



Landscape architecture and environmentalism in the expansion era for Australian universities: the work of Bruce Mackenzie and Associates

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The 1960s and 1970s were an era of expansion of the tertiary education sector internationally with entirely new universities developed at an unprecedented pace. In the Australian context, the quintessential start-up suburban campus was usually set within a greenfield site - typically on post-agricultural land at the fringe of rapidly expanding suburbia. An effective role for landscape architecture often materialised from symbiotic relationships between architects, engineers, planners, horticulturalists, and others. A significant driver in shaping and enacting a clear vision for a distinctive quality of campus landscape came internal to university administration. Communities consisting of academic staff, administrative staff, and other interested and talented practitioners have been found to be crucial in defining a niche for landscape architects in campus design, marking a significant moment in the recognition and due regard that would be paid to a small but influential profession on the Australian scene.

This paper records the themes that define the distinctive nature of the Australian condition. Focusing on campus designs by Bruce Mackenzie and Associates (BMA), the paper provides a preliminary assessment of the roles and influence of people, organisations, and events in the creation of the modern campus in Australia. It concludes that the most effective results were achieved when the landscape architect was engaged at the formative stages of campus development and had broad support inclusive of collaboration with other consultants and with university administrators and on-ground staff. A significant ingredient for success in achieving innovative results was found to be the existence within the university of communities of interested and engaged people with joint aims and ambitions for the creation of high quality campus landscapes, often in line with a culture of environmentalism. Such communities often go unheralded yet without their involvement the establishment of campus landscapes that celebrated the conservation of Australian indigenous plants and forms may not have been as readily achieved.

Keywords: landscape architecture, environmentalism, Australian campuses, Bruce Mackenzie and Associates.

Introduction

This paper considers the emergence of the profession of landscape architecture in Australia in the context of a period of expansion in University campuses in the post-World War Two years. Australia followed the UK, North America and Europe, making deliberate attempts to expand the infrastructure of tertiary education. The Australian Federal Government received advice from the Murray Committee in 1957 to the effect that Australian universities were woefully unable to accommodate teaching staff and students across all manner of requirements,¹ the result of which saw the rate of new building construction double.² Total university enrolments between 1958 and 1960 grew 30% with a predicted total enrolment of over 95,000 by 1966, a clear indication of the changed attitudes towards the value of tertiary education.³ Simultaneous with new university expansion, technical and training colleges were being transformed into colleges of advanced education as a result of the Martin Committee Report in 1964, and later into universities during the Dawkins era of the late 1980s.⁴

Amidst all this change, the Australian Universities Commission (established 1959) believed that the newer universities of the 1960s had a greater capacity for expansion because they were generally located on large suburban sites.⁵ Capital grants predominantly went toward buildings,⁶ perhaps with the assumption that landscape and environmental quality would follow. However, campuses did in fact require careful site planning, an endeavour defined by North American Kevin Lynch as ‘...a design problem that lies on the boundaries between architecture, engineering, city planning, and landscape architecture.’⁷ To this ‘design problem’ could also be added socio-political contexts, including university communities and more broadly, the burgeoning environmental movement, that potentially added to the design challenge. How then did the Australian profession of landscape architecture contribute?



This paper briefly introduces the context within which the profession engaged in campus work. It will briefly discuss three contemporary campus sites that at earlier stages received landscape architectural input from the practice of Bruce Mackenzie and Associates (BMA): the University of Technology Sydney (UTS) commencing c. 1970; the University of Wollongong (UoW) from 1976 to 1987; and, the Australian Defence Force Academy (ADFA) in Canberra commencing 1981.⁸ It will pay particular attention to the UTS and the UoW for the effectiveness in manifesting BMA's design ethos in distinctive ways.

Campus landscapes in the context of an emerging profession.

The Australian profession of landscape architecture emerged in the 1960s from an array of associated disciplines – architects, planners, foresters, environmental activists and even academics. Their application to the profession remains a complex path to chart, with different motivations, interests, formal training etc.⁹ Institutionalisation under the Australian Institute of Landscape Architects (AILA) in 1966 provided a formal instrument for recognition among competing professions and bureaucracies. The AILA attempted to define a role for the practitioner, drafting membership criteria, standards of practice, and education policies. However, as sociologist Andrew Abbott has argued, it is competition for work and inter-professional relations that creates a system of professions that in turn defines a profession,¹⁰ more so than its independent steps towards institutionalisation. The complex ways in which professional territory is won, and lost, and the environments in which this occurs, Abbott argues, form a critical part of the history of any profession.

