



AMENDED TREE REMOVAL & PRUNING APPLICATION REPORT

Innovation Plaza - Australian Technology Park,
Redfern 27.7.2018.

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Forward

- The City of Sydney Council (Council) and Department of Planning & Environment (DP&E) has considered the report, dated 30.4.2018 prepared by Lee Hancock Consulting Arborist to support the removal of Tree 67 in Innovation Plaza, as proposed within the Response to Submissions (RTS) Report for SSDA 8517 and has raised a number of issues relating to the information included within the previous report regarding the percentage of branches and foliage removed/ pruned and the number of trees to be pruned.
- In response to the Council's comment, this is a revised report based on the original. Changes to this revised report are highlighted in **red text** to assist the DP&E appreciate the changes to it and to address any concerns. The majority of red text is included in **Section 4. Discussion**
- The proposed development will only impact on Tree 67 through its removal and Trees 66, 68 and 43 through pruning.
- **The reason for pruning to 5m:** The amended report has changed the maximum height to comply with City of Sydney Street Tree Strategy. Refer: Section 4. Discussion.
- The expected maximum loss of foliage through pruning is less 10%, which will not impact the viability of the trees
- An error was made in estimating the height of Tree 67 current height is 14m, this has been remedied in Table 2. Tree Health and Retention Values.
- The remaining trees positioned in Innovation Plaza are not recommended for pruning, only trees 66 and 68 positioned either side of Tree 67 in the event of Tree 67 approval for removal is granted.

1. Introduction

Lee Hancock Consulting Arborist was commissioned to prepare a report to support the assessment of State Significant Development Application 8517 that seeks to redevelop and adaptively re-use Bays 1-4a within the Locomotive Workshop to provide, amongst other things, the provision of a loading dock in the northern portion of Bays 1 and 2 that will be accessed from Innovation Plaza.

Previous reports submitted by Earthscape Horticultural Services 28th April 2017, numbered the existing trees 59-80 (Avenue of London Plane Trees) located between Innovation Plaza and the Locomotive Workshops. The *Ficus rubiginosa* (Port Jackson Fig) is numbered Tree 43 and is located at the goods entrance of Cornwallis Street, Redfern.

2. Aim

The purpose of this report is to assess the trees health and vigour, structural integrity, their significance in the landscape and assess their suitability for retention.

2.1 Table 1. Documents Provided

PLAN/DOCUMENT	PREPARED BY	DWG/REF NO	DATED
Australian Technology Park Locomotive Workshop Swept Path Assessment	GTA CONSULTANTS	N117430-04-03-01	13.9.2017
Arboricultural Impact Assessment	Earthscape Horticultural Services	N/A	28 th April 2017

3. Site Analysis

The entire Australian Technology Park site including the study site, Innovation Plaza is part of the Eveleigh Railway Workshops listing on the NSW State Heritage Register. The Innovation Plaza site in recent times have implemented an Avenue planting of semimature *Platanus* x *Hybrida*. (London Plane Tree). At the entrance from Cornwallis St into Innovation Plaza stands a large mature *Ficus rubiginosa* (Port Jackson Fig) in established retained garden.



4. Discussion

An assessment of each tree was made using the Visual Tree Assessment (VTA) procedure. The prescribed trees were assessed from the ground only. No aerial inspection or diagnostic testing has been undertaken as part of this assessment.

4.1 The initial point of reference in assessing the impacts of the proposed development is AS4970 (2009) '*Protection of trees on development sites*'.

4.2 The study area begins at 2-4 Cornwallis Street PT4002 DP. 1194309 National Innovation Centre and PT 4000 DP.1194309 Locomotive Workshop.

The subject trees numbers were obtained directly from Earthscape Horticultural Services Appendix 6. Tree Location Plan April 2017, by referencing the original Tree Location Plan this should aid the reader in the location of the existing trees.

Tree 43. *Ficus rubiginosa* (Port Jackson Fig)

Tree appears structurally stable, in good form and vigour. Tree canopy facing north shall be impacted upon by delivery trucks entering, crown lifting the canopy should minimise any damage to the long-term health and vigour of the existing trees.

Trees 66 and 68. *Platanus x Hybrida*. (London Plane Tree).

The subject trees 66 and 68 *Platanus x Hybrida*. (London Plane Tree) were assessed to be semi-mature specimens which are in good health and vigour, with sound structural branch attachments. The proposed delivery truck route to access the loading dock will impact upon the lower structural branches of trees 66 and 68. Selectively pruning the lower branches of trees 66 and 68 will minimise any mitigating issues relating to trunk and branch damage. Damage to trunk and branches leaving open wounds can predispose the tree to fungal infections or wood decay fungi.

