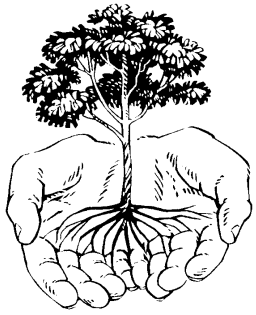

PROPOSED WHITESIDE DEVELOPMENT NORTH RYDE

Arboricultural Assessment

Prepared for

EGC Custodian Services

December 2010

Prepared by

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1.0 INTRODUCTION

1.1 The following report has been prepared for EGC Custodian Services to provide an assessment of the trees within the proposed Whiteside development at North Ryde. The report reviews the current condition and viability of the trees and provides an assessment of the feasibility and suitability of the specimens for retention.

1.2 Where appropriate and information is available, this report also provides a broad assessment of the potential impacts on some trees in the context of the current proposed design features.

1.3 The proposed development is indicated to include Lot 6 located on Whiteside St and Lots 3 & 4 (#14 & #16) David St.

1.4 Refer to the Tree Location Plan for the tree numbers referred to in the Tree Inventory and Assessment Schedule of this report.

2.0 SUMMARY RECOMMENDATIONS AND TABLE

2.1.1 The following summary lists trees that are recommended to be retained or removed. These include trees that are on the proposed development site or that are adjacent to and are within the specified distance from the site. In all, 76 trees were recorded for this tree survey. Of these, 68 were within the proposed development area and of these, the majority are recommended for removal in the short term regardless on the nature of the developments. Trees recorded for this survey within 5 metres of the site or street trees total 8. Generally, these trees would not be affected by development within the proposed lots. At this stage, it is not possible to determine which, if any, retained trees within the site may be adversely affected by excavation or construction, requiring removal.

Interpretation of this table should consider that a number of trees assessed as suitable for retention may have to be reviewed at a later stage. Therefore, recommendations made here to “retain” a tree should be considered as a guide only and the status or suitability of a specimen should be reassessed in the context of proposed development on each separate lot. Trees noted as “retain?” relate to some short lived species that are currently exhibiting good health but have poor longer term viability. Where a tree may be impacted upon by an aspect of development, more detailed arboricultural advice should be obtained as to the feasibility of retaining the tree.

No.	Botanical Name	Common Name	Remove / Retain / Transplant
1	*Syagrus romanzoffianum*	Queen Palm	Remove
2	*Syagrus romanzoffianum*	Queen Palm	Remove
3	*Washingtonia robusta*	Mexican Fan Palm	Consider for transplant
4	*Syagrus romanzoffianum*	Queen Palm	Remove

No.	Botanical Name	Common Name	Remove / Retain / Transplant
5	*Salix babylonica*	Weeping Willow	Remove
6	*Ficus microcarpa var. 'Hillii'*	Hills Weeping Fig	Remove
7	*Ficus microcarpa var. 'Hillii'*	Hills Weeping Fig	Remove
8	*Morus nigra*	Mulberry	Remove
9	*Eucalyptus microcorys*	Tallowwood	Remove
10	*Eucalyptus microcorys*	Tallowwood	Remove
11	*Morus nigra*	Mulberry	Remove
12	*Paulownia tomentosa*	Royal Paulownia	Retain
13	*Cinnamomom camphora*	Camphor Laurel	Remove
14	*Cinnamomom camphora*	Camphor Laurel	Remove
15	*Angophora costata (?)*	Sydney Red Gum	Retain
16	*x Cupressocyparis leylandii*	Leyland Cypress	Reassess in context of final design
17	*Syagrus romanzoffianum*	Queen Palm	Remove
18	*Archontophoenix cunninghamiana*	Bangalow Palm	Consider for transplant
19	*Archontophoenix cunninghamiana*	Bangalow Palm	Consider for transplant
20	*Archontophoenix cunninghamiana*	Bangalow Palm	Consider for transplant

No.	Botanical Name	Common Name	Remove / Retain / Transplant
21	*Lagerstroemia indica*	Crepe Myrtle	Consider for transplant
22	*Cupressus macrocarpa 'Brunniana Aurea'*	Brunniana	Remove
23	*Cupressus macrocarpa 'Brunniana Aurea'*	Brunniana	Remove
24	*Morus nigra*	Mulberry	Remove
25	*Syzygium australe*	Scrub Cherry	Remove
26	*Syzygium paniculatum*	Brushy Cherry	Remove
27	*Macadamia integrifolia*	Macadamia	Remove
28	*Callistemon viminalis*	Weeping Bottlebrush	Remove
29	*Callistemon viminalis*	Weeping Bottlebrush	Remove
30	*Fruit trees*	Citrus trees	Remove
31	*Celtis sinensis*	Chinese Hackberry	Remove
32	*Lagerstroemia indica*	Crepe Myrtle	Consider for transplant
33	*Lagerstroemia indica*	Crepe Myrtle	Consider for transplant
34	*Lagerstroemia indica*	Crepe Myrtle	Consider for transplant
35	*Eucalyptus scoparia*	Wallangarra White Gum	Reassess in context of final design
36	*Ligustrum lucidium*	Broad - Leaved Privet	Remove

No.	Botanical Name	Common Name	Remove / Retain / Transplant
37	*Ligustrum lucidium*	Broad - Leaved Privet	Remove
38	*Eucalyptus seiberi*	Silvertop Ash	Retain? Reassess in context of final design
39	*Cinnamomom camphora*	Camphor Laurel	Remove
40	*Ligustrum lucidium*	Broad - Leaved Privet	Remove
41	*Ligustrum lucidium*	Broad - Leaved Privet	Remove
42	*Ligustrum lucidium*	Broad - Leaved Privet	Remove
43	*Eucalyptus microcorys*	Tallowwood	Remove
44	*Eucalyptus robusta*	Swamp Mahogany	Remove
45	*Eucalyptus microcorys*	Tallowwood	Remove
46	*Ficus rubiginosa*	Port Jackson Fig	Consider for transplant
47	*Grevillea robusta*	Silky Oak	Remove
48	*Grevillea robusta*	Silky Oak	Remove
49	*Grevillea robusta*	Silky Oak	Remove
50	*Grevillea robusta*	Silky Oak	Remove
51	*Grevillea robusta*	Silky Oak	Remove
52	*Grevillea robusta*	Silky Oak	Remove

No.	Botanical Name	Common Name	Remove / Retain / Transplant
53	*Grevillea robusta*	Silky Oak	Remove
54	*Eucalyptus species*	Eucalyptus	Remove
55	*Grevillea robusta*	Silky Oak	Remove
56	*Acacia parramattensis*	Parramatta Green Wattle	Remove
57	*Acacia parramattensis*	Parramatta Green Wattle	Remove
58	*Ligustrum sinense*	Narrow - Leaved Privet	Remove
59	*Ligustrum sinense*	Narrow - Leaved Privet	Remove
60	*Cupressus glabra*	Smooth Arizona Cypress	Retain
61	*Chamaecyparis obtusa 'Crippsii'*	Golden Hinoki Cypress	Remove
62	*Chamaecyparis obtusa*	Hinoki Cypress	Remove
63	*Thuja orientalis*	Book - Leaf Pine	Remove
64	*Ficus microcarpa var. 'Hillii'*	Hills Weeping Fig	Retain? Reassess in context of final design
65	*Corymbia citriodora*	Lemon Scented Gum	Retain
66	*Corymbia citriodora*	Lemon Scented Gum	Retain
67	*Schefflera actinophylla*	Umbrella Tree	Remove
68	*Grevillea robusta*	Silky Oak	Retain

No.	Botanical Name	Common Name	Remove / Retain / Transplant
69	*Jacaranda mimosifolia*	Jacaranda	Remove
70	*Jacaranda mimosifolia*	Jacaranda	Reassess in context of final design
71	*Jacaranda mimosifolia*	Jacaranda	Reassess in context of final design
72	*Acer palmatum*	Japanese Maple	Consider for transplant
73	*Lagerstroemia indica*	Crepe Myrtle	Remove
74	*Corymbia citriodora*	Lemon Scented Gum	Retain
75	*Ceratopetalum gummiferum*	NSW Christmas Bush	Retain
76	*Lagerstroemia indica*	Crepe Myrtle	Retain

2.1.2 Appropriate tree protection measures should be installed and maintained through all stages of demolition, bulk earthworks and construction on this site if the development proceeds. This report provides general guidelines for appropriate tree protection and management during construction; however a more detailed Tree Protection Plan should be developed when the various components of the demolition and construction processes are determined. The Tree Protection Plan should incorporate appropriate tree protection zones, access routes during demolition and construction, site compounds and materials storage.

2.1.3 The location of all trees to be retained and removed, together with their correct dimensions, should be included on all relevant plans, including all bulk earthworks, construction and services drawings.

