



BRIGHT IDEA FOR CONSTRUCTION

The aim of the BRITE (Building Research, Innovation, Technology and Environment) project is to promote the incidence and quality of innovation in the Australian building and construction industry.

Many construction industry stakeholders are sceptical about the potential for innovation and its likely benefits. Many also lack the linkages and capabilities required for successful innovation. The BRITE project addresses this situation through demonstration and benchmarking activities that highlight innovation.

It is an initiative of the Cooperative Research Centre for Construction Innovation, a national body, headquartered in Brisbane at the Queensland University of Technology.



energy saver

SOUTH EAST QUEENSLAND'S FEBRUARY heat wave saw energy usage skyrocket. So it's refreshing to realise that constructing an energy efficient building does not need to cost any more than a conventional building.

BRITE project participant, William McCormack Place, a Public Works office block in Cairns acclaimed as Australia's most energy efficient building, cost \$17.5 million to build including fit-out and public art.

Graham Messenger, principal property manager at Public Works says the \$11.9 million construction component of the more than 4,500 square metre building compares favourably with conventional office block construction.

"William McCormack Place cost no more than a conventional office block to build and is saving Public Works a substantial amount in ongoing operating costs," says Mr Messenger.

"This Cairns' building is the first in Australia to get a five-star energy rating from the Australian Building Greenhouse Rating Scheme." It is more efficient than our other buildings up North. It uses 37 per cent less energy than our other buildings on average, so our electricity bill is 37 per cent less and that comes out to a reduction of about \$15 a square metre which is significant. That translates into lower energy bills for tenants." The building is also expected to achieve a massive 40 per cent savings in air conditioning, capital and maintenance cost over its 50 year life.

As far as costing more to build, he says "on this project, it did not". The reason for this goes right back to the beginning of the building's design process. "Property developers and owners need to plan for energy efficiency from the beginning," he says.

Dr Keith Hampson, chief executive officer of the Cooperative Research Centre for Construction Innovation couldn't agree more. The CRC instigated the BRITE project which includes the Public Works building in Cairns. "William McCormack Place is not just about technology or air conditioning systems," says Dr Hampson. "It's also the way the project was delivered which allowed local Cairns' firm MGF Consultants to provide an innovative solution that was incorporated in the delivery. In this instance the

form of delivery Public Works selected was design and construct and that provided an opportunity for the team to work together right up front."

MGF Consultants has been helping businesses construct energy efficient buildings for years but none quite like William McCormack Place. Graeme Standfield, a director at MGF Consultants, says there's nothing really new about the technology used to deliver energy efficiency. "It's just how it's been used," he says.

"The building puts some well established technologies to the best use. Construction control was maintained in the construction program to ensure that the building was built in an air-tight manner. Various elements were considered in the building's orientation so it resulted in the least solar impact."

It also uses an adaption of a chilled thermal storage system from a previous MGF design as part of the air conditioning system, allowing chillers to operate at optimum efficiency. In addition, variable speed drivers for pumps and fans have been installed. The building benefits from extra insulation and shading while high efficiency T8 light fittings have been used throughout.

"We have not introduced any trickery," says Mr Standfield. "There's nothing really new in there and some of the systems in place we developed nearly 20 years ago but they do not seem to have been picked up by other parts of Queensland."

All this is about to change. Dr Karen Manley, BRITE project leader for the CRC for Construction and Innovation and research fellow at the School of Construction Management and Property at the Queensland University of Technology says one of the fundamental objectives of the BRITE project was to help increase the take-up of innovative practices among the building and construction community.

"The technologies used in William McCormack Place are advanced technologies compared to what's conventionally used in today's marketplace," says Dr Manley.

"The reality is a lot of people do not feel comfortable about change. The risks associated with using advanced technologies and practices can seem overwhelming and that's where the BRITE project and the CRC for Construction and Innovation

comes in – demonstrating how the process can be successfully managed.

"By focussing on these innovative projects and bringing them to the attention of more people in the industry and through education and training, we are helping drive the transfer of innovative technology throughout the Australian building industry."

The BRITE project shines the spotlight on innovative practices on six case studies, four from Queensland. The Queensland case studies include William McCormack Place in Cairns, concrete planking innovation at Suncorp Stadium, performance improvement driven by the Port of Brisbane Motorway Alliance and ground penetrating radar that finds defects in bridge beams in this case Cattle Creek Bridge at Mackay.

The Departments of State Development and Innovation, Transport and Main Roads, Public Works, Housing and Racing as well as the Commonwealth Scientific and Industrial Research Organisation and ARUP are partners in the BRITE project, combining their collective resources to profile the project's case studies.

State Development and Innovation Parliamentary Secretary Linda Lavarch launched the BRITE project to the construction community on February 26 at a function organised by the CRC for Construction Innovation in Brisbane.

Ms Lavarch told building and construction leaders that the case studies revealed just how innovative Queensland's construction industry could be.

"A healthy, progressive and innovative construction sector provides efficient housing and a competitive built environment for our business and industry," she said. "It is vital to our future. A 10 per cent improvement in efficiency in the construction industry has the potential to not only benefit the bottom line of construction businesses but boost gross domestic product by 2.5 per cent over five years.

"The CRC for Construction Innovation recognises that construction is an integral part of Queensland's economy and it is taking leading edge research and applying it to the practical problems of the construction industry so that we will ultimately see innovative technology and ways of doing business transferred throughout the industry." ■