

Macquarie University – a brief history of its landscaping.
Alison Downing, Biological Sciences.
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Macquarie University is a relatively new university but the rapid changes in science and technology of recent times are reflected in the way in which we view images of the campus. Macquarie was established in 1964 and the photograph of the area soon to be developed as the university campus was taken from an aeroplane. Similarly the photograph taken in 1982 was also taken from the air. Now, in 2009, it is possible to sit at a computer, log into Google Earth and almost instantaneously view campus from a satellite in space. The detail is such that in many cases, individual trees can be identified.

1964 – 1970 from Market Gardens to University Campus

In 1964, market gardens, orchards and poultry (chook) farms covered much of the area of North Ryde that had been selected as the site for the new university. The aerial photograph taken at that time shows a surprisingly large area of natural bushland visible between market gardens on the north western corner of Talavera and Culloden Roads, a small patch at the corner of Balaclava and Waterloo Roads (near the site of the new railway station), and there is an extensive area of bushland adjacent to Christie Park on the northern side of Talavera Road. The dog racing track is clearly visible between Waterloo and Talavera Roads, just between the present day amphitheatre and the lake. A report by Walter (Wally) Abraham to the New South Wales Government dated 5th June 1962, entitled *Proposed University Site at North Ryde* appears to be the first written record of his advice to the New South Wales Government on the proposal to establish a new university at North Ryde.

By 1970, the farms and orchards had been cleared and it was possible to see from Vimiera Road to the high rise university buildings, E7, W6 and the library (under construction at that time). Talavera Road was still a very rough dirt road with a water jump across the creek close to the site of the present M2 toll gates. Even now, in 2009, the legacy of the (mostly) Italian market gardeners can still be seen. There are olive trees on Culloden Road, close to the offices of OFM. Sadly, the oldest olive on campus was recently cut down when the site for the new library was cleared. Many of the market gardeners used fibres from NZ flax leaves to tie bundles of flowers and vegetables. Flax plants grown originally by the Nati family have been retained in plantings adjoining the central courtyard. For many years, it has been possible to find rhubarb crowns and it is still possible to find the occasional asparagus plant. Other legacies that still remain from the Italian market gardeners include a persimmon (*Diospyros kaki*) and olive trees (*Olea europea* subsp. *europea*) near the amphitheatre, and numerous ornamental trees including Arizona Cypress (*Callitropsis glabra*, previously known as *Cupressus arizonica* var. *glabra*), Brush Box (*Lophostemon confertus*, previously known as *Tristania conferta*), Pencil Pines (*Cupressus sempervirens*), Phoenix Palms (*Phoenix canariensis*) and Camphor Laurels (*Cinnamomum camphora*).

In April, 1965, Macquarie University's first Vice-Chancellor, Professor Alex Mitchell, appointed Walter (Wally) Abraham to the position of Architect-Planner and between 1965 and 1978, the university embarked on 40 major building projects. In 1966, Richard Clough, then Assistant Commissioner (Landscape) at the National Capital Development Commission and later Professor of Landscape Design, UNSW, was engaged as Landscape Consultant, to design a suitable landscape for the 135 hectares that comprised the university campus. By 1982, the Architect-Planner estimated that 10,000 trees had been planted on campus, adding to the existing stands of trees on the site. In 1967 with Laurie Ezzy as Grounds Overseer, tree planting began in earnest.

Landscape design for the campus was planned to encompass the original native vegetation and remnants of exotic plantings. Native trees already growing on campus included *Allocasuarina littoralis* (Black She Oak), *Angophora costata* (Sydney Red Gum), *Banksia serrata* (Old Man Banksia), *Corymbia* [*Eucalyptus*] *gummifera* (Red Bloodwood), *Eucalyptus globoidea* (White Stringybark), *E. haemastoma* (Scribbly Gum), *E. paniculata* (Grey Ironbark), *E. pilularis* (Blackbutt), *E. racemosa* (Narrow-leaved Scribbly Gum), *E. resinifera* (Red Mahogany) and

Syncarpia glomulifera (Turpentine). Eucalypts, including *Corymbia citriodora*, *C. ficifolia* (WA Red Flowering Gum), *C. maculata* (Spotted Gum), *Eucalyptus elata* (Weeping Peppermint) *E. nichollii* (Narrow-leaved Black Peppermint), *E. mannifera* (Brittle Gum), *E. grandis* (Flooded Gum), *E. cinerea* (Argyle Apple), *E. botryoides* (Bangalay) and *E. globulus* (Southern Blue Gum) were planted in drifts on hillsides and gullies to enhance the appearance of the campus. Some deciduous exotic trees, including *Liquidambar styraciflua*, *Tradica sebifera*, formerly *Sapium sebiferum* (Chinese Tallowwood) and *Ulmus parvifolia* (Chinese Elm) were planted to provide autumn colour.

