

Construction Innovation Delivers for All Stakeholders

MANY CONTRACTORS AND CONSULTANTS IN THE CONSTRUCTION INDUSTRY HAVE TRADITIONALLY BEEN SCEPTICAL ABOUT THE POTENTIAL BENEFITS OF INNOVATION. THE BRITE PROJECT HAS EXPLORED THIS ISSUE AND DOCUMENTED RESULTS IN A NEW GUIDE **INNOVATE NOW!**

Over the past three years, the BRITE Project of the Cooperative Research Centre for Construction Innovation has conducted a large-scale industry survey and 12 best-practice case studies, with participation from over 400 businesses, 14 government organisations, eight industry associations and four universities. "We are very excited by changing perspectives in the construction industry," said the BRITE Project Leader, Dr Karen Manley.

"There seems to be growing interest in innovation as a means of ensuring on-going competitive advantage for businesses," she stated.

The BRITE research revealed that scepticism about the value of innovation was misplaced. It showed that 93 per cent of all innovators in the construction industry achieve higher business profits as a result of their efforts, while all of them reap improvement to their reputations and are subsequently likely to be more successful in winning projects over time. Clients are keen to work with innovative businesses because of the substantial benefits that can be achieved on projects. The improved prospects for future work provide the incentive for consultants and contractors to search for new ideas.

Clients and Crises Major Drivers of Innovation

Leading-edge clients and crises are the key drivers of innovation in Australia's property and construction industry, a major study from the CRC for Construction Innovation has revealed.

Construction Innovation's BRITE Project team spent three years researching

innovation in the Australian property and construction industry to produce the *Innovate now!* report.

The *Innovate now!* report concluded clients with high levels of technical competence, challenging needs and extensive experience provide significant opportunities for innovation.

"The more demanding, technically competent and experienced the client, the more likely it is to stimulate innovation in projects, by demanding outcomes that exceed business as usual," said Dr Karen Manley, BRITE Project team leader.

"Businesses that are slow to innovate may need to find the courage to expose themselves to this kind of pressure if they want to improve business performance," Dr Manley said.

Similarly, a cooperative team approach in the face of a crisis can also lead to innovative solutions.

"Normally, crises are seen as a disaster on a project, but our research indicates that the old adage about finding the positive in any situation certainly rings true," Dr Manley said.

Public sector clients are seen as major drivers of innovation in the industry. They have the highest rate of investment in research and development, the highest rate of adoption of advanced practices and technologies and the best return on innovation.

All of which led the BRITE Project team to conclude that an effective innovation program should focus, where possible, on



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| | Case study 1 | Case study 2 | Case study 3 | Case study 4 | Case study 5 | Case study 6 |
|-------------------------------|---|--|--|---|---|--|
| Project name | William McCormack Place | Lang Park Sports Stadium | Port of Brisbane Motorway | National Gallery of Victoria – Australian Art Building | Coutts Crossing Bridge | Cattle Creek Bridge |
| Innovation summary | Chilled water thermal storage tank and moisture absorbing thermal wheel | Precast prestressed polystyrene voided concrete planks with formed rebates | Project delivered under an alliance contract | Fire engineering enabled use of unprotected steel | Fibre-reinforced polymer (FRP) bridge deck | Ground penetrating radar to find defects in bridge beams |
| Main benefit achieved | 37% saving in energy costs | 8% saving in cost of grandstand steelwork | 10% project cost saved, 30% time saved | 5% of project cost saved | 75% saved in transport costs, 90% saved in traffic management costs | 50% of project cost saved |
| | Case study 7 | Case study 8 | Case study 9 | Case study 10 | Case study 11 | Case study 12 |
| Project name | Gladesville Road Community Centre | Imago Site | Stadium Australia | Art Gallery of South Australia | Adelaide Oval | Tomago All-Weather Access Road |
| Innovation Summary | Managing stormwater with storage gutters and infiltration | Saving site-remediation costs through a new waste disposal method, sprinkler and wheel wash system | Post-tensioned steel trusses to create long span roofs | Twin-coil air-conditioning to improve energy efficiency | Relationship based contract and 3D CAD to efficiently deliver complex project | Using recycled tyres to create a permeable road pavement while meeting strict environmental and community requirements |
| Main benefits achieved | 26% reduction in mains water demand | 13% project cost saved | 50% reduction in steel weight; 25% reduction in roof erection time | 30% reduction in energy consumption | 50% reduction in prefabrication time, 90% reduction in requests for information | 15% of project cost saved |

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cultivating deeper and broader relationships with repeat public sector clients.

Innovation Benefits Achieved on Selected Construction Sites

The BRITE project has studied 12 innovative projects in detail. The 'benefits' table displays a summary of the findings.

Four of the documented projects were in Queensland, four in New South Wales, two in South Australia and one each in Victoria and Western Australia. They included three sporting stadiums, two bridges, two art galleries, two commercial buildings, two very different roads (a motorway and an access track) and one case of contaminated land.

The size of the project made no difference to the extent of benefits gained. At *Cattle Creek Bridge* (Case Study No 6), 50 per cent of the project cost estimate of \$1 million was saved, while on the *National Gallery of Victoria* (Case Study No 4), five per cent of the project cost estimate of \$65 million was saved.

The table also shows that the range of potential benefits is broad, with the 12 cases of innovation showing savings related to:

- gas supply
- water usage
- material supply
- material weight
- fabrication time
- erection time
- road transport
- traffic management
- requests for information
- project duration
- overall project cost.

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From iconic building projects, to small road projects, the case studies show that it pays to innovate!

The *Innovate now!* guide and contributing case studies are lodged at www.brite.crci.info for free download. The guide provides detailed steps for businesses wanting to improve their innovation performance, along with detailed checklists to help businesses develop an innovation program. For further information, contact Dr Karen Manley, BRITE Project Leader, k.manley@qut.edu.au.

The Cooperative Research Centre (CRC) for Construction Innovation (www.construction-innovation.info) is a national collaboration of 21 industry, government and research partners focussed on creating technologies, tools and processes for the property, design, construction and facility management sectors. ●

INNOVATIVE AUSTRALIAN CONTRACTORS RECEIVE RECOGNITION

A database of Australia's most innovative contractors has been developed by the CRC for Construction Innovation to identify the leaders in our industry and to promote innovation by providing this register of potential networking partners.

The database has been developed in response to calls from the construction industry for a 'yellow pages' of innovative contractors.

BRITE Project Leader Dr Karen Manley said the purpose of the database is to help facilitate connections between innovative businesses.

“It is important for a business to maintain active personal contacts with related organisations driving innovation,” said Dr Manley.

Only qualifying contractors are listed on the database. To qualify, businesses answer questions about their innovation activity. The answers are scored and businesses must pass a hurdle score to qualify for listing on the database.

Dr Manley said the score measured the degree of novelty in technological and organisational innovations, the impact of innovation on profitability, the adoption rate of existing advanced technologies and practices, and the importance businesses placed on investing in research and development.

The National Innovative Contractors Database can be viewed and downloaded at www.brite.crci.info. The database will also be distributed as part of a national seminar tour in 2007.

To apply for registration on the database, contact Lindy Spindler, BRITE Project, CRC for Construction Innovation, phone (07) 3864 9146 or email l.spindler@qut.edu.au


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