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1.0 Introduction

1.1 Background

1.1.1 This Arboricultural Impact Assessment report has been prepared for Westconnex–New M5. It relates to the establishment of new street lights along Campbell Street and the pruning requirements of trees located within Simpson Park. The street light poles have been established in accordance with the engineering justification provided by Westconnex-New M5 (**Appendix 4**).

1.1.2 The purpose of this report is to record the information gathered from an onsite inspection of the trees and the assessment of the pruning requirements needed to allow light access to the footpath. Recommendations regarding tree pruning works and their impacts are based on these observations and the data collected.

1.1.3 The following documentation was reviewed and assists in the preparation of this report:

- Untitled aerial image showing Simpson Park and streetlight pole locations. Shown as Figure 1
- Engineering justification [REDACTED] Engineering Manager Westconnex New M5 to [REDACTED] [REDACTED] Westconnex New M5, dated 26/06/19
- Light pole ‘zone of influence diagram’
- Campbell Road Simpson Park Trees-Streetlight Locations Tree Impact Cross Sections, Light 76, prepared by Westconnex New M5, document No M5N-CDS-SKT-700-116-UT-0081
- Campbell Road Simpson Park Trees-Streetlight Locations Tree Impact Cross Sections, Light 80, prepared by Westconnex New M5, document No M5N-CDS-SKT-700-116-UT-0082
- Campbell Road Simpson Park Trees-Streetlight Locations Tree Impact Cross Sections, Light 87, prepared by Westconnex New M5, document No M5N-CDS-SKT-700-116-UT-0083
- Extract from arborist report prepared by Australian Tree Consultants 16-151 dated December 2016, Pages 18, 19, 27, 28, 29, 72 and 73

1.1.4 Documentation can be found within the Appendices of this report.

1.1.5 This report is to be used in its entirety only. Any written or verbal submission, report or presentation that includes statements taken from the findings, discussions, conclusions or recommendations made in this report may only be used where the whole original report (or a copy) is referenced to and directly attached to that submission, report or presentation. Information contained in the report covers only the trees that were inspected and reflects the trees condition at the time of the inspection. There is no guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future. The authors Curriculum Vitae has been included within the report and can be found as **Appendix 6**.

1.1.6 The image below, Figure 1, shows Simpson Park the assessed trees, their locations and the positions of the installed streetlight poles.



Figure 1: Simpson Park, Campbell Street, St Peters.

1.1.7 This Arboricultural Impact Assessment has been commissioned to ensure compliance with the requirements set out by the Department of Planning and Environment (DPE) as per Condition B63 shown in the table below.

Condition	Requirement	Addressed in:
B63	The Proponent must commission an independent experienced and suitably qualified arborist, to prepare a comprehensive Tree Report(s) prior to removing any trees on the periphery and/or outside the construction footprint as identified in the figures in Section 6 of the document referred to in condition A2(b), including any tree(s) removed along Euston Road. The Tree Report may be prepared for the entire SSI or separate reports may be prepared for individual areas where trees are required to be removed. The report(s) must identify the impacts of the SSI on trees and vegetation within and adjacent to the construction footprint. The report(s) must include:	This report;
B63 (a)	a visual tree assessment with inputs from the design, landscape architect, construction team;	Refer to section 2, appendix 1, 2 and 4
B63 (b)	consideration of all options to amend the SSI where a tree has been identified for removal, including realignment, relocation of services, redesign of or relocation of ancillary components (such as substations, fencing etc.) and reduction of standard offsets to underground services; and	Refer to Appendix 4
B63 (c)	measures to avoid the removal of trees or minimise damage to existing trees and is to ensure the health and stability of those trees to be protected. This includes details of any proposed canopy or root pruning, excavation works, site controls on waste disposal, vehicular access, storage of materials and protection of public utilities.	Refer to sections 4-6
B63	A copy of the report(s) must be submitted to the Secretary for approval prior to the removal, damage and/or pruning of any trees, including those affected by site establishment works. All recommendations of the report must be implemented by the Proponent, unless otherwise agreed by the Secretary.	No tree removal, damage and/or pruning will occur to the subject trees prior to the Secretary's approval of this report

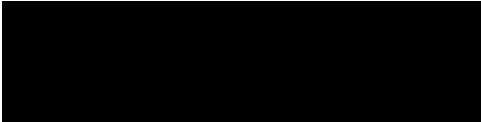
2.0 Inspection Methodology

2.1 On the 3 June 2019 I attended the site to undertake the tree inspection and collect data.

2.2 The tree(s) were assessed using the principles of a ground based Visual Tree Assessment (VTA)¹ and methods consistent with modern arboriculture. No aerial (climbing) inspection, tissue sampling or diagnostic testing was undertaken as part of the inspection process unless otherwise stated. The data collected during the inspection can be found as **Appendix 1** Tree Assessment Schedule.

2.3 Eight branches found to obstructing light clearance were assessed for pruning.

¹ Mattheck, C. and Breloer, H (2006), *The Body Language of Trees – A Handbook for Failure Analysis*, The Stationary Office. Pages 118-122.

- 
- 2.4 Pruning recommendations take into consideration the requirements of AS4373-2007 Pruning of Amenity Trees and species tolerance to pruning.
 - 2.5 Where possible each of the subject trees has been photographed and individual branches required for removal or reduction identified. Photographs can be found as **Appendix 2**.

3.0 Environmental Significance

3.1 Local Tree Preservation Orders and Heritage

- 3.1.1 Simpson Park is located within the Inner West (formerly Marrickville Council) local government area. The trees are protected under the conditions of the Marrickville Development Control Plan 2011, Part 2.20 General provisions Tree Management.
- 3.1.2 Simpson Park is located within the Lackey Street and Simpson Park heritage conservation area (C37) as identified under schedule 5 of the Marrickville LEP 2011.

3.2 Wildlife and Habitat

- 3.2.1 None of the trees identified for pruning works exhibited any hollows or cavities that would be considered as suitable for wildlife nesting or habitation. No arboreal mammals or birds were observed within any of the trees during the inspection works.

3.3 Threatened Species and/or Ecological Communities

- 3.3.1 None of the assessed trees are listed as threatened species or for part of an endangered ecological community under the Threatened Species Conservation Act 1995, the Environment Protection and Biodiversity Conservation Act 1999 or the NSW Biodiversity Conservation Act 2016.