There have been two major, formal plantings on campus. One hundred and twenty trees were planted in the central courtyard of the university in July 1968. The formation is said to represent a *phalanx*, a unit of a legion of the Roman army. Armed soldiers lined up, side by side, with their shields suspended on their left arms, so that viewed from the outside, it looks like a solid wall. Behind each line is another line supporting the first, so a general can plant the phalanx to be many men deep as well as wide to suit the terrain of a battle site (Karl Van Dyke, Museum of Ancient Cultures, Macquarie University).

The second formal planting, the avenue of London Plane Trees (*Platanus X hispanica*, formerly known as *Platanus X hybrida*) that extends across campus from east to west was planted over a period of time, beginning in July 1967, to September 1970. In 1991 Wally Abraham was honoured by the university when he was awarded a Doctor of Science *honoris causa* and subsequently, in 2006, the avenue of Plane Trees renamed "Wally's Walk" in recognition of Dr Abraham's contribution.

However, the very first plantings on campus appear to be a mixture of Jacaranda, Silver Birch and White Azalea on the southern side of E7A in April 1967. The Jacaranda and White Azaleas are still in existence.

Brush Box (*Lophostemon confertus*, previously *Tristania conferta*) was selected as the most suitable tree for the university car parks. This tree of rainforest margins of northern NSW and Queensland was chosen for its ability to survive in hot, dry conditions where it could provide both shade and screening. The first planting (June, 1967) of 80 trees was in the F5 car park, followed in June 1968 by the planting of 150 trees in W4 (eastern side) car park.

In August 1967, 160 trees of *Corymbia maculata* (previously *Eucalyptus maculata*) and *Eucalyptus macarthurii* were planted in the Ecology Reserve adjoining Lane Cove National Park. These days it seems rather an odd decision to plant in an area of natural bushland two species not native to the local area. Forty Camphor Laurels, (*Cinnamomum camphora*) were planted along Western Road in July 1969. Nowadays, with hindsight, we view with horror this serious pest of eastern Australian bushlands. There has always been a mystery surrounding the many Flooded Gums (*Eucalyptus grandis*) planted on campus. Why plant Flooded Gums, rather than the similar, but local, Sydney Blue Gums (*Eucalyptus saligna*) whose populations are now listed as Endangered Ecological Communities. It seems that in 1972, Wally Abraham visited Buladelah State Forest on the north coast of New South Wales. He was so delighted with the appearance of these magnificent, fast growing eucalypts that he instructed Grounds Overseer Laurie Ezzy to plant 35 individual trees along the creek backing onto Robert Menzies College. They have subsequently been planted at numerous other locations across campus.

In 1969, Sir Garfield Barwick, the first Chancellor of the university, donated from his garden at Beecroft a number of valuable trees, including Blue Spruce (*Picea pungens glauca*), *Nyssa sylvatica*, Tulip Tree (*Liriodendron tulipifera*), Trident Maple (*Acer trifidum*), *Magnolia x soulangiana* and *Fraxinus oxycarpa*. Unfortunately, most have not survived. For some, including the Blue Spruce, it seems that the conditions at Macquarie were too harsh, others were cut down to make way for library extensions.

At that time, the School of Biological Sciences maintained the area of land between Vimiera, Culloden and Waterloo Roads, now covered with student housing. A peach and nectarine orchard was maintained on the corner of Vimiera and Waterloo Roads to support the research work of Harvey Malcolm who was to become one of Biology's first awarded Doctoral students. A variety of fenced field enclosures on the corner of Culloden and Waterloo Roads

were an important part of the ecology teaching program and used by Professor Fred Milthorpe and ecologists Dr. Frank Burrows and Dr. George Mackay. Some years later, Alison Downing, encouraged by Biology Laboratory Manager, Sam McKay, planted groups of eucalypts along the creek bed. Some of these taller eucalypts can still be seen between the roadway and the ornamental lake.