The selective pruning of branches as stated in AS 4373 Pruning of Amenity Trees (2007) Section 3.40 is *the removal of identified or specified branches*. Accordingly, branches will be removed to a height of 4.5 m compliant with City of Sydney's maximum pruning for vehicle clearance. The expected maximum loss of foliage is less than 10%, which will not impact the trees' viability or health.

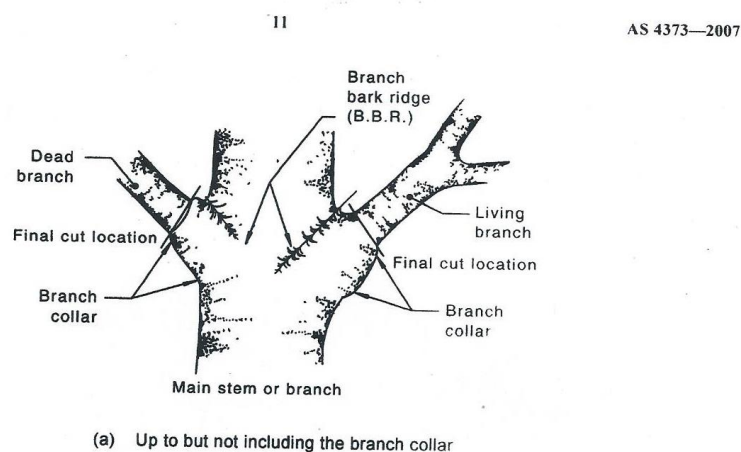
It is recommended that the branches that are intended to be removed through pruning should not exceed 100mm in diameter and then a final cut should be made as close as possible to the branch collar without cutting into the branch collar or leaving a protruding stub. See Figure 1.

Tree 67. *Platanus x Hybrida*. (London Plane Tree).

Tree 67 is a semi mature tree in good health and vigour, with sound branch attachments and 14m in height. The supplied swept path assessment plan reveals that there is no feasible alternative for the retention of the tree. The height and maturity of the tree indicates, it is not considered to be a good specimen to be transplanted. Therefore, whilst the tree is considered to be of a moderate retention value, removal is recommended.

NOTE: To clarify, the remaining trees positioned in Innovation Plaza are not recommended for pruning, only trees 66 and 68 positioned either side of Tree 67.

Figure 1. Indicative correct pruning procedures.



NOTE: When removing dead wood from a tree, make the final cut as close to the branch collar as possible. Do not damage living tissue. The branch collar is the best guide for the final cut when removing a living branch. However, if there is no branch collar use the branch bark ridge as depicted in Figure 1(b).

Table 2. Tree Health and Retention Values.

Tree	Genus & Species	Height	DBH /DAGL	Maturity	Condition	Health and Vigour	Landscape Significance Rating	Useful Life Expectancy	Retention Value
43	<i>Ficus rubiginosa</i> (Port Jackson Fig)	10m	1000/1400 mm	Mature	Good	Good	High	Long greater than 40 Years	High
66	<i>Platanus x Hybrida.</i> (London Plane Tree).	14m	300/320	Semi mature	Good	Good	High	Long greater than 40 Years	High
67	<i>Platanus x Hybrida.</i> (London Plane Tree).	14m	310/330	Semi mature	Good	Good	High	Long greater than 40 Years	Moderate
68	<i>Platanus x Hybrida.</i> (London Plane Tree).	14m	320/340	Semi mature	Good	Good	High	Long greater than 40 Years	High

5. Conclusion

The site analysis has collected all relevant data in assessing the condition of trees located within the vicinity of Innovation Plaza and the Locomotive Workshop, an assessment of the health and vigour, estimated life expectancy and their significance in the landscape and amenity value have been recorded for Trees 66, 67, 68 and 43.

This report provides recommendations relating to tree management only. Advice should be sought from appropriately qualified consultants regarding design/construction issues.

A comprehensive risk assessment and management plan for the trees is beyond the scope of this report.

6. Recommendations

The proposed access route to the Loading Dock planned within the Locomotion Workshop necessitates the removal of Tree 67 *Platanus x Hybrida*. (London Plane Tree). It does not seem feasible to retain the tree. There are no other alternatives such as transplanting as previously considered, given the size and maturity of the tree, and the economic outlay. Approved tree removal shall be undertaken by an experienced Certified AQF Level 3 Arborist in accordance with Safe Work Australia Code of Practice 'Guide to Managing Risks of Tree Trimming and Removal Work'.

The remaining London Plane trees 66 and 68 shall be selectively pruned by the project arborist. To attain clearance for vehicles. It is recommended that pruning lower branches to a height of 4.5m clearance. The maximum diameter of branches removed should not exceed 100mm in diameter.

