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24 October 2024

129 – 153 PARRAMATTA ROAD & 53 – 75 QUEENS ROAD

FIVE DOCK, NSW

DEVELOPMENT PROPOSAL

ARBORICULTURAL IMPACT ASSESSMENT REPORT

Ref No- 10924

Prepared for
DEICORP Pty Limited
L4, 161 Redfern Street
REDFERN NSW 2016
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INTRODUCTION

This arboricultural report has been commissioned by DEICORP Pty Limited. The purpose of the report is to assess the remaining Useful Life Expectancy (ULE) and potential impacts that may occur to significant trees due to a new development proposal. The new development proposal known as Kings Bay Village is located within 129-153 Parramatta Road and 53 – 73 Queens Road FIVE DOCK NSW.

Recommendations for retention or removal of trees is based on the tree's protection status being prescribed (LGA protected) or non-prescribed trees, tree condition, estimated remaining Useful Life Expectancy (U.L.E.) and potential impacts to trees by the development proposal.

Development incursions within tree protection zones (TPZ) are based on percentages of incursion noted within Note 2 of Appendix- A and are described as *Negligible* (0%), *Minor* (<10%) or *Major* (>10%) TPZ occupancy having *low*, *moderate* to *high-level* impacts within the Tree Protection Zone (TPZ). Where site restrictions within notional root zone radiuses exist development impacts or encroachment disturbances are based on author's experience, observations of site conditions, soil type and topography.

Each tree assessed has been accorded a temporary tree identification number and is referred to by number throughout this report. For additional trees not plotted in provided documentation their location has been estimated by taking offsets from existing trees and structures.

The trees, their location, development impact and design requirements have been detailed within the Tree Assessment Schedule and Tree Location Plan of Appendices C & D.

Care has been taken to obtain information from reliable sources. All data has been verified as far as possible, however, I can neither guarantee nor be responsible for the accuracy of information provided by others.

METHODOLOGY

1. In preparation for this report a initial site and ground level visual tree inspection was conducted on Thursday 5 October 2023 by the author of this report. The principles of visual tree inspection were adopted from components of Mattheck *& Breloer* 1994 '*The Body Language of Trees*' with basic risk values determined by criteria explained within the ISA TRAQ (tree risk) manual 2017. The inspection included observing the overall health and vigour of trees, tree form, structure and structural condition commencing from near the lower trunk to the upper first order branch division as best as site conditions would allow. On completion of the inspection the retention value of the tree was summarised utilizing the tree inspection Checklist provided within Appendix- B.

2. The inspection was limited to visual observations from within the site where no aerial (climbing) inspections, woody tissue testing, or tree root investigation was undertaken as part of this tree assessment. Tree height and canopy spread was estimated and expressed in metres with trunk diameters measured at approximately 1.4 metres above ground level, rounded off to the nearest 50mm and expressed as DBH (Diameter at Breast Height). Where multi stems at the base exist the stem group diameter was estimated as a tight clump. Where neighbouring trees were unable to be visually inspected trunk diameters and structural condition was estimated.

3. This report acknowledges and utilizes the current Australian Standards 'Protection of Trees on Development Sites' AS4970 – 2009 as explained within Notes of Appendix- A.

4. Unless specified otherwise all distances and development offsets within this report are taken from the centre of the tree as indicated within provided survey and/or design documentation.

5. Plans and/or documentation received to assist in preparation of this assessment include:

   TURNER project No. 24027 plans *specific to*:
   - Basement 01, Dwg No. DA-110-008 rev 1 dated 4.10.2024
   - Ground Level Dwg No. Dwg No. DA-110-009 rev 1 dated 4.10.2024
   - Level 1 Dwg No. DA-110-010 rev 1 dated 4.10.2024
   - NTH Elevation A-B Dwg No. DA-210-100 rev 1 dated 4.10.2024
   - STH Elevation C-DE Dwg No. DA-210-102 rev 1 dated 4.10.2024

   Isthmus (Landscape Design) Pty Limited, project No: IS0333
   - Landscape Plans (LP) Plans Dwg No's DA-000-1 to DA- 080-1, issue E dated 3.10.24

   LTS surveyors
   - Survey Plans ref No. 52058 001DT Sheets 1 - 17 rev H dated 19.7.2023

1. SUMMARY OF ASSESSMENT

1.1 General tree assessment

1.1.1 Forty-four (44) trees or groups of (screen or stands of self-seeded trees) have been assessed for the purpose of this arboricultural report. Of the forty-four trees two tree groups are neighbouring trees located within Rosebank College being identified as tree Group 43*x9* and 44*x12*.

Within the site two (2) trees or groups of are non-prescribed trees, two (2) trees are dead, and eight (8) trees have been identified with low retention values.

1.1.2 *Low retention value trees* are identified as trees: T1, 2, 9x3, 10, 11, 12, 16 & 21.

The trees may be located within confined spaces that cannot accommodate safe future growth or contain structural faults that are likely to become problematic in the future.

1.1.3 *Dead (exempt) trees* are identified as trees: T8 & 39.

1.1.4 *Exempt non-prescribed trees* are identified as trees: T15 & 20x5.

Being dead or exempt species, the exempt trees are permitted to be managed (pruned, removed or relocated) without Council consent.

1.1.5 *Neighbouring trees* are identified as trees: T43*x9* & 44*x12*.

Given the location of tree group 43*x9* directly against the boundary, demolition of the structural building and removal of foundations or retaining walls will highly likely affect tree anchorage and result in tree collapse. Prior to any works or site modifications occurring within tree protection zones a detailed and specific arboricultural report is recommended outlining the risk and consequences of demolition on tree anchorage.

Tree group 44*x12* requires further detailed information prior to obtaining a Construction Certificate (CC). Detailed civil & design plans are required detailing the construction method, demolition and excavation requirements for design works within the TPZ and proposed link(s) between Rosebank College & Spencer Lane. Provided no demolition or site level alterations or excavations occur within tree protection zones the trees are likely retainable given appropriate arborist advice and specific tree protection methodology that ensures tree sensitive design & construction and that tree anchorage will not be disrupted by the proposal.

1.2 The development proposal

1.2.1 The development proposal consists of four separate multi-level residential apartments with lower commercial facilities requiring deep excavation for basement levels. New public access, roads and Spencer Street extension including green space corridors are proposed where site leveling and deep excavation is required within Tree Protection Zones (TPZ's) of prescribed (protected) and non-prescribed trees.

1.3 Tree removal to accommodate design

1.3.1 All prescribed (protected) and non-prescribed trees located within the site boundaries have been identified for removal to accommodate the Kings Bay Village development proposal.

