14 DGL (m): 0.16
TPZ (m): 2 SRZ (m): 1.53

Current Form: Poor
Current Vigour: Good
Age Class: Mature
SULE: Medium (15-40 years)

Retention Value: Low



ID # 69

Species: *Populus deltoides*

Common: American Cottonwood

Height (m): 18.00
DBH (m): 0.63 DGL (m): 0.73
TPZ (m): 7.56 SRZ (m): 2.9

Current Form: Average
Current Vigour: Good
Age Class: Mature
SULE: Medium (15-40 years)

Retention Value: Moderate



ID # 66

Species: *Ulmus parvifolia*

Common: Chinese Elm

Height (m): 9.00
DBH (m): 0.57 DGL (m): 0.71
TPZ (m): 6.84 SRZ (m): 2.87

Current Form: Average
Current Vigour: Good
Age Class: Mature
SULE: Long (>40 years)

Retention Value: Moderate



ID # 70

Species: *Ulmus parvifolia*

Common: Chinese Elm

Height (m): 9.00
DBH (m): 0.33 DGL (m): 0.40
TPZ (m): 3.96 SRZ (m): 2.25

Current Form: Suppressed
Current Vigour: Good
Age Class: Mature
SULE: Long (>40 years)

Retention Value: Moderate



ID # 67

Species: *Populus deltoides*

Common: American Cottonwood

Height (m): 18.00
DBH (m): 0.66 DGL (m): 0.80
TPZ (m): 7.92 SRZ (m): 3.01

Current Form: Average
Current Vigour: Good
Age Class: Mature
SULE: Medium (15-40 years)

Retention Value: Moderate



ID # 74

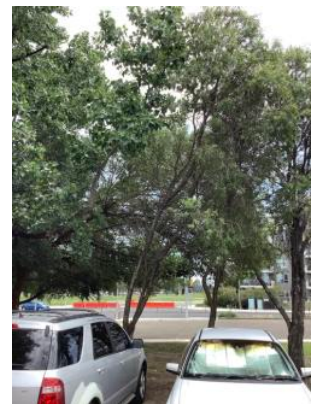
Species: *Callistemon viminalis* cv.

Common: Weeping Bottlebrush

Height (m): 8.0
DBH (m): 0.19 DGL (m): 0.25
TPZ (m): 2.28 SRZ (m): 1.85

Current Form: Poor
Current Vigour: Fair
Age Class: Mature
SULE: Medium (15-40 years)

Retention Value: Low



ID # 75

Species: *Callistemon viminalis* cv.

Common: Weeping Bottlebrush

Height (m): 7.0
DBH (m): 0.16 DGL (m): 0.22
TPZ (m): 2 SRZ (m): 1.75
Current Form: Poor
Current Vigour: Fair
Age Class: Mature
SULE: Medium (15-40 years)

Retention Value: **Low**



ID # 79

Species: *Schinus areira*

Common: Peppercorn Tree

Height (m): 12.00
DBH (m): 1.13 DGL (m): 1.20
TPZ (m): 13.56 SRZ (m): 3.57
Current Form: Average
Current Vigour: Good
Age Class: Mature
SULE: Long (>40 years)

Retention Value: **Moderate**



ID # 76

Species: *Callistemon viminalis* cv.

Common: Weeping Bottlebrush

Height (m): 6.00
DBH (m): 0.33 DGL (m): 0.37
TPZ (m): 3.96 SRZ (m): 2.18
Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Medium (15-40 years)

Retention Value: **Low**



ID # 80

Species: *Viburnum tinus*

Common: Laurustinus

Height (m): 2.0
DBH (m): 0.10 DGL (m): 0.15
TPZ (m): 2 SRZ (m): 1.5
Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Medium (15-40 years)

Retention Value: **Low**



ID # 77

Species: *Hibiscus rosa-sinensis*

Common: China Rose

Height (m): 2.5
DBH (m): 0.09 DGL (m): 0.18
TPZ (m): 2 SRZ (m): 1.61
Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Medium (15-40 years)

Retention Value: **Low**



ID # 81

Species: *Callistemon citrinus* cv.

Common: Crimson Bottlebrush

Height (m): 5.00
DBH (m): 0.19 DGL (m): 0.26
TPZ (m): 2.28 SRZ (m): 1.88
Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Medium (15-40 years)

Retention Value: **Moderate**



ID # 78

Species: *Viburnum tinus*

Common: Laurustinus

Height (m): 2.0
DBH (m): 0.15 DGL (m): 0.20
TPZ (m): 2 SRZ (m): 1.68
Current Form: Average
Current Vigour: Fair
Age Class: Mature
SULE: Replaceable

Retention Value: **Low**

