

Project Team Integration: Communication Coordination and Decision Support [Stephen Kajewski, QUT]

This series of reports provides the Building Commission with access to a set of business practice guidelines for the adoption and integration of e-tendering, e-archiving and hand-held technology systems and processes. Two industry-focussed booklets are available for uploading to the Building Commission website.

Evaluation of Functional Performance of Commercial Buildings [Terry Boyd, QUT]

eValuBuild provides Building Commission **policy professionals** with an opportunity to help portfolio clients improve real estate performance through a decision-making model that incorporates the facility life cycle. The practical, market-based cash flow model supports a better understanding of property market trends, forecasts and facility management.

Sustainability and the Future Building Code of Australia [Brian Ashe, ABCB]

This report provides the Building Commission **Environment Division** with the summary of an extensive international review on sustainability requirements in other jurisdictions and recommendations on which the Australian Building Codes Board made its deliberations to include sustainability in the future Building Code of Australia.

Smart Buildings for Healthy and Sustainable Workplaces [Greg Foliente, CSIRO]

The Building Commission **Environment Division** has access to an examination of the history, trends, drivers, new technologies and potential application areas related to the operation of healthy and efficient office buildings.

Cash/In-kind support

The graph illustrates the contributions made by the Building Commission since the CRC's inception. The forecast amounts are drawn from the signed Centre Agreement. Currently the Building Commission is short \$98,000 of meeting its scheduled in-kind contributions after three years of operation. *Construction Innovation* will continue to work with you in moving to close this shortfall.

The future

We are at the midpoint of our CRC's life. I'm confident that the 300 plus individuals who personally contribute to the success of *Construction Innovation* across Australia remain committed to making a significant positive difference for Australian property and construction.

Our goal to make a real and lasting impact in this industry drives us to commit to a second round CRC application in early 2006. We are advancing with our initiatives to secure industry and research support to underpin this bid. We plan to build on the successes of this CRC in servicing the Australian property and construction industry for its future, and delivering real value for our leading CRC partners.

We are delighted to have worked with the Building Commission team since the beginning of this CRC's development and look forward to continuing our good work together.

November 2004



Message to the Building Commission from Dr Keith Hampson, CEO of Construction Innovation

This past year has been critical for our CRC for *Construction Innovation*. We have entered a new era with a substantial number of research projects coming to a close. In addition to developing and managing research projects, we are also realising valuable outcomes from our projects and disseminating the results within our partner network and industry. Our research and industry partners are working together to secure commercial project outcomes by identifying pathways to industry adoption and financial returns through improved business practice.

Our progress in leading the Australian property and construction industry in collaboration and innovation is highlighted by six *Construction Innovation* initiatives:

1. *Construction 2020* through November 2003 to July 2004 set a clear national leadership agenda for Australia's property and construction industry.
2. The International Construction Research Alliance (ICALL) brought together leading international applied research and development organisations servicing property and construction throughout North America, Europe and Australia. *Construction Innovation's* membership of this key group demonstrates our CRC's globally important role confirmed at our *Clients Driving Innovation* International Conference in October 2004.
3. The CRC's nominee, John McCarthy, was elected to the Board of the International Council for Research and Innovation in Building and Construction (CIB) in May this year. John is already helping shape the international research activities for this influential group of more than 3000 individuals from 70 countries to ensure our CRC partners have a strong international profile.
4. At a national level, *Construction Innovation* has played a key role in the formation of the Australian Sustainable Built Environment Council (ASBEC). ASBEC is working to bring together disparate regional, state and national input to the sustainability agenda for the built environment, with the goal of unifying national guidelines for green development.
5. Our CRC's investment in the intellectual capacity of our industry is an initiative for which we are particularly proud. *Construction Innovation* supports 15 PhD and Masters students across the nation. Many of these students are from our CRC partners. This research capability building is complemented by our developing input to the higher education curriculum and industry-focussed technology transfer.
6. *Construction Innovation's Clients Driving Innovation* International Conference in October 2004 reinforced the value of applied research outcomes and the strength of our industry, government and research partnerships. 210 attendees from across the globe shared in the technology transfer from refereed research papers to industry case studies in a most professionally convened conference that *made the mark* for our CRC partners nationally and internationally.