No other trees positioned in Innovation Plaza shall be or are required to be pruned.

For Tree 43, crown lifting the lower branches to a height of 4.5m clearance without disfiguring the natural growth habit of the tree is recommended. The maximum diameter of branches that are to be removed should not exceed 100mm.

Pruning shall be compliant with AS4373 (2007) *Pruning of Amenity Trees* and undertaken by an experienced Certified AQF Level 3 Arborist in accordance with Safe Work Australia Code of Practice 'Guide to Managing Risks of Tree Trimming and Removal Work'.

Installation of ornamental tree guards around trees 66 and 68 is also recommended. Tree guards provide protection from acts of vandalism but in this scenario provide added protection from the trucks entering and leaving the dock.

7. Images

Ficus rubiginosa (Port Jackson Fig) Crown lifting to accommodate vehicles.



The Site - Innovation Plaza



Tree 66 . Red line indicates selective pruning of one branch.

Tree 67 to be removed



Tree 68 Lower branch removal indicated by red dash



Tree 66 Small diameter branches selectively pruned.



8. References

AS4373 *Pruning of Amenity Trees* (2007)

AS4970 '*Protection of trees on development sites*'. (2009)

Harris, Clark & Matheny. *Arboriculture: Integrated Management of Landscape Trees, Shrubs and Vines*, (1999) Prentice Hall, New Jersey.

Mattheck, C. & Breloer, H. (1994) *The Body Language of Trees*.

Morton, A. Earthscape Horticultural Services -Tree Retention Values

Morton, A. Earthscape Horticultural Services - *Arboricultural Impact Assessment – Proposed Public Domain Upgrade Australian Technology Park* – Henderson Road, Eveleigh, NSW. Version 3 28th April 2017.

Disclaimer

The author, Lee Hancock Consulting Arborist takes no responsibility for actions taken and their consequences, contrary to those expert and professional instructions given as recommendations pertaining to safety by way of exercising our responsibility to our client and the public as our duty of care commitment to mitigate or prevent hazards from arising, from a failure moment in full or part, from a structurally deficient or unsound tree or a tree likely to be rendered thus by its retention and subsequent modifications to its growing environment either above or below ground contrary to our advice.

This report is a recommendation only. In no way does it guarantee any actions by the determining authorities.

9. Methodologies

9.1 Visual Tree Assessment (VTA)

A technique developed by (Mattheck & Breloer) was carried out on all trees from the ground. The technique involves, identification of the Genus and Species of trees on the site. The Diameter at Breast Height (DBH) 1.4m above ground level determined from the circumference of the trunk divided by π (π).

Tree height (m) Diameter at Ground Level (DAGL), Canopy spread (m) in four cardinal points (north, south, east, west) Structural integrity, Amenity value, Indigenous/ Endemic value, Health and vigor of trees.

9.2 Useful Life Expectancy (ULE)

An assessment procedure has been developed by (Barrell, J.D.) 1993 'by which trees on a site are accurately recorded and designated according to their suitability for retention in the short, medium or long term'. This methodology is a measure of the "sustainability" of the remaining contribution in years that the tree can provide in the context of the site.

9.3 Landscape Significance

The significance of trees in the landscape is assessed in determining their retention values in 3 categories. Heritage Value reflects Historical significance, Ecological Value maintains biodiversity values and Amenity value contributes to the character of the landscape.

9.4 Tree Retention Values

A rating was given to each tree on site; the information gathered was then processed by evaluating the health and vigour, the remaining useful life expectancy (ULE), plus their significance in the landscape. A retention value for each tree was then evaluated ranging from High, Moderate, Low and Very Low.

