



THE UNIVERSITY
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CONTACT

In this issue:

The spirit of sport at UQ

Best of the best: Alumni Awards 2013

Spotlight on UQ in Indonesia



SUSTAINABLE TEACHING



Advanced Engineering Building



Centre for Advanced Imaging



Global Change Institute Building

UQ's building program scaled new heights in 2013 with the completion of three major developments at St Lucia campus.

The \$138 million Advanced Engineering Building, the \$38 million Global Change Institute Building and the \$52 million Centre for Advanced Imaging are exemplars of UQ's ongoing commitments to state-of-the-art teaching and research spaces, as well as the highest standards of sustainable design and operation.

Property and Facilities Director Alan Egan said the University prided itself on the architectural expression of its built environment, which reinforced the natural beauty and appeal of the various campuses.

"Every building is unique and reflects the values of excellence in design for research and learning," he said.

"The principles that guide building development across the entire UQ estate are an amalgam of sustainability, low lifecycle costs, flexibility and adaptability, a human scale which encourages social interaction and, above all, good contemporary design."

Sustainability in particular is a key consideration in the construction and design of buildings at UQ.

The Advanced Engineering Building (AEB), designed by Mark Roehrs (Bachelor of Architecture (Second Class Honours) '86) and Richard Kirk (Bachelor of Design Studies '87; Bachelor of Architecture (First Class Honours) '92), features a number of initiatives designed to reduce the building's energy consumption, including 100kW of rooftop solar panels, solar hot water systems, and an energy-saving cooling system that uses the thermal stability of a heavy concrete tunnel to pre-cool the air before it enters the building.

Other features include sustainable building products, mixed-mode air conditioning and bicycle facilities. The building's energy-saving features can be measured in real time, meaning the AEB is literally a living laboratory for engineering students.

As headquarters for UQ's Global Change Institute (GCI), the GCI Building is a project that showcases UQ's commitment to sustainable design, construction and operation. It was also designed by Roehrs in partnership with Robert Keen from Hassell Architects.

Constructed over two years, the building harnesses solar lighting, best-practice construction techniques and materials, natural ventilation, rainwater storage and recycling to be one of the first in Australia to meet the standards of The Living Building Challenge – a certification program that defines the most advanced measure of sustainability in a human-made environment.

With 100 per cent of its power generated from solar energy, the building aims to be in natural ventilation mode for 88 per cent of the year and consume only 40 per cent of the energy target set out in the Green Building Council

of Australia's benchmark for educational facilities. It also represents the first structural use in Australia of geopolymers concrete, a low-carbon product.

As well as being a triumph of innovative design and sustainable operation, the AEB and GCI are embodiments of the power of philanthropy.

GHD – an international network of engineers, architects and environmental scientists spearheaded by alumnus Des Whybird (Bachelor of Civil Engineering '74) – gifted \$2.5 million towards the AEB's 500-seat GHD Auditorium, and the GCI was made possible by a \$15 million gift from alumnus and Wotif.com co-founder Graeme Wood AM (Master of Information Systems '07, Honorary Doctorate of Economics '11).

Pro-Vice-Chancellor (Advancement) Clare Pullar said philanthropy had played an important role in the development of UQ's world-class infrastructure.

"UQ has benefited from major acts of philanthropy throughout its history, beginning with the Mayne family's gift in the 1920s which helped establish St Lucia campus," she said.

"The Atlantic Philanthropies' investment in four of our major research institutes was key in the establishment of much of our biomedical infrastructure, and alumni have been keenly supporting significant developments in more sustainable learning and engagement environments.

"We are incredibly grateful for the generosity of private benefactors such as Graeme and Des, and for support from governments and industry, which enable us to continue to develop outstanding learning and research facilities to benefit future generations of students and the wider community."

One such facility is the new Centre for Advanced Imaging (CAI), also based at St Lucia campus. Managing the most comprehensive range of magnetic resonance instrumentation in the southern hemisphere, the CAI is the only facility of its type in Australia, and one of only a handful in the world.

The centre serves as the headquarters for the National Imaging Facility, which has received more than \$4 million in federal government funding under the Collaborative Research Infrastructure Strategy funding scheme. It was designed by John Wardle Architects in association with Wilson Architects.

All three buildings are welcome additions to the University's landscape, ensuring UQ continues to be a world-class environment in which to study and conduct research.

THE DON NICKLIN BUILDING

Described as "larger than life", the late Professor Don Nicklin (1934–2007) taught and inspired generations of chemical engineering students.

In June this year, the Chemical Engineering Building at St Lucia campus was officially named after Nicklin, an alumnus (Bachelor of Applied Science (First Class Honours) '57) and former Dean and Pro-Vice-Chancellor who had an enormous influence on chemical engineering at UQ, and on the broader profession both in Australia and overseas.

"Professor Nicklin had an amazing presence and oozed leadership," said Professor Peter Halley, Acting Head of the School of Chemical Engineering.

Halley remembers Nicklin as a "great family man" who was equally at home talking to government, industry and undergraduate students.

"My recollection of Professor Nicklin as my lecturer in first-year thermodynamics was his handy tips on life (like how to treat your significant other well) intermingled with thermodynamics – engineering and life skills taught at once," he said.

Professor Mark Kendall from UQ's Australian Institute for Bioengineering and Nanotechnology, and leader of the Nanopatch needle-free

vaccine delivery device, also has fond memories of Nicklin.

"He delivered my very first UQ lecture as an undergraduate engineering student in 1990," Kendall said.

"He was inspiring and entertaining. He got across the idea that you can enjoy what you are doing while being a leader in the field."

Professor Bill Clarke, Remondis Chair and Director at UQ's Centre for Solid Waste Bioprocessing, was a tutor in Nicklin's thermodynamics class in the late 1980s.

"Don appeared at most 'tutes' and took over proceedings," Clarke said.

"He could hold the attention of the class like no-one else, very rarely writing on the board, as he explained why processes went one way and not the other."

Following his retirement in 1994, Nicklin continued his association with the University as Emeritus Professor, sharing his profound knowledge and experience in a number of ways.

His significant contribution to UQ is remembered not only through the naming of the Don Nicklin Building, but also through the Nicklin Medal, which was introduced in 2009 to recognise individuals for their exceptional practical contribution to chemical engineering.

President and Vice-Chancellor Professor Peter Hoj (far right) with Professor Don Nicklin's family (from left): grandchildren Anna, Sam, Hannah and Lucy; daughter Jane; sister-in-law Penny; and wife Joanna.



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