Many of the cottages that had been home to farmers were retained and were used for many purposes. The white cottage, demolished this year (2009) to make way for the new library, housed the Architect Planner's Office. The university workshop was located in cottages on the corner of Epping and Balaclava Roads. The university grounds staff (at one stage, close to 30 in number), had their base in a cluster of small, weird and wonderful cottages, in the bushland on the northern side of Talavera Road. Biological Sciences used a number of cottages. A red brick cottage on the site now occupied by the swimming pool, housed growth cabinets and computing staff (punch cards, of course) and was lovingly referred to as 'The Castle' or 'Nottingham Castle' as a number of the staff had been recruited by plant physiologist Professor Fred Milthorpe from the University of Nottingham in the United Kingdom. Another cottage opposite Christie Park was used as an animal house, and a third closer to the creek was used for early experiments in methane generation. Many of the cottages were used to provide accommodation for staff: grounds supervisor Laurie Ezzy lived in a cottage on Talavera Road adjoining a plant nursery where purchased trees were held until ready for planting on campus. Groundsman David Melville was born in 1917 and lived in a cottage close to the site of the present Shell Service Station on Epping Road, later moving to a cottage on the creek on the northern side of Talavera Road. For many years he grew cut flowers for the university council offices and for the library and cut flax fibres to bind the stems of poppies, delphiniums, asters, phlox and wallflowers. Dave also remembered that the small stone building near the amphitheatre was built by an Italian during the Second World War and it is said that he brewed sly grog on the premises which was sold to American servicemen.

In February 1974, the University Council adopted a statement of aims and policies for communication to institutions undertaking development within the university site. One of these aims was that institutions should consult with the Architect-Planner's Office during planning process to ensure, amongst other things, maintenance or development of the landscape. Professor Frank Mercer, from Biological Sciences, seized that opportunity to work with the Architect Planner, to design a courtyard garden, enclosed within Buildings E8A, E8B and E8C, that could provide both a pleasant, landscaped environment for the enjoyment of staff, students and the community and also a valuable resource for plant material for teaching. In 1978, following many months of planning, hard work and fund raising by staff and students, a tree planting day celebrated the opening of the Biological Sciences Courtyard Garden (now the Frank Mercer Garden). Garden beds were designed for particular purposes, a fern bed, a pond for algae and mosses, a garden bed showcasing monocotyledons, another for dicotyledons, a dry land bed with cacti and succulents, and yet another with plants from two closely related families, the Epacridaceae (Australian heaths) from the southern hemisphere, the Ericaceae (Ericas, Rhododendrons and Azaleas) predominantly from the northern hemisphere. There was tremendous support from staff and students in Biological Sciences, the associated Plant Physiology Unit of CSIRO, from Earth Sciences and from the university administration. Chancellor Professor Partridge, Deputy Chancellor Judge Lincoln, Vice-Chancellor Edwin Webb and Deputy Vice-Chancellor Cohen all planted trees. Architect-planner Wally Abraham and his wife Felicity donated tree ferns from their Kiama property. Following the success of this garden, Professor Mercer, Wally Abrahams and Biology staff members, Alison Downing, Ossie Osborne and Terry Eason, worked together to extend the garden outwards to an open area with more scope for tree planting. Later, Alison Downing, Ossie Osborne and Terry Eason, with help from then Grounds Manager Roger Nancarrow and his staff, continued planting, developing gardens along the northern side of E8A and E8C and also planting many unusual Australian rainforest species on the eastern side of the courtyard extension, now just across the road from the hospital site. Ossie Osborne planted the row of *Eucalyptus deanei* along the roadway in front of Building E8B and also the row of *Hibiscus* species opposite the University Workshop. The *Hibiscus* species were originally grown by David Bishop from CSIRO as part of his research within the Plant Physiology Unit. Gynea lilies (*Doryanthes excelsa*) on the northern side of E8A and E8C were rescued by staff of Biological Sciences from bushland near Waterfall prior to the

construction of the Southern Freeway. Laboratory Manager Sam McKay planned the rescue mission.

The Biology Courtyard is still maintained by Biology staff and students who volunteer their time to weed, plant and prune. In the 90's, Professor Mark Westoby worked with Buildings and Grounds to have sails and seating installed in the courtyard as well as some imaginative sculptures representing fossil fish. For many years ecologist Barbara Rice has co-ordinated these efforts, sadly she passed away in June this year (2009). Since then, we have been fortunate to have biologist and ecologist Wade Tozer oversee the courtyard including new plantings of some unusual Australian rainforest trees. Recently Michael Maroney and his staff redesigned and replanted the pond, vastly improving its appearance and making it more useful for teaching. It is planned to introduce native fish into the pond at a later date.