We've also worked together to ensure the ongoing involvement of our major partners in addition to securing the core participation of Australia's largest municipality, the Brisbane City Council, joining our CRC in January 2004. Negotiations for fresh partners are continuing with key private sector and government organisations.

The important CRC Program Second Year Review completed in late 2003 evaluated our progress against the five Commonwealth objectives of Research, Education and Training, Commercialisation, External Communication, and Administration. The Review Panel confirmed that *Construction Innovation* was performing well in all respects, especially in research management and emphasised that the calibre, enthusiasm and team spirit of all personnel interviewed was impressive.

I believe that we are in *good shape* and acknowledge the enormous efforts made by our committed participants and staff these past three years.

Key benefits

General/Direct business benefits/ Public good

Since the 2003 Executive Report Card, *Construction Innovation's* activities have been significantly broadened with strongly emerging education and technology transfer and commercialisation foci.

Research — *Construction Innovation* has as one of its core goals the development and delivery of a quality industry-led applied research program. This program incorporates the research goals of its participants, including the Building Commission, shaped through a process of regular consultation at multiple levels.

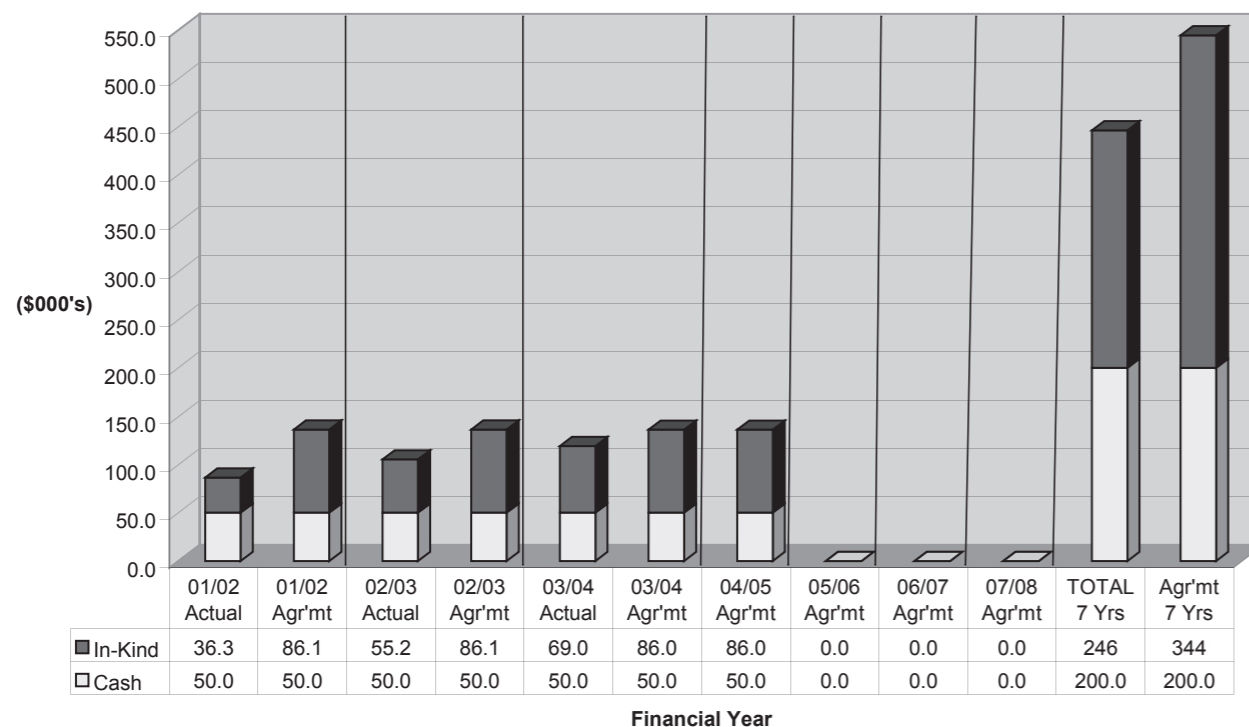
Industry leadership — The Building Commission is viewed as a leader developing solutions for CRC participants and industry that will deliver a positive change in property and construction in this State.

Implementation — As a number of projects are coming to a close during this period, the Building Commission has an increased opportunity to exploit specific outcomes for implementation within its Department and that of its stakeholder agencies for increased effectiveness.