Campus landscapes received only oblique reference within the discourses of the AILA's first two conferences. At the 1969 conference held at the University of Melbourne, Richard Downing noted somewhat disparagingly of the grounds of the University of Melbourne: '...you may, of course, wonder whether we have any respect for our environment at all.'¹¹ George Seddon's analysis of the 'The Quality of Our Landscape,'¹² gave anecdotes pertaining to the campus of the University of Western Australia (UWA), its design, mismanagement, and even high art, and praised in particular the planting of the Sunken Garden. Landscape architects Lindsay Pryor, Peter Spooner and Bruce Mackenzie all presented papers at the 1969 conference, but none made mention of their campus design commissions, notwithstanding the fact that in the published proceedings Pryor's paper was illustrated with his landscape design work for La Trobe University.¹³ The 1971 conference, held in association with the Australian Conservation Foundation, was overwhelmingly concerned with conservation of urban and natural environments, yet campuses, many of which had seen dramatic success and failures in terms of environmental impact, were not included in any critical analysis.¹⁴ Despite these scratchy beginnings, campus design work from the late 1950s through the 1960s and 70s was indeed a significant professional pursuit: all the individuals cited above (and more) had been involved in planning, designing and managing Australian campuses.

As early as 1946, Pryor pioneered a role for landscape architecture within the campus of the Australian National University in Canberra. He then went on to complete commissions for numerous campuses across the eastern states and territories¹⁵ and recruited landscape architect Richard Clough, formally an employee of the National Capital Development Commission in Canberra and second president of the AILA from 1969-71. In the context of hectic site work operations typical of the period, their methods could best be described as pragmatic and direct, advising on plant species selection, preparing planting plans, and completing on-site inspections. Roles for private practitioners were pioneered in highly idiosyncratic ways. At Monash University in Clayton, no less than six landscape architects took up professional roles between 1958 and 1971, their variable successes largely the product of Monash's highly opinionated academic community, keen to shape the campus landscape to their own tastes.¹⁶ George Seddon, who was not formally a landscape architect, too had involvement in designing campus landscapes via engagement with the Grounds Committee of the UWA through which he had direct access to the University gardener and others.

A further distinction needs to be made for academics who were also landscape architects and subsequently completed landscape design on-campus. In the mid-1960s, Peter Spooner completed the 'Broadwalk' around the time he began teaching at the University of New South Wales (UNSW in Sydney). In a different mode again, in 1974 during a period of rapid growth, the UWA was among the earliest in Australia to appoint a full-time University Landscape Architect in Jean Verschuer,¹⁷ setting a precedent that lasted through to 1987 at that institution. The diverse ways in which landscape architects impacted on the Australian campus was partly a product of the newness of the profession and its unchartered professional territory at that time.

Interdependent realms of environmental idealism: Bruce Mackenzie and Associates (BMA).

The early trials and tribulations of landscape architects in campus development also occurred at a time of a global environmental movements. In Australia, formulations of environmental consciousness often mixed notions of



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national identity and Australian indigenous landscapes, resulting in unusual alliances across groups with different philosophical and political backgrounds.¹⁸ Some within university communities identified campus landscapes as ideal theatres in which to explore Australian indigenous themes thus enabling landscape architects Bruce Mackenzie and Associates (BMA) to build a reputation. Bruce Mackenzie (born 1932) is one of Australia's most notable landscape architects and founder of the profession. In 1967, BMA were pioneering environmental design engendering Australian indigenous themes at sites such as Peacock Point (later Illoura Reserve) on Sydney Harbour, work that as recently as 2016 has been lauded by the AILA as among the 'top ten' landscapes to be produced between 1966 and 2000.¹⁹

In BMA's monograph, *Design With Landscape*,²⁰ Mackenzie explained the three campus projects the firm completed: the UTS, UoW and the ADFA. Around the time that BMA were designing UTS and UoW, Mackenzie described his own design ethos as 'idealistic purism of purpose,'²¹ meaning a bias toward Australian plants over non-Australian plants. Nationhood underpinned his thinking: 'The indigenous environment of this young nation, I believe, offers a vast potential for establishing a tradition almost totally dictated by its natural and distinctive qualities.'²² Mackenzie's pursuit of indigenous landscapes permeated BMA's campus work thus serving as important cases for gauging the firm's effectiveness.

