CRC Construction Innovation
BUILDING OUR FUTURE

Construction Innovation update

November 2003
Issue 7

Construction 2020 hits Brisbane. Next – Australia.

The first Construction 2020 (C2020) Workshop was held in Brisbane on Wednesday 12 November, with broad representation from across the ir

Construction 2020 is an initiative of the Cooperative Research Centre for Construction Innovation to workshop and survey members of Australia's property and construction industry to develop and capture a shared vision of what the industry could look like in the Year 2020, and what is needed to get it there.

Professor Peter Brandon visiting from the University of Salford,UK

Over seventy people attended the Brisbane workshop to listen to an overview of Construction Innovation's research activities and define their best dreams and worst nightmares for the future of the industry.

Feedback from workshop participants was excellent, with members suggesting the C2020 process was a valuable one to assist in bringing together what is currently an industry riddled with adversarial and disparate effort.

Two leaders in the industry, Dr Keith Hampson, CEO of Construction Innovation, and Professor Peter Brandon, an international expert in the property and construction industry are sharing the facilitation of the C2020 initiative. They will be travelling to all capital cities in Australia to workshop and capture the vision of where the Australian property and construction industry is heading; and determining how Construction Innovation can lead the industry in applied research to achieve this vision.

As an integral member of the C2020 initiative, Professor Brandon will be compiling results from a questionnaire being delivered to thousands of industry members, requesting information on the possibilities and vision for the Australian construction industry. The questionnaire is also available on the C2020 website www.construction2020.construction-innovation.info and can be submitted on-line, or by fax or post.

Professor Brandon recently completed his term as Pro-Vice-Chancellor for research at the University of Salford, UK - the only UK University to be awarded a 6-star rating in the Built Environment within the independent UK research assessment exercise. He is now the University Director of Strategic Programmes.

Dr Hampson is committed to building a more internationally competitive Australian property and construction industry by developing applied technology and management systems, promoting better education, and innovative practices.

For more information on Construction 2020 see Workshop details below, and page 2.

www.construction2020.construction-innovation.info

Construction 2020

Hobart	Monday 24 November, 4:00-7:00 pm, The Old Woolstore Apartment Hotel, 1 Macquarie St
Melbourne	Tuesday 25 November, 4:00-7:00 pm, Rydges Hotel, 186 Exhibition Street
Sydney	Wednesday 26 November, 4:00-7:00 pm, Engineers Australia Auditorium, Eagle House, 118 Alfred Street, Milsons Point
Canberra	Thursday 27 November, 4:00-7:00 pm, The Canberra Club, 45 West Row
Perth	Monday 1 December, 4:00-7:00 pm, Engineers Aust Auditorium, 712 Murray St, West Perth
Adelaide	Wednesday 3 December, 2:30-5:30 pm, Novotel Hotel, 65 Hindley Street
Darwin	Thursday 4 December, 3:00-6:00 pm, Crowne Plaza Hotel, 32 Mitchell Street

www.construction2020.construction-innovation.info

Arup Australasia
Australian Building Codes Board
Bovis Lend Lease
Building Commission
CSIRO
DEM
John Holland
Queensland Department of Main Roads
Queensland Department of Public Works
Queensland State Development
QUT
Rider Hunt
RMIT
Springfield
University of Newcastle
University of Sydney
University of Western Sydney
Woods Bagot

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IN THIS EDITION

Builders, contractors, industry leaders – everyone

You can talk about your vision for the year 2020 in a series of workshops being held around the country in November and December 2003.

We call it **Construction 2020**, and it's all about capturing the vision of where the Australian property and construction industry is heading; and determining how the Cooperative Research Centre (CRC) for Construction Innovation can lead the industry in applied research to achieve this vision.

Construction 2020 will begin with a series of participatory workshops in every capital city of Australia to seek industry views on the direction and challenges facing the Australian property and construction industry today and into the future (see Page 1).

The last time a report was produced on the state of the industry was in the late 1990's: a government-industry initiative which brought together all major players to identify issues to lift industry performance. The formation of a CRC was one of the recommendations arising from the National Building and Construction Committee and Australian Government Action Agenda process.

It was a valuable process. Now that we have a CRC servicing the Australian property and construction industry, we believe ***you*** should help clarify the vision for the industry.

