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**LANDSCAPE, TREE REPLACEMENT, AND CANOPY COVER REVIEW OF
SSD 16_7539 DARLINGTON TERRACES MIXED USE DEVELOPMENT**

Introduction:

Mark Moeller-Head of Open Spaces, Central Operations Services (COS).

In this position I am responsible for the active management of 140 Hectares of campus landscape across 6 campuses.

I have 33 years industry experience, 13 years in this current role.

My formal qualifications include:-

- Landscape Construction –Cert 3
- Associate Diploma in Park Management
- Certificate in Arboriculture

Scope of Review

This report addresses the Department of Planning Industry & Environment's (DPIE) request for further information and clarification on tree replacement and landscaping details in relation to the State Significant Development Application for the mixed-use additions and alterations of the Darlington Terraces, Darlington campus, Darlington, SSD 16_7539. In particular, this report addresses the proposed tree replacements, proposed landscaping, and tree canopy cover targets for the site and Camperdown-Darlington campus.

Tree replacements

The attached Landscape Report and Landscape Plans (**Appendix K**) by *Oculus* confirms a total of 38 trees proposed for removal within the site (27 trees) and along Darlington Lane south planter bed (11 trees). A total of 44 new trees will be planted within the Darlington Terraces site and the upgrade of Codrington Park, and which therefore increases the tree plantings by 6 additional trees on site as part of this SSD application.

Of the 38 trees proposed for removal, 44% were exotic, and approximately 30% listed as having poor structure.



Proposed removal of Tree 25

Of the proposed tree removals, one of the trees *Tree 25* is identified as a High Value Tree. The attached report by *Tree IQ* (Appendix R3) confirms the following:

"Tree 25 Quercus ilex (Evergreen Oak) is a shorter specimen which is located more centrally within the rear garden area. Whilst not highly visible from Darlington Lane, the crown of Tree 25 Quercus ilex (Evergreen Oak) spreads across the rear garden of three (3) properties.

"Crown Lifting/Reduction Pruning (to increase vertical clearance beneath the canopy of the trees for building and construction access) would have a greater impact on the crown form of Tree 25 Quercus ilex (Evergreen Oak) due to its short trunk and low spreading crown."

"In summary, both trees have a high retention value. However, Tree II Eucalyptus saligna (Sydney Blue Gum) is of higher landscape significance and is better positioned (than Tree 25) with a more suitable crown form in regard to development opportunities.

Whilst the loss of Tree 25 (Evergreen Oak) will impact the canopy cover in the short term, recent re plantings on the adjoining Darlington campus sites of Abercrombie Business School (58 trees) and the Regiment student accommodation (20 trees) more than offset the loss of Tree 25 with an overall increase of 10% in tree numbers to the Darlington campus. This increase will further be supplemented by the additional 6 tree plantings proposed by this SSD application for the Darlington Terraces site.

Proposed Landscaping – Courtyard and Codrington Park Planting Conditions

The attached Landscape Report by *Oculus* (**Attachment K**) confirms the following:

- All of the planters in the central courtyard, front gardens, pocket park and east side of Darlington lane are on natural ground, with only the roof terrace planters being on structural slab. Most of the planters (central courtyard) are raised up in order to create greater privacy for rooms, however, these still connect with natural ground. The proposed small trees have been located in larger planters with sufficient soil volume to support their growth. Planter areas, depths and volumes are noted on the planting plans.
- The proposed planters on the two roof terraces will have 500-600mm soil depth in compliance with the Apartment Design Guide and the City of Sydney Landscape Code.
- All of the planters in the central courtyard and roof terraces will be provided with an automatic irrigation system to promote successful establishment and strong ongoing growth.



- Proposed planters within the Codrington Street pocket park, the Darlington Road front gardens and the west side of Darlington Lane will all be at-grade, deep soil planters. These planters will promote and support the long-term growth of the proposed planting, notably the large sized tree species in the pocket park.

Proposed Landscaping – Biodiversity

The attached Landscape Report by *Oculus* (**Appendix K**) confirms the following:

- The total Planting cover area of the Darlington Terraces site will significantly increase fourfold from existing 235.7m² (4.1% of the total site area) to 993.9m² (17.2% of site area).
Consequently, the planting area of the Darlington Terraces site will be significantly greater post-development completion.
- The planting area of the SSD site will be significantly greater post-development based on the proposal than the existing pre-development situation
- All of the proposed tree species, with the exception of those in the Darlington Road front gardens, are native.
- In terms of shrub and ground cover planting, all of the proposed species in the pocket park and roof terrace are native. More than 80% of the species proposed for the central courtyard and Darlington Lane are also native.
- The proposed predominantly native planting will improve the existing ecological value of the site and add significantly to the future biodiversity and ecological resilience of the site.

The University's Tree Management Strategy & Recent Tree Plantings in Darlington Campus

The first formal procedure I implemented on entering this role was a *Tree Management Plan 2008* and *Tree Population Study 2013*. The TMP was revised and updated in 2016 in consultation with, and endorsed by, the City of Sydney. The main objective of these documents was for the protection and Enhancement of the Universities canopy cover.