The UTS and UoW are comparable as early 1970s to late 1980s projects, whereas the formative period for ADFA came in the 1980s. The ADFA and UTS were both new campuses on undeveloped sites, and consisted of stands of indigenous plants and pre-existing landforms. In contrast, the UoW was built upon earlier campuses developed as part of Wollongong College and Wollongong Teachers College dating from the early 1960s. These sites had been cleared agricultural land but directly abutted on the eastern boundary the Mt Keira escarpment, an area of steep land with indigenous forests, from which drainage channels that passed into the UoW site originated. Along these drainage channels were isolated specimens of indigenous trees, including a small number of fig trees, the original specimens of which ultimately did not survive building development but were replaced. In the context of the three campus's pre-existing site conditions it is interesting to note the resultant shape, form and character of the landscapes that eventuated.

At the ADFA, the site's pre-existing savannah woodland was identified as an important feature of the site by landscape architect Catherin Bull and Professor of Botany Lindsay Pryor,²³ yet Mackenzie admitted that:

...[its] retention was not to be, as the random nature of the woodland had little chance of surviving the patterning and finished levels of complex buildings, a concourse, sports fields, parade ground, roads and car parks. Only a few of the original trees survived.²⁴



Figure 1: Two very different outcomes on the one campus site. [left] Attempted reconstruction of savannah woodland (2018); and, Figure 2, [right] the highly manicured parade ground and Claret Ash planting (2018). The Australian Defence Force Academy [UNSW], Canberra, by Bruce Mackenzie and Associates.

Notwithstanding BMA's attempts to reinstate vegetation in car parks and on the outer perimeters of the ADFA campus (see Figure 1), the defining plant species of the core part of the campus (see Figure 2) was the non-Australian tree, Claret Ash (*Fraxinus raywoodii*). This choice was a compromise in response to the cooler climate of Canberra and the argument that with deciduous trees more winter sunlight would be permitted to internal spaces. However, Mackenzie later perceived the result to be conflicting in appearance and that 'a less reverent approach to Canberra's standards would be applied, and limit the cold-climate trees to only the most critical winter time places.'²⁵



The design of ADFA was led by large design and coordination teams predominantly consisting of architects and planners²⁶ with BMA's involvement commencing almost a decade after planning had commenced. Roger Johnson, who served on ADFA's Planning Co-ordination Team, praised Mackenzie's role²⁷ yet by BMA's own admission their effectiveness in advancing an environmental agenda was less certain. In this sense, the UTS and the UoW remain the more notable of BMA's commissions largely because of a more long-standing and intrinsic role.

The formulation of legacies: the UTS and the UoW.

The outcomes at the UTS and UoW stand in stark contrast to the ADFA. At the UTS (formerly known as William Balmain Teachers' College and later the Kuring-gai College of Advanced Education), BMA worked closely with project architect David Donald Turner from the NSW Government Architects Office. Turner was known to be sensitive to Australian indigenous landscapes. The site had significant vegetation and rock platforms of Hawkesbury Sandstone, qualities praised from the outset by landscape architect Allan Correy²⁸ from the Landscape Section of the New South Wales Public Works Department. Correy was one of the few landscape architects of the period who became involved in conservation debates and environmental activism²⁹ and thus aided the assembly of a unified voice for protecting the site's pre-existing qualities at the design and planning stages.

The UTS campus layout was highly compact so as to avoid impacts across the site. BMA innovatively regenerated landscapes adjacent to buildings and car parks, developing landscape plans that designated areas of indigenous plants to be protected whilst also specifying 'native seed broadcasting' to be completed by campus staff.³⁰ This essentially entailed mechanical slashing of natural heath vegetation, the stockpiling of the residue, and the subsequent re-application of this residue to bare earth so that seeds contained within could propagate distinctive reproductions of the original landscape of indigenous plant communities.³¹

Planting solely Australian native plants and working with existing natural features, BMA's plan annotations indicate the intention to achieve an appearance of naturalness: specifying planting locations at 'random centres';³² to 'clean back to bare rock wherever possible'³³ and seamlessly integrate constructed elements, like steps and walls, into natural grades (see Figures 3 and 4); and, to micro-manage the site's ongoing regeneration. In a letter to the Principal of the college, Mackenzie explained that on a recent visit to the site in 1975 he had observed '...Willow trees, Pampas Grass, and Cotoneaster...[they] can only exist in conflict with the basic theme and strength of the natural indigenous character...Could they be removed?'³⁴ Despite the Principal's preference for non-Australian plants (roses for example) and his initial hesitation over BMA's embrace of the indigenous landscape, Mackenzie claimed that over time that same principal became proud of the resultant Australian theme.³⁵