3.0 FIELD SURVEYS

3.1 SITE ASSESSMENT

3.1.1 The trees on the site and on adjoining sites were assessed on 6/12/2010.

3.1.2 The Levels and Detail Survey Plan prepared by Watson Buchan P/L Ref: 08/0015, 14/2/2008 was used as the basis for the Tree Location Plan contained in this report. Since that survey, there has been a rapid decline and death of a number of trees located in horse yards across the site. As a result, several large trees indicated on the survey no longer existing on site or are presently in a state of decline.

3.2 APPROACH

3.2.1 Tree assessment was carried out to satisfy the requirements of City of Ryde Council's Development Control Plan Part 9.6, 2010 - Tree Preservation Order. Generally, trees were assessed on the basis of satisfying the size requirements:

i. A height exceeding 3 meters or

ii. A trunk girth (circumference) exceeding 450mm.

In some cases, some individual specimens were found to have heights greater than 3 metres but were treated as groups. In all cases these trees were identified as weed species that are exempt from Council's TPO but were included as they appear on the 2008 survey.

3.2.2 Tree locations and data were collected using the following equipment:

- Trimble GPS Pathfinder ProXH Unit
- Reflective Laser with Digital Compass.
- Trimble Ranger Data Logger

Following the completion of field work, GNSS points (Global Navigation Satellite System) were post processed to gain the sub 30cm accuracy by using GPS Pathfinder Office.

3.2.3 It should be noted that following this tree survey, a detailed land survey was undertaken and tree locations plotted. There appears to be some discrepancy between the locations plotted using corrected GNSS and the earlier land survey. The tree locations shown in Diagram 2 have been adjusted to fit the locations plotted in the land survey. However, given the apparent discrepancy, it is recommended that for any trees to be retained, where they are in critical locations close to development, the exact locations of those trees should be reassessed.

3.3 SURVEY AREA

The tree survey involved assessment of trees within the proposed lot areas and trees outside of the lot boundaries to a distance of approximately 5 metres. The approximate perimeter of the proposed development site and the area assessed for this report are indicated in Figure 1 below.

Figure 1: Approximate tree survey area.

3.4 HAZARD ASSESSMENT

Assessment of trees for this report was carried out by ground based visual inspection only. Where trees are to be retained, a more thorough hazard assessment may be required (including aerial inspection of decay and branch attachment or examination of cavities) to determine any other possible defects. Where appropriate, the Tree Assessment Survey Sheets indicate trees requiring more detailed assessment.

A hazard rating system was used to describe the hazard potential of individual specimens, ranging from 0 to 5. The main categories of this system are described by the following:

HAZARD CATEGORY (Colour code)	HAZARD RATING	DESCRIPTION	TIME FRAME
H0	Negligible	The tree appears healthy, no apparent sign of disease or damage, or is not of a size, species or condition likely to pose a threat.	Remedial tree works required at a time frame to be scheduled by client.
H1	Very Minor Hazard	The tree appears healthy but is of a type or condition to potentially develop minor branch drop of live or dead wood	Remedial tree works required at a time frame to be scheduled by client.
H2	Minor Hazard	The tree appears healthy, minor defects that can be rectified by minor tree surgery.	Remedial tree works required at a time frame to be scheduled by client.

HAZARD CATEGORY (Colour code)	HAZARD RATING	DESCRIPTION	TIME FRAME
H3	Medium Hazard	Mature to aged tree in declining condition, and/or structure, and/or disease apparent, showing potential for branch drop.	Remedial tree works required at a time frame to be scheduled by client.
H4	High Hazard	The tree shows signs of over weighted limbs, significant disease, root damage, removal of adjacent supporting tree, other significant defects present.	Remedial tree works required as soon as possible.
H5	Very High Hazard	Defects are very severe, dangerous trees because of structural defects including cavities, decay, included bark, wounds or poor form.	Remedial tree works required as soon as possible.

Note: The hazard categories listed above are applicable under normal weather conditions, which include strong winds and torrential rains, but exclude extreme localized events such as tornado-like squalls and storms which have the capacity to destroy many trees regardless of their age and condition.

3.5 RECURRENT ASSESSMENT

3.5.1 Tree assessment and recommendations are based on the condition of the trees at the time of inspection. As the retained trees continue to age and decline, further assessment, particularly from a hazard management perspective may be necessary.

3.5.2 It is recommended that a qualified Arborist should conduct a follow up assessment of the trees at least two years following completion of construction and redevelopment works, as part of a responsible tree management program and to fulfil risk management responsibilities on the part of the responsible management entity.

4.0 TREES AND SITE CONDITIONS

4.1 TREE SURVEY RESULTS

4.1.1 ***Trees Recorded on Site***: A total of 76 trees were assessed for this tree survey. Of these, 68 were within the boundaries of the three lots. Among these, only 2 trees could be considered as making a prominent contribution to the site. The remaining trees are considered to make only a moderate to low contribution to the site or were inappropriate due to their weed status.

4.1.2 ***Trees Recommended for Retention***: In total, only 6 trees would be considered suitable for retention under existing conditions. However, in the context of the proposed development, only 2 to 3 trees could be retained. All 6 trees should be reassessed in the context of the final design to determine what impacts construction may have on these trees and whether retention is feasible.

A further 10 small trees were found to be suitable for transplanting elsewhere on site if a suitable location could be found in the finished landscape. These were mostly Palm species and small Crepe Myrtles. In all cases, these where small trees that provide

only limited amenity value even in the current site conditions. If they cannot be reused elsewhere on site, none of these specimens should be considered as a restraint to development.

4.1.3 ***Trees Recommended for Removal***: 60 other trees were recorded for this survey and are located either within or close to the proposed building envelopes or proposed driveway entries. These trees will require removal as part of the development, as almost all are exempt species. They also tend to be small and generally provide little contribution to the existing landscape.

4.1.4 ***Trees Recorded on Adjacent Areas***: A total of 8 trees were identified within areas outside of the proposed lots but falling within 5 metres of the proposed development site. Generally, these trees should not be affected by development within the proposed lots.

4.2 **SITE CONDITIONS**

4.2.1 ***Site Soil Conditions***: My knowledge of the area suggests that the site soil may predominantly be sandy to silty clays derived from Wianamatta Shales with a possible sandstone intergrade. However, on this site, there appears to have been a high level of disturbance over time due to the use of the site for primary industry use. Therefore it is not possible to say how much of the site includes unaltered soil profiles.

5.0 GENERAL COMMENTS

5.1 In broad terms, there are relatively few trees of a size or significance across the greater part of the site that should hinder development. The flat, open nature of most of the site, together with most trees of importance being located along the margins, reduces the potential for development impacts on the trees.

5.2 The bulk of the vegetation cover, including trees, are weed species and exempt from Ryde City Council's TPO. These mostly include Privet, Silky Oak and Mulberry. There are also some smaller ornamental trees located in the main residence of Lot 6 including a number of palm species. The only trees of significance on the homestead block are a small Sydney Red Gum (tree 15) and a Cyprus (tree 16).

5.3 There are several smaller Crepe Myrtles and several mature palms that would be suitable for transplanting if they can be used in appropriate locations within the finished landscape. These trees should be reassessed to determine if they could be retained elsewhere on site.

Figure 2: Trees suitable for transplanting

5.4 Generally the properties at number 14 and 16 David Ave. are clear of any significant trees. The exception is the large Hills Fig located on the boundary with 18 David Ave. Based on the current design proposal this tree would be protected.

5.5 There are few large trees located on the adjoining properties close to the proposed development. For the most part the proposed setback of the main structures will provide ample protection to the rootzones of trees on the adjoining properties. The exception to this may be the proximity of the proposed buildings adjacent to the trees on the southern edge of no.16 David St. The current design proposal appears to give an adequate setback from the boundary so as not to impact on the root systems of these trees. However as the design progresses more detailed assessment should be made of the potential impacts that below ground services close to the boundary fence or the location of low concrete structures (such as paths, garden beds or retaining walls) may have on these trees.

5.6 There were several large trees on the site and these are indicated in the 2008 survey. However most of these trees are now dead or in a state of decline. These declines appear to have occurred rapidly and appear to be the result of horse damage (horses browsing on the bark resulting in ringbarking), soil compaction and possibly soil saturation. However more thorough assessment of the causes of tree death should be considered as it is also possible that a root rot fungal disease may be present on the site. This possibility should be ruled out before extensive landscape planting occurs on the site. Most of these trees have since been cut down. It is difficult to determine the species of the dead trees however one of the few remaining eucalypts on the site was a Silver Top Ash that is likely to have been either a remnant or regeneration from the original native tree cover as this species is know in nearby areas.

Figure 3: Silver Top Ash, tree 38, is typical of the large trees that have undergone rapid decline across the site over the last 2 to 3 years.

