ADVICE + ACTION

THINC

Queensland University of Technology
Science & Engineering Centre,
Gardens Point

CLIENT:
Queensland University of Technology (QUT)

LOCATION:
Brisbane, QLD

PROJECT VALUE:
$230m

SERVICES:
Independent Advice
Project Facilitation
Project Delivery

A pioneering research, education and community hub

Background

The Science and Engineering Centre (SEC) redevelopment involved the complete demolition and redevelopment of a major precinct at the QUT Gardens Point Campus in Brisbane. The precinct extends from the Goodwill Bridge to the Botanic Gardens at the top of the Gardens Point Campus.

The objective of the Science and Engineering Centre redevelopment was to provide state-of-the-art teaching, research and student facilities to position QUT at the forefront of higher education within Australia and the international tertiary education market, and also to facilitate extensive collaboration with the private sector through joint research activities.

The SEC comprises two multi-level buildings constructed of concrete and curtain wall facade, linked by shaded and open green space. One block contains 10 levels including two levels of basement car parking, one level of retail space, two levels of teaching and learning and three levels of research in the disciplines of science, technology, engineering and mathematics, as well as project and laboratory spaces. The other block contains retail, student support services, three levels of research space and a 200 seat function room on Level 10.

The common podium area connecting the two buildings forms the new campus heart. Beneath the podium area is a 50 metre FINA-approved pool, as well as a 1,300sqm gym. Other facilities include a student bar, food court, bike centre, state-of-the-art lecture theatres, laboratory and project spaces and bookstore.

One of the unique features of the SEC is 'The Cube', an open plan space over two levels in the main public area with a bank of fully interactive screens that showcase innovative technologies, and a Microsoft area, which allows sample use of the company's most recent products.

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One of the nation's first Five Star Green Star Education V1 university buildings, the Science & Engineering Centre was built in a manner which will inspire both students and researchers for many years to come. Thinc was engaged by QUT to project manage the delivery of the project. This involved:

- Extensive stakeholder and user management
- Strict design and cost management within demanding project guidelines
- Achieving 5 star ESD rating under the new education green star rating toll
- Implementing a complex staging and decanting strategy within the highly demanding Gardens Point Campus with significant early works demolition packages.

Thinc's role required liaison and reporting at the highest level of university management. Working closely with QUT, the team took a multifaceted approach to adding value to the project. Thinc's Project Director on the development, Robin Sweasey, explains:

"Firstly, we undertook a complex stakeholder management process to enable the diverse community of users and stakeholders within the university to provide detailed input into the developing design to ensure the universities functional requirements were achieved."

"Secondly, our strategic procurement advisory skills enabled us to assess the potential procurement forms for their suitability and determine which form best delivered the requirements of the client."

"Thirdly, we focused on creating a high performance team environment by rigorously managing the project in a collaborative and cooperative manner, whilst focusing on clear obligations and accountabilities."

Innovation

The entire project was about innovation in the teaching and research activities within the University and this was reflected throughout the project. The procurement form, for example, was a key aspect of this and was implemented in a truly collaborative manner.

The spaces within the facility were also designed to encourage innovation in the way the occupants work and interact. The collaborative spaces encourage collaboration between students, academics and industry partners and it is hoped this will translate into innovative teaching and research activities and outcomes.