If the UTS demonstrated concerted effort at protecting and enhancing a site's pre-existing indigenous qualities, the UoW's legacy can be defined as reclaiming an indigenous landscape completely erased. In 1976 when BMA began their commission, the UoW had as early as 1973³⁶ a community of like-minded and enlightened people, notably, mathematician and UoW senior academic, Keith Tognetti.³⁷ The interested community had support from the top in Vice-Chancellor Designate Dr L. M. Birt and Estate Manager John Bell (both commencing 1973). Together they formed a multi-dimensional force at various levels of management³⁸ committed to reconstructing semblances of an indigenous landscape. Birt's personal commitment was bolstered by the fact that he lived on a property in the hills above the campus and had a garden of impressive eucalypt trees and Australian plants.³⁹

The UoW's Academic Senate saw the need to build the new University's academic stature comparative with Sydney universities and believed that a campus of distinctive environmental quality would be a competitive tool in recruiting students and staff.⁴⁰ With Birt's support, Bell enabled this to pass: he initiated the production of a Development Plan in 1974 which was completed by a team of both in-house staff and consultants of national reputation in campus development;⁴¹ he aided the establishment of a Buildings and Grounds Committee (commencing 1 January 1975) which facilitated the production of key guidelines for pedestrianisation, a ring-road configuration⁴² with car parking, the use of Australian native plants, cohesion in brick paving, and, the masking of existing buildings with trees;⁴³ he helped secure and defend⁴⁴ substantial funding for landscape,⁴⁵ and importantly, he appreciated the site's resources, like its creek lines, supporting protection because they 'provided an attractive natural feature of the landscape'.⁴⁶

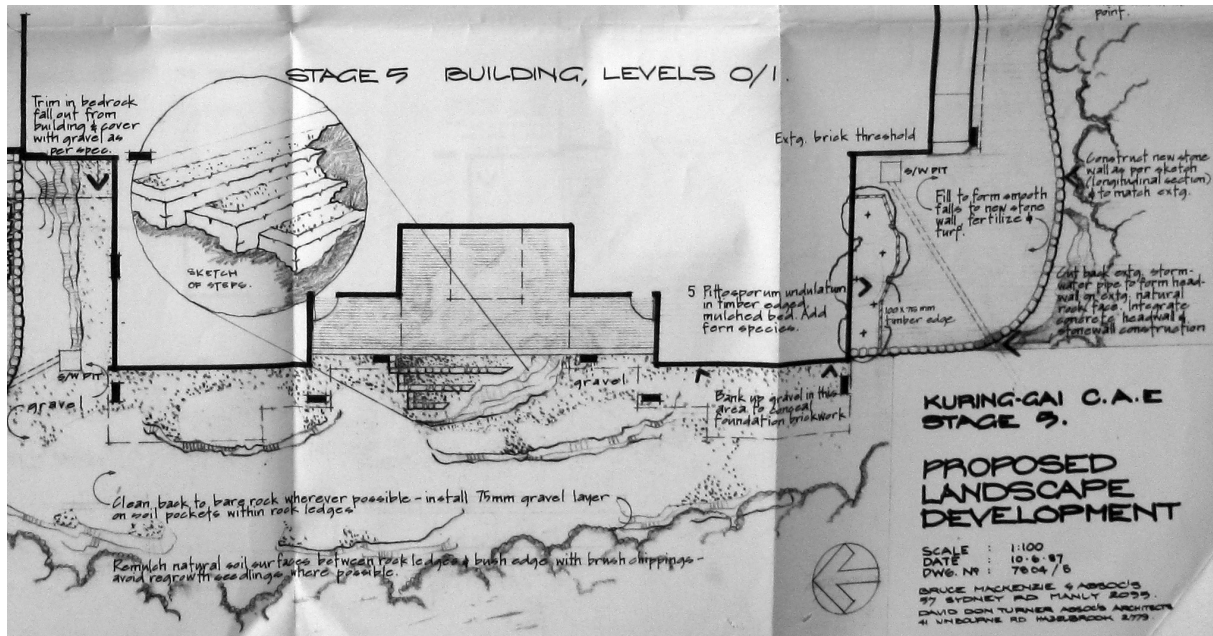


Figure 3: [top] Bruce Mackenzie and Associates, 'Kuring-Gai C.A.E Stage 5 Proposed Landscape Development', Drawing No. 7804/8, 10 June 1987; Figure 4 [bottom]: The UTS campus, 2016.