5.7 In response to a question raised concerning the impact of shade and screening from some trees; 64, 65, 66 & 68 – most screening along the boundary with 18 David St will come from the Hill Weeping Fig tree 64. In order to maintain the current level of screening, the existing low branches will generally have to be retained. The two large Lemon Scented Gums (trees 65 and 66) located in the adjoining property will afford relatively little screening at the lower levels of the proposed dwellings due to the tall crowns, open branch structure and sparse foliage typical of this species. Similarly, the Silky Oak, tree 68, will provide only limited screening as it has few lower branches.

The impact of this group of trees in terms of shade on the proposed dwellings will also be affected by the form of the trees. The dense leaf cover of the Fig will cause the densest shade at ground level in winter. However the location of this tree to the north east of the proposed structure means that the longest shade will by restricted to the morning. Shade will continue to be cast up to midday but with the shade gradually moving towards the unit closest to David St. At 20 metres tall, the two Lemon Scented Gums will also cast long shadows in winter, but this will be a more broken, scattered shade due to the lack of low branches and the open branch arrangement of the tree crowns. By midday, the shadows of the Gums should be combined with the shadow of the Fig and concentrated along the eastern boundary. Similarly, the Silky Oak will cast shadows onto the proposed dwelling until early afternoon. However the narrow crown form and sparse leaf cover will result in broken shade. Refer to Figure 2 for actual shadows cast on the existing property in June.

Figure 4: Shadows at approx. 12.30pm 15/06/2010 by trees located boundary of 16 David St

5.8 No information is available at this stage regarding proposed alterations to existing levels and drainage across the site. Therefore no comment can be provided in this

report on the impact that any alterations may have on retained trees. As the detailed design progresses, it will be necessary to review potential impacts on retained trees. In general terms, as there are relatively few trees considered suitable for retention and because most trees to be retained are outside of the main construction envelopes, it does not appear likely that there will be any significant changes to growing conditions for most retained trees.

6.0 TREE ASSESSMENT

6.1 EXPLANATION OF TERMS

6.1.1 The following Tree Assessment schedule categorises the trees by a number of *objective* measurements; height, spread and diameter at breast height (DBH), and *subjective* assessment criterion; structure, rank and potential construction impacts. The following explain the terms used in the tree assessment schedule.

Health - Refers to the overall health and vigour of the specimen. Assessment of tree condition has taken into consideration both known specimens of the same species and age, which are growing under favourable conditions in Sydney, and a comparison with other specimens within this site growing in the same conditions. Health takes into consideration factors including: shoot extension growth, foliage surface area, and leaf size as well as the presence and extent of pests and diseases.

Structure - This is based on visual assessment of the presence of defects in tree

Age Class - Based on available information, such as photographs, or assessment of the characteristics of the specimen, site conditions and experience with the species growing under similar conditions.

Young - trees usually in their first years of growth (apart from short lived species)
Semi Mature - trees in the first 1/3 of life expectancy for the species
Mature - trees between 1/3 and 2/3 life expectancy for the species
Over mature tree - annual growth is almost negligible, coming to end of life, usually applies to veteran trees, although this will vary with the species.

Life Expectancy - Ryde City Council requires the inclusion of an estimated useful life expectancy using appropriate industry methods for all trees assessed. This is an estimate of the length of time that an individual tree can be retained with an acceptable level of risk based on the information available at the time of inspection. SULE (Safe Useful Life Expectancy) is one of the most common methods applied to describe life expectancy. However this method has been superseded by the originator of the system[1], the TreeAZ method has been adopted for this report.

TreeAZ is not static as it is closely related to tree condition and the surrounding environment. Alterations in these variables may change the TreeAZ rating. Consequently the reliability of TreeAZ assessments will decrease as time passes from the initial assessment because of the potential for these variable increases (A full description of the TreeAZ rating can be found below).

TreeAZ Categories (Version 3.08)

Z **Trees not worthy of being a material constraint:** Not suitable for retention for more than 10 years

[1] TreeAZ was designed by Barrell Treecare (www.barrelltreecare.co.uk)

(Small, young or regularly pruned trees/hedges that could be replaced like for like)

Z1	Small or young	Trees that are unimportant because of their small size or young age and can be realistically replaced with similar trees. May include unsuitable weed species.
Z2	Formal hedges and trees regularly pruned to restrict size	

(Trees that would be removed within 10 years because they are a high risk)

Z3	Dead, dying, diseased or declining	Unlikely to live more than 10 years or remedial tree works would have to be so severe that they seriously compromise the amenity and/or health of the tree and are not a practical option. This would include trees that become newly exposed because of adjacent trees being removed.
Z4	Severe damage/structural defects that cannot be properly addressed by remedial care including cavities, decay, included bark, wounds and excessively unbalanced	
Z5	Present or future instability because of poor anchorage or recently increased exposure	

(Trees that need severe pruning or removal within 10 years for good management reasons)

Z6	Severe damage/structural defects that can be temporarily addressed by remedial care including cavities, decay, included bark, wounds and excessively unbalanced	Trees with severe defects or instability that could be retained in the short term with substantial remedial care but not realistically retainable for more than 10 years, i.e. severely pruned trees with severe decay or a high risk of future decay.
Z7	Overgrown/unmanaged hedge that is beyond recovery by remedial pruning	Overgrown hedges that are in very poor condition and unsuitable for long term retention.
Z8	Causing damage to existing structures	Trunks damaging or close to walls. Roots that are already deforming surfacing. (The potential to deform surfacing is not normally a valid reason because it is so unpredictable.)
Z9	Causing unreasonable inconvenience to existing properties	Excessive shading or trees that are so overbearing that they will significantly interfere with the normal use of the property, i.e. excessive shading of a patio in a small garden. Excessive honeydew. Leaning over occupied buildings.
Z10	Adversely interfering with better trees	Directly rubbing causing damage. Indirectly shading and preventing the normal development of better trees.
Z11	Poor trees occupying space for potentially better new trees	Trees with no potential to improve and are taking up space where new trees could be growing. Inhibiting the development of an uneven age class structure.
Z12	Unacceptably expensive to retain	Topped trees with excessive decay. Trees close to buildings, roads and paths that are high maintenance. Only space to grow in one direction and will continually become severely unbalanced if not regularly pruned.

A **Trees worthy of being a material constraint:** Suitable for retention for more than 10 years (**Note:** This excludes small and young trees)

A1	No significant defects and could be retained without remedial care	Single or in groups with no major defects and obviously suitable for long term retention.
A2	Minor defects that could be addressed by limited remedial care or work to adjacent trees	Trees with minor defects that could recover from remedial works and be retainable into the long term, i.e. pollards with little decay. Tall but stable hedges. Rows of trees

		that may not be individually important but form a significant feature as a group. They must be potentially stable and not require excessive maintenance to keep them that way.
A3	Special significance for historical, commemorative or rarity reasons that would warrant extraordinary efforts to retain for more than 10 years	Special care should be taken in its normal context of meaning unusual or uncommon.
A4	Trees that may have legislative protection for ecological reasons (Advisory and will require specialist investigation)	This would include veteran trees and trees that provide some special habitat feature.

Note: Trees that are very good examples of category A can be noted as AA and trees that are the worst examples of category Z can be noted as ZZ summarised as follows:

AA Most suitable for retention
A Suitable for retention
Z Not particularly suitable for retention
ZZ Unsuitable for retention

Recommended Tree Protection Zone - The Tree Protection Zone (TPZ) indicated is the set-back distance recommended for safe long-term tree retention and is the closest distance development impacts should be allowed without further specific assessment and onsite arboricultural supervision. Calculation of TPZs are based on the current *AS 4970*-2009 Protection of trees on development sites recommendations and describe the radius measured from the centre of the tree. A similar total soil surface area (πr^2) may also be adequate if provided as a square or rectangle, rather than a circle.

Based on the *AS 4970*-2009 the recommended setback can be reduced by 10% on the one side closest to a proposed excavation/building if the other side is unaffected by development.

It may also be possible for specific works to be undertaken within the nominated TPZ distances without adverse affect if such works are designed and implemented after further consultation with the Project Arborist and possible detailed site assessment (including possible investigative excavation to determine soil conditions and root locations).

Some trees might also be safely retained in circumstances where TPZ distances are reduced on one side of the tree only but are extended on other sides to provide alternative or compensatory root areas. In such cases the extent of desired canopy pruning might also need to be further assessed.

Other works within TPZ areas may have a detrimental impact on the health or perceived amenity of retained trees but may be considered an acceptable alternative to immediate removal, particularly in circumstances where site layout allows for replacement landscape plantings.

7.0 TREE INVENTORY AND ASSESSMENT SCHEDULE

7.1.1 The following Assessment Schedule provides comparative information on trees within the site using a series of brief descriptions and ratings. Detailed features of individual specimens and recommendations are provided in the "Notes" column.

7.1.2 Trees located outside of the site, but within five metres of the boundary of the proposed development or adjacent to the main roads, are also discussed in the Assessment Schedule.