Training and development — The Building Commission has access to one of Australia's largest banks of research information in the property and construction industry. With 22 projects completed by the end of 2004, *Construction Innovation* has information, guidelines, systems and processes developed in areas such as innovative and efficient building practices, healthy smart indoor environments, environmental assessments and decision frameworks promoting sustainable design residential subdivisions and individual houses, which could be converted into continuous professional development training programs to develop your staff and the Victorian property and construction industry.

This Executive Report Card highlights how the Building Commission can benefit from ongoing involvement in *Construction Innovation*, through research, implementation, industry leadership, training and development and innovative industry profiling.

**Building Commission
Cash + In-Kind Contributions to CRC for Construction Innovation
FY 01/02 to 07/08**



Research

Of the 41 research projects either completed or currently underway, the Building Commission has participated in 8 projects. The Building Commission has leadership of one project through Dennis Hogan. Building Commission participation as at 30 June is summarised as follows:

- The Building Commission was involved in 4 of the 27 projects currently underway.
- The total value of these 4 projects is \$1.1 million comprising \$0.6 in cash and \$0.5 million of in-kind support.
- The Building Commission has 6 staff members making an in-kind contribution.
- Peter Nassau is the Building Commission's nominee on the Research Committee, and Commercialisation, Education, Training and Technology Transfer Reference Group.

Industry leadership

The breadth of *Construction Innovation's* partner network spans across client, design consultant, constructor and facility manager responsibilities across five centres of activity around Australia. This integrated effort across 306 individuals working on *Construction Innovation* activities is a significant sign to the industry of commitment and leadership. *Construction Innovation's* Governing Board is committed to ensuring strong linkages between CRC partners and Australia's property and construction industry. A number of research projects support this:

Innovation Potential, Directions and Implementation in the Building and Construction Product System [Karen Manley, QUT]

As a participant of *Construction Innovation*, ABCB has been able to illustrate through case study material, the incidence and quality of innovation in the property and construction sector. This has been achieved by generating and disseminating knowledge about: the rate of innovation over time, what makes one business a better innovator than another, implementation processes and the need to innovate and share innovations with others.

Sustainability and the Future Building Code of Australia [Brian Ashe, ABCB]

As a participant in this project, the Building Commission has been part of a significant recommendation to the Australian Building Codes Board (ABCB), that there is a need for sustainability requirements in the BCA21. The ABCB recently announced that the BCA21 will include sustainability provisions.

Ethical Construction Procurement [Adrian Kirk, University of Newcastle]

Through participation in *Ethical Procurement*, the Building Commission will be recognised as shaping a set of ethical procurement guidelines for uptake and implementation by major construction procurers, including government clients and contractors. *Ethical Procurement* will make

industry more aware of ethical standards in construction procurement, help develop more productive and efficient procurement processes, and encourage better working relationships between clients and contractors in the supply chain.

e-Business Security and Legal Issues [Martin Betts, QUT] e-Business Adoption [Kerry London, University of Newcastle]

The widespread use of information and communication technologies within construction organisations is dependent on overcoming the current barrier of the legal probity of their electronic communication. The Building Commission will develop a greater awareness in the construction industry of the value of e-business to organisations and to increase participation in various e-business technologies.

Industry profiling

The successful approach *Construction Innovation* has promoted with our **external communication** is to promote our CRC partners as *the* industry innovators. Successful external communication has continued to be a significant achievement for our CRC with 80 major publications in the national and trade press this past 12 months. Effective communication profiling our partners throughout our network of industry associations (especially those in the Australian Construction Industry Forum) and the community generally continues to be a hallmark of the collaboration led by this CRC. The *innovative industry profiling* of the Building Commission's engagement in our CRC is developing. The following highlights the specific publications where the Building Commission's research has been promoted this past 12 months.