Bell's procurement in 1975 of landscape supervisor Leon Fuller and his second-in-command Bob Beattie would prove a decisive move. Leon Fuller's influence is widely regarded as a critical moment, and despite the fact that his six-year tenure was relatively short, he inculcated a landscape tradition from which others, including his successors David Walker and Martin Bramston, benefitted. Fuller was prepared to embrace an intensive planting program dedicated to indigenous plants of the Mt Keira escarpment and their propagation and use on-site to the order of 60% of all planting in his time.⁴⁷ Many of these plantings represent the earliest use of the local rainforest trees in designed landscapes. His subsequent publication on the native plants of the Wollongong region the 'Illawarra',⁴⁸ *Wollongong's Native Trees*, has been lauded in the local media as 'the definitive reference book on the region's diverse native trees.'⁴⁹ Fuller believed Bell's 'Development Plan' of December 1976 which included provisions for 'The Built Environment' and 'Landscaping'⁵⁰ was a formal instrument that expressed and gave credence to the indigenous plant theme and a degree of artistic licence.⁵¹



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At the time [1975/6] a number of people at the university, mainly academics, felt strongly about using native plants. Dr Keith Tognetti (a mathematician at the university) was one of them. Their plan was to create a natural forest around the buildings and I believed in that vision. I could see it in my head. I had this clear picture of what it would be like.⁵²

The contribution of BMA needs to be appreciated against this backdrop of the University's in-house activities. BMA's early work included the design of car parks using Australian native plants, and in 1979, the completion of the duck pond amidst Fuller's emerging plantations after four years of intensive activity. The pond's design included vertically-placed logs as partial edging, creating an organically aligned wall⁵³ (see Figure 5). BMA contributed to the University master plan of 1987 led by architects and planners Graham, Bell and Bowman.⁵⁴ The landscape principles proposed mostly Australian indigenous species with plants indigenous to Wollongong region selectively used dependent upon suitability. A consistent plant palette was balanced with distinctive treatments for corridors, boundaries, paved areas, and, the remaining creek channel where recreational opportunities were to be provided.⁵⁵ The construction of UoW's campus landscape during the 1980s and 90s was to an in-house value in excess of \$30 million⁵⁶ and included an extensive redevelopment designed by Ian Brammer Landscape Architects for a water course and ponds (including The McKinnon Pond) that dramatically redefined an area once dominated by car park and playing fields.⁵⁷

The road to transformation of the UoW campus was not always a smooth one and the post-Birt era has had critics. For example, Vice-Chancellor Kenneth McKinnon reputedly had a relatively autocratic manner whilst overseeing a period of growth and development from the 1980s yet he nonetheless delivered a vision for landscape albeit whilst 'disbanding' previously engaged committees of management and restricting the influence of senior academics.⁵⁸ However, successive management regimes have been overwhelmingly committed to maintaining UoW's high environmental quality, ensuring adequate funds were allocated for maintenance and new landscapes, particularly post-construction of new buildings. It does appear that opinions have varied with regard to the kinds of forms that a reconstructed indigenous landscape should take within a university campus environment. The design ethos of Landscape Supervisor Martin Bramston (1984-circa 2012) from the mid-1980s onwards emphasised the 'presentation' of the campus as a park-like setting (see Figure 6) befitting a sense of order and control⁵⁹ that to an extent was different to the 1970s bid to reconstruct vignettes of natural Illawarra forest in relatively wilder states. Thus, diverging approaches may have resulted in differing views of ultimate success.⁶⁰ Regardless, the legacies of the 1970s seem all-pervasive: the current landscape guidelines include statements like: 'Plants should be 100% Australian native with approximately 50% of these being local to the Illawarra Escarpment and coastal plain.'⁶¹



Figure 5: [left] The duck pond at the University of Wollongong in 2018; Figure 6 [right]: A view of planting near Central Square, the University of Wollongong in 2018.



Conclusion

The relatively young Australian profession of landscape architecture made distinctive yet sporadic claims to the design and planning of university campuses over a two decade period from the 1960s to the 1980s. In this context, the commissions of BMA figure prominently. Examples of BMA's most effective work at the UTS and UoW begin to indicate some of the ingredients for success: consistent and ongoing involvement of one landscape consultant commencing from the early stages of development; close professional associations with architects, engineers, and planners of both in-house staff and external consultants; representation on design panels, management committees and the like; and perhaps most significantly, being able to capitalise on the joint and prolonged efforts by communities of university staff and other people all of whom had vested and common interests in attaining high quality campus environments. The significance of a broad commitment of people at multiple levels can often go unheeded. For example, the UoW's current masterplanners, MGS Architects, record the legacy of Fuller's work and Mackenzie's designs but the broader group in the academic and management community like Keith Tognetti, Kenneth Ausburn, John Steinke, Martin Bramston and many others are overlooked.⁶² Campuses are complex sites where the physical environment potentially develops in ways highly distinctive in response to the particular communities who inhabit them. It is the existence of such communities that make campuses unique environments and ideal arenas for the study of professions, shedding light on the complex negotiations that occur in the bid to develop a shared resource. Globally, the ongoing evolution of campus landscapes within increasingly urbanised centres presents critical opportunities for comparative analysis across a diverse and wide-ranging international scene.