Tree No.[2]	Botanical Name	Common Name	HEIGHT SPREAD[3] DBH[4] (mm) H	S	D	Health	Structure	Age	Hazard Rating	Tree/AZ	Action	Tree Protection Zone[5]	Notes	Northing	Easting
1.	*Syagrus romanzoffianum*	Queen Palm	5	4 4	150	Fair	Good	Semi-mature	H1	Exempt Species	Remove	-	A small specimen. Somewhat stunted growth for age. Of no significance to the site. Species exempt from council TPO.	325792.873	6259969.835
2.	*Syagrus romanzoffianum*	Queen Palm	8	5 5	200	Fair	Good	Mature	H1	Exempt Species	Remove	-	Medium sized specimen. Of no significance to the site. Species exempt from council TPO.	325790.99	6259965.739
3.	*Washingtonia robusta*	Mexican Fan Palm	6	4 4	350	Good	Good	Semi-mature	H2	**A1**	Consider for transplant	2	Small specimen. Of no significance to the site. Would be suitable for transplanting if a suitable location could be found elsewhere on site.	325788.37	6259962.247
4.	*Syagrus romanzoffianum*	Queen Palm	13	5 4	250	Good	Good	Mature	H2	Exempt Species	Remove	-	Large specimen exhibiting poor trunk taper. Of no significance to the site. Species exempt from council TPO.	325785.282	6259959.101
5.	*Salix babylonica*	Weeping Willow	4	5 8	300	Declining	Dangerous	Over-mature	H5	Exempt Species	Remove	-	Small specimen in decline. Trunk of tree has recently failed due to borer damage. Although the tree does not pose a risk. It is not suitable for retention. Of no significance to the site. Species exempt from council TPO.	325787.425	6259953.472
6.	*Ficus microcarpa var. 'Hillii'*	Hills Weeping Fig	3	3 3	130 100	Poor	Very Poor	Young	H2	**Z1**	Remove	-	Small specimen possibly planted out from a pot plant. Of no significance to the site.	325804.786	6259977.276
7.	*Ficus microcarpa var. 'Hillii'*	Hills Weeping Fig	3	1 1	50	Poor	Very Poor	Young	H0	**Z1**	Remove	-	Small specimen possibly planted out from a pot plant. Of no significance to the site.	325802.66	6259978.949
8.	*Morus nigra*	Mulberry	6	5 5	150 80	Poor	Poor	Mature	H1	Exempt Species	Remove	-	Small specimen. Of no significance to the site. Species exempt from council TPO because it is a fruit tree.	325787.338	6259992.054
9.	*Eucalyptus microcorys*	Tallowwood	5	3 3	150	Fair	Good	Young	H0	**Z1**	Remove	-	Small specimen. Of no significance to the site.	325820.647	6260010.655
10.	*Eucalyptus microcorys*	Tallowwood	5	4 3	150	Fair	Good	Young	H0	**Z1**	Remove	-	Small specimen. Of no significance to the site.	325805.463	6260012.725
11.	*Morus nigra*	Mulberry	7	8 6	200 200	Fair	Fair	Mature	H1	Exempt Species	Remove	-	Group of small trees. Of no significance to the site. Species exempt from council TPO because it is a fruit tree.	325770.355	6259987.883
12.	*Paulownia tomentosa*	Royal Paulownia	6	4 4	100	Fair	Fair	Young	H0	**Z1**	Retain	2	Young tree located on the boundary of adjoining property. A current design proposal indicates there would be no impact on this tree. It's small size and small root spread means that it would have a high tolerance to disturbance.	325745.926	6260000.71
13.	*Cinnamomom camphora*	Camphor Laurel	12	14 11	900	Fair to good	Fair to good	Mature	H2	Exempt Species	Remove	-	Large tree located at Whiteside St. entry. Only of limited significance to the site. Species exempt from council TPO.	325735.227	6259999.542

[2] Tree numbers indicated in **blue** are trees located on adjacent properties and not part of the current development proposal.
[3] **Spread** – Where two measurements are shown, the first is north/south, and the second is east/west.
[4] **DBH** = Diameter at Breast Height. Measurement of trunk diameter measured at 1.4m above ground level. Where trunk form does not permit measurement at 1.4m, the nearest measurement above or below that height is recorded. For trees located on adjacent properties, an estimate of DBH may be provided.
[5] **Tree Protection Zone** - Recommended radius (metres from the tree centre) within which impacts to tree roots should be prevented. TPZ may be adjusted if encroachment is on one side only or if further investigations reveal constraints to growth that permit construction closer.

Tree No.[2]	Botanical Name	Common Name	HEIGHT SPREAD[3] DBH[4] (mm) H	S	D	Health	Structure	Age	Hazard Rating	Tree/AZ	Action	Tree Protection Zone[5]	Notes	Northing	Easting
14.	*Cinnamomom camphora*	Camphor Laurel	12	16 10	1200	Fair to good	Fair to good	Mature	H2	Exempt Species	Remove	-	Large tree located at Whiteside St. entry. Severely lopped for powerline clearance. Has dense stand of Privet growing at the base of it. Only of limited significance to the site. Species exempt from council TPO.	325731.181	6259993.656
15.	*Angophora costata (?)*	Sydney Red Gum	13	14 15	800 400	Fair to good	Fair to good	Mature	H2	**A2**	Retain	9.6	Medium sized specimen with multiple trunks arising from ground level. In relative terms this tree does provide some amenity to the site although retention is recommended if possible. The current design proposal indicates retention of this tree however the actual crown spread is greater than shown on the survey. As a result the eastern edge of the crown would be impacted upon by the development.	325752.722	6259978.335
16.	*x Cupressocyparis leylandii*	Leyland Cypress	12	6 6	400 400	Good	Fair	Mature	H1	**A1**	Assess in context of final design	4.8	Large mature specimen. Exotic species. This tree is a reasonable specimen located close to the existing house. While this is one of the few larger trees on the site, it contributes only limited amenity to the landscape and only in the context of the existing house garden.	325767.143	6259967.671
17.	*Syagrus romanzoffianum*	Queen Palm	13	5 5	300	Good	Good	Mature	H1	Exempt Species	Remove	-	Large specimen exhibiting poor trunk taper. Of no significance to the site. Species exempt from council TPO.	325767.13	6259962.62
18.	*Archontophoenix cunninghamiana*	Bangalow Palm	10	3 3	200	Good	Good	Semi-mature	H0	**A1**	Consider for transplant	2.4	Mature specimen, possibly in the age range of 30-40 years. Attractive specimen. While this is one of the few larger trees on the site, it contributes only limited amenity to the landscape and only in the context of the existing house garden. Would be suitable for transplanting if a suitable location could be found elsewhere on site.	325765.127	6259961.193
19.	*Archontophoenix cunninghamiana*	Bangalow Palm	10	3 3	200	Good	Good	Semi-mature	H0	**A1**	Consider for transplant	2.4	Mature specimen, possibly in the age range of 30-40 years. Attractive specimen. While this is one of the few larger trees on the site, it contributes only limited amenity to the landscape and only in the context of the existing house garden. Would be suitable for transplanting if a suitable location could be found elsewhere on site.	325761.298	6259960.332
20.	*Archontophoenix cunninghamiana*	Bangalow Palm	10	3 3	200	Good	Good	Semi-mature	H0	**A1**	Consider for transplant	2.4	Mature specimen, possibly in the age range of 30-40 years. Attractive specimen. While this is one of the few larger trees on the site, it contributes only limited amenity to the landscape and only in the context of the existing house garden. Would be suitable for transplanting if a suitable location could be found elsewhere on site.	325763.536	6259958.957
21.	*Lagerstroemia indica*	Crepe Myrtle	8	6 7	150 120	Fair to Good	Fair to Good	Mature	H0	**Z1**	Consider for transplant	2	Good specimen. Tree exhibits good health, vigour and form. The current design would impact directly on this tree. Would be suitable for transplanting if a suitable location could be found elsewhere on site.	325773.881	6259957.67
22.	*Cupressus macrocarpa 'Brunniana Aurea'*	Brunniana	10	5 3	350 150	Dead	Dead	Mature	H4	**Z3**	Remove	-	Tree recently died possibly from soil saturation and poor drainage.	325776.489	6259955.802
23.	*Cupressus macrocarpa 'Brunniana Aurea'*	Brunniana	10	5 3	200 200	Dead	Dead	Mature	H4	**Z3**	Remove	-	Tree recently died possibly from soil saturation and poor drainage.	325777.971	6259958.186
24.	*Morus nigra*	Mulberry	8	9 6	350	Fair	Fair	Mature	H2	Exempt Species	Remove	-	Small specimen. Of no significance to the site. Species exempt from council TPO because it is a fruit tree.	325776.71	6259964.907
25.	*Syzygium australe*	Scrub Cherry	4	2 1	100	Good	Good	Young	H0	**Z1**	Remove	-	Trimmed hedge of 10 small specimens with narrow crown spread. Growth has been constrained by overcrowding from other tree specimens planted along the fence line and from pruning. Hedge contributes only limited amenity to the landscape and only in the context of the existing house garden.	325773.936	6259951.722

