

Timothy Mahoney
Senior Planning Officer
Planning Panels, Housing and Key Sites Assessments
Department of Planning, Housing and Infrastructure

13 November 2024



Dear Tim,

Heritage fig tree
2-4 Gladstone Ave and 357-363 Crown Street, Wollongong
DA –2023/156 Multi use high-rise development

**TREE MANAGEMENT
CONSULTING ARBORICULTURISTS
HORTICULTURISTS
LANDSCAPE DESIGNERS
ABN 68 508 911 904**

At your request, I have reviewed the material supplied (Annexure B) regarding the heritage listed (Local Item 6290 of the Wollongong Local Environment Plan 2009) *Ficus macrophylla* (Moreton Bay fig) on the land identified as 363 Crown Street Wollongong.

It is my understanding you seek advice regarding the potential impact of overshadowing caused by the proposed future multi-use development at 2-4 Gladstone Avenue and 357-363 Crown Street, Wollongong (the Site), on the health and longevity of the Moreton Bay fig.

Ficus macrophylla is a rainforest species that naturally grows on the east coast of NSW and Queensland. The species can generally tolerate full sun and partial shade.

I have been a qualified horticulturist for approximately 40 years with a special interest in trees, and a qualified consulting arboriculturist for more than 20 years. In that time, and as far as I am aware, there have been few research papers or other studies published that specifically address the effects of reduced solar access on the viability of existing trees by new buildings. However, some recent studies suggest, not unexpectedly, that tall buildings in high density urban environments that reduce the available sunlight radiation to trees and thereby reduce photosynthesis.

The lack of focussed and readily available research on the matter suggests to me this potential issue has not been of sufficient concern in the past to warrant specific attention, although I would expect more studies will follow in the future. Conversely, there are many papers and studies on the effects of trees and their shading impacts on buildings and solar panels.

I have reviewed the Applicant's arboricultural material and plans and considered Council's concerns, and it is my opinion the Applicant's arboricultural analysis is sufficiently detailed to indicate the tree is not likely to suffer long term decline solely on the basis of overshadowing. If this heritage item was a eucalypt, the impacts and outcomes of the proposal on its viability would be substantially different.

The only potential change that could be expected in tree appearance would be a thinning of crown density through gradual leaf fall over time as the trees adjust to changed light conditions. There may some decline of smaller branches to allow light to filter through the canopy to other branches. Due to the maturity of the tree it is expected that any possible impacts arising out of overshadowing may take several months or years to become apparent, if at all.

Whilst I do not anticipate the tree will be adversely affected by overshadowing, I would recommend it is monitored by an experienced arboriculturist during all stages of site development (including demolition and landscaping) and at least 5 years post construction to confirm the status of its crown density, so that any potential or actual issues with tree health or condition can be assessed and appropriately managed.

Despite the likely improvement of the tree's below-ground growing conditions following landscaping, there may be a period where a visible post-development decline in vigour is evident (e.g., dieback of growth tips and smaller branches, and possible production of epicormic growth) as the tree adapts to inevitable non-woody root loss incurred during the removal of pavements and structures within its Tree Protection Zone.

I have noted some crown thinning on the tree's southern side, possibly as a result of root loss and disturbance from excavation within the southern portion of its Tree Protection Zone some time between August 2015 and November 2016 (Google Street View). My concern with this Moreton Bay fig is focused on the methodology to remove the pavements and structures within its Tree Protection Zone.

The Arboricultural Impact Assessment dated 16 December 2022 did not account for loss of the Tree Protection Zone on the tree's southern side. In addition, under Image (g) the arborist notes the bitumen is to be carefully 'scraped' under supervision. The notion of scraping the pavement suggests root loss and damage will occur. In my view, the pavement should be cracked and broken up by hand (e.g. light use of a sledgehammer or similar handheld tool for a minimum 6m radius). A clear, staged methodology for removal of the pavement is necessary, including working in small sections/areas and moving progressively further away from the tree, and specific instructions regarding works under certain water conditions, and watering and mulching of each section as it is cleared, rather than removing the entire paved area before providing water and mulch.

To this end, a site-and-tree-specific Tree Protection Plan should be tailored for this tree, noting small planting container sizes should be used within the Structural Root Zone to avoid unnecessary damage or disturbance of tree roots.

Please contact me via email cat@urbanforestryaustralia.com.au or phone 0414 997 417 to discuss further if required.

Yours sincerely,



Catriona Mackenzie

Consulting arboriculturist, horticulturist, and landscape designer.



CATRIONA MACKENZIE – BRIEF CURRICULUM VITAE**ANNEXURE A**

Director of Urban Forestry Australia. Address: 46 Guardian Road, Watanobbi, NSW, 2259.