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Disclosure Statement

No potential conflict of interest was reported by the author.

Notes on contributor

Andrew Saniga is Associate Professor in Landscape Architecture, Planning and Urbanism. His research and teaching focusses on landscape design, landscape history, and the conservation and management of heritage landscapes. He is a member of DOCOMOMO and a Registered Landscape Architect with the AILA.

Endnotes

¹ Murray Report, 1957, paragraph 168 referenced in: Australian Universities Commission, *Report of the Australian Universities Commission on Australian Universities, 1958-1963*, (Canberra: Commonwealth Government Printer, 1960), 7.

² Ibid., 12.

³ Ibid., 17-18.

⁴ Gwilym Croucher, Simon Marginson, Andrew Norton, and Julie Wells, *The Dawkins Revolution: 25 Years On*. (Carlton: Melbourne University Press, 2013).

⁵ Australian Universities Commission, *Second Report of the Australian Universities Commission on Australian Universities, 1961-1966*, (Canberra: Commonwealth Government Printer, 1963), 82.

⁶ See 'Capital Grants' sections of numerous Australian University Commission reports where money to be spent on new buildings is documented.

⁷ Kevin Lynch, *Site Planning*, (Cambridge Mass: The MIT Press, 1962), 3.

⁸ The UTS and UoW campuses have undergone numerous institutional name changes. For example, the UTS commenced as the William Balmain Teachers' College, then the Kuring-gai C.A.E. before becoming the University of Technology Sydney. Thus only the current campus names have been used for the sake of clarity. The ADFA is a campus of the University of New South Wales in Sydney.

⁹ See Andrew Saniga, *Making Landscape Architecture in Australia*, (Sydney: UNSW Press, 2012), 166-198.

¹⁰ Andrew Abbott, *The System of Professions: An Essay on the Division of Expert Labor*, (Chicago: The University of Chicago Press, 1988), 18-19.

¹¹ Richard Downing, "Opening Address", in *Proceedings of the Conference: The Landscape Architect and the Australian Environment conducted by the Australian Institute of Landscape Architects at the Prince Philip Theatre, the University of Melbourne, 30th August 1969* (Canberra: AILA, 1970), 9.

¹² See George Seddon, "The quality of our landscape", in *Proceedings of the Conference: The Landscape Architect and the Australian Environment conducted by the Australian Institute of Landscape Architects at the Prince Philip Theatre, the University of Melbourne, 30th*



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August 1969 (Canberra: AILA, 1970), 13-25. See also: George Seddon, *The Old Country: Australian Landscapes, Plants and People*, (Melbourne: Cambridge University Press, 2005), 207-214.

¹³ See L. D. Pryor, "Summary – Education and Landscape Architecture", in *Proceedings of the Conference: The Landscape Architect and the Australian Environment conducted by the Australian Institute of Landscape Architects at the Prince Philip Theatre, the University of Melbourne, 30th August 1969* (Canberra: AILA, 1970), 51-55.

¹⁴ See Australian Institute of Landscape Architects and the Australian Conservation Foundation, *Landscape Architecture In Conservation: Proceedings of the Conference of the Australian Institute of Landscape Architects held in Association with the Australian Conservation Foundation, 19-22 August, Adelaide, South Australia* (Adelaide: The Griffin Press, 1971).

¹⁵ See Andrew Saniga, "Lindsay Dixon Pryor: setting foundations for Australian campus landscapes," refereed paper presented at the *Remaking Cities: 14th Biennial Urban History Planning History Conference*, RMIT Melbourne, Jan 31 – Feb 2, 2018 (proceedings in-press).

¹⁶ For the trials and tribulations of landscape architects at Monash University see Andrew Saniga, *An Uneasy Profession: defining the landscape architect in Australia, 1912-1972*, PhD Diss., (Melbourne: The University of Melbourne, 2005), 293-345.

¹⁷ Jean Verschuer, "Landscaping the grounds: 1970-80", in *A Landscape for Learning, A History of the Grounds of The University of Western Australia*, ed. George Seddon and Gillian Lilleyman (Crawley: University of Western Australia Press, 2006) 119.

¹⁸ See Libby Robin, *Defending the Little Desert: The Rise of Ecological Consciousness in Australia* (Melbourne: Melbourne University Press, 1998), 2-3.

