

Lessons in innovation

In 2003, the BRITE project of the Co-operative Research Centre (CRC) for Construction Innovation undertook six case studies of innovation in the Australian building and construction industry. The studies examined projects such as William McCormack Place in Cairns, the first commercial office building in Australia to achieve a five-star Australian Building Greenhouse Rating (ABGR), and the National Gallery of Victoria's Australian art building.

Overall, the BRITE project gave a broad definition of 'innovation' - identifying not just the development of new technologies, but also innovative management approaches and the application of existing technologies in innovative ways. Due to the demonstrated value of non-research and development innovation, the project's report advocates 'a rethinking of the Commonwealth Government's R&D tax concession, with its narrow definition of eligible expenditure.'

According to the report, the studies highlight the success of "incremental innovation" - the process of adopting and extended innovations developed by others as opposed to original innovation. In reference to William McCormack Place, the Queensland Department of Public Works noted that improved building performance is "not a case of the development of complex or costly new technologies but one of effectively using a combination of existing technologies". This underlines the relative importance of organisational skills, compared to technical skills, for the majority of innovation undertaken in the Australian building and construction industry.

The findings of the project suggest that there may be some reluctance to adopt innovative practices due to the project-based nature of production within the industry. As a result, the benefits to the innovator are less apparent than the benefits to the project. It was found, however, that contractors with a history of innovation are being favoured and awarded more work by clients. One specific example of recognition for innovators are the recent changes to the Queensland Department of Public Works prequalification system for building industry consultants - 'innovation history' has now been added as a criterion in the selection process.

The nature of the contract employed on a particular project is noted as having a significant impact on both the ability and

the will of contractors to incorporate innovative approaches into their design. Two strategies of particular note are a guaranteed maximum price and project alliances between client, contractors and consultants. The case of Brisbane's Suncorp Stadium is one that highlights the potential benefits of a price guarantee. According to the case study, "the contract allowed for the development of alternative designs and for shared benefits between the contractor and client if the project was delivered below the guaranteed maximum price". The interest in savings from both parties led to the development of a composite connection between steel beams and concrete planks. The project's engineers, Arup, sponsored full-scale prototype testing of the connection design to verify its performance. According to the report, the connection's strength and efficiency allowed a weight reduction of approximately 25% in the steel floor beams, resulting in an estimated saving of \$260,000. Interaction between the engineers, plank supplier and university researchers provided benefits to all parties.

The report highlights the Port of Brisbane Motorway project as an example of the benefits that can be achieved through a project alliance. It states that the Alliance "recognised the need for a high level of design input, and more importantly, a significant integration of design, planning and construction activities". The sharing of both risk and benefit in delivery of the project provided an environment that was supportive of potential innovation, and the close ties between client and contractor allowed for negotiation when obstacles to the original design arose.

While there is great potential for innovation in the building and construction industry, the BRITE project highlights the importance of access to expertise in facilitating new approaches. Arup, for example, has initiated an innovation competition which encourages employees to write up the benefits of their innovations. This provides opportunities for knowledge-sharing and helps to ensure that the value of innovation is not simply a one-off.

Further information on the BRITE project's case studies can be found at www.brite.crci.info ■



Innovation checklist for businesses

This innovation checklist is based on case study findings and follows a format developed by the Construction Best Practice Program in the UK. The checklist assists business managers to identify where they are and where they want to be. Business managers are invited to mark each item as appropriate, assuming that they might be asked to demonstrate the basis for their response.

	I haven't thought about it	I am thinking of doing something	Yes	Yes, and we are constantly improving	Yes, we represent best practice
	Level 1	Level 2	Level 3	Level 4	Level 5
1. Do you have robust relationships with key industry participants e.g., clients, manufacturers and universities?					
2. Do you actively monitor international best practice in your field?					
3. Do you actively monitor advances in related industries that might be applicable to your business?					
4. Do you have a formal system for transferring project learnings into your continuous business processes?					
5. Do you view problems or failures as opportunities for learning and growth?					
6. When you make changes, do you measure how well the changes have worked?					
7. Are your staff rewarded for maintaining network linkages with other industry participants with complementary skills?					
8. Are staff encouraged to share ideas?					
9. Do you have a strategy to keep the loyalty of key experts within the business?					
10. As your business changes, are you bringing in the necessary new skills and competencies?					

Business managers can look at the pattern of their responses and ask themselves:

Level 1: Is it in our interests to ignore these activities?

Level 2: Am I putting in the effort and resources needed to support these activities?

Level 3: Which of these activities should I make even better?

Level 4: How can I identify the strengths on which to build and improve even more?

Level 5: How can I capture and share these successes?