- Jul 03 *Wayfinding tool* Keith Hampson interviewed on radio in four states
- Aug 2003 *Sustainable strategies: An Australian solution for commercial buildings* **TABS – The Australian Building Surveyor**
- Sept 03 *High-tech way finding tools under investigation* **Building Australia Magazine**
- Sept 03 *A sustainable career in a sustainable built environment* **Construction Contractor**
- 15 Oct 03 *Green space forum a 'tree huggers' delight* **Property Review.com.au**
- 24 Oct 03 *Green space organisations want national forum* **National Building News Monthly**
- Nov 03 *Facing the future of construction in Australia to benefit all* **National Building News Monthly**
- Nov 03 *Green space united national forum* **National Building News Monthly**
- Jan 04 *'Green' calculator counts cost of building designs* **New Scientist**
- Feb 04 *UPDATE Newsletter* **CRC Construction Innovation**
- Feb/Mar 04 *Australian invention to revolutionise building design* **Master Builder**

- Mar 04 *Making a sustainable impact* **National Building News Monthly**
- Apr 7–13/04 *Calculating environmental footprints* **Campus Review**

Senior client and industry networking is a unique and specific benefit our CRC offers. We constructively engage your senior staff with key national and international industry, government and research leaders. The significance of these networks cannot be underestimated. When the Australian Government reviews our nation's approach to sustainability through the House of Representatives Standing Committee or seeks the views of innovative Australian designers or constructors – it contacts our CRC; when the Dutch Government conducts an international review of construction industry development – it contacts our CRC; when other Queensland Government agencies or the Building Commission (Victoria) or the Australian Building Codes Board seeks to inform its policy development – it contacts our CRC. In each instance, the Building Commission's leadership and your staff are given exposure at these critical interfaces.

Implementation

Way Finding in the Built Environment [Dennis Hogan, Building Commission]

Through Dennis Hogan's leadership, this project has put the Building Commission and *Construction Innovation* into the forefront of knowledge of technologies and systems that will make it easier and safer for people who have a sensory impairment to find their way around large public areas. This research will feed directly into the Building Commission's policy development in relation to access to premises.

Automated Code Checker [Robin Drogemuller, CSIRO]

As a partner of *Construction Innovation*, the Building Commission through the *Director of Compliance and Conciliation* has had insights into and access to a working prototype analysis software tool that is able to automatically check the 3D CAD model of a building against the sections of the BCA relevant to access by people with disabilities (Section D3) and the deemed-to-satisfy provisions including AS 1428.1. *Automated Code Checker* will assist designers in code compliance checking and will reduce the cost to the industry of checking for compliance and will reduce the risk of non-compliance, with its associated rectification costs.

Environmental Assessment of Commercial Buildings [Selwyn Tucker, CSIRO]

As a project participant, the Building Commission through the *Environmental Division* has had insights into and early access to *LCADesign*, an automated eco-efficiency design tool for commercial buildings which includes a comprehensive Life Cycle Inventory database. *LCADesign* is the first assessment tool of its kind as it automates a process that is currently undertaken manually through the use of spreadsheets and/or the designer's tacit knowledge of product characteristics.

Training and development

Project workshops

Understanding the importance of the Building Commission's industry development priorities, *Construction Innovation* has delivered project workshops for its partners on the following themes:

- Showcasing Innovations to 200 industry leaders in February 2004 (BRITE Project Launch)
- Workshops to Queensland Government partners and industry leaders on increasing productivity through the use of *Construction Innovation* technologies such as the *Automatic Estimator*, 4D CAD construction program directly from a 3D CAD model of a building, and automatic environmental evaluation of building designs through the use of *LCADesign*
- Improving the chances of construction project success by applying *Project Diagnostics*
- Making better project procurement decisions by using *Value Alignment*.

Project reports

As *Construction Innovation* research projects move to completion, the Building Commission is provided with electronic copies of major reports, guidelines and information sheets on the findings. The following projects findings have now been made available and provided for the Building Commission's internal and external information sharing:

Value Alignment Process for Project Delivery [Tony Sidwell, QUT]

The Building Commission *policy professionals* have access to Value Alignment, a software-based decision tool that creates a profile of a project's characteristics, including its risk profile. The tool can be used to select an appropriate procurement system for new projects.

Knowledge Management and Innovation Diffusion [Derek Walker, RMIT]

The Building Commission's *corporate staff* has access to a bank of information on how to improve Information and Communication Technologies (ICT) innovation diffusion and to improve Knowledge Management (KM) practices.

Indoor Environments: Design, Productivity and Health [John Bell, QUT]

The Building Commission's Environment Division professionals are provided with a review of the state of international knowledge on how the indoor environment of buildings influences occupants. The link between productivity and health of building occupants and the indoor environment and the impact this may have on the cost of building ownership is also discussed.