1981 - 1997

By 1981, the aerial photograph of campus is very different from that of 1964. Buildings are well established and car parks cover a huge area of campus. Three university playing fields are clearly visible, with excavation well on the way for more. On the eastern side of campus, student housing has been established in town house accommodation and two colleges, Dunmore Lang and Robert Menzies. These are conveniently located close to Macquarie Shopping Centre and bus routes linking the city, Epping, Eastwood, Chatswood, Turramurra and Gordon. The School of Biological Sciences' animal yards are well established on the corner of Culloden and Talavera Roads and an avenue of Crimson Flowered Willow Bottlebrush (*Callistemon salignus*), propagated by Alison Downing from seed collected at University of Sydney's Crommelin Native Arboretum at Pearl Beach, can be clearly seen. The glasshouses and potting sheds are located across the road from Christie Park in a site now occupied partly by the Graduate School of Management, partly by the Travelodge Motel. The swathes of trees across campus stand out, so too are the Lemon Scented Gums in the central courtyard, the east-west avenue of plane trees and the Brush Box in the university car parks.

In 1982, inspired by the plantings in the Biology courtyard, palaeontologists John Talent and Ruth Mawson worked with Frank Mercer and Alison Downing, and with the support of and encouragement from Wally Abraham and university engineer Max Fairleigh, to develop the gardens adjacent to the Earth Sciences buildings – E5A, E5B and E7B – as an evolutionary garden. The concept was to divide the courtyard into two sections, so that the gardens on the north and west were planted with *Laurasian* (predominantly) northern hemisphere species, such as *Magnolia*, Pecan Nut (*Carya illinoensis*), Camellias, *Prunus* (Flowering Plums), Swamp Cypress (*Taxodium distichum*) and Dawn Redwood (*Metasequoia glyptostroboides*). The gardens on the eastern and southern sides were planted with *Gondwanan* (predominantly) southern hemisphere species, such as *Macadamia*, Norfolk Island Pine (*Araucaria heterophylla*), Hoop Pine (*Araucaria cunninghamii*), She Oaks (*Allocasuarina* spp.), Ivory Curl Tree (*Buckinghamia celsissima*) and South African Proteas. The pathway through the central area of the courtyard was titled "Wallace's Line", a reference to the line drawn through south-east Asia, Separating Laurasia from Gondwana. This project too received great support from staff and students who raised much of the funding required for landscaping and purchase of the plants. Professor Jim Rose, Head of the School of Earth Sciences at that time, provided a tremendous amount of support and encouragement. A wonderful additional feature of the courtyard has been the installation of some massive rocks, including Devonian limestones full of marine fossils, Permian tree trunks from Queensland coal mines and sandstone cores from Warragamba Dam. There is no doubt that the two courtyard gardens established by the Schools of Biological Sciences and Earth Sciences, have contributed significantly to the rich diversity of trees on campus and provide a valuable resource for teaching and research.

Bushfires in 1994 and 2001

The proximity of the university to Lane Cove National Park has meant that there is always need to be vigilant in bushfire season. In 1994 bushfires burnt right up to the edge of Talavera Road and cinders ignited dry grass around the Biology glasshouses at that time located at the site of the present Graduate School of Management. In 2001, black smoke enveloped the university as fires again raged through Lane Cove National Park. Helicopters drew water from the university lakes and in a scene reminiscent of the movie 'Apocalypse Now', they would emerge

from black smoke over the Lane Cove Valley, at first only their landing lights visible, to queue to draw up water from the lake. They would then make orderly right turns to return to the fire front. The memories of the noise of the helicopters, the black smoke, occasional leaping red and yellow flames and the heat generated by the fire are impossible to erase. The university supported the fire fighting mission by pumping massive quantities of water into the lakes to keep the water levels high. However, each cloud has a silver lining and following each bush fire, staff and students from Biological Sciences were able to monitor the ecological processes following the fire. Completion of the M2 Motorway in 1997 has provided a barrier that gives significant protection to the university from future bushfires.

Grounds Managers

When Grounds Overseer Laurie Ezzy retired, there were a substantial number of men (sometimes 30 or more) employed as groundsmen. They maintained gardens and lawns surrounding buildings, used tractors to mow broad acre areas of grass, planted trees, carried out landscaping work and did most of the maintenance of their own equipment.

Jack Nordish followed Laurie Ezzy and over the next few years, the number of groundsmen was reduced significantly as management considered that much of the campus planting had been completed. Later contractors would take over much of the broad acre lawn mowing and grounds maintenance. Jack believed in leading by example. Rather than spending hours at his desk, he would be out working with his men. Jack had a black dog, a black barb, and she was his constant companion. Jack drove a blue tractor, the only blue tractor on campus, and whenever he was driving that tractor, his dog would ride along with him in a wooden box specially installed above one wheel. She would also travel to and from the university with Jack, sitting up happily in the front passenger's seat. It was said that when Jack went out with his wife on the weekend, his wife had to sit in the back as the front seat belonged to his dog. David King followed Jack Nordish as Grounds Manager.