So, what is the main purpose of Construction 2020? To gain an Australian perspective and vision of where the property and construction industry is heading and the research needed to make the Australian industry more competitive, on the understanding that excellent research and development will contribute to national and international growth in the construction industry. The outcomes will be documented in a quality industry-focused report for broad distribution, to be launched in May 2004. In addition, the results will be disseminated through a series of national seminars mid-2004.

What are the benefits for you in participating in these workshops? Firstly, you will be heard. Your voice and your vision are important in defining the next period of growth and development for our industry. You will also see practical and exciting examples of where Construction Innovation is leading the property and construction industry in applied research and development and technology transfer, and will have the opportunity to see how new and leading edge research is being applied in the industry.

To RSVP contact:
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Construction 2020 workshops:

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- **Melbourne -** 25 November, 4-7 pm, Rydges Hotel, 186 Exhibition Street
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construction2020.construction-innovation.info

Green Space united – a National Forum

Construction Innovation has brokered two major workshops to encourage linkages and a shared vision between key players in the *green space* servicing Australia's property and construction industry.

With the first workshop held 7 October and the second on 27 October, the workshops were designed as a place for players to come together and develop a united approach to advance the important agenda of the *green space*.

Dr Keith Hampson, CEO of Construction Innovation says they are an opportunity to encourage the range of organisations to consolidate activities to facilitate improved outcomes for industry.

"Construction Innovation has brokered this dialogue to assist industry reduce the frustration caused by the number of disparate views in this sector. We believe the collective intelligence gained through this process may be useful to consolidate a national approach in this important agenda," he said.

Construction Innovation is committed to building stronger links between researchers and research users in leading the Australian property and construction industry in collaboration and innovation. The organisation was established in 2001 to strengthen industry collaboration, and to develop key technologies, tools and management systems to improve the effectiveness of the Australian construction industry. Construction Innovation is the only CRC specifically servicing the needs of this important sector of the Australian economy.

Construction Innovation has structured its research focus around three core activities, including the Sustainable Built Assets Program, led by Dr Peter Newton from CSIRO and Ken Stickland from ARUP Australasia.

Dr Hampson says this is a significantly funded research program which is important to the CRC.

"We are keen to make a significant contribution to Australia's Property and Construction Industry in this area. Our vision is the development of a unified practical sustainable green agenda for Australia's Property and Construction Industry," he said.

Green space participants at the workshop included: Evergen (CSIRO); Australian Greenhouse Office; Property Council of Australia; Queensland Department of Public Works; NSW Department of Commerce; Australian Building Codes Board; The Barton Group; Australian Procurement and Construction Council; Cooperative Research Centre for Construction Innovation; Brisbane City Council; Australian Business Council for Sustainable Energy and Australian Energy Performance Contracting Association; Australian Green Development Forum; Building Commission (Victoria); Green Building Council of Australia; Australian Council of Building Design Professionals; Australian Building Energy Council; Environment Australia; Victorian Department of Sustainability and the Environment.

For the first time ever, these key organisations from Australia's *green space* sat in the one room together discussing the issue of developing a more united approach to servicing environmental sustainability in Australia's property and construction industry.

At the end of the three hour workshops, all participants agreed the gatherings were a major step forward and a success, demonstrated by a plan for the way forward.

The negotiated package of change includes setting up a national forum of Government, industry and community stakeholder groups to develop a national framework and gain commitment for a national consensus on sustainability in the built environment. It was suggested the national forum would be:

1. supported through minimum performance codes and regulations
2. a national research and education leader
3. a national planning leader
4. a national market transformation leader.

All participants at the workshop agreed they wanted to see outcomes, and that the National Forum was the delivery mechanism from which to write a National Action Plan with a clear set of recommendations on sustainability in the built environment. This would then be presented to government for top-down leadership of the strategy.

The initiation phase agreed to by participants includes a series of meetings attended by selected *green space* organisations with a mandate to develop a twelve month road map to write the Action Plan and establish the National Forum. From then it will move into the 2nd phase of implementing the vision and outcomes as determined by the National Forum at a peak national level, thereby pursuing an agenda of Australia being a leader of sustainability in the built environment.

Construction 2020 questionnaires are now available on-line. To fill in a questionnaire for on-line submission, fax or post, please visit construction2020.construction-innovation.info and click on Questionnaire.

The final report from Construction