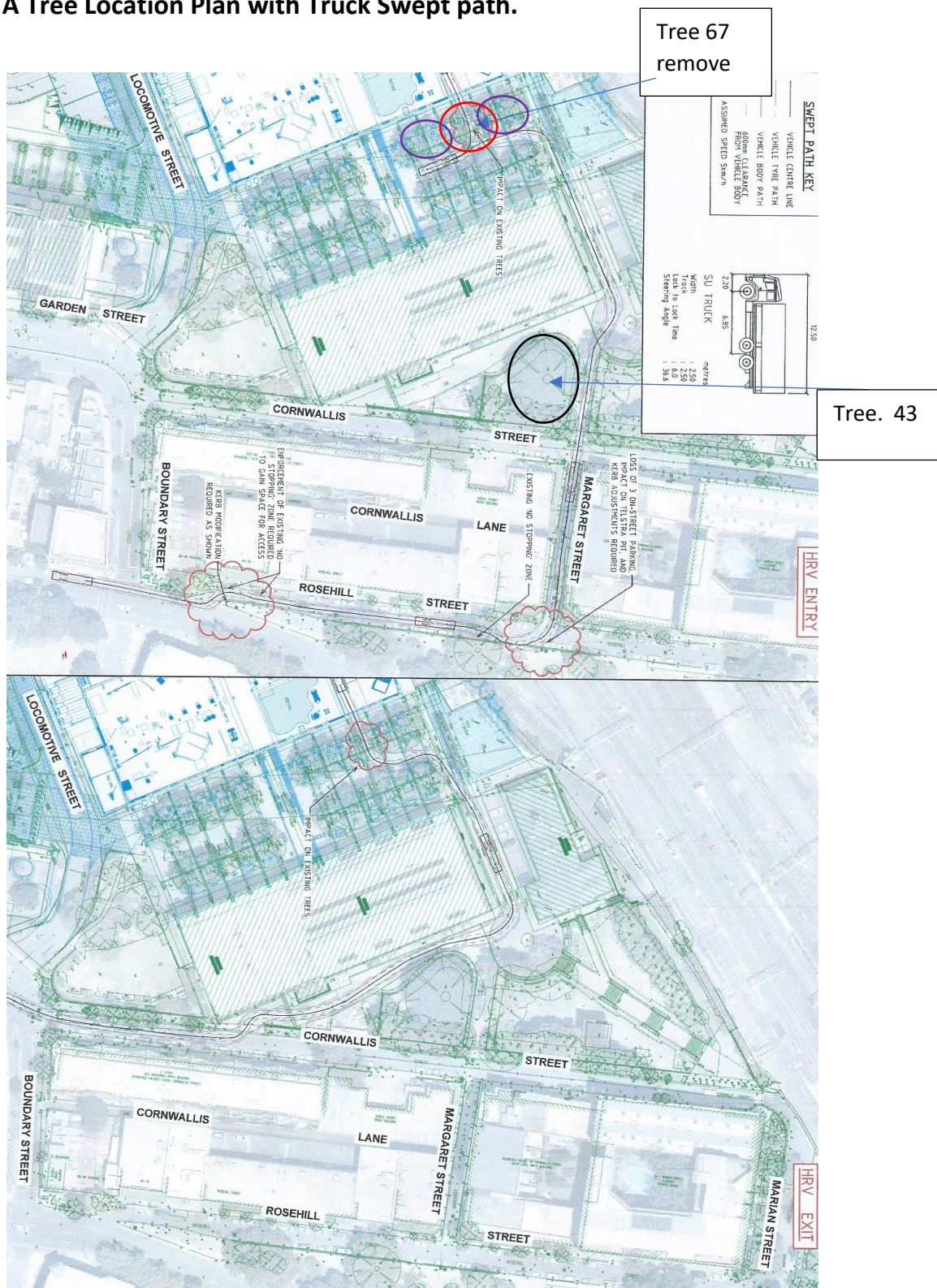
Table 3. Tree Health and Retention Value

Estimated Life Expectancy	Landscape Significance Rating						
	1	2	3	4	5	6	7
Long - Greater than 40 Years	High Retention Value						
Medium- 15 to 40 Years			Moderate Retention Value				
Short - 5 to 15 years				Low Ret. Value			
Transient - Less than 5 Years				Very Low Retention Value			
Dead or Potentially Hazardous							

Table 4. Tree Retention Values

RETENTION VALUE	RECOMMENDED ACTION
“High”	1. These trees considered worthy of preservation; as such careful consideration, should be given to their retention as a priority. 2. Proposed site design and placement of buildings and infrastructure should consider lessening any mitigating issues in relation to trees. 3. In addition, the extent of the canopy (canopy drip-line) should also be considered, particularly in relation to high rise developments. Significant pruning of the trees to accommodate the building envelope or temporary scaffolding is generally not acceptable.
“Moderate”	1. The retention of these trees is desirable. 2. These trees should be retained as part of any potential development if possible however the trees are considered less critical for retention. 3. If these trees must be removed, replacement planting should be considered in accordance with Council’s Tree Replacement Policy to compensate for loss of amenity.
“Low”	4. These trees are not considered to worthy of any special measures to ensure their preservation, due to current health, condition or suitability. They do not have any special ecological, heritage or amenity value, or these values are substantially diminished due to their ULE. 5. These trees should not be considered as a constraint to the potential development of the site.
“Very Low”	1. These trees are considered potentially hazardous or very poor specimens or may be environmental or noxious weeds. 2. The removal of these trees is therefore recommended regardless of the implications of any proposed development.

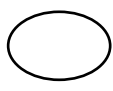
Appendix A Tree Location Plan with Truck Swept path.



Legend:



Tree removed



Trees retained 66 and 68