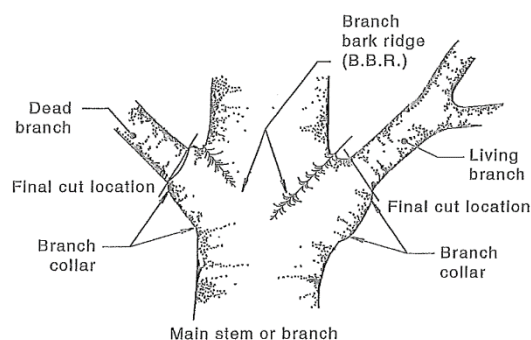
4.0 Assessed Pruning Works

- 4.1 All branches identified for removal were assessed with respect to AS4373-2007 pruning of Amenity Trees. Under the provisions of AS4373 the assessed pruning works fall within two classes being, selective pruning – applicable to all tree species and reduction pruning – restricted to trees with suitable secondary branches. Pruning method has been provided as part 5 of this report.
- 4.2 Pruning works involving the removal of less than 10% of a trees canopy may be considered as minor and will not ordinarily result in significant impacts upon its long-term health and condition.
- 4.3 Trees 148 and 151 were identified for pruning works. Trees 143, 144, 145, 146, 147, 149, 150 and 152 did not require any pruning works to be undertaken to provide light clearances.
- 4.4 The prescribed pruning of trees 148 and 151 constitute less than 5% of their total canopy volume, are restricted to branches 100mm in diameter or less and meet the requirements of the light pole ‘zone of influence’ diagram, **Appendix 5**. These works are not expected to have a detrimental impact on the medium to long term viability of the trees. The pruning works are not expected to have a significant impact upon the visual amenity of the trees.
- 4.5 Specific pruning works for each of the trees are identified as:
- **Tree 148:** Selective removal and/or reduction of second and third order branches growing around and below new street light. Pruning is restricted to approximately four second order branches 60mm, 3x40mm and 20mm in diameter as shown in photo 2, **Appendix 2**.
 - **Tree 151:** Selective removal and/or reduction of second and third order branches growing around and below new street light. Pruning is restricted to approximately four second order branches 30mm, 60mm, 50 and 100mm in diameter as shown in photo 2, **Appendix 2**.

5.0 Pruning Method

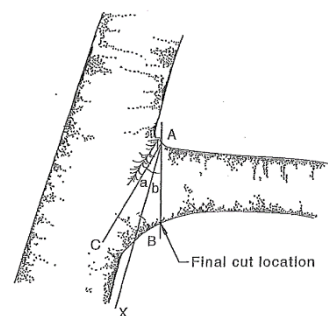
5.1 All tree pruning works are to be undertaken by suitably qualified tree workers (minimum AQF level 3 or equivalent) and in accordance with AS4373-2007 Pruning of Amenity Trees and Safe Work Australia's Guide to Managing Risks of Tree Trimming and Removal Works. All appropriate approvals and consents are to be obtained prior to tree removal works commencing.

5.2 Natural target pruning is the removal of branches, stems, and stubs such that final cuts are achieved as close as possible to the branch collar without cutting into it, or leaving a protruding stub. The branch collar is an area of



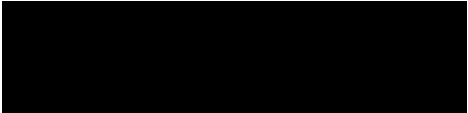
overlapping trunk and branch tissue forming a swelling around the base of many branches. It contains defensive chemicals that prevent infection from bacterial and/or fungal pathogens. The associated diagram shows final cut locations when undertaking pruning works.

5.3 On branches where the branch bark collar cannot be found, the branch bark ridge is to be used as a pruning guide. Line A to X is a line parallel to the trunk occurring just outside the branch bark ridge. Line A to C indicates the angle of the branch bark ridge and line A to B represents the angle and location of the final cut. Angle 'a' should equal angle 'b'.



5.4 The cutting of branches which results in a stub, referred to as lopping, is regarded as an unacceptable practice, except in certain circumstances. Lopping may result in:

- An increased rate of shoot production and elongation, which is weakly attached to the parent tree

- 
- Decay of the stubs
 - Poor form and visual amenity
 - Reduced life expectancy of the tree
 - Pre-disposing the tree to pathogenic infection and insect attack

5.5 Pruned branches are to be mulched on-site. The arisings of which are to be spread under the subject trees to promote a beneficial rooting environment and improve tree health.

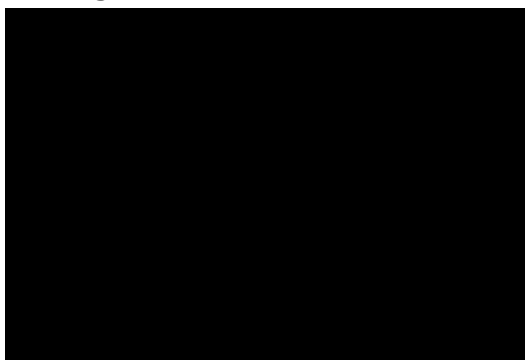
6.0 Conclusions and Recommendations

6.1 The prescribed pruning works are considered to be minor and are not expected to have significant impact upon the health, condition or amenity of the trees.

6.2 In the interests of maintaining tree health and condition and to minimise its visual impact all pruning works are to be kept to the minimal amount required to achieve the required street light clearances. Where possible the final cuts are to be made so that the smallest wound area is left on the tree.

I trust the information provided is of help, however, please feel free to contact me should you require any further assistance or clarification.

Regards.



Diploma (AQF level 5) in Horticulture (Arboriculture) Ryde TAFE 2006

Appendix 1: Tree assessment schedule

Tree number	Tree name		Tree dimensions			Vigour <small>Low, Normal, Excellent</small>	Condition <small>Poor, Fair, Good</small>	Age class <small>Young, Mature, Old, Dead</small>	SULE <small>Short, Medium, Long</small>	Landscape Significance	Comments
	Botanical name	Common name	Height (m)	Spread	D.B.H. (mm)						
151	<i>Ficus microcarpa var. hillii</i>	Hills fig	15-20	10x10	700	N	G	M	L	H	Approximately four second order branches 30mm, 60mm, 50 and 100mm in diameter to be removed or reduced. Pruning constitutes <5% of canopy volume – minimal impact upon tree health and condition. Tree health and condition consistent with the findings of the arborist report.
148	<i>Ficus microcarpa var. hillii</i>	Hills fig	15-20	10x10	450	N	G	M	L	H	Approximately four second order branches 60mm, 3x40mm and 20mm in diameter to be removed or reduced. Pruning constitutes <5% of canopy volume – minimal impact upon tree health and condition. Tree health and condition consistent with the findings of the arborist report.

Appendix 2: Photographs



Photo 1: Light pole 76 adjacent tree 151.



Photo 2: Branches from tree 151 identified for removal.



Photo 3: Light pole 80 adjacent tree 148.



Photo 4: Branches from tree 148 identified for removal.



Photo 5: Branches from tree 148 identified for removal.

Appendix 3: Tree assessment criteria

Tree number: Identifying number given to individual (or group) trees.

Botanical Name: Latin name for tree showing genus and species.

Common Name: The common name given to the tree.

Tree Dimensions: The physical dimensions of the tree.

- **Height:** Estimated or measured height of tree in meters.
- **Spread:** Estimated or measured radial canopy spread of tree in meters.
- **Diameter at Breast Height (DBH):** The estimated or measured diameter of trunk in given in millimetres measured at 1.4m from ground.

Age Class: An estimation of how old the tree is in relation to its life expectancy.