Phone: 0414997417 Email: cat@urbanforestryaustralia.com.au

Academic and Training Qualifications:

2023 – 2028 VALID Tree Risk-Benefit Validator

2014 – 2029 ISA Tree Risk Assessment Qualification (TRAQ) re-examined and renewed 2019, 2024)

2003 – 2004 Diploma of Horticulture (Arboriculture) AQF5 Ryde TAFE. *Distinction*

1998 – 2000 Associate Diploma of Applied Science (Landscape Design) at Ryde TAFE. *Distinction*

1983 – 1985 Certificate of Horticulture, Ryde School of Horticulture, Ryde TAFE. *Honours*

Current Professional Memberships:

Member of the International Society of Arboriculture 168039

Founding and Executive Member (2003 – 2023), past President (2013–2016), (2022 - 2023) of the Institute of Australian Consulting Arboriculturists ACM0052003

Introduction:

Catriona Mackenzie has been involved in the horticultural, landscape design and arboricultural industry since 1981. Catriona has always maintained a 'hands-on' approach to her landscape and arboricultural projects from the initial stages of design through to managing the landscape and the protection of significant trees and vegetation. Her experience with managing long term landscapes comes from her own landscape design and management business, which she operated for 10 years from 1989 to 2000. Her experience in the arboricultural field encompasses a wide range of tree related work including employment in Local Government (i.e. former Warringah and Pittwater Councils), established arboricultural contracting/consulting firms, and as the principal consultant for an established arboricultural consulting business (Urban Forestry Australia). Ms. Mackenzie has also worked as a part time teacher at Ryde TAFE, teaching arboricultural and landscape subjects, i.e. Laws and Regulations, Site Grading, Landscape Graphics, and some relief teaching in Protection of Trees on Construction Sites. Ms. Mackenzie routinely attends the Arboriculture conferences held in Australia each year and attends the TREENET symposiums held in Adelaide each September (Covid-19 exceptions in 2020 and 2021). She has attended various seminars and workshops over the past years relating to the arboricultural and landscaping professions. Ms. Mackenzie continues to contribute time and effort to the profession and practice of arboriculture and landscape design.

Conference and Seminar Papers

Conflicts between Arboriculturists and Engineers – An Arboriculturist's perspective. Arboricultural & Engineering Symposium - Housing Engineering Design & Research Association, 28 June 2013.

Keynote Speaker *Our Trees, our Kids, our Future* – Australian Institute of Horticulture Congress Healthy Plants – Healthy Communities. Brighton Le Sands NSW 6 November 2014.

Plans and Pitfalls - From Concept to Construction Forum hosted by IACA, Paramatta 2017.

Professional Experience 1981 – 2024 Works include:

Arboricultural, horticultural and landscape heritage assessments.

Arboricultural Impact Assessments for Development Applications.

Author of NSW Department of Education and Communities Tree Management Guidelines.

Consulting Services: private, commercial, religious and educational organisations, local and state government bodies.

Landscape amenity assessments and sustainability plans. Landscape plans, specifications, and documentation for DA's.

Plans of Management for city parks. Protection and preservation of trees on construction sites.

Tree auditing and tree management programs. Tree Risk Assessments and Tree Valuations.

View and Visual Impact Assessments

A fundamental principle of good landscape design is to conduct a thorough site analysis. This provides the groundwork for developing a sensitive design solution for the specific site conditions. A primary consideration when conducting landscape site analysis is to identify opportunities to create or enhance desirable views and to screen existing undesirable views. Informed judgement of the impact on garden or landscape design on views into, out of, and over rural properties, golf courses, and private gardens, especially in urban situations, is paramount, and should always be made with respect for both site users' and neighbours' views. Ms Mackenzie has undertaken many view impact assessments for private and local government clients, providing analysis, opinion and evidence for Class 1, Class 2 and Class 4 matters in the Land and Environment Court of New South Wales.

Expert Witness

Land and Environment Court of NSW - Class 1, 2, 3 and 4 Proceedings

District, Local, Supreme, and Coroners Courts of New South Wales.

Ms Mackenzie has provided expert witness service in more than 170 court proceedings to date.

DOCUMENTS SUPPLIED AND REVIEWED FOR THIS REPORT – ANNEXURE B

- NSW Southern Regional Planning Panel Record of Briefings dated 28.03.2023, 10.10.2023 and 25.06.2024.

Applicant's Documents

- Arboricultural Impact Assessment by David Gowenlock (Seasoned Tree Consulting) dated 16.12.2022.
- Arboricultural Statement for Amended Architectural Drawings by David Gowenlock dated 31.10.2023.
- Arborist Response to Wollongong Council RFI by David Gowenlock dated 08.03.2024.
- Arborist Response to Wollongong Council RFI by David Gowenlock dated 09.04.2024.
- Arborist Response to Wollongong Council RFI by David Gowenlock dated 13.05.2024.
- Arborist Response to Wollongong Council RFI by David Gowenlock dated 03.06.2024.
- Tree Comparative Study (Sydney University Moreton Bay figs) by David Gowenlock dated 09.07.2024.
- Survey Sheets 1 – 5 by GeoSurv dated 18.03.2024.
- Photographs (x15) of Hill figs in Sussex Street Sydney by David Gowenlock dated 14.05.2024.
- Google Street View images (x 3) of Hills figs In the Barangaroo Precinct (author and dated unknown).
- Full Plan Set Rev.04 by BKA Architecture dated 07.06.2024.
- Heritage Tree – Eye of Sun A451, A452, A454, A455 by BKA Architecture dated 09.07.2024.
- Letter to Wollongong City Council by Jeff Mead (Planning Ingenuity) dated 10 October 2024.

Council's Documents

- Arboricultural Impact Review by Paul Vezgoff (Moore Trees) dated 26.04.2023.
- Updated Arboricultural Impact Review by Paul Vezgoff dated 08.03.2024.
- Combined Landscaping Plan
- Council overview and chronology of Arborist assessments - heritage listed Morton Bay Fig UPDATED_PPSSTH-225.