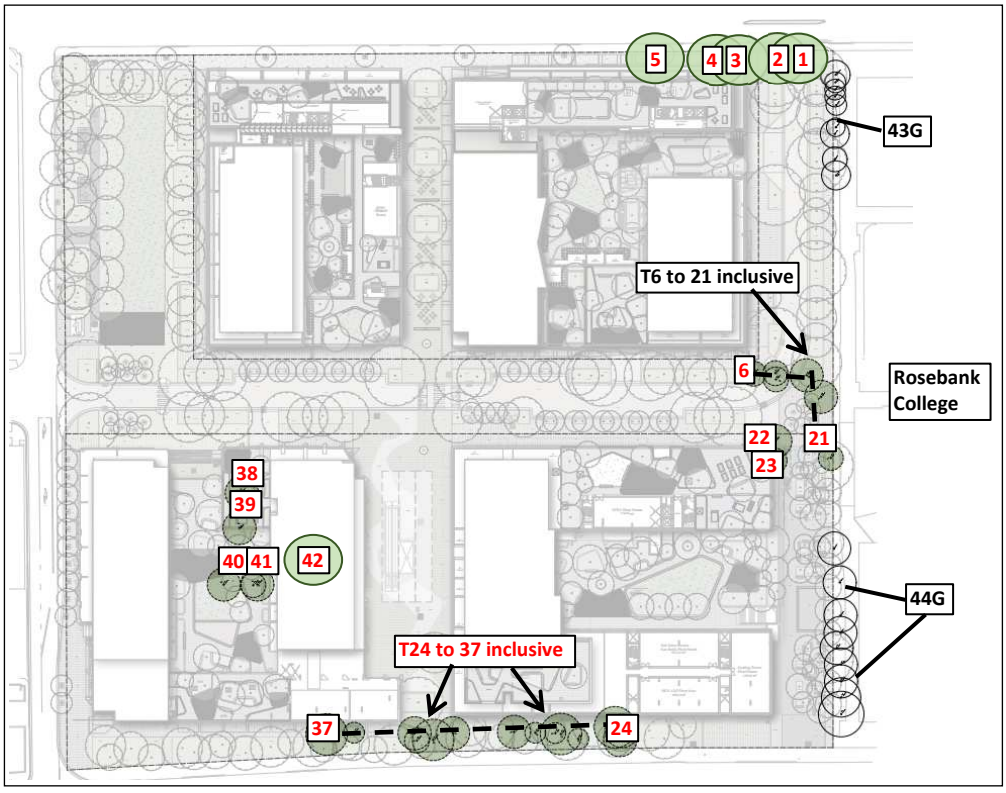
The subject trees are identified as trees T1 *to* 42 inclusive.

As shown within Figure 1 below, the design footprint which includes excavation for basement levels, Spencer Street extension, public domain areas, public & site access requires the removal of the trees within the development area.

1.3.2 Those trees specified for removal include:

- Thirty-eight (38) prescribed trees: T1 to 7, 9 - 14, 16 - 19, 21 – 38 and 40 to 42.
- Four (4) non-prescribed including dead trees: T8, 15, 20x5 & 38.

Figure 1: showing proposed design footprint & site tree removal plan



1.3.3 As discussed within Section 1.4.4, prior to works including demolition within tree protection zones neighbouring trees within Rosebank College require additional information to ensure the trees will remain viable.

1.3.4 The identified development impacts and design requirements have been detailed and required to be reviewed within Appendix- C, with the following sections summarizing impacts by the design proposal.

1.4 Discussion of development impacts

1.4.1 *Spencer Street upgrade*.

Eighteen (18) prescribed trees are directly affected by the Spencer Street upgrade or will be directly affected by demolition of adjacent structure to complete roadworks. These trees identified for removal are trees:

- T1, 2, 3, 6 *to* 14, 16 *to* 19, 21, 22 & 23.

Of the above trees T22 & 23 are also directly affected by the construction footprint for Building E-2.

1.4.2 *Trees which fall directly within building or excavation footprints.*

Six (6) prescribed trees are located within proposed basement excavation areas, building or design footprints receiving *High* or likely *Significant* levels of impact by demolition within the Structural Root Zone (SRZ). These trees being identified for removal are trees:

- T4, 5x2, 38, 40, 41 & 42.

1.4.3 *Public domain works including Parramatta Rd site access*.

Adjacent Parramatta Road fourteen (14) prescribed trees are located within the proposed public domain area and require removal to accommodate design are identified as trees:

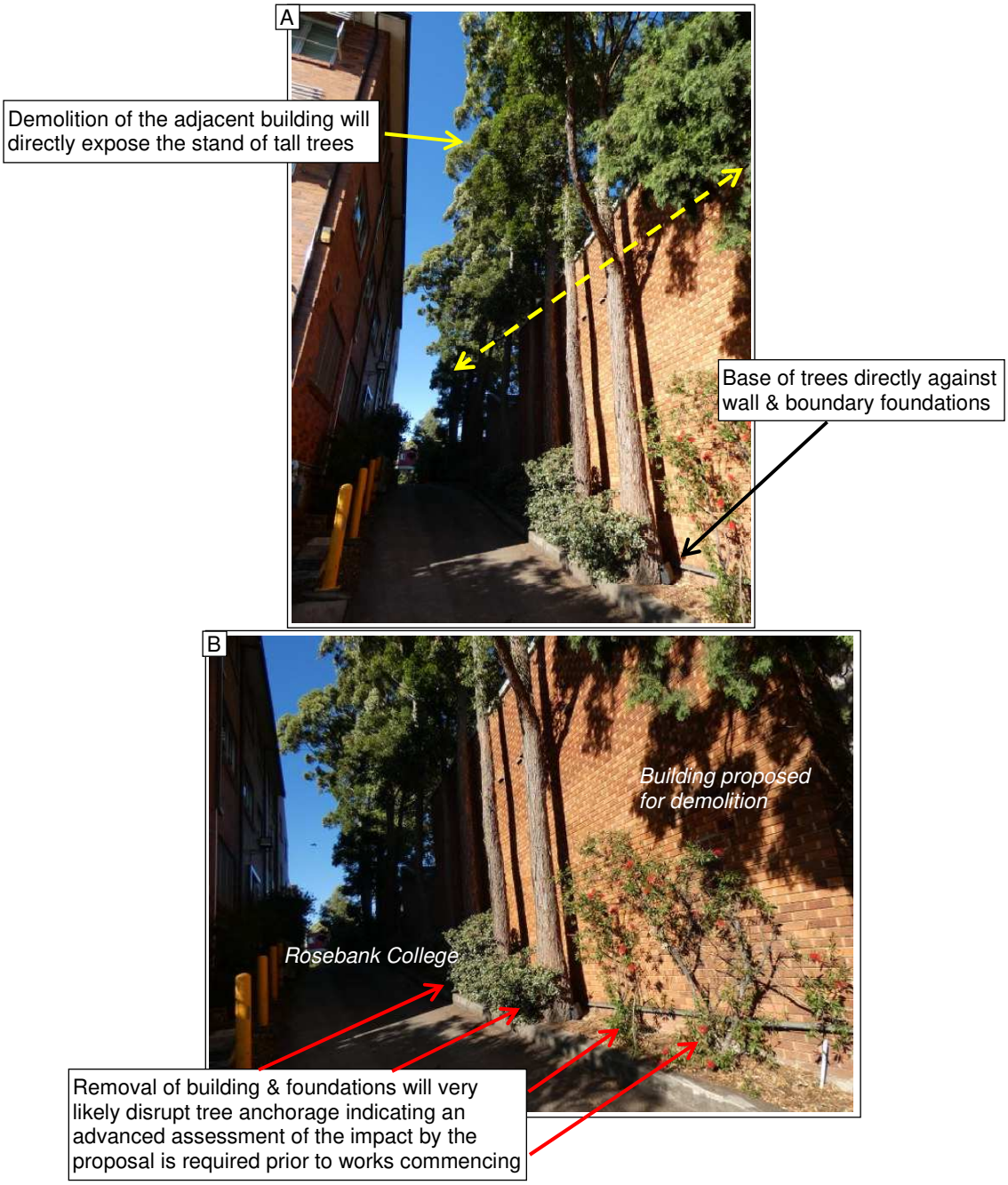
- T24 *to* 37 inclusive.