- **Semi-mature (SM)** – Age less than 20% of life expectancy of tree in situ
- **Mature (M)**– Age 20% - 80% of life expectancy of tree in situ
- **Old (O)**– Age greater than 80% of life expectancy of tree in situ
- **Dead (D)**– Tree is dead

Vigour: Ability of a tree to sustain its life processes. This is independent of the condition of a tree but may impact upon it. Vigour can appear to alter rapidly with change of seasons (seasonality) e.g. dormant, deciduous or semi-deciduous trees. Vigour can be categorised as Dormant, Low, Normal and High.

- **Dormant Vigour** – Determined by the existing turgidity in the lower order branches in the outer extremity of the crown, with good bud set and formation, and where the last extension growth is distinct from those most recently preceding it, evident by bud scale scars. Normal vigour during dormancy is achieved when such growth is evident on a majority of branches throughout the crown.
- **Low Vigour** – Reduced ability of a tree to sustain its life processes. This may be evident by the atypical growth of leaves, reduced crown cover and reduced crown density, branches, roots and trunk, and a deterioration of their functions with reduced resistance to predation. This is independent of the condition of a tree but may impact upon it, and especially the ability of a tree to sustain itself against predation.
- **Normal Vigour** – Ability of a tree to maintain and sustain its life processes. This may be evident by the typical growth of leaves, crown cover and crown density, branches, roots and trunk and resistance to predation. This is independent of the condition of a tree but may impact upon it, and especially the ability of a tree to sustain itself against predation.
- **High Vigour** – Accelerated growth of a tree due to incidental or deliberate artificial changes to its growing environment that are seemingly beneficial, but may result in premature aging or failure if the favourable conditions cease, or promote prolonged senescence if the favourable conditions remain, e.g. water from a leaking pipe, water and nutrients from a leaking or disrupted sewer pipe, nutrients from animal waste, a tree growing next to a chicken coop, or a stock feed lot, or a regularly used stockyard, a tree subject to stringent watering and fertilisation program, or some trees may achieve an extended lifespan from continuous pollarding practices over the life of the tree.

Condition: A tree's crown form and growth habit, as modified by its environment (aspect, suppression by other trees, soils) the stability and viability of the root plate, trunk and structural branches (first (1st) and possibly (2nd) order branches), including structural defects such as wounds, cavities or hollows, crooked trunk or weak trunk/branch junctions and the effects of predation by pests and diseases. These may not be directly connected with vigour and it is possible for a tree to be of normal vigour but in poor condition. Condition can be categorised as Dead, Poor, Fair and Good.

- **Dead Condition** – Tree is no longer capable of performing any of the following processes or is exhibiting any of the following symptoms; Photosynthesis via its foliage crown (as indicated by the presence of moist, green or other coloured leaves), Osmosis (the ability of the roots system to take up water), Turgidity (the ability of the plant to sustain moisture pressure in its cells), Epicormic shoots or epicormic strands in Eucalypts (the production of new shoots as a response to stress, generated from latent or adventitious buds or from a lignotuber), Permanent leaf loss, Permanent leaf wilting (the loss of turgidity which is marked by desiccation of stems leaves and roots), Abscission of the epidermis (bark desiccates and peels off to the beginning of the sap wood).
- **Poor Condition** - Tree is of good habit or misshapen, a form that may be severely restricted for space and light, exhibits symptoms of advanced and irreversible decline such as fungal, or bacterial infestation, major die-back in the branch and foliage crown, structural deterioration from insect damage e.g. termite infestation, or storm damage or lightning strike, ring barking from borer activity in the trunk, root damage or instability of the tree, or damage from physical wounding impacts or abrasion, or from altered local environmental conditions and has been unable to adapt to such changes and may decline further to death regardless of remedial works or other modifications to the local environment that would normally be sufficient to provide for its basic survival if in good to fair condition. Deterioration physically, often characterised by a gradual and continuous reduction in vigour but may be independent of a change in vigour, but characterised by a proportionate increase in susceptibility to, and predation by pests and diseases against which the tree cannot be sustained. Such conditions may also be evident in trees of advanced senescence due to normal phenological processes, without modifications to the growing environment or physical damage having been inflicted upon the tree. This may be independent from, or contributed to by vigour.
- **Fair Condition** - Tree is of good habit or misshapen, a form not severely restricted for space and light, has some physical indication of decline due to the early effects of predation by pests and diseases, fungal, bacterial, or insect infestation, or has suffered physical injury to itself that may be contributing to instability or structural weaknesses, or is faltering due to the modification of the environment essential for its basic survival. Such a tree may recover with remedial works where

appropriate, or without intervention may stabilise or improve over time, or in response to the implementation of beneficial changes to its local environment. This may be independent from, or contributed to by vigour.

- **Good Condition** - Tree is of good habit, with crown form not severely restricted for space and light, physically free from the adverse effects of predation by pests and diseases, obvious instability or structural weaknesses, fungal, bacterial or insect infestation and is expected to continue to live in much the same condition as at the time of inspection provided conditions around it for its basic survival do not alter greatly. This may be independent from, or contributed to by vigour.

Useful Life Expectancy (ULE): Adapted from Barrell, it is a snapshot in time of the potential an individual tree has for survival in the eyes of the assessor. SULE is not static – it is closely related to tree health and the surrounding conditions. Alterations in these variables may result in changes to the SULE assessment. Consequently, the reliability all SULE assessments have will decrease as time passes from the initial assessment and the potential for changes in variables increases.

- **Long SULE (L):** Trees that appear to be retainable at the time of the assessment for more than 40 years with an acceptable level of risk.
- **Medium SULE (M):** Trees that appear to be retainable at the time of the assessment for 15-40 years with an acceptable level of risk.
- **Short SULE (S):** Trees that appear to be retainable at the time of the assessment for 5-15 years with an acceptable level of risk.
- **Remove (R):** Trees that should be removed within the next 5 years.

Landscape Significance: Adapted from the IACA Significance of a Tree, Assessment Rating System (STARS). The landscape significance of a tree is an essential criterion to establish the importance that a particular tree may have on a site. However, rating the significance of a tree becomes subjective and difficult to ascertain in a consistent and repetitive fashion due to assessor bias. It is therefore necessary to have a rating system utilising structured quantitative criteria to assist in determining the retention value for a tree. The system uses a scale of High, Medium and Low significance in the landscape.