Tree No.[2]	Botanical Name	Common Name	HEIGHT SPREAD[3] DBH[4] (mm) H	S	D	Health	Structure	Age	Hazard Rating	Tree/AZ	Action	Tree Protection Zone[5]	Notes	Northing	Easting
26.	*Syzygium paniculatum*	Brushy Cherry	9	4 3	150 150	Good	Good	Semi-mature	H0	**Z1**	Remove	-	Small specimen with narrow crown spread. Growth has been constrained by overcrowding from other tree specimens planted along the fence line. It contributes only limited amenity to the landscape and only in the context of the existing house garden.	325768.464	6259949.014
27.	*Macadamia integrifolia*	Macadamia	6	5 4	150	Good	Good	Semi-mature	H0	**Z1**	Remove	-	Small specimen with narrow crown spread. Growth has been constrained by overcrowding from other tree specimens planted along the fence line. It contributes only limited amenity to the landscape and only in the context of the existing house garden. This tree may be exempt from council TPO if considered as a fruit tree however Council needs to clarify this.	325766.518	6259950.731
28.	*Callistemon viminalis*	Weeping Bottlebrush	8	6 4	100 100	Poor	Poor	Semi-mature	H0	**Z11**	Remove	-	Small specimen with narrow crown spread. Growth has been constrained by overcrowding from other tree specimens planted along the fence line. It contributes only limited amenity to the landscape and only in the context of the existing house garden.	325766.336	6259953.722
29.	*Callistemon viminalis*	Weeping Bottlebrush	8	6 4	100 100	Poor	Poor	Semi-mature	HO	**Z11**	Remove	-	Small specimen with narrow crown spread. Growth has been constrained by overcrowding from other tree specimens planted along the fence line. It contributes only limited amenity to the landscape and only in the context of the existing house garden.	325764.93	6259954.263
30.	*Fruit trees*	Citrus trees	3	2 2	100	Fair	Fair	Mature	H0	Exempt Species	Remove	-	Part of the original orchard comprising approximately 12 small citrus trees and numerous weeds particularly Privet. Exempt from council TPO.	325752.423	6259953.476
31.	*Celtis sinensis*	Chinese Hackberry	8	5 4	100	Good	Fair	Young	H0	**Z2**	Remove	-	Self-sown weed species. Small tree located on southern boundary. Tree is not suitable for retention.	325750.852	6259944.548
32.	*Lagerstroemia indica*	Crepe Myrtle	8	5 4	60 60	Fair	Fair	Semi-mature	H0	**Z1**	Consider for transplant	2	Small tree. One in a group of three. Would be suitable for transplanting if a suitable location could be found elsewhere on site.	325756.842	6259941.657
33.	*Lagerstroemia indica*	Crepe Myrtle	8	5 4	60 60	Fair	Fair	Semi-mature	H0	**Z1**	Consider for transplant	2	Small tree. One in a group of three. Would be suitable for transplanting if a suitable location could be found elsewhere on site.	325758.193	6259941.345
34.	*Lagerstroemia indica*	Crepe Myrtle	8	6 4	100 100	Fair	Fair	Semi-mature	H1	**Z1**	Consider for transplant	2	Small tree. One in a group of three. Would be suitable for transplanting if a suitable location could be found elsewhere on site.	325760.744	6259938.207
35.	*Eucalyptus scoparia*	Wallangarra White Gum	9	9 8	400	Fair	Fair	Mature	H3	**A2**	Assess in context of final design	4.8	Small tree planted adjacent to the rear fence of the house yard. Appears to be stunted for the age of the tree with a form that is low and spreading. The current design indicates that this tree would be impacted upon by the proposed stairwell location. It contributes only limited amenity to the landscape and only in the context of the existing house garden.	325768.045	6259943.4
36.	*Ligustrum lucidium*	Broad - Leaved Privet	10	12 10	200 200	Poor	Fair	Mature	H3	Exempt Species	Remove	-	Tree located in adjoining property. Self-sown weed species growing adjacent to boundary fence. The current design would not impact on this tree.	325762.581	6259933.164
37.	*Ligustrum lucidium*	Broad - Leaved Privet	5	3 1	100	Poor	Fair	Over-mature	H3	Exempt Species	Remove	-	Group of 3 self-sown weed species. 2 trees dead. Exempt from council TPO.	325785.652	6259924.792
38.	*Eucalyptus seiberi*	Silvertop Ash	18	15 10	800 250	Poor	Very Poor	Over-mature	H5	**Z3**	Assess in context of final design	9.6	Large specimen exhibiting poor health and vigour. It is likely that this is the only remnant of the original native vegetation on the site. The tree is located within an existing horse paddock and has been severely damaged by horse browsing. The tree has extensive twig and branch dieback, limited leaf cover and numerous epicormic shoots. Aerial photos show that tree has declined rapidly over last 2 years. The prognosis for this tree is poor. The current design would not impact on this tree.	325788.601	6259912.404

Tree No.[2]	Botanical Name	Common Name	HEIGHT SPREAD[3] DBH[4] (mm) H	S	D	Health	Structure	Age	Hazard Rating	Tree/AZ	Action	Tree Protection Zone[5]	Notes	Northing	Easting
39.	*Cinnamomom camphora*	Camphor Laurel	9	5 3	100 50	Fair	Fair	Young	H1	Exempt Species	Remove	-	Self-sown weed species. Exempt from council TPO.	325802.783	6259930.944
40.	*Ligustrum lucidium*	Broad - Leaved Privet	6	5 4	50 50	Poor	Poor	Young	H1	Exempt Species	Remove	-	Self-sown weed species. Exempt from council TPO.	325804.957	6259934.668
41.	*Ligustrum lucidium*	Broad - Leaved Privet	10	9 8	150 150	Poor	Poor	Mature	H1	Exempt Species	Remove	-	Self-sown weed species. Exempt from council TPO.	325811.133	6259917.592
42.	*Ligustrum lucidium*	Broad - Leaved Privet	7	7 6	150 150	Poor	Poor	Mature	H1	Exempt Species	Remove	-	Self-sown weed species. Exempt from council TPO.	325817.402	6259933.965
43.	*Eucalyptus microcorys*	Tallowwood	8	6 6	150	Fair	Fair	Young	H1	Z1	Remove	-	Small specimen. Tree exhibits tip dieback and deadwood and has included bark. Some horse damage present. Provides minimal amenity to the site landscape.	325803.187	6259951.733
44.	*Eucalyptus robusta*	Swamp Mahogany	6	4 9	150 100	Fair	Fair	Young	H1	Z1	Remove	-	Small specimen. Tree exhibits tip dieback, deadwood epicormics and has included bark. Some horse damage present. Provides minimal amenity to the site landscape.	325806.263	6259959.853
45.	*Eucalyptus microcorys*	Tallowwood	14	12 10	400 400	Fair to poor	Poor	Mature	H5	Z3	Remove	-	Mature specimen. Multi-trunked from 0.5m above ground level. The tree has several large bark inclusions between the co-dominant trunks. Numerous wounds on at least one trunk from horse browsing. Although old wounds exhibit vigorous callous growth, the crown exhibits sparse leaf cover and dieback in at least two of the three trunks. Although the tree does not pose an immediate risk of failure, the rate of decline and death among other gums on the site suggest that the prognosis for this tree is poor. The tree falls within the footprint of the current design proposal.	325834.144	6259970.072
46.	*Ficus rubiginosa*	Port Jackson Fig	4	5 5	100 75	Good	Fair	Young	H0	A2	Consider for transplant	2	Small specimen. Multi-trunked from ground level. This is a young tree that provides little amenity to the site at this stage. Would be suitable for transplanting if a suitable location could be found elsewhere on site.	325844.355	6259979.33
47.	*Grevillea robusta*	Silky Oak	9	2 2	100	Good	Good	Young	H0	Exempt Species	Remove	-	Small specimen. Self-sown weed species surrounded by privet. Exempt from council TPO.	325849.257	6259984.176
48.	*Grevillea robusta*	Silky Oak	11	3 3	150	Good	Good	Semi-mature	H0	Exempt Species	Remove	-	Small specimen. Self-sown weed species surrounded by privet. Exempt from council TPO.	325875.35	6259987.198
49.	*Grevillea robusta*	Silky Oak	11	3 3	150	Good	Good	Semi-mature	H0	Exempt Species	Remove	-	Small specimen. Self-sown weed species surrounded by privet. Exempt from council TPO.	325888.619	6259986.901
50.	*Grevillea robusta*	Silky Oak	11	3 3	150	Good	Good	Semi-mature	H0	Exempt Species	Remove	-	Small specimen. Self-sown weed species surrounded by privet. Exempt from council TPO.	325881.614	6259979.693
51.	*Grevillea robusta*	Silky Oak	9	1 1	70	Good	Good	Young	H0	Exempt Species	Remove	-	Small specimen. Self-sown weed species surrounded by privet. Exempt from council TPO.	325879.232	6259977.606
52.	*Grevillea robusta*	Silky Oak	10	3 3	150	Good	Good	Semi-mature	H0	Exempt Species	Remove	-	Small specimen. Self-sown weed species surrounded by privet. Exempt from council TPO.	325875.982	6259965.731