Of the above trees T18, 20, 32, 33, 35 & 37 are tall and established trees having canopy extension that extends well over the existing building elevation. The trees and smaller trees are protected by the adjacent building height (elevation) where sudden exposure by removal of an accustomed wind protection factor including demolition of below ground foundations would likely result in windthrow: *tree failure and collapse when a force exerted by wind against the crown and trunk results in uprooting / failure at ground level.* Therefore, exposing previously protected trees should be carefully considered.

1.4.4 *Rosebank College & Spencer Lane*.

Tree Group 43*x9*: based on limited visual access to the tree group, from Queens Street frontage these trees appear to have been planted directly adjacent to the boundary and against the existing two storey building of No: 55 Queens Street. Survey documentation identifies the building as built directly on the boundary having retaining walls and structure extending to the south. Documentation is unclear in tree location and proposed RL's adjacent the boundary with Spencer Street at or near RL7.50. Street pathway is at or near RL7.66 indicating a reduced level to accommodate design. Regardless of the proposed design and occupancy by public access and provided green space shown within Public Domain Landscape Plan 03: demolition of the existing building and removal of the building foundations will very likely result in ground-based tree failure, or failure from windthrow by sudden exposure.

Figure 2, showing Rosebank College tree Group 43*x9*



1.4.5 Prior to any works, demolition or modifications of features within tree protection zone setbacks the principle (client) is to provide a detailed arboricultural risk assessment on the proposed impacts of demolition on tree anchorage. The assessment is to identify the risk & consequence of whole tree failure by loss of adjacent protection factors and support structures that very likely contribute to maintaining tree anchorage.

In specific: at no stage should works within tree protection zones commence without AQF Level 5 project arborist certification that ensures the trees will not be affected by the proposal.

1.4.6 Tree Group 44*x12*: Having a 12m building setback with adjacent Public Domain works and links through to Rosebank College specific details in demolition of existing structures, tree locations, existing & proposed RL's for new works are unclear. Spencer Lane appears at or near RL7.0+ to RL8.0+ with boundary adjacent trees at or near RL7.18 to 7.39.

As Public Domain works are proposed on the existing hard surfaces and fill is likely required to accommodate design tree retention is possible. Based on the design proposal new works within the SRZ & TPZ propose a *significant (>35%) SRZ & TPZ* occupancy and disturbance.

Mitigating impacts requires further construction plan & detailed information to be reviewed and endorsed by an appointed project arborist. These should include issues such as:

- Review & endorsement of demolition plans with arborist advice on any additional tree management requirements. Visually the northern most tree of the stand may be affected by removal of a boundary retaining wall where tree removal may need to be considered.
- Review and endorsement of a detailed colour coded cut & fill plan within tree protection zone setbacks, or between the building footprint & boundary.
- Arborist involvement in ensuring civil works and Public Domain works are of tree sensitive design & construction that mitigate impacts on tree anchorage while maintaining the vitality of trees.

Figure 3, showing part Rosebank College tree Group 44*x12*

2. CONCLUSIONS & RECOMMENDATIONS

2.1 Tree removal

2.1.1 Based on the assessment conducted and documentation reviewed the removal of the following thirty-eight (38) prescribed trees from within the subject site is proposed to accommodate the development proposal.

- **T1, 2, 3, 4, 5x2, 6, 7, 9x3, 10, 11, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 40, 41 & 42**.

2.1.2 Non-prescribed trees permitted to be removed without Council consent are identified as trees: **T8, 15, 20x5 & 39**.

2.2 Specific tree management recommendations

2.2.1 In addition to the recommendations provided the following summary and/or guidelines for Rosebank College tree management are provided:

Tree group 43x9

a) Prior to any works commencing, specific to demolition and site modifications within tree protection zones, a detailed AQF Level 5 arboricultural risk assessment is to be provided by the client detailing the management of the trees based on the risks & consequences of removing support structures that are likely contributing factors in maintaining tree anchorage.

Tree group 44x12

b) No demolition or ground-based disturbances that have the ability to affect tree anchorage or vitality should occur within tree protection zone radiuses without arborist advice & certification.

c) *In specific*, no alterations (change in site conditions) should occur within the Structural Root Zone (SRZ) being *the area required for tree stability* without prior arborist advice & certification.

d) Prior to demolition, demolition plans are to be reviewed and endorsed by an appointed project arborist providing any additional tree management advice.

e) A detailed tree group specific Tree Protection & Management Plan should be provided based on final civil design & engineering drawings that clearly identify proposed works, existing & proposed levels and changes within tree protection zone radiuses.

Yours sincerely

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Diploma of Hort/Arboriculture (AQF5), Associate Diploma Parks Management (AQF4)
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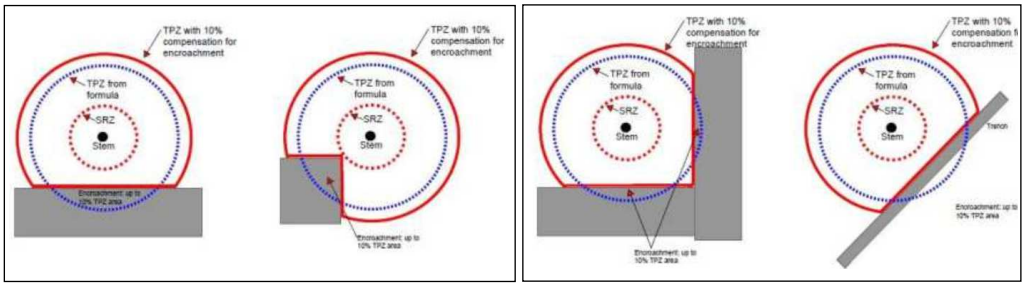
APPENDICES

APPENDIX- A: Terminology, notes & references

Acceptable Risk: Exposure to or reject risk of varying degrees. The acceptable risk is defined as '*The person who accepts some degree of risk in return for a benefit being exposed to some risk of varying degree*. **Age classes:** (I) Immature refers to a well established but juvenile tree. (ESM) refers to an early semi mature tree not of juvenile appearance. (SM) Semi-mature refers to a tree at growth stages advancing into maturity and full size. (LSM) Late Semi- Mature, refers to a tree between semi-mature and close to mature. (EM) refers to a tree at the first stages of maturity. (M) Mature refers to a full size tree with some capacity for future growth. **Health:** Refers to a trees vigor exhibited by the crown density, leaf colour, presence of epicormic shoots, ability to withstand disease invasion and the degree of dieback. **Condition:** Refers to the tree's form and growth habit, as modified by its environment (aspect, suppression by other trees, soils) and the state of the scaffold (i.e. Trunk and major branches), including structural defects such as cavities, crooked trunks or week trunk / branch junctions. These are not directly connected with health and it is possible for a tree to be healthy but in poor condition. **Decay:** (*N*) – an area of wood that is undergoing decomposition. (*V*) – decomposition of an area of wood by fungi or bacteria. **Decline:** Is the response of a tree to a reduction of energy levels resulting from stress. Recovery from decline is difficult and slow; is usually irreversible. **Defect:** A identifiable fault in a tree. **Epicormic Shoots**: Shoots that arise from latent or adventitious buds that occur on stems and branches and on suckers produced from the base of the tree. A symptom / result of stress related factors. **Footprint:** The area occupied by site structures, including the dwelling driveways and hard surfaces. **Included Bark**: (Inclusion) a genetic weak fault, pattern of development at branch junctions where the bark is turned inwards rather than pushed out, can pose a potential hazard. **Order of branches:** First order being those that are the first to extend from the main trunk or codominant limbs, second order branches extend from the first order and third order branches extend from the second order. **Probability:** The likelihood of some event happening. **Risk:** Is the probability of something adverse happening. **Suppression:** Restrained growth pattern from competition of other trees or structures. **Wound:** Damage inflicted upon a tree through injury to its living cells, may continue to develop further weakening of the structure compromising structural integrity. **Works**: any activity that modifies above & below ground conditions within specified tree protection zones. **Windthrow:** tree failure and collapse when a force exerted by wind against the crown and trunk overcomes resistance to that force in the root plate, such that the root plate is lifted from the soil on one side as the tree tips over. **NOTE 1**: This report acknowledges the current **Australian Standards 'Protection of Trees on Development Sites'** AS 4970 – 2009 with reference to the Tree Protection Zone (TPZ): being a combination of the root and crown area requiring protection. The TPZ takes into consideration the Structural Root Zone (SRZ): The area required for tree stability. Determined by AS4970 - 2009 Figure 1, Table of determining the SRZ, section 3.3.5 of the standards. The standard states where a greater than 10% encroachment occurs the arborist is to take into consideration the schedule of determining impacts as set within AS4970 s. 3.3.4. Encroachments are referred to within this report as major or minor encroachments (AS4970 s. 3.3.2 & 3.3.3). Below is the terminology used for estimated percentage of development incursion used within this report. To retain specific trees and ensure their viability development must take into consideration protection of the TPZ radius. **NOTE 2: The extent of inclusion within the TPZ radius has been categorised as follows**: *Low impact* 0 - 10% of minor consequence. *Low to Moderate* 10 – 15% incursion where the project arborist is to demonstrate the tree(s) remain viable. *Moderate* 15 – 20% incursion where the project arborist is to demonstrate the tree(s) remain viable by tree sensitive construction techniques. *Moderate to high* 20 – 25% incursion requiring specific protection methodology to retain. *High impact* 25 – 35% incursion where design changes or further information is required to manage tree vitality which includes *Significant* >35% incursion. **WBF** = located within design or building footprint where design necessitates tree removal. **NOTE-3**: Showing acceptable 10% incursion within TPZ radiuses (AS4970)



SELECTED REFERENCES:

Barrell J. 1993, 'Preplanning Tree Surveys: Safe us Life expectancy (SULE) is the Natural Progression", Arboricultural Journal 17: 1, February 1993, pp. 33-46.

International Society of Arboriculture (ISA) 2013, Tree Risk Assessment Manual, Martin Graphics, Champaign Illinois U.S.

Mattheck, C. & Breloer, H.(1994) *The Body Language of Trees.* Research for Amenity Trees No.4 the Stationary Office, London.

Matheny N. & Clark J. 1998, Trees & Development *'A Technical Guide to Preservation of Trees During Land Development'* International Society of Arboriculture, Champaign USA.

ProSafe: TPZ encroachment calculator https://proofsafe.com.au/tpz_incursion_calculator.htmlStandards Australia 2009, *Australian Standards 4970 Protection of Trees on Development Sites* - Standards Australia, Sydney, Australia.

Canada Bay Council DCP Part B- General Controls subsection B6.1 Tree maintenance.

APPENDIX- B: Tree Retention Value *Check list* ©*rainTree consulting*

i) Landscape Significance (LS): The significance of a tree in the landscape is a combination of its amenity, environmental and heritage values. Values may be subjective however, offer a visual understanding of the relative importance of the tree to the environment. The Landscape Significance of a tree is described in seven categories to assist in determining the retention value of trees.

1	Significant	2	Very High	3	High	4	Moderate	5	Low	6	Very Low	7	Insignificant

ii) Visual Tree Assessment (VTA)

0	If appropriate to VTA - **exempt* trees from Local Government Authority (LGA) Tree Management or Preservation Orders (TPO)	2E	Tree location likely to be affected by infrastructure restricting root growth potential, or tree has potential to cause infrastructure damage where risk mitigation or rectification works may compromise tree anchorage. Tree(s) may be contained by sloid structures with restricted anchoring root(s)
0A	Noxious or invasive weed species located within heritage conservation areas		
1	Trees that are dead, significantly declining >75% volume or obviously hazardous	3	This rating incorporates trees that may require further investigation of defects such as cavities or symptoms indicating internal decay to an extent that cannot be quantified under visual examination. Further inspections may be in the way of arborist climbing inspection within the canopy, root crown investigation and/or drill penetrating or Picus Sonic Tomograph ultrasound testing procedures to determine percentage of internal decay.
2	Trees that are structurally damaged. Have poor structure or weak & detrimental large stem inclusions capable or failure opposed to 2B. Tree also may be affected by extensive borer damage, fungal pathogens (wood rot) or viruses. Some symptoms may be reversible, remediated or controlled give appropriate management.		
2A	Tree damage specific to basal and/or root plate damage, or very shallow soils, or steep topography resulting in poor anchorage where condition may become problematic in near future / may include trees with included bark splits to ground level	4	Trees which appear specifically environmentally stressed by drought, poor soil or site conditions. Symptoms may be reversible given appropriate management
2B	Defect specific to stem inclusions development (weak branch attachments) where the condition may not be immediately detrimental however, require annual to biannual monitoring with control to prevent stem failure by installing slings, cable or bracing. Tree may also contain multi stems or codominant twin stems	5	Trees that have become exposed or are subject to wind loading, or have tall forest form where exposure may result in windthrow or limb snap
		5A	Screen trees or shrubs that are routinely hedged or pruned for height control
2C	Tree may contain minor wounds, pest or minor pathogen activity, altered from storm damaged to an extent that is not considered immediately detrimental - may also display average form. Likely to require close annual monitoring or minor corrective pruning	6	Trees may be typical for species type, of good form and visual condition for age class. May have suppressed one sided canopy, or are low risk trees
2D	Trees significantly altered by recent storm or over pruning events which may reduce retention values due to average form- or tree extensively pruned for power line clearance	7	VTA restricted by canopy or plant material vine or ivy covering tree parts, or site conditions which do not allow access- fences to neighbouring sites

iii) Retention Value (RV): Determined by [1] High - tree fee of visual defects and viable for retention, [2] Medium – Consider retention with minor visual faults which may reduce ULE, [3] Low - trees which contain faults that are likely to become problematic in the near future, [4] Removal - trees to be considered for removal due to poor condition.

1	High retention	2	Medium retention	3	Low retention	4	Consider removal

iv) U.L.E. categories Useful Life Expectancy (after *Barrell* 1996, modified by the author). A trees U.L.E. category is the life expectancy of the tree modified first by its age, health, condition, safety and location. U.L.E. assessments are not static but may be modified as dictated by changes in trees health and environment.

1. Long U.L.E. - Appear retainable at the time of assessment for over 40 years with an acceptable degree of risk assuming reasonable maintenance.
2. Medium U.L.E. - Appear to be retainable at the time of assessment for 15 to 40 years with an acceptable degree of risk assuming reasonable maintenance.
3. Short U.L.E. - Trees appear to be retainable at the time of assessment for 5 to15 years with an acceptable degree of risk assuming reasonable maintenance.
4. Very short - Removal- Trees which should be scheduled for removal within the very short term or as specified within this report.
5. Small, young or regularly pruned – Trees under 5m in height that can be easily moved or replaced, includes screen plantings or hedge lines.

APPENDIX- C: Tree Assessment Schedule

Refer Appendix- C Tree retention value Checklist

	Trees requiring removal due to hazardous or dead condition - subject to Local Government Authority notification						Trees with low retention values: senescence, developing defects or being low significant or *exempt trees within the site from the LGA tree management orders					
Tree No	***Botanical Name*** **COMMON NAME**	**Height x spread (m)**	**DBH (mm)**	**SRZ** / **TPZ (m)**	**Age**	**Vigour** (health)	**Condition** (structure)	**LS**	**VTA**	**RV**	**U. L.E.**	**Comments** CV = Council verge tree NT= Neighbouring tree
1	*Cupressus sempervirens* Mediterranean Cypress	15 x 7	400	2.4 / 4.8	SM	Good	Good	3	2E	3	3	Suppressed canopy form S side, one sided canopy biomass – N, weight loaded, in raised garden bed with restricted basal anchoring root development, boundary wall failure with foundations within 1m S & E sides= tree anchorage likely to become problematic= low safe retention value tree
Design impact summary: Spencer Street extension, tree falls within proposed footprint where tree removal is required to accommodate the proposal.												
2	*Cedrus deodara* Deodar Cedar	12 x 8	400	2.4 / 4.8	SM	Fair	Good	3	2A	3	<3	Suppressed canopy form S side, one sided canopy biomass – N, weight loaded, in raised garden bed with restricted basal anchoring root development & wall failure N side, wall foundations within 1.5m S sides= tree anchorage likely to become problematic= low safe retention value tree
Design impact summary: Spencer Street extension, tree falls within proposed footprint where tree removal is required to accommodate the proposal.												
3	*Plumeria sp* Frangipani	4 x 4	250at base	1.8 / 3	M	Good+	Fair / Good	4	4	2	2/5	+Deciduous at time of inspection, lower trunk with past pruning cuts N side, in garden bed with restricted rot development, wall foundations at base S & E sides= tree anchorage likely to become problematic if removed
Design impact summary: Spencer Street extension, tree falls within proposed footprint where tree removal is required to accommodate the proposal.												

	Trees requiring removal due to hazardous or dead condition - subject to Local Government Authority notification						Trees with low retention values: senescence, developing defects or being low significant or *exempt trees within the site from the LGA tree management orders					
Tree No	***Botanical Name*** **COMMON NAME**	**Height x spread (m)**	**DBH (mm)**	**SRZ** / **TPZ (m)**	**Age**	**Vigour** (health)	**Condition** (structure)	**LS**	**VTA**	**RV**	**U. L.E.**	**Comments** CV = Council verge tree NT= Neighbouring tree
4	*Cupressus torulosa* Bhutan Cypress	14 x 6	450	2.5 / 5.4	SM	Good	Good	3	2E	2	<2	Suppressed canopy form S side, one sided canopy biomass – N, weight loaded & slight lean N, in raised garden bed with restricted basal anchoring root development, wall foundations at base S & W sides= tree anchorage likely to become problematic if foundations removed= low safe retention value tree
Design impact summary: Tree removal required- within building or excavation footprint for basement cut. Building B, demolition for construction by removing of existing adjacent building protection factor and below ground foundations, including small, raised garden bed will highly likely result in tree collapse with targets consisting of utility lines, road usage & pedestrian. Based on basement cut tree falls within the excavation footprint indicating tree removal is required to accommodate design.												
5*x2*	*Plumeria sp* Frangipani	4 x 4	250at base	1.8 / 3	SM	Good+	Fair / Good	4/3	2C	2	2/5	+Deciduous at time of inspection, two trees in garden bed with lower trunk abnormalities & one-sided canopy biomass – N.
Design impact summary: Tree removal required- within building or excavation footprint for basement cut. Building B demolition for construction by removing existing adjacent building, below ground foundations, including small, raised garden bed will highly likely result in tree collapse or decline due to the trees confined growing area. Based on basement cut tree falls within the excavation footprint indicating tree removal is required to accommodate design.												
6	*Cinnamomum camphora* Camphor Laurel	7 x 2	100	1.5 / 2	I	Good	Good	4	6	2E	<2	Tree in raised garden bed supported by retaining wall, located adjacent building wall & foundations where location to infrastructure likely to become problematic in the future
Design impact summary: Spencer Street extension, tree falls within proposed road reserve / footpath footprint where tree removal is required to accommodate the proposal.												
7	*Cinnamomum camphora* Camphor Laurel	9 x 4.5	300at base	2 / 3.6	ESM	Fair / Good	Fair / Good	4	2	3	<2	3X stems (epicormics) from base, in raised garden bed supported by retaining wall, located adjacent building wall & foundations where location to infrastructure likely to become problematic in the future
Design impact summary: Spencer Street extension, tree falls within proposed road reserve / footpath footprint where tree removal is required to accommodate the proposal.												

	Trees requiring removal due to hazardous or dead condition - subject to Local Government Authority notification						Trees with low retention values: senescence, developing defects or being low significant or *exempt trees within the site from the LGA tree management orders					
Tree No	***Botanical Name*** **COMMON NAME**	**Height x spread (m)**	**DBH (mm)**	**SRZ** / **TPZ (m)**	**Age**	**Vigour** (health)	**Condition** (structure)	**LS**	**VTA**	**RV**	**U. L.E.**	**Comments** CV = Council verge tree NT= Neighbouring tree
8	*Dead tree* Camphor Laurel	10 x 6	450at base	2.4 / -	-	-	-	6	1	4	4	Dead tree
Design impact summary: Spencer Street extension, tree falls within proposed road reserve / footpath footprint where tree removal is required to accommodate the proposal.												
9*x3*	*Cinnamomum camphora* Camphor Laurel	6 x 1.5	100	1.5 / 2	I	Fair / Poor	Fair	4	4/2E	3	<3	3x trees, in garden bed supported by retaining wall, environmentally stressed, in significant decline where location to infrastructure likely to become problematic in the future= low retention value
Design impact summary: Spencer Street extension, tree falls within proposed road reserve / footpath footprint where tree removal is required to accommodate the proposal.												
10	*Cinnamomum camphora* Camphor Laurel	7 x 2	200, 100	2 / 3.6	ESM	Fair	Fair	4	4/2E	3	<3	2x stems at ground level, environmentally stressed with low foliage volume, where location to infrastructure likely to become problematic in the future= low retention value
Design impact summary: Spencer Street extension, tree falls within proposed footprint where tree removal is required to accommodate the proposal.												
11	*Cinnamomum camphora* Camphor Laurel	14 x 5	250	2 / 3	ESM	Fair / Poor	Fair	4	4/2E	3	<3	Environmentally stressed with significant decline in canopy, in garden bed supported by retaining wall, where location to infrastructure is likely to become problematic in the future= low retention value
Design impact summary: Spencer Street extension, tree falls within proposed footprint where tree removal is required to accommodate the proposal.												
12	*Cinnamomum camphora* Camphor Laurel	11 x 7	350	2.3 / 4.2	ESM	Good	Good	4	2E	3	<3	Multi stems at 1.2m, at edge of garden bed supported by retaining wall, location to infrastructure is likely to become problematic in the future= low retention value
Design impact summary: Spencer Street extension, tree falls within proposed footprint where tree removal is required to accommodate the proposal.												

	Trees requiring removal due to hazardous or dead condition - subject to Local Government Authority notification						Trees with low retention values: senescence, developing defects or being low significant or *exempt trees within the site from the LGA tree management orders					
Tree No	***Botanical Name*** **COMMON NAME**	**Height x spread (m)**	**DBH (mm)**	**SRZ** / **TPZ (m)**	**Age**	**Vigour** (health)	**Condition** (structure)	**LS**	**VTA**	**RV**	**U. L.E.**	**Comments** CV = Council verge tree NT= Neighbouring tree
13	*Pittosporum undulatum* Native Daphne	11 x 6	350at base	2.1 / 4.2	ESM	Fair	Fair / Good	4/3	4	2	3	3x stems, suppressed canopy form, environmentally stressed with decline in canopy & low foliage volume, located in restricted garden bed
Design impact summary: Spencer Street extension, tree falls within proposed footprint where tree removal is required to accommodate the proposal.												
14	*Cinnamomum camphora* Camphor Laurel	9 x 4	150	1.6 / 2	ESM	Fair	Fair / Good	4	4/2E	2	<2	4x stems at ground level, environmentally stressed with low foliage volume, in garden bed where location to infrastructure likely to become problematic in the future
Design impact summary: Spencer Street extension, tree falls within proposed footprint where tree removal is required to accommodate the proposal.												
*15	*Olea europaea susp cuspidate* African Olive	5 x 2	100	1.5 / 2	I	Good	Good	4	0/2E	3	<3	Exempt non-prescribed tree with one sided canopy biomass – E, weight loaded, located at base of foundations
Design impact summary: Spencer Street extension, tree falls within proposed footprint where tree removal is required to accommodate the proposal.												
16	*Cinnamomum camphora* Camphor Laurel	6 x 2	150	1.6 / 2	ESM	Poor	Fair	4	4/1	4	4	Significantly environmentally stressed, near dead tree of very low retention value
Design impact summary: Spencer Street extension, tree falls within proposed footprint where tree removal is required to accommodate the proposal.												
17	*Cinnamomum camphora* Camphor Laurel	5 x 1.5	150	1.6 / 2	ESM	Poor	Fair / Poor	5	1	4	4	Significantly environmentally stressed, near dead tree of very low retention value
Design impact summary: Spencer Street extension, tree falls within proposed footprint where tree removal is required to accommodate the proposal.												
18	*Gleditsia tricanthos* Honey Locust	11 x 12	350, 250	2.8 / 7.2	SM	Good	Fair / Good	4/3	4/2B	2	2	Twin stems at 0.6m with defined stem inclusion development, has minor stem inclusion development at 1.8m NE, minor decline in canopy due to garden bed location= condition & location may become problematic in the future
Design impact summary: Spencer Street extension, tree falls within proposed footprint where tree removal is required to accommodate the proposal.												

	Trees requiring removal due to hazardous or dead condition - subject to Local Government Authority notification						Trees with low retention values: senescence, developing defects or being low significant or *exempt trees within the site from the LGA tree management orders					
Tree No	***Botanical Name*** **COMMON NAME**	**Height x spread (m)**	**DBH (mm)**	**SRZ** / **TPZ (m)**	**Age**	**Vigour** (health)	**Condition** (structure)	**LS**	**VTA**	**RV**	**U. L.E.**	**Comments** CV = Council verge tree NT= Neighbouring tree
19	*Cinnamomum camphora* Camphor Laurel	4.5 x 1.5	100	1.5 / 2	I	Fair	Fair / Good	4	4	2	2	Environmentally stressed with low foliage volume where location to infrastructure likely to become problematic in the future
Design impact summary: Spencer Street extension, tree falls within proposed footprint where tree removal is required to accommodate the proposal.												
*20*x5*	*Olea europaea susp cuspidate* African Olive	4.5 x 3.5	200at base	1.6 / 2.4	ESM	Good	Fair / Good	4	2E	3	<3	Exempt non-prescribed trees, in narrow garden bed with failing retaining wall N side
Design impact summary: Spencer Street extension, tree falls within proposed footprint where tree removal is required to accommodate the proposal.												
21	*Acer negundo* Box Elder	5 x 6	300at base	2 / 3.6	ESM	Good+	Good	4	2E/2A	3	<3	+Deciduous at time of inspection, 3x stems, in narrow garden bed, retaining wall at base failing, has broad form, location= low retention value tree
Design impact summary: Spencer Street extension, tree falls within proposed footprint where tree removal is required to accommodate the proposal.												
22	*Eucalyptus sideroxylon* Red Ironbark	12 x 12	500	2.6 / 6	SM	Good	Good	3	2C	2	2	Tree with broad form, subject to limb snap, minor lower & upper branch scaffolds abnormalities with no significant visual faults
Design impact summary: Tree falls within the proposed public domain area / footpath footprint, within Building E construction envelope being directly adjacent basement excavation and Spencer Street extension where tree removal is required to accommodate the proposal.												
23	*Eucalyptus haemastoma* Scribbly Gum	10 x 9	450	2.5 / 5.4	ESM	Good	Good	3	6	1	2	Suppressed canopy form with mid trunk bowing lean SW, in low garden bed with no significant visual faults
Design impact summary: Tree falls within the proposed footprint of proposed basement cut & Building E construction footprint with Spencer Street extension at base of tree indicating tree removal is required to accommodate the proposal.												
24	*Callistemon viminalis* Bottle Brush	10 x 9	550	2.7 / 6.6	M	Good	Fair / Good	3	2C	2	2	Suppressed canopy form N, biomass-W, past pruning cuts at 4m W & E stems S side where location to Fire Services may become problematic
Design impact summary: LP design shows tree located directly within the public domain area & proposed for removal. Basement cut for Building E-3 proposed on existing building footprint where demolition for construction by removing existing adjacent building protection factor, below ground foundations and removal of fire hydrant facility would likely result in tree failure or decline, indicating High level impact where tree removal is required to accommodate design.												