1. High (H) significance in landscape

- The tree is in good condition and good vigour
- The tree has a form typical for the species
- The tree is a remnant or is a planted locally indigenous specimen and/or is rare or uncommon in the local area or of botanical interest or of substantial age
- The tree is listed as a heritage item, threatened species or part of an endangered ecological community or listed on council's significant tree register
- The tree is visually prominent and visible from a considerable distance when viewed from most directions within the landscape due to its size and scale and makes a positive contribution to the local amenity
- The tree supports social and cultural sentiments or spiritual associations, reflected by the broader population or community group or has commemorative values
- The tree's growth is unrestricted by above and below ground influences, supporting its ability to reach dimensions typical for the taxa in situ – tree is appropriate to the site conditions

2. Medium (M) significance in landscape

- The tree is in fair-good condition and good or low vigour
- The tree has form typical or atypical of the species
- The tree is a planted locally indigenous or a common species with its taxa commonly planted in the local area
- The tree is visible from surrounding properties, although not visually prominent as partially obstructed by other vegetation or buildings when viewed from the street
- The tree provides a fair contribution to the visual character and amenity of the local area
- The tree's growth is moderately restricted by above or below ground influences, reducing its ability to reach dimensions typical for the taxa in situ

3. Low (L) significance in landscape

- The tree is in fair-poor condition and good or low vigour
- The tree has form atypical of the species
- The tree is not visible or is partly visible from the surrounding properties as obstructed by other vegetation or buildings
- The tree provides a minor contribution or has a negative impact on the visual character and amenity of the local area
- The tree is a young specimen which may or may not have reached dimensions to be protected by local Tree Preservation Orders or similar protection mechanisms and can easily be replaced with a suitable specimen
- The tree's growth is severely restricted by above or below ground influences, unlikely to reach dimensions typical for the taxa in situ – tree is inappropriate to the site conditions
- The tree is listed as exempt under the provisions of the local Council Tree Preservation Order or similar protection mechanisms
- The tree has a wound or defect that has the potential to become structurally unsound

Environmental Pest / Noxious Weed Species

- The tree is an environmental pest species due to its invasiveness or poisonous/allergenic properties.
- The tree is a declared noxious weed by legislation

Hazardous / Irreversible Decline

- The tree is structurally unsound and/or unstable and is considered potentially dangerous
- The tree is dead, or is in irreversible decline, or has the potential to fail or collapse in full or in part in the immediate to short term

The tree is to have a minimum of three (3) criteria in a category to be classified in that group

Appendix 4: Engineering Justification E-mail

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED], the basis of the lighting design and justification for localised pruning of tree branches around the luminaires is as follows.

The lighting design conforms to the relevant Australian Standards for lighting design as follows;

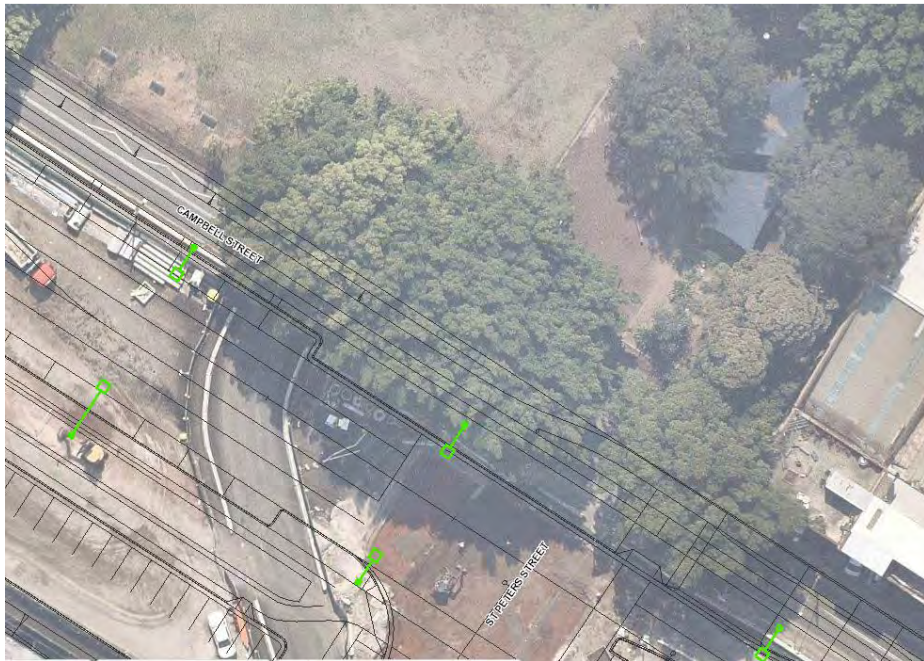
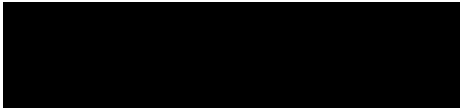
- Campbell Street - Category V3 AS/NZS 1158.1.1
- Shared Path - Category P2 AS/NZS 1158.1.1
- Local Residential Street - Category P4 AS/NZS 1158.1.1

Compliance with these Standards is mandated by the Road Authority and is justified to ensure the safety of road users, pedestrians and cyclists in recognition of the significant increase in traffic volumes associated with the project. The Pre-Project condition consists of two through traffic lanes in Campbell Street, whereas the Project consists of four through traffic lanes, a central turning lane into St Peters Street, two indented kerb side parking lanes and a separated cycle and Pedestrian path on the northern side i.e. a cross section consisting of seven road traffic lanes plus a separated cycle and pedestrian path.

The light poles are placed outside the roadside clear zone on the north and south side of the carriageway. The positioning of the Project light poles on the northern side of Campbell Street is approximately at the location of the southern kerb line of the Pre-Project condition i.e. the separated cycle and pedestrian path and Green Link occupies the space of the former road alignment and the additional seven traffic lanes forming the new carriageway are located to the south of the former road alignment . There is no median space to locate centralised lighting due to the central turning lane to St Peters Street.