The City of Sydney's Urban Forest Strategy aims to achieve an average canopy cover of 23% throughout the LGA by 2030. The current trend for many universities and comparable international organisations is a canopy cover target of 30%. The 2008 USYD Tree Management Procedures set canopy cover targets for the University of 30% by 2010 and 40% by 2040.

Canopy cover obtained by the Department of Lands (**Table 1**) in 2013 show an overall canopy cover 22% for the Darlington campus, with a 10% increase in tree numbers since 2013, The University of Sydney is therefore well on track to meet the 30% canopy cover by 2030.



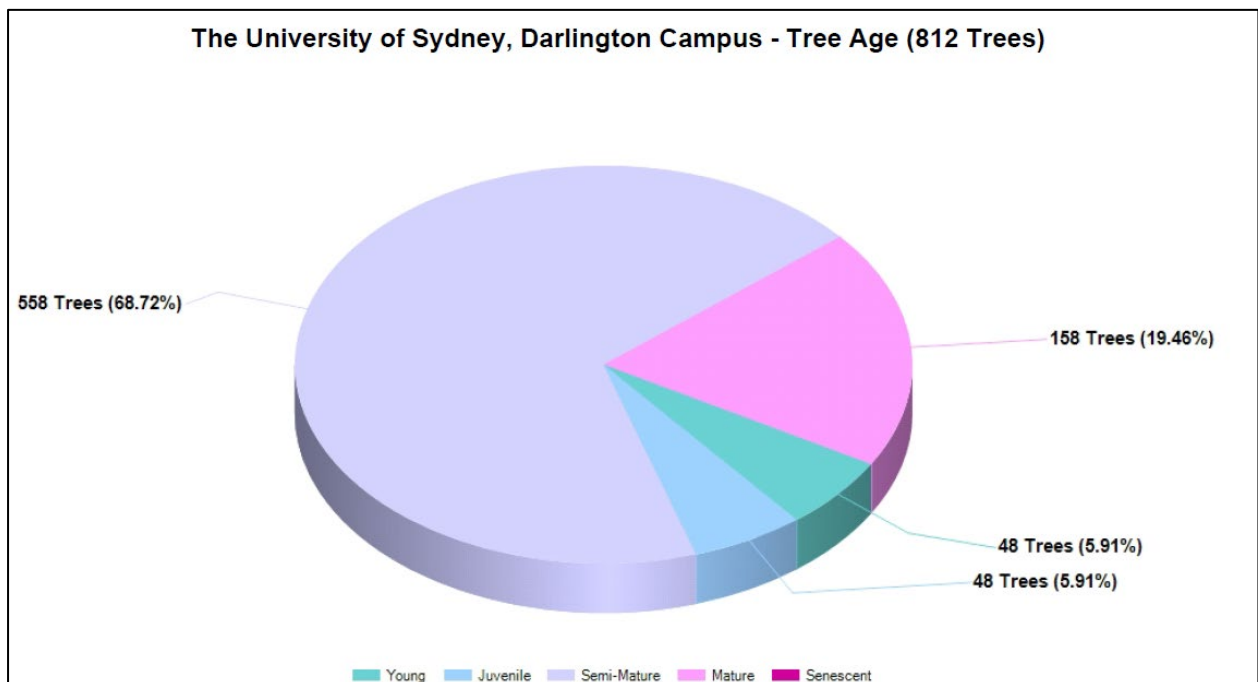
The Landscape report by *Oculus* (**Appendix K**) confirms the tree canopy cover proposed by the Darlington Terraces development will increase from existing 1,194m² or 20.7% site cover, to a post-development mature tree canopy cover of 1,356m² or 23.5% of site area.

Table 1: canopy cover amount and comparison

Height Range	2013			
	DARLINGTON (canopy m2)	Total (canopy m2)	% of total area	
3m - 5m	6011	2806	8818	1.58%
5m - 10m	34430	11590	46020	8.26%
10m - 20m	55096	8269	63365	11.37%
Over 20m	4024	355	4380	0.79%
Grand Total	99,562	23,021	122,582	21.99%

The following Age chart for the Darlington campus tree population demonstrates a healthy balance across the 812 trees with 80% of the trees on this campus yet to reach maturity.

The active replanting program further supports the predicted canopy cover target of 30% by 2030.





Conclusion

The proposed landscape plan for the Darlington Terraces project by Oculus adds significant value to the sustainability and Biodiversity, through increased canopy cover and greater soft scaped landscaped areas within the design.

The proposed SSD Darlington Terraces Landscape Plan will contribute over 4,000 native plants and which will also facilitate the University's commitment to increased native fauna to the campus. The species selection for both trees and understory plantings will align to recommendations listed within the 2013 Campus ecological Assessment undertaken by Australian Museum Consulting.

The Universities strong commitment to the protection and enhancement of its' canopy cover is evident in the active replanting program for 2020. A 15% increase on the Camperdown campus and a 10% increase on the Darlington campus in overall tree numbers significantly offsetting any loss of canopy as a result the proposed removal of tree 25 (Evergreen Oak).

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