Roger Nancarrow was appointed Grounds Manager in 1990 and continued working with a relatively small staff of 6 groundsmen. Roger came to Macquarie with an outstanding horticultural background including garden design and construction and good knowledge of both native and exotic plants. Roger initiated the first sustainable work practices used in grounds management at Macquarie. Construction on the M2 motorway commenced in 1995 and cut a swathe through the bushland area on the northern side of Talavera Road. Roger negotiated with those managing the construction of the M2 who were as good as their word, making arrangements to have all the felled trees wood chipped and the woodchip dumped in the university's northern car park, all 20,000 cubic metres of it! This was a really valuable resource and provided ample supplies of woodchip to mulch new plantings on campus for quite a few years. Roger also set out to update machinery which had not been well maintained for some years and bought a massive Vermeer wood chipping machine in order to convert into mulch fallen trees, branches and plants that had previously been taken to North Ryde tip. He also established compost bins to utilise the vast quantities of fallen leaves and waste plant matter. This material had also previously been dumped at the tip. His planting philosophy was to take degraded areas of campus and improve and redevelop them with appropriate trees and shrubs that would not only cope with often harsh conditions but that would also improve the landscape. He worked closely with staff of Biological Sciences on a number of projects.

Michael Maroney has been Grounds Manager at Macquarie since late September 1995. The university has again been extremely fortunate as he has an excellent background in parks and gardens management and a great love of trees, palms and cycads. Currently the university grounds, for the most part, are maintained by contractors, leaving Michael and his specialised team of 4 – 5 groundsmen to manage special projects. Michael is also a member of the University's Sustainability Group.

1997 – Mars Creek Landscape Concept Plan

In March, 1997, CONTEXT Landscape Design prepared Landscape Design and Management Principles for the Mars Creek valley through campus. Since that time, significant work has been done to clear weed infested areas, stabilise creek banks, build containment

structures including water holding basins (ponds) and landscape the area with suitable trees and shrubs.

Construction of the lake on the northern side of campus adjacent to the Graduate School of Management was begun in 1991, together with construction of the second stage of GSM. The area is signposted as a *Flora and Flora Reserve*. Grounds Manager Michael Maroney has established Lotus (*Nelumbo nucifera*) plants in the lake and native reeds, including *Restio tetraphyllus* along the north-western shore line. The Lotus provide a spectacular display of pink blooms during the hotter months of the year, the native reeds refuge for the many waterbirds that inhabit the lake and its surroundings.

Commercial development

In recent years many high rise buildings have appeared on campus. The landscaping of the surrounding areas has been undertaken by commercial landscape design companies who appear to have followed the original guidelines set down for landscaping the campus. Most of the plantings are of native species, the trees mostly eucalypts or their close relatives. Shrubs include bottlebrush (*Callistemon*), Grevilleas and *Westringia*. One pleasing aspect is the use of many species of native grasses, sedges, rushes and lilies. Gynea lilies have been popular with the designers and the plants are spectacular, with long, broad, strappy leaves and huge heads of crimson flowers on massive stems 3 to 4 metres high. And again, following the early guidelines, there are occasional deciduous trees to provide colour in autumn.

The university also maintains a tree replacement policy. Where trees are removed during building construction, suitable replacement trees must be sought and planted elsewhere on campus.

2008 - Sustainability – the way forward

In 2008, the university established a *Sustainability Group*, led by Leanne Denby, to manage relevant sustainability issues and to co-ordinate appropriate action to maintain remaining areas of native bushland, to minimise weed invasions, particularly along creek beds and to manage a tree planting program to enhance and extend the existing landscaped areas. A bush care group has been established to help maintain the remaining areas of natural bushland on campus and along the natural watercourses running across campus. One area of prime importance is to co-ordinate the interests of particular faculties, departments, staff and students. In June, 2000, Lesley Hughes, now Head of Biological Sciences, and Alison Downing assembled a list of tree species on campus and this has recently been updated (2009). Sustainability are currently working with Professor Lesley Hughes and her staff towards the establishment of the university campus as an arboretum. It is hoped that an appropriate tree planting program will evolve from this, together with an educational program to inform staff, students and the community about the significance of trees on campus.

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