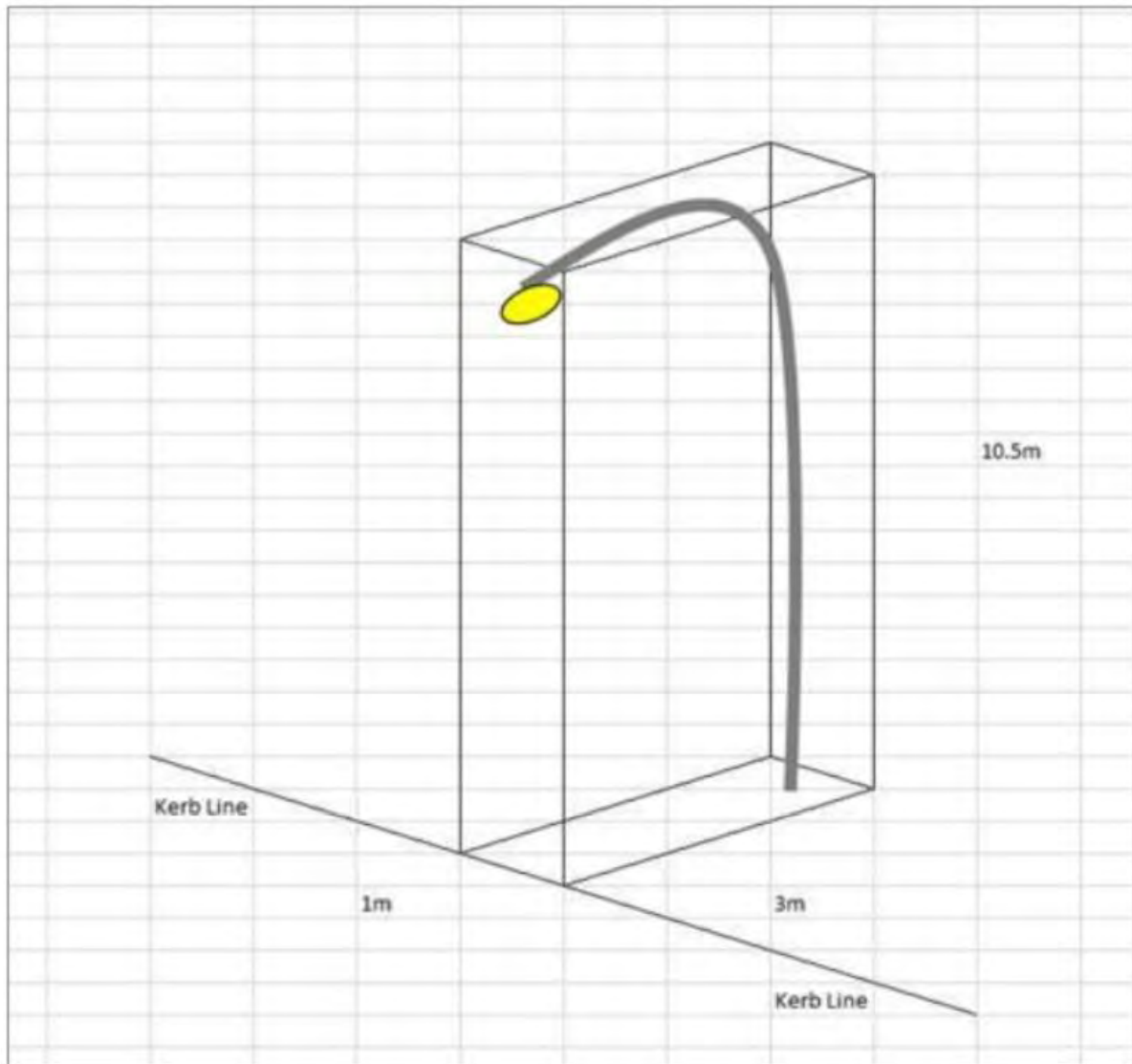
The height of the poles are conforming to the standard Ausgrid pole provision and the lighting design conforms to the requirement of Category V3 AS/NZS 1158.1.1. A reduction in pole height is not considered feasible as it would only be marginal in order to achieve the lighting standard and would involve a closer pole spacing which would still require branch pruning and further pruning for the additional poles.

[REDACTED]

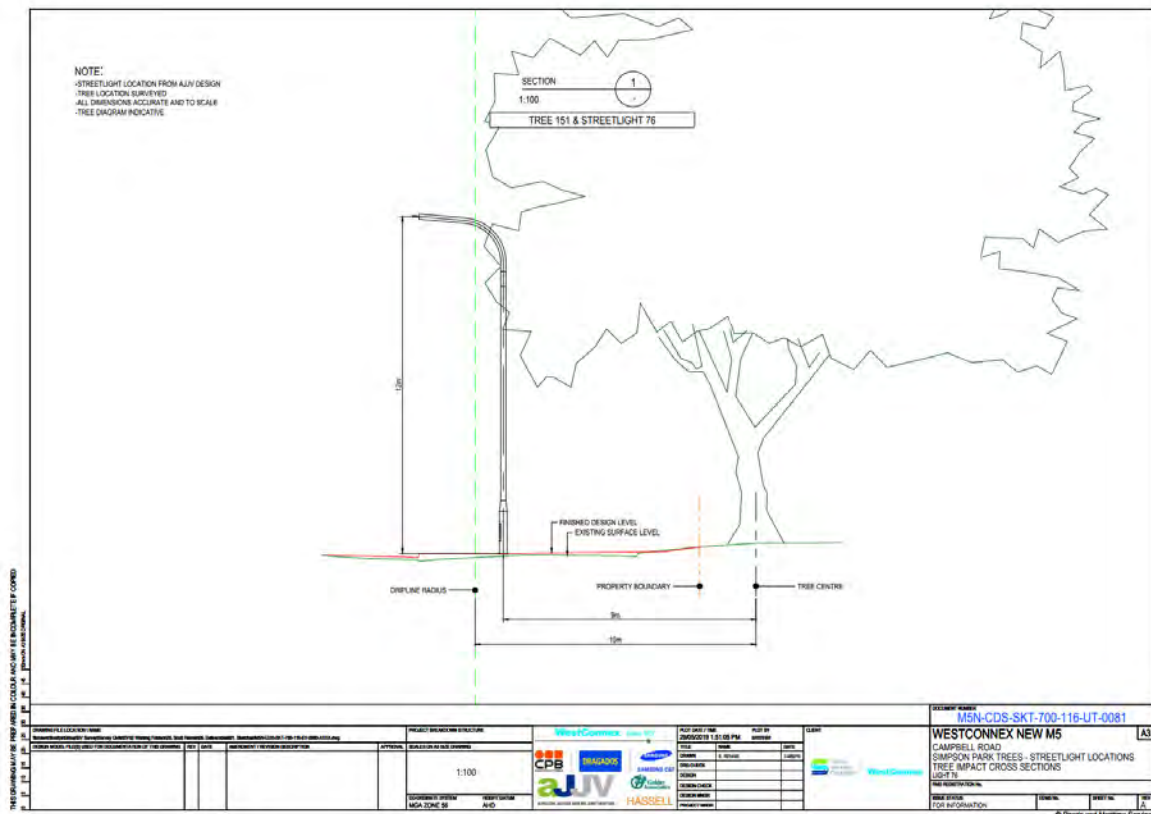
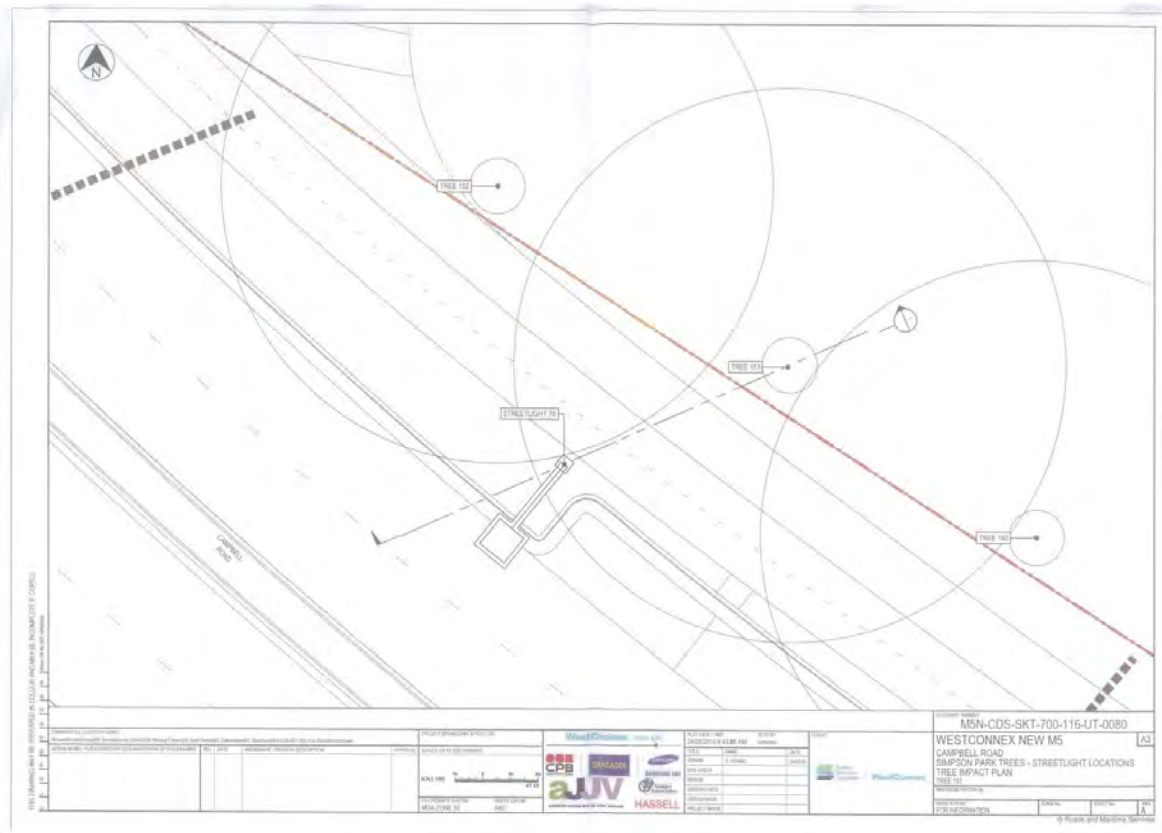