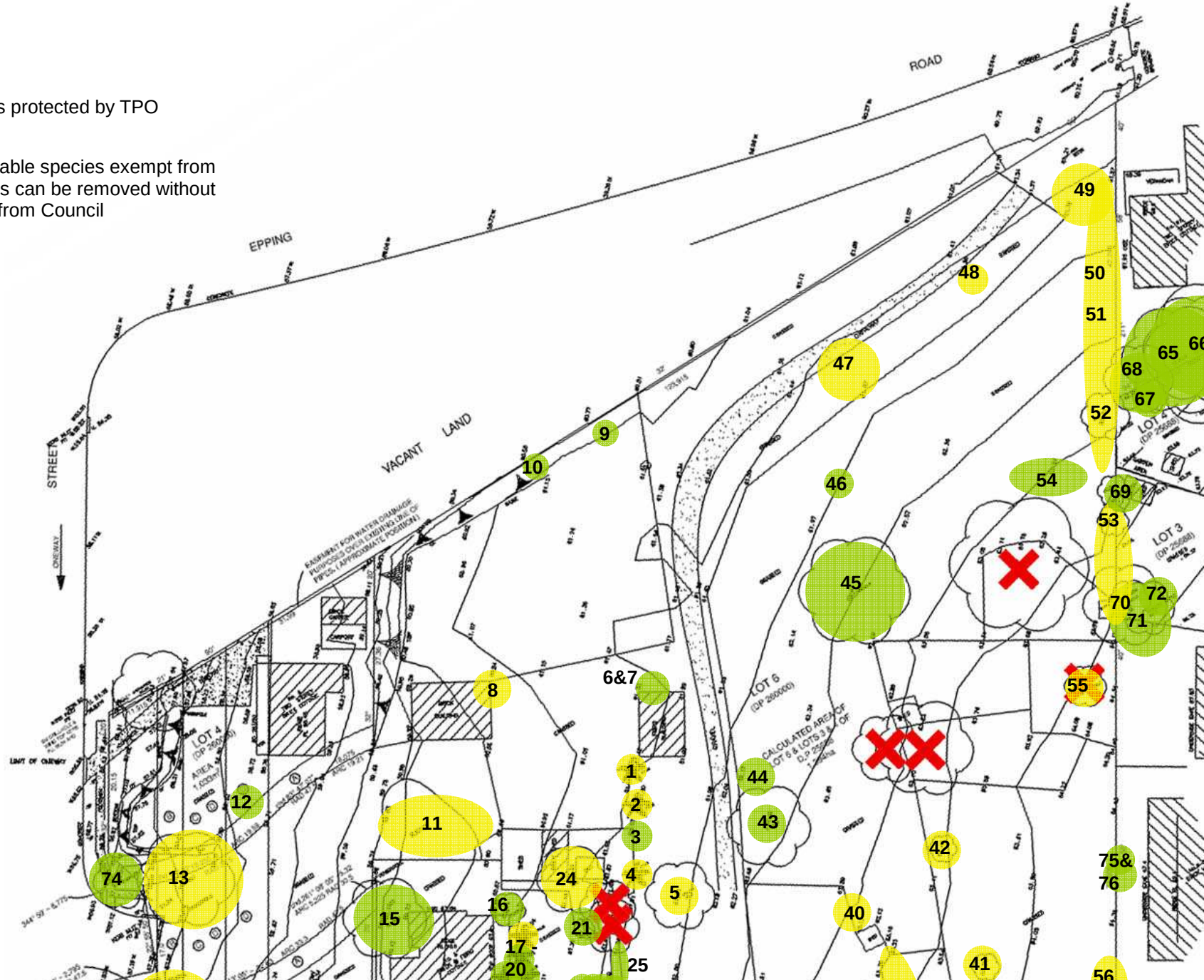
Tree No.[2]	Botanical Name	Common Name	HEIGHT SPREAD[3] DBH[4] (mm) H	S	D	Health	Structure	Age	Hazard Rating	Tree/AZ	Action	Tree Protection Zone[5]	Notes	Northing	Easting
53.	*Grevillea robusta*	Silky Oak	10	3 3	150	Good	Good	Semi-mature	H0	Exempt Species	Remove	-	Small specimen. Self-sown weed species surrounded by privet. Exempt from council TPO.	325866.704	6259959.595
54.	*Eucalyptus species*	Eucalyptus	8	2 2	100	Good	Good	Young	H0	**Z1**	Remove	-	Stand of approx. 6 small saplings possibly self-sown from adjacent, now dead, gum. These trees provide no amenity to the landscape at this early stage. The tree falls within the footprint of the current design proposal.	325862.41	6259963.8
55.	*Grevillea robusta*	Silky Oak	9	4 4	150	Poor	Poor	Young	H1	Exempt Species	Remove	-	Small specimen. Some horse damage present. Self-sown weed species. Exempt from council TPO.	325841.542	6259932.403
56.	*Acacia parramattensis*	Parramatta Green Wattle	6	8 8	150	Fair	Fair	Semi-mature	H0	**Z1**	Remove	-	Self-sown specimen located adjacent to eastern boundary. Typically short lived species that will have poor viability over the short to medium term. Surrounded by privet. Not recommended for retention in the finished landscape.	325826.675	6259904.015
57.	*Acacia parramattensis*	Parramatta Green Wattle	6	8 8	150	Fair	Fair	Semi-mature	H0	**Z1**	Remove	-	Self-sown specimen located adjacent to eastern boundary. Typically short lived species that will have poor viability over the short to medium term. Surrounded by privet. Not recommended for retention in the finished landscape.	325821.716	6259904.697
58.	*Ligustrum sinense*	Narrow - Leaved Privet	8	8 8	100 100	Fair	Fair	Semi-mature	H0	Exempt Species	Remove	-	Self-sown weed species. Exempt from council TPO.	325816.106	6259900.825
59.	*Ligustrum sinense*	Narrow - Leaved Privet	8	8 8	100 100	Fair	Fair	Semi-mature	H0	Exempt Species	Remove	-	Group of 3 self-sown weed species. Exempt from council TPO.	325810.322	6259903.567
60.	*Cupressus glabra*	Smooth Arizona Cypress	16	10 8	900	Poor	Poor	Over-mature	H4	**Z3**	Retain	10.8	Large mature specimen located on adjoining property. The current design proposal would have no impact on this tree. Tree exhibits tip dieback and deadwood and has included bark.	325816.276	6259894.678
61.	*Chamaecyparis obtusa 'Crippsii'*	Golden Hinoki Cypress	6	5 4	200	Good	Good	Mature	H0	**Z**	Remove	-	Small ornamental specimen located in the front yard of the property. Tree has been crown raised extensively for pedestrian access detracting from the form of the tree. Tree contributes little or no amenity value to the site. Retention is not recommended. The tree falls within the footprint of the current design proposal.	325899.004	6259941.099
62.	*Chamaecyparis obtusa*	Hinoki Cypress	4	1 1	100 100	Fair	Poor	Semi-mature	H0	**Z1**	Remove	-	Small ornamental specimen located in the rear yard of the property. Tree contributes little or no amenity value to the site. Retention is not recommended. The tree falls within the footprint of the current design proposal.	325894.333	6259952.624
63.	*Thuja orientalis*	Book - Leaf Pine	5	3 2	150 150	Fair	Fair	Semi-mature	H0	**Z1**	Remove	-	Small ornamental specimen located in the rear yard of the property. Tree contributes little or no amenity value to the site. Retention is not recommended. The tree falls within the footprint of the current design proposal.	325895.215	6259955.383
64.	*Ficus microcarpa var. 'Hillii'*	Hills Weeping Fig	17	20 19	800 100	Good	Fair	Mature	H1	**A2**	Retain (?) Assess in context of final design	9.6	Large mature specimen located adjacent to boundary fence between nos. 16 and 18 David St. The crown shape has been distorted by the large gums in no.16. The tree was originally multi-trunked however most of the trunks have been lopped back. There are some bark inclusions and decay arising from lopped limbs. A more extensive investigation of the safety of this tree should be carried out. Based on current information it appears that this fig will be retained as part of the development. However the suitability for its retention should be reassessed as more detail about the building design becomes available.	325894.843	6259961.504
65.	*Corymbia citriodora*	Lemon Scented Gum	20	20 18	500	Fair	Fair	Mature	H2	**AA**	Retain	6	Large mature specimen located in adjoining property at no. 18. The tree has a broad crown spread, extending over at least 1/3 of the property at no.14. The current design is unlikely to have significant impact on the root plate of this tree however the proposed height of the building may require substantial pruning on the south-western side to permit construction access.	325889.012	6259964.361