¹⁹ Andrew Saniga, "Significant Projects 1966-2000", *Landscape Architecture Australia*, 152 (2016): 23-30. Note: this project has been recognised as highly distinguished via a number of other formal bodies such as the National Trust.

²⁰ Bruce Mackenzie, *Design With Landscape: A 50 Year Journey*. (Sydney: BruceMackenzieDesign, 2011).

²¹ Alistair Knox and Bruce Mackenzie, "The Indigenous Environment as a concept for applied landscape design", in *Proceedings of the Conference: The Landscape Architect and the Australian Environment conducted by the Australian Institute of Landscape Architects at the Prince Philip Theatre, the University of Melbourne, 30th August 1969* (Canberra: AILA, 1970), 48.

²² Knox and Mackenzie, "The Indigenous Environment as a concept for applied landscape design", 48.

²³ Catherin Bull recounted that she walked the site with Professor Pryor, from the Australian National University, noting existing conditions of landscape including trees and topographical distinctions. Catherin Bull was assisting Roy Simpson from Yuncken Freeman Architects. Catherin Bull, Interview with Andrew Saniga, 30 May 2018, Brisbane.

²⁴ Mackenzie, *Design With Landscape: A 50 Year Journey*, 197.

²⁵ *Ibid.*, 201.

²⁶ Bruce Bowden, "The Australian Defence Force Academy: A Military Campus," *Architecture Australia* (July 1987): 68-81.

²⁷ Roger Johnson, "Australian Defence Force Academy A Review," *Architecture Australia* (July 1987): 86-87.

²⁸ Mackenzie, *Design With Landscape: A 50 Year Journey*, 225-227.

²⁹ Jennifer Taylor, *Australian Architecture since 1960*. (Sydney: The Law Book Company Limited, 1986), 48-50. See also Saniga, *Making Landscape Architecture in Australia*, 171-172.

³⁰ Bruce Mackenzie and Associates [Landscape Consultants], "Kuring-Gai C.A.E. Northwest Carpark Landscape Development", Drawing No. 7505/3, undated plan [1975].

³¹ Letter from Victoria Grounds, Bruce Mackenzie & Associates to The Town Planner, Ku-ring-gai Municipal Council, Gordon, 2 September 1975.

³² Bruce Mackenzie and Associates, "Kuring-Gai College of Advanced Education Planting to Road Embankments & Associated Areas", undated plan [1975].

³³ Bruce Mackenzie and Associates, "Kuring-Gai C.A.E Stage 5 Proposed Landscape Development", Drawing No. 7804/8, 10 June 1987.

³⁴ Letter from Bruce Mackenzie, Bruce Mackenzie and Associates to The Principal, Kuring-gai CAE, Lindfield, 3 July 1975.

³⁵ Bruce Mackenzie, Letter to Andrew Saniga, 7 June 2018.

³⁶ John F Bell et al., *The University of Wollongong Development Plan* (Wollongong: University of Wollongong, 1976).

³⁷ Leon Fuller, Personal communication with Andrew Saniga, 21 April 2018. Note: this claim is generally supported from a number of sources including Landscape Supervisor Martin Bramston.

³⁸ Leon Fuller, Personal communication with Andrew Saniga, 5 February 2018; *The Long Wide Road to 87: "A University Built on Lamington Drives," blog entry by Ben Meek, June 3, 2016*. Accessed 5 Feb at: <https://hcupublishingau.wordpress.com/2016/06/03/uni-of-wollongong-built-on-lamington-drives/>; Gerard Sutton, "In Memoriam: John Bell", *Campus News University of Wollongong* 4, no. 12 (December 2009): 14.

³⁹ Leon Fuller, Personal communication with Andrew Saniga, 5 February 2018.

⁴⁰ Steinke referenced in Nick Hartgerink, *Regional Icon Global Achiever: A history of the University of Wollongong 1951 – 2011*, (Wollongong: University of Wollongong, 2011), 26.

⁴¹ Bell initially sought G. J. Harrison, University Architect at Flinders University, South Australia to act as Consultant. Harrison proposed the formulation of a Planning Team including University staff and this ended up being comprised of: John F. Bell (Estate Manager); John A. Manton (University Architect); Ronald M Kinnell (University Engineer). See Bell et al., *The University of Wollongong Development Plan*.

⁴² The concept of the ring-road was a product of Keith Tognetti's visit to the University of Lancaster in 1974 where he observed the benefits of a ring-road separating vehicular from pedestrian and bike traffic areas of the campus. See Keith Tognetti, "Some historical notes on the development of the landscape at the University of Wollongong", Unpublished manuscript (supplied to A Saniga by author), 16 May 2018.