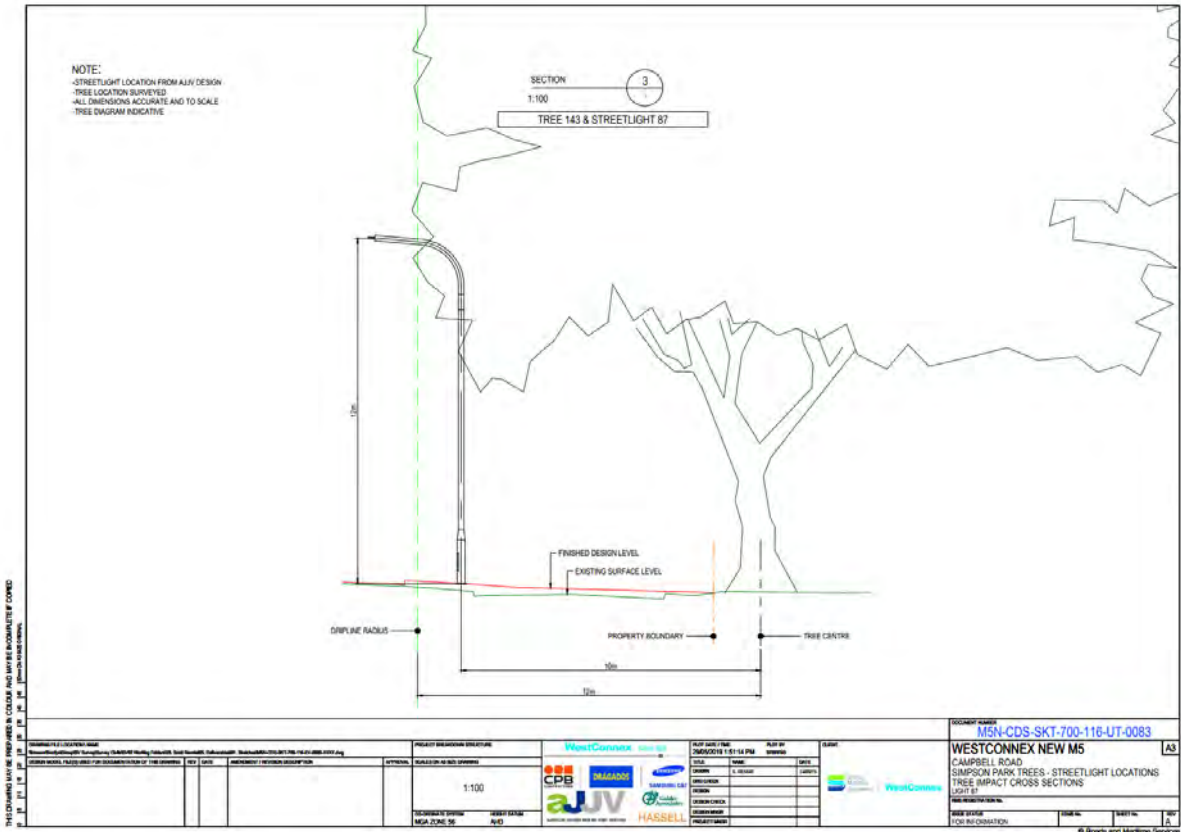
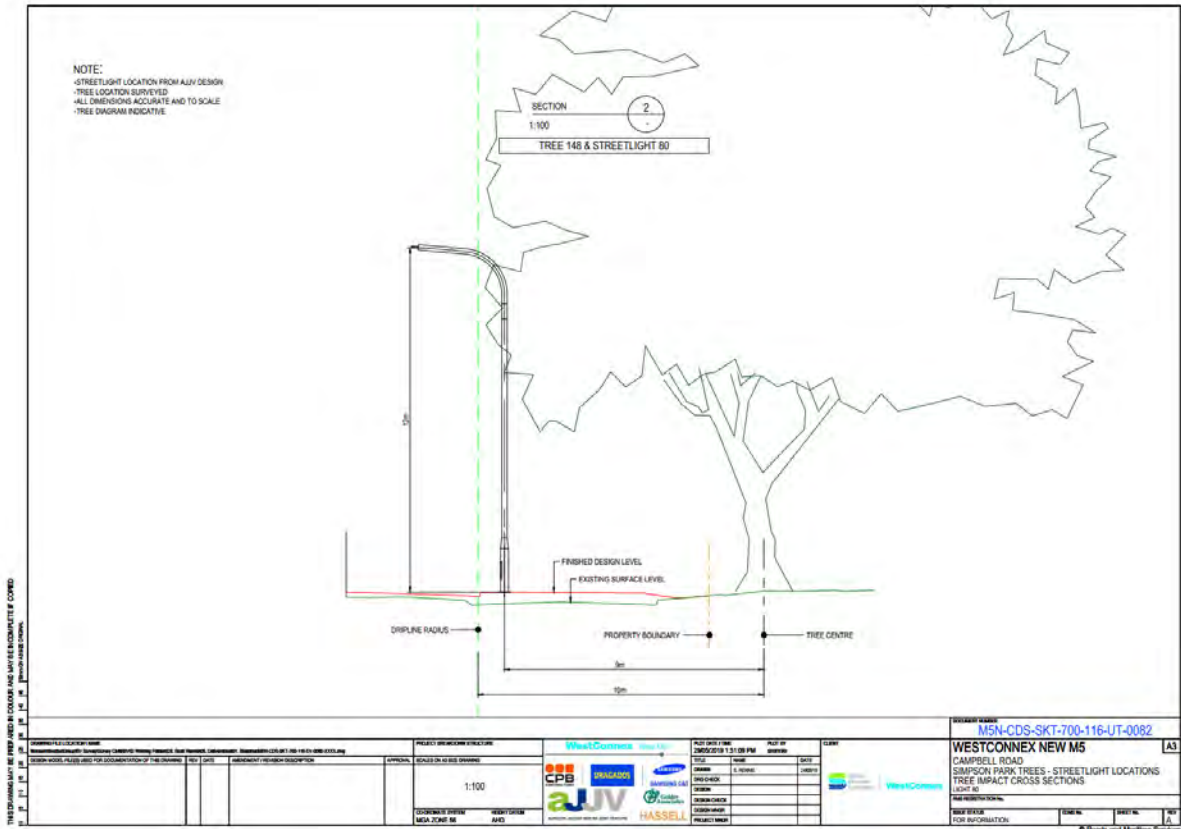
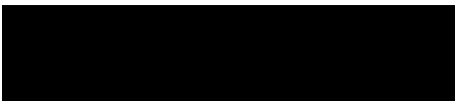
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Appendix 5: Light pole 'zone of influence' diagram