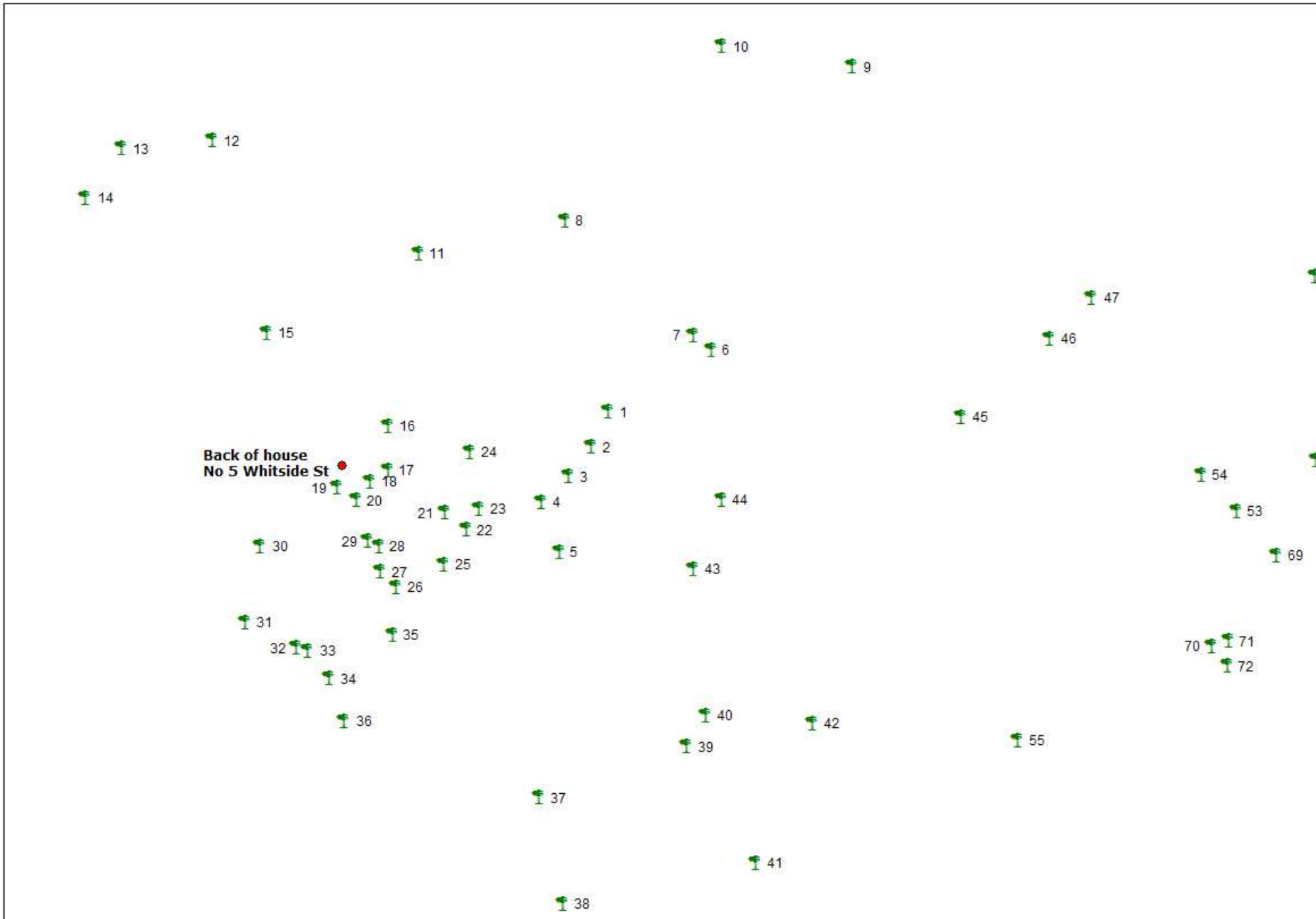
Tree No.[2]	Botanical Name	Common Name	HEIGHT SPREAD[3] DBH[4] (mm) H	S	D	Health	Structure	Age	Hazard Rating	Tree/AZ	Action	Tree Protection Zone[5]	Notes	Northing	Easting
66.	*Corymbia citriodora*	Lemon Scented Gum	20	20 18	500	Fair	Fair	Mature	H2	**AA**	Retain	6	Large mature specimen located in adjoining property at no. 18. The tree has a broad crown spread, extending over at least 1/3 of the property at no.14. The current design is unlikely to have significant impact on the root plate of this tree however the proposed height of the building may require substantial pruning on the south-western side to permit construction access.	325893.334	6259962.815
67.	*Schefflera actinophylla*	Umbrella Tree	7	5 3	150	Fair	Fair	Semi-mature	H0	**Z11**	Remove	-	Small ornamental specimen located in the rear yard of the property. Tree contributes little or no amenity value to the site. Retention is not recommended. The tree falls within the footprint of the current design proposal.	325884.16	6259963.607
68.	*Grevillea robusta*	Silky Oak	20	8 8	450	Good	Fair	Mature	H2	**A1**	Retain	5.4	Large mature specimen located in adjoining property at no. 18. The tree has a broad crown spread, extending over at least 1/3 of the property at no.14. The current design is unlikely to have significant impact on the root plate of this tree.	325884.462	6259965.699
69.	*Jacaranda mimosifolia*	Jacaranda	9	5 4	150	Poor	Poor	Young	H1	**Z1**	Remove	-	Small specimen located in the rear of the property. Tree contributes little amenity value to the site. The tree falls within the footprint of the current design proposal.	325871.533	6259954.533
70.	*Jacaranda mimosifolia*	Jacaranda	10	10 9	200 200	Poor	Poor	Mature	H1	**Z4**	Assess in context of final design	-	Small specimen located in the rear of the property. Tree contributes moderate amenity value to the site and adjoining property. The tree falls within the area of the proposed driveway and parking bays.	325863.993	6259943.824
71.	*Jacaranda mimosifolia*	Jacaranda	9	7 4	200	Fair	Fair	Semi-mature	H1	**A2**	Assess in context of final design	-	Small specimen located in the rear of the property. Tree contributes moderate amenity value to the site and adjoining property. The tree falls within the area of the proposed driveway and parking bays.	325866.017	6259944.418
72.	*Acer palmatum*	Japanese Maple	6	5 9	100 100	Fair	Fair	Mature	H1	**A2**	Consider for transplant		Small specimen located in the rear of the property. Tree contributes little or no amenity value to the site. The tree falls within the area of the proposed driveway and parking bays. Would be suitable for transplanting if a suitable location could be found elsewhere on site.	325865.909	6259941.495
73.	*Lagerstroemia indica*	Crepe Myrtle	8	5 4	100 100	Good	Fair	Semi-mature	H0	**Z**	Remove	-	Small specimen located in the rear of the property. Tree contributes little or no amenity value to the site. The tree falls within the area of the proposed driveway and parking bays.	325879.748	6259923.215
74.	*Corymbia citriodora*	Lemon Scented Gum	15	10 8	300	Good	Good	Mature	H1	**A**	Retain	3.6	Large mature specimen located in adjoining property at no. 18. The tree has a broad crown spread, extending over at least 1/3 of the property at no.14. The current design is unlikely to have significant impact on the root plate of this tree however the proposed height of the building may require substantial pruning on the south-western side to permit construction access.		
75.	*Ceratopetalum gummiferum*	NSW Christmas Bush	7	3 3	100	Fair	Fair	Mature	H0	**A**	Retain	2	Small specimen located in the rear of the adjacent property. Tree exhibits extensive dieback in some sections (typical of the species) but is currently flowering vigorously. Tree contributes little amenity value but impacts should be avoided.		
76.	*Lagerstroemia indica*	Crepe Myrtle	8	6 7	150 120	Good	Fair to Good	Mature	H0	**A**	Retain	2	Small specimen located in the rear of the adjacent property. Tree contributes only localised amenity value but impacts should be avoided.		

LEGEND:

Ornamental trees protected by TPO

Weed or undesirable species exempt from TPO. These trees can be removed without gaining consent from Council

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8.0 GENERAL RECOMMENDATIONS

8.1 Only general recommendations can be made for the management of these trees at this stage. It is proposed that tree protection measures will conform to current best practice.

8.2 In the event that changes are made to the proposed site development, individual specimens may require reassessment in the context of those changes.

8.3 For those trees identified to be retained, their actual locations should be accurately determined and protection measures installed prior to the development.

8.4 Generally, earthworks and construction across the site should ad*here to the requirements of* AS4970-2009 Protection of trees on development sites.