⁴³ Bell et al., *The University of Wollongong Development Plan*, 1; Hartgerink, *Regional Icon Global Achiever*, 26.

⁴⁴ The Draft Development Plan of March 1975 attracted criticism from the Student Army who objected to the spending, arguing the money would be better spent for infrastructure and buildings etc. See: Student Army [G. Butler], "Comment on University Draft Development Plan", *University of Wollongong Campus News* 1, no. 11 (April 14, 1975): 1-4.

⁴⁵ Leon Fuller, Interview with Andrew Saniga, 12 February 2018, Wollongong; Martin Bramston, Personal communication with A Saniga, 1 March 2018.

⁴⁶ Bell et al., *The University of Wollongong Development Plan*, 12. In summary: a 1970 masterplan by planners Laurie and Heath Pty Ltd proposed that a creek that ran through the site needed to be diverted in order to allow Stage 2 of the main library to be constructed and that this be achieved by piping the creek underground some 100 metres to the east. This drew criticism and objection to the extent that a decision was made to divert the creek but not to contain it within a concrete pipe. Despite the concern for the appearance of the reconfigured creek, its shift in position had an unforeseen detrimental impact: two large fig trees that predated urbanisation by hundreds of years and had survived the early years of the campus's development were purportedly killed as a result of their water supply being impacted. Also see Jodie Duffy, "Field of dreams", *Weekender*, April 14, 2012, 8.

⁴⁷ Hartgerink, *Regional Icon Global Achiever*, 28; Duffy, "Field of dreams", 8.

⁴⁸ Leon Fuller, *Wollongong's Native Trees*, 3rd ed. (Wollongong: Big Bean Books, 2011).

⁴⁹ Michelle Hoctor, "Field guide to the landscape we love", *Illawarra Mercury*, May 12, 2012, 15.

⁵⁰ Bell et al., *The University of Wollongong Development Plan*, Sections 15 and 16.

⁵¹ Leon Fuller, Interview with Andrew Saniga, 12 February 2018, Wollongong.



⁵² Leon Fuller quoted by Duffy, "Field of dreams", 8.

⁵³ The duck pond in the central square was built in 1978/9 amid controversy: many felt the price tag of around \$80,000 was too high and that funds should have instead spent on improving education, the university's prime task. Student activism arose in a bid to bring about a decision whereby such funds would be spent procuring a new professorial position in History and Philosophy of Science, hence the protestors slogans 'F... the ducks, we want HPS.' Hartgerink, *Regional Icon Global Achiever*, 28; see also: Duffy, "Field of dreams", 8. This wall has subsequently been replaced due to deterioration of the timber over time but its reconstructed state bears strong resemblance with the original.

⁵⁴ See: Graham, Bell and Bowman, *Stage 1 Site Services Development Plan The University of Wollongong*, October 1987. This masterplan materialised in the form of a 'site services' document because the lead consultants, were sensitive to the fact that the then Vice-Chancellor, Ken McKinnon (1982-94) did not value bureaucratic entanglement or 'voluminous master plans' (Terry Graham, personal communication with Andrew Saniga, 9 March 2018).

⁵⁵ Graham, Bell and Bowman, *Stage 1 Site Services Development Plan The University of Wollongong*, October 1987, pp. 19-20 & 23.

⁵⁶ Martin Bramston, Personal communication with Andrew Saniga, 1 March 2018.

⁵⁷ See G. J. Harrison, *Review of Estate Development Plan the University of Wollongong*, The University of Wollongong, 1985, front cover.

⁵⁸ Terry Graham, Personal communication with Andrew Saniga, 20 April 2018.

⁵⁹ Martin Bramston, Personal communication with Andrew Saniga, 1 March 2018.

⁶⁰ Keith Tognetti, Personal communication with Andrew Saniga, February 2018.

⁶¹ University of Wollongong Facilities Management, *University of Wollongong Landscaping Design Guidelines and Standards* (Wollongong: University of Wollongong, 2015), 15.

⁶² See MGS Architects, UOW 2016 – 2036 Wollongong Campus Master Plan, July 2016.

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Image Sources

Figure 1: Andrew Saniga, 2018.

Figure 2: Andrew Saniga, 2018.

Figure 3: Bruce Mackenzie and Associates. "Kuring-Gai C.A.E Stage 5 Proposed Landscape Development." Drawing No. 7804/8, 10 June 1987.

Figure 4: Andrew Saniga, 2016.

Figure 5: Andrew Saniga, 2018.

Figure 6: Andrew Saniga, 2018.