Appendix 6: Campbell Road Simpson Park Trees-Streetlight Locations Tree Impact Cross Sections

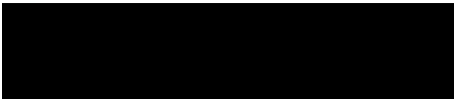




Appendix 7: Extracts from arborist report

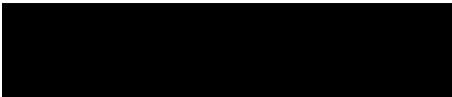






Campbell Street and Campbell Road - St. Peters								
No	Botanical name	Retention value	Tree Location	Encroachment into TPZ		Cause of encroachment	Proposed outcome	Reason for proposed outcome
142	<i>Ficus microcarpa</i>	High	Adjacent to footprint	Major	>10%	Construction	Redesign	Highly significant tree, can be retained using tree sensitive design modifications. No work that may damage this tree is to be undertaken in the TPZ until the redesign is complete and this report updated and approved by Department of Planning and Environment.
143	<i>Ficus microcarpa</i>	High	Adjacent to footprint	Major	>10%	Construction	Redesign	Highly significant tree, can be retained using tree sensitive design modifications. No work that may damage this tree is to be undertaken in the TPZ until the redesign is complete and this report updated and approved by Department of Planning and Environment.
144	<i>Ficus microcarpa</i>	High	Adjacent to footprint	Major	>10%	Construction	Redesign	Highly significant tree, can be retained using tree sensitive design modifications. No work that may damage this tree is to be undertaken in the TPZ until the redesign is complete and this report updated and approved by Department of Planning and Environment.
145	<i>Ficus microcarpa</i>	High	Adjacent to footprint	Major	>10%	Construction	Redesign	Highly significant tree, can be retained using tree sensitive design modifications. No work that may damage this tree is to be undertaken in the TPZ until the redesign is complete and this report updated and approved by Department of Planning and Environment.
146	<i>Ficus microcarpa</i>	High	Adjacent to footprint	Major	>10%	Construction	Redesign	Highly significant tree, can be retained using tree sensitive design modifications. No work that may damage this tree is to be undertaken in the TPZ until the redesign is complete and this report updated and approved by Department of Planning and Environment.

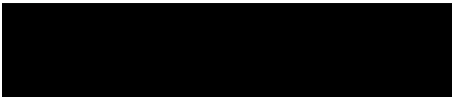
Campbell Street and Campbell Road - St. Peters								
No	Botanical name	Retention value	Tree Location	Encroachment into TPZ		Cause of encroachment	Proposed outcome	Reason for proposed outcome
147	<i>Ficus microcarpa</i>	High	Adjacent to footprint	Major	>10%	Construction	Redesign	Highly significant tree, can be retained using tree sensitive design modifications. No work that may damage this tree is to be undertaken in the TPZ until the redesign is complete and this report updated and approved by Department of Planning and Environment.
148	<i>Ficus microcarpa</i>	High	Adjacent to footprint	Major	>10%	Construction	Redesign	Highly significant tree, can be retained using tree sensitive design modifications. No work that may damage this tree is to be undertaken in the TPZ until the redesign is complete and this report updated and approved by Department of Planning and Environment.
149	<i>Ficus microcarpa</i>	High	Adjacent to footprint	Major	>10%	Construction	Redesign	Highly significant tree, can be retained using tree sensitive design modifications. No work that may damage this tree is to be undertaken in the TPZ until the redesign is complete and this report updated and approved by Department of Planning and Environment.
150	<i>Ficus microcarpa</i>	High	Adjacent to footprint	Major	>10%	Construction	Redesign	Highly significant tree, can be retained using tree sensitive design modifications. No work that may damage this tree is to be undertaken in the TPZ until the redesign is complete and this report updated and approved by Department of Planning and Environment.
151	<i>Ficus microcarpa</i>	High	Adjacent to footprint	Major	>10%	Construction	Redesign	Highly significant tree, can be retained using tree sensitive design modifications. No work that may damage this tree is to be undertaken in the TPZ until the redesign is complete and this report updated and approved by Department of Planning and Environment.



Campbell Street and Campbell Road - St. Peters								
No	Botanical name	Retention value	Tree Location	Encroachment into TPZ		Cause of encroachment	Proposed outcome	Reason for proposed outcome
152	<i>Ficus microcarpa</i>	High	Adjacent to footprint	Major	>10%	Construction	Redesign	Highly significant tree, can be retained using tree sensitive design modifications. No work that may damage this tree is to be undertaken in the TPZ until the redesign is complete and this report updated and approved by Department of Planning and Environment.
153	<i>Corymbia maculata</i>	High	Adjacent to footprint	Major	>10%	Construction	Redesign	Highly significant tree, can be retained using tree sensitive design modifications. No work that may damage this tree is to be undertaken in the TPZ until the redesign is complete and this report updated and approved by Department of Planning and Environment.
154	<i>Brachychiton acenifolius</i>	High	Outside footprint	None	-	-	Retain	No significant impacts to the subject tree are foreseeable under the current proposal.
155	<i>Ficus microcarpa</i>	High	Outside footprint	None	-	-	Retain	No significant impacts to the subject tree are foreseeable under the current proposal.
156	<i>Acmena smithii</i>	High	Adjacent to footprint	Major	>20%	Construction	Remove	Cannot be retained under current proposal. Pruning and / or protection not viable given extent of encroachment (major) and intrusive works. Non-destructive digging not possible due to required construction. Removal required to allow for shared path construction and Hutchinson Street tie in. Significant stormwater upgrades are planned to eliminate local flooding in this area. The stormwater upgrades have major encroachment into the TPZ. This tree is located in privately owned property. Consent must be gained from the owner prior to removing the tree. Pruning or trimming within the deed boundary may be undertaken under the advice of a consulting arborist.