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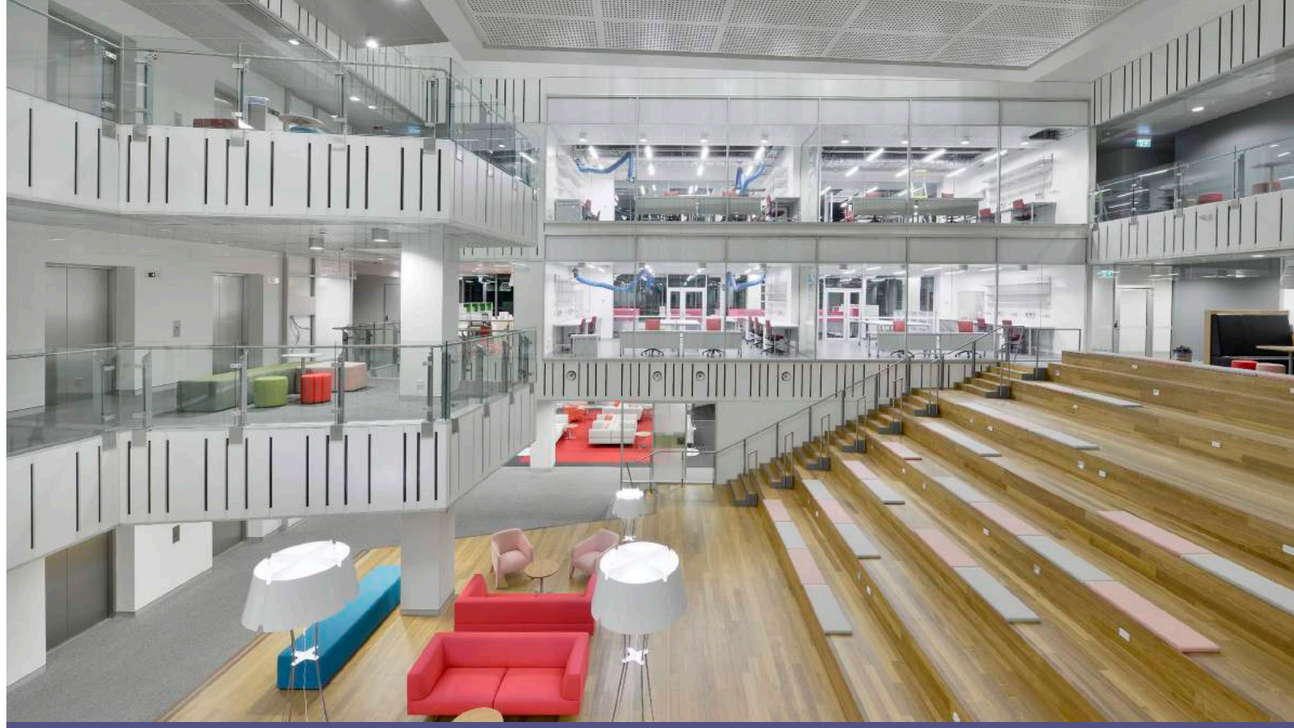
Robin Sweasey, Project Director.



Sustainability

The SEC was designed as a 'living building', and as an education tool which showcases the innovative and sustainable engineering techniques used in its construction.

This is evident in the absence of ceilings to enable students and other building users to see how the building operates, along with interactive and visually dynamic plant rooms and other building services systems throughout the centre.

Sustainability initiatives incorporated into the project include extensive roof mounted solar capture, with 198kw of photovoltaic cells. The SEC also has a 838KW tri-generation plant, which not only powers the building but also exports power back into the QUT microgrid and uses the waste heat to cool the building through absorption chillers. Water efficiency measures include 236KL water storage harvesting from the roof area and air handling unit (AHU) condensate; and reticulation of grey water from showers and basins for flushing toilets and urinals. To ensure optimum delivery of outside air, and help keep everyone's minds fresh, sensors throughout the buildings provide response monitoring of carbon dioxide (CO_2) and Volatile Organic Compound (VOC) levels. Additionally, all interior finishes were selected to minimise VOC levels.

Outcomes

The team faced numerous challenges to successfully deliver such a complex and high-profile development, not least the Brisbane floods of January 2011.

From the start, logistics were also tricky when it came to protecting public safety, with the Gardens Point Campus a major gateway between the CBD and South Brisbane via the Goodwill Bridge, and the area's estimated foot traffic up to 60,000 persons per week. However, by effectively working collaboratively, all issues were successfully overcome.

The team also used the project as an opportunity to provide real-world experience throughout the design and construction phases for hundreds of students. The main contractor on the project - Leighton Contractors – also developed a lecture series in conjunction with QUT, where experts from the project team explored subjects including engineering, safety, environment and project management.

The result is a pioneering research, education and community hub and a model of sustainable building design. It was completed on time and budget in November 2012 and was officially opened by The Prime Minister, The Hon. Julia Gillard MP and Queensland Premier, The Hon. Campbell Newman MP. ■

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For further information contact:

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