8.5 All pruning of trees to be retained should be carried out in accordance with AS4373 - 2007.

8.6 Protection of trees to be retained should be carried out in accordance with current best practice including: establishment of fenced tree protection zones prior to the commencement of site establishment, installation of mulch to protection zones around trees, supervision/monitoring of excavation close to trees, temporary irrigation to trees if required during extended dry periods.

9.0 OVERVIEW OF TREE MANAGEMENT PROCEDURES

The following sets out a summary of the main tree management measures that should be enacted to ensure adequate protection of the retained trees on this site. A detailed Tree Management Plan will be required once more detail is available regarding the nature of development on across the site.

9.1 SITE MANAGEMENT

9.1.1 Implementation - All tree protective measures should be implemented before the commencement of demolition, excavation and building works.

9.1.2 Duration - Protect the trees and maintain the protective measures in place and in good order for the duration of the demolition, bulk earthworks and construction phases.

9.1.3 Tree Protection Zones - Establish Tree Protection Zones (TPZ) around all individual trees or groups of trees to be retained at the distances indicated on the Tree Protection Zone (see attached schedule) unless more specific recommendations are provided by the Project Arborist regarding appropriate setbacks.

9.1.4 Trees To Be Retained - these will be protected and managed within Tree Protection Zones enclosed by Tree Protection Fences (TPF) in accordance with industry best practise. This will include; a minimum 1800mm high galvanised chain wire fence with lockable gates to AS 1725 and clad with shade cloth to prevent wind blown debris. Fences to be located and installed to avoid damage to tree roots. TPF to be maintained during the all phases of work on site.

9.1.5 Enclosure Signs - Signage should be attached to each tree enclosure, defining limitations. Install tree protection signage to all sides of each tree enclosure.

9.1.6 Site Sheds – Generally locate site sheds outside of the dripzones of trees.

9.1.7 Harmful Materials - All materials will be stored outside of fenced TPZs. There will be no temporary storage or stockpiling of bulk materials and harmful materials within TPZ. Do not place spoil from excavations against tree trunks. Prevent wind-blown materials such as cement or other chemicals from harming trees and plants. Do not permit waste from washing of concreting tools

or painter's waste to be disposed of anywhere within the TPZ or other disturbed areas to be incorporated into the final landscape works.

9.1.8 Excavation - Excavation for new works should avoid damage, disturbance or rocking the remaining root system. Roots should not be torn by backhoe or excavator buckets. Where roots greater than 50 mm diameter are encountered during excavation, roots shall be exposed by hand and cut by the Project Arborist. Roots will be cut cleanly using hand tools to avoid disturbance to surrounding roots. Wounds will not be treated with dressings or paint in accordance with current best practice.

9.1.9 Extent - Excavation for new work should extend no further than necessary for the construction.

9.1.10 Soil Moisture - Where roots are to be exposed for extended periods, soil within the rootzones of the trees will be assessed and adequate moisture levels maintained through temporary irrigation. Where required, a soil wetting agent such as Wettasoil will be applied conjunction with watering to ensure good moisture retention in the exposed soils.

9.1.11 Root Protection - Where excavation is to occur at the edge of the TPZ and is likely to exposes roots for extended periods, sheeting or a root curtain will be installed to prevent further damage or drying out of the roots. Sheeting shall extend the length of the cut face exposing roots. Adequate soil moisture levels will be maintained around the area of cut roots to promote adventitious root growth.

9.1.12 Backfilling - Backfill to trenches and around exposed roots will be with site soil or a loamy sand soil mix approved by the Superintendent.

9.1.13 Damage to Limbs and Bark - Damage from temporary powerlines, stays, guys and the like to trees will be avoid by ensuring these are not attached to trees.

9.1.14 Work Within Tree Protection Zones - Generally, excavation or construction equipment will not be permitted to operate from within the TPZs of trees to be retained. Where it is considered necessary to operate machinery within the TPZ, steel plates or timber planking will be installed within TPZ to avoid soil compaction and root damage.

Where operation of machinery with TPZs and close to tree trunks becomes necessary, trunk protection will be installed of affected trees, as shown below.

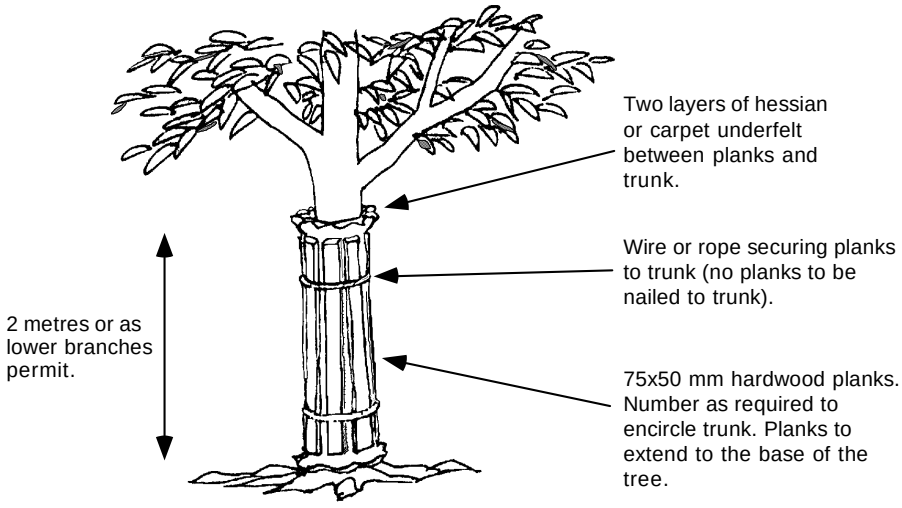

Diagram 1: Method of installing trunk protection.

9.1.15 TPF Removal - Temporary removal of tree protection enclosures during construction will only be permitted when work is required specifically within the enclosure, and only following written

approval. The TPFs will be re-installed as soon as work is completed or if the area is to remain idle for more than 24 hours.

9.1.16 Machinery Damage to Limbs - Operators of backhoes, excavators or similar equipment are to avoid damage to tree limbs and trunks. Where alternative access is not readily available, branches will be tied back by the Project Arborist.

9.1.17 Trenches - Trenches for temporary or permanent underground utilities are to be located outside of the fenced off tree protection zones. In the event that underground services are to be located within a TPZ, the option of tunnelling or boring under trees will be investigated and implemented where feasible.

9.1.18 Compaction - Where compaction of the rootzone has occurred to an extent that will restrict root growth, assessed by penetrometer testing, soil decompaction techniques such as vertical mulching or hydraulic coring will be carried out.

10.0 TREE SURGERY RECOMMENDATIONS

The attached tree assessment sheets identify some trees requiring remedial tree surgery. As a guide, the following information is included to provide a standard that should be required of the tree workers.

10.1 All pruning work should be in accordance with the Australian Standard for Pruning Amenity Trees AS 4373 - 2007 and as described below.

10.2 A minimum amount of foliage should be removed to achieve the required pruning objective.

10.3 All tree surgery work should be carried out by a qualified Arborist. The following should serve as a guide for the standard of pruning work:

10.3.1 When removing a live branch, at all times cuts must be made just outside of the branch collar or at approximately the same angle where no collar exists. Do not damage the collar or branch bark ridge or leave a protruding stub (refer to Diagram 2 below).

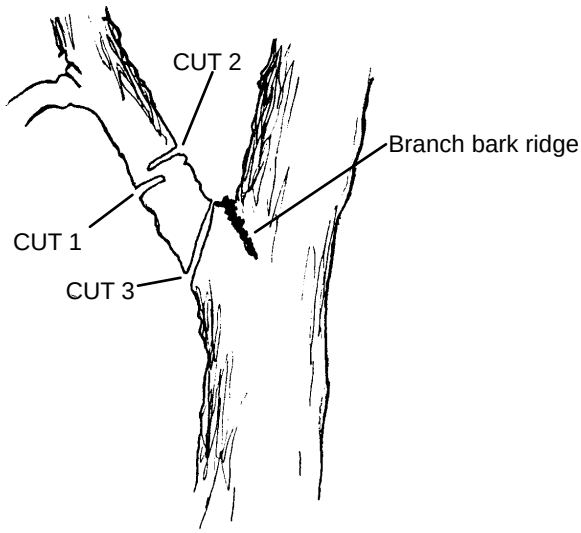

Diagram 2: Removal of branches will involve cutting the branch back to but just outside of the collar. For larger branches, the step cuts shown here will be followed to avoid tearing bark away from the collar.

10.3.2 Wounds to live tissue will be minimised. During deadwood removal, cuts will be made outside of the collar, consistent with "target pruning techniques", avoiding damage to the live cambium tissue.

10.3.3 Cuts close to the sites of existing decayed tissue will be avoided where possible to reduce the risk of spreading decay pathogens.

10.3.4 All pruning will be carried out without the use of climbing spurs or other tools that might injure the bark or conductive tissue of the trees.

10.3.5 Dressings or paints will not be applied to wounds in accordance with current industry best practise.