	Trees requiring removal due to hazardous or dead condition - subject to Local Government Authority notification		Trees with low retention values: senescence, developing defects or being low significant or *exempt trees within the site from the LGA tree management orders

Tree No	*Botanical Name* COMMON NAME	Height x spread (m)	DBH (mm)	SRZ / TPZ (m)	Age	Vigour (health)	Condition (structure)	LS	VTA	RV	U. L.E.	Comments CV = Council verge tree NT= Neighbouring tree
25	*Callistemon viminalis* Bottle Brush	10 x 6	250	2 / 3	ESM	Good	Good	3	2B	2	2	SSF with upper branch scaffolds bowing lean E, twin stems at 1.8m with minor stem inclusion development, has junction abnormalities on N side which may become problematic
Design impact summary: LP design shows tree located directly within the public domain area & proposed for removal. Basement cut for Building E-3 constructed on existing building footprint where demolition for construction by removing existing adjacent building protection factor, below ground foundations and removal of fire hydrant facility would likely result in tree failure or decline, indicating High level impact where tree removal is required to accommodate design.												
26	*Grevillea robusta* Silky Oak	18 x 11	500	2.6 / 6	ESM	Good+	Good	3	2E	2	<2	+Deciduous at time of inspection, in full flower, tree of tall forest form, minor kink trunk at 1.4m with no significant visual faults, has moderate canopy overhang by 6m N side
Design impact summary: LP design shows tree located directly within the public domain area & proposed for removal. Building E-3 constructed on existing building footprint where demolition for construction by removing existing adjacent building protection factor, below ground foundations at base of tree would highly likely result in windthrow; tree collapse by sudden exposure and loss of root anchorage, indicating a High level of impact by the proposal where tree removal is required to accommodate design.												
27	*Callistemon viminalis* Bottle Brush	6 x 5	250	2 / 3	ESM	Good	Fair / Good	3	2C	2	<2	Lower & mid trunk past pruning cuts S side, displays stem split at 2.2m / cut area, has degrading wound wood margins= condition may become problematic in the future
Design impact summary: LP design shows tree located directly within the footprint of the public domain area & proposed for removal to accommodate design												
28	*Corymbia maculata* Spotted Gum	20 x 15	600	2.8 / 7.2	SM	Good	Good	3	4	2	2	Canopy slightly environmentally stressed with slightly low foliage volume & vigour, displays exposed roots N side with no significant visual faults, canopy overhang 5m N side over building
Design impact summary: LP design shows tree located directly within the public domain area & proposed for removal. Building E-1 construction with demolition by removing existing adjacent building protection factor and below ground foundations at base of tree would highly likely result in windthrow: tree collapse by sudden exposure and loss of root anchorage with targets likely Parramatta Rd usage, utility lines & person, indicating a High level of impact by the proposal where tree removal is required to accommodate design.												

	Trees requiring removal due to hazardous or dead condition - subject to Local Government Authority notification						Trees with low retention values: senescence, developing defects or being low significant or *exempt trees within the site from the LGA tree management orders					
Tree No	***Botanical Name*** **COMMON NAME**	**Height x spread (m)**	**DBH (mm)**	**SRZ** / **TPZ (m)**	**Age**	**Vigour** (health)	**Condition** (structure)	**LS**	**VTA**	**RV**	**U. L.E.**	**Comments** CV = Council verge tree NT= Neighbouring tree
29	*Callistemon viminalis* Bottle Brush	6 x 5	200	1.8 / 2.4	ESM	Good	Fair / Good	4/3	2C	2	2	Minor wound at base N, displays exposed roots N side with no significant visual faults
Design impact summary: LP design shows tree located directly within the footprint of the public domain area & proposed for removal to accommodate design												
30	*Callistemon viminalis* Bottle Brush	6 x 4	300at base	2 / 3.6	SM	Good	Fair	4/3	2C	2	2	EST stem 150(Ø) dead, SW stem with minor bow, past pruning cuts, and no significant visual faults
Design impact summary: LP design shows tree located directly within the footprint of the public domain area & proposed for removal to accommodate design												
31	*Callistemon viminalis* Bottle Brush	7.5 x 7	400	2.4 / 4.8	SM	Good	Fair / Good	3	2B / 2C	2	2	Twin stems at ground level, broad form, E side past pruning cuts & open wound at 1.8m S, has limb snap section in upper branch scaffolds W side with significant lean W
Design impact summary: LP design shows tree located directly within the footprint of the public domain area & proposed for removal to accommodate design												
32	*Casuarina glauca* She Oak	16 x 7	350	2.3 / 4.2	ESM	Good	Fair / Good	3	2C	2	2	lower trunk torsion twist to 2m, slight lean NE, suppressed canopy form SW side- biomass NE & weight loaded, canopy overhang >4m N side over building
Design impact summary: LP design shows tree located directly within the public domain & site access area to Spencer Street, indicating tree removal is required to accommodate design. & proposed for removal. Building E-1 construction with demolition by removing existing adjacent building protection factor and below ground foundations at base may also likely result in windthrow: tree collapse by sudden exposure and disturbance to root anchorage with targets likely Parramatta Rd usage, utility lines & person.												
33	*Casuarina glauca* She Oak	18 x 17	1250	3.7 / 15	M	Good	Good	3	2C	2	2	Multi stem form from 2 – 3.5m, canopy broad with minor limb snap in upper branch scaffolds at 9m SW & no significant visual faults, canopy overhang >7m N side over building
Design impact summary: LP design shows tree located directly within the public domain & site access area to Spencer Street, indicating tree removal is required to accommodate design. Construction with demolition by removing existing adjacent building protection factor and below ground foundations may likely result in tree decline or excessive limb snap by sudden exposure and loss of accustomed adjacent building protection factors: targets are likely Parramatta Rd usage, utility lines & person.												