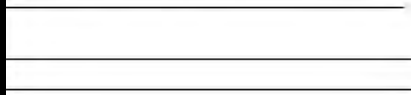
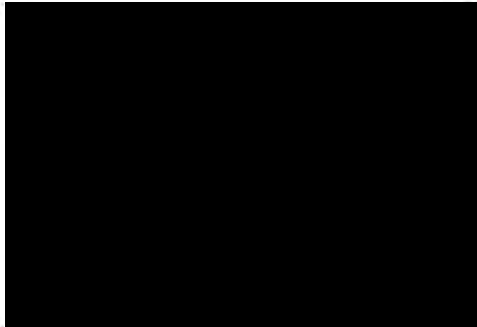
Appendix A: Tree Schedule

Campbell Street West - St. Peters										
No.	Botanical name	Surveyed (yes/no)	Height (m)	Spread (m)	DBH (mm)	TPZ (m)	SRZ (m)	Health	Structure	Other notes
137	<i>Camellia japonica</i>	Yes	3	3	150	2	1.5	Fair	Fair	
138	<i>Pyrus calleryana</i>	Yes	4	3	200	2.4	2	Fair	Fair	
139	<i>Pyrus calleryana</i>	Yes	4	3	200	2.4	2	Fair	Fair	
140	<i>Pyrus calleryana</i>	Yes	4	3	200	2.4	2	Fair	Fair	
141	<i>Fraxinus raywood</i>	Yes	4	3	200	2.4	2	Fair	Fair	
142	<i>Ficus microcarpa</i>	Yes	20	22	1200	15	4	Good	Good	
143	<i>Ficus microcarpa</i>	Yes	20	21	1200	15	4	Good	Good	
144	<i>Ficus microcarpa</i>	Yes	22	22	1300	15	4	Good	Good	
145	<i>Ficus microcarpa</i>	Yes	22	22	1300	15	4	Good	Good	
146	<i>Ficus microcarpa</i>	Yes	18	20	1100	13.6	4	Good	Good	
147	<i>Ficus microcarpa</i>	Yes	12	12	450	5.4	2.5	Fair	Fair	
148	<i>Ficus microcarpa</i>	Yes	14	14	450	5.4	2.5	Good	Good	



Campbell Street West - St. Peters										
No.	Botanical name	Surveyed (yes/no)	Height (m)	Spread (m)	DBH (mm)	TPZ (m)	SRZ (m)	Health	Structure	Other notes
149	<i>Ficus microcarpa</i>	Yes	15	17	1000	12	3.5	Good	Good	
150	<i>Ficus microcarpa</i>	Yes	14	14	700	8.4	3	Good	Good	
151	<i>Ficus microcarpa</i>	Yes	15	16	700	8.4	3	Good	Good	
152	<i>Ficus microcarpa</i>	Yes	14	14	1200	15	4	Good	Good	
153	<i>Corymbia maculata</i>	Yes	16	12	600	7.2	2.5	Good	Good	
154	<i>Brachychiton acerifolius</i>	Yes	16	9	400	4.8	2.5	Good	Good	
155	<i>Ficus microcarpa</i>	Yes	16	18	1200	15	4	Good	Good	
156	<i>Acmena smithii</i>	Yes	12	8	300	3.6	2	Good	Good	
157	<i>Acmena smithii</i>	Yes	8	5	300	3.6	2	Good	Good	
158	<i>Plumeria species</i>	Yes	3	3	150	2	1.5	Fair	Fair	
159	<i>Washingtonia robusta</i>	Yes	3	3	300	3.6	2	Good	Good	
160	<i>Banksia integrifolia</i>	Yes	4	3	150	2	1.5	Good	Good	
161	<i>Callistemon viminalis</i>	No	7	8	500	6	2.5	Good	Good	

Appendix 8: Report authors Curriculum Vitae



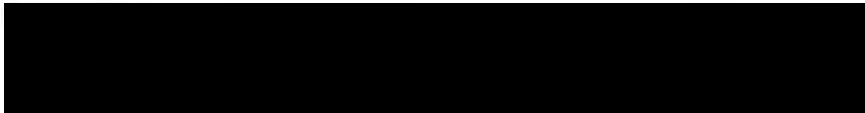
QUALIFICATIONS

2006 Diploma (AQF level 5) of Horticulture (Arboriculture),
Ryde TAFE

1997 Higher National Certificate in Electronic
Engineering (Communications), Southampton
Institute of Higher Education, England

1993 Advanced Level Design Technology
(Technology), Barton Peveril College,
Southampton, England

WORK HISTORY



Key Responsibilities: Oversee the management of council, commercial and private tree contracts. Manage staff. Provide tree consultancy and reporting services to residential, commercial and government clients including M4 Westconnex, M5 Westconnex, Northconnex, Northern Beaches B-Line Bus Route, Sydney Water and the RMS. Undertake the inspection and reporting on trees in relation to health, condition, safety, hazard assessment, development and council applications. Provide on-site supervision of development/construction works close to trees. Recommend tree protection and retention methods. Undertake audits to ensure industry best practices.



Provide advice and solutions to private residents and local governments regarding the management of trees around the electrical network. Assess and approve the removal of trees in relation to the electrical network. Undertake audits of tree contractors to ensure

conformance to industry best standards. Prepare written reports and advise on special projects. Manage complaints and disputes related to trees. Provide tree care advice.

Key Responsibilities: Management of the Council's primary tree contractors including pest controllers and landscapers. Undertake safety and quality audits to ensure conformance with contractual and industry best standards. Issue and manage work-loads according to budgetary requirements. Undertake the assessment of private tree applications. Provide advice and consultation to private residents and internal departments regarding the management of trees within the municipality. Manage complaints and disputes related to trees.

Key Responsibilities: Undertake tree pruning and removal duties. Oversee the management of council, commercial and private tree contracts. Manage staff.

Continuing Professional Development

Graduate Certificate in Arboriculture Melbourne University – Currently Studying
Concept to Construction – Institute of Australian Consulting Arborist (IACA) – July 2017
VALID Tree Risk Assessment – Feb 2017, April 2019
Advanced Quantified Tree Risk Assessment QTRA – Dec 2016, March 2019
Tree Risk Assessment Qualification TRAQ – Nov 2016
Quantified Tree Risk Assessment (QTRA) 2014 (No 3951)
Practitioners Guide to Visual Tree Assessment 2014
Up by Roots – Healthy Soils and Trees in the Built Environment (James Urban) 2008
Tree A-Z / Report Writing (Jeremy Barrell) 2006
Various presentations and seminars as a member of the Local Government Tree Resource Association (LGTRA)

REFERENCES

Upon Request