	Trees requiring removal due to hazardous or dead condition - subject to Local Government Authority notification						Trees with low retention values: senescence, developing defects or being low significant or *exempt trees within the site from the LGA tree management orders					
Tree No	***Botanical Name* COMMON NAME**	**Height x spread (m)**	**DBH (mm)**	**SRZ / TPZ (m)**	**Age**	**Vigour** (health)	**Condition** (structure)	**LS**	**VTA**	**RV**	**U. L.E.**	**Comments** CV = Council verge tree NT= Neighbouring tree
34	*Eucalyptus scoparia* White Gum	17 x 8	300	2 / 3.6	ESM	Fair / Good	Good	3	4	2	2	Canopy slightly environmentally stressed, in slightly low vigour, slightly suppressed by adjacent tree(s), contained by infrastructure with no significant visual faults
Design impact summary: LP design shows tree located directly within the public domain & site access area to Spencer Street, indicating tree removal is required to accommodate design.												
35	*Casuarina cunninghamiana* River Oak	18 x 11	350	2.3 / 4.2	ESM	Good	Good	3	5/2B/ 2C	2	2	Lower trunk torsion twist to 2.2m, twin stems at 6m codominant, tree of tall forest form, suppressed canopy E side, canopy overhang >4m N side over building
Design impact summary: LP design shows tree located directly within the public domain & site access area to Spencer Street, indicating tree removal is required to accommodate design.												
36	*Eucalyptus nicholii* Black Peppermint	3.5 x 4	250at base	1.8 / 3	ESM	Good	Fair	4	2A	2	<2	Significant lean SW from likely past root plate failure, no soil heave opposite side, lower trunk PPF with extensive epicormic shoot development
Design impact summary: LP design shows tree located directly within the public domain area & proposed for removal, where demolition of existing building foundations may disrupt tree anchorage due to tree lean in opposite direction.												
37	*Eucalyptus pulchella?* White peppermint	17 x 13	600	2.8 / 7.2	SM	Good	Good	3	2C	2	2	Slightly low foliage volume, lower trunk kinked to 5m, upper branch scaffolds with minor limb snap & no significant visual faults, canopy overhang >4m N side over building
Design impact summary: LP design shows tree located directly within the public domain area & proposed for removal. Building D-2 construction with demolition by removing existing adjacent building protection factor and below ground foundations at base on two (2) sides may also result in windthrow: tree collapse by sudden exposure and disturbance to root anchorage with targets likely Parramatta Rd usage, utility lines & person.												

	Trees requiring removal due to hazardous or dead condition - subject to Local Government Authority notification						Trees with low retention values: senescence, developing defects or being low significant or *exempt trees within the site from the LGA tree management orders					
Tree No	***Botanical Name*** **COMMON NAME**	**Height x spread (m)**	**DBH (mm)**	**SRZ** / **TPZ (m)**	**Age**	**Vigour** (health)	**Condition** (structure)	**LS**	**VTA**	**RV**	**U. L.E.**	**Comments** CV = Council verge tree NT= Neighbouring tree
NOTE 1: Below tree(s) with restricted access & visual inspection, unable to access site, inspected as best as site conditions would allow												
38	*Eucalyptus sideroxylon* Red Ironbark	12 x 13	650	2.8 / 7.8	SM	Fair / Good	?	3	7/4	2	2	Restricted tree inspection, appears environmentally stressed with decline in canopy, potentially has main twin stems
Design impact summary: Tree falls within basement cut excavation area and Buildings C-1, D-1 & D2 footprint indicating tree removal is required to accommodate design.												
39	Dead tree	11 x 12	-	- / -	-	-	-	6	1	4	4	Dead tree
Design impact summary: Tree falls within basement cut excavation area and Buildings C-1, D-1 & D2 footprint indicating tree removal is required to accommodate design.												
40	*Cinnamomum camphora* Camphor Laurel	7 x 7	500?	2.6 / 6	ESM	Good	?	4	7	?	?	Restricted tree inspection, above ground visual parts appear in good order
Design impact summary: Tree falls within basement cut excavation area and Buildings C-1, D-1 & D2 footprint indicating tree removal is required to accommodate design.												
41	*Cinnamomum camphora* Camphor Laurel	10 x 9	500?	2.6 / 6	ESM	Good	?	4	7	?	?	Restricted tree inspection, above ground visual parts appear in good order
Design impact summary: Tree falls within basement cut excavation area and Buildings C-1, D-1 & D2 footprint indicating tree removal is required to accommodate design.												
42	*Jacaranda mimosifolia* Jacaranda	12 x 8	500?	2.6 / 6	ESM	Good	?	4	7/2E	?	<2	Restricted tree inspection, above ground visual parts appear in good order where location to infrastructure is likely to become problematic in the future
Design impact summary: Tree falls within basement cut excavation area and Buildings C-1, D-1 & D2 footprint indicating tree removal is required to accommodate design.												
G43 *x9 NT*	*Eucalyptus microcorys* Tallowwood	av 18 x 13	av 450	2.5 / 5.4	ESM	Good	Good?	3	7-5-2E	2	2?	Trees of tall forest form, located at base of building, appear against foundations where location to infrastructure will likely become problematic in the future, demolition of foundations & excavation at base may result in windthrow / tree failure
Design & impact summary: Located within Rosebank College, demolition of adjacent building & foundations will very likely result in tree collapse indicating a significant impact on the safe retention of the trees. Prior to any works occurring (demolition or site alterations) within the TPZ an advance arboricultural risk assessment outlining the consequence of proposed works and risk to person safety is to be provided by the client. The management of the trees should then be certified by an appointed AQF L5 project arborist.												

	Trees requiring removal due to hazardous or dead condition - subject to Local Government Authority notification						Trees with low retention values: senescence, developing defects or being low significant or *exempt trees within the site from the LGA tree management orders					
Tree No	***Botanical Name* COMMON NAME**	**Height x spread (m)**	**DBH (mm)**	**SRZ / TPZ (m)**	**Age**	**Vigour** (health)	**Condition** (structure)	**LS**	**VTA**	**RV**	**U. L.E.**	**Comments** CV = Council verge tree NT= Neighbouring tree
G44 *x12 NT*	*Eucalyptus microcorys* Tallowwood	av 20 x 11	av 500	2.6 / 6	SM	Good	Fair / Good?	3	7-5-2E	2	2?	Trees of tall forest form, minor mid trunk past pruning cuts raising canopy, small retaining wall N side-problem if removed, kerb at base T2-T9 S side, canopy 5-6m in site at 5m above ground level. Demolition of part wall foundations & excavation at base may result in windthrow / tree failure
Design & impact summary: Located within Rosebank College, requires further information in detailed design plans showing clear proposed & existing RL's, demolition areas and civil plans for links to Rosebank College within TPZ's. Notionally Public Domain works proposes a Significant SRZ & TPZ occupancy, coverage or disturbance over existing hard stands of at or near 44.2%. Tree retention is possible given detailed arborist advice in tree sensitive design & construction where no demolition should occur within tree protection zones that would compromise tree retention values or make the trees unsafe. A tree specific Tree Protection & Management Plan should be provided based on arborist advice and review of final construction plans that should include tree sensitive design & construction within the SRZ & TPZ and a colour coded Bulk Earthwork Plan showing areas of cut & fill within tree protection zones given the variation of levels between the two sites.											

APPENDIX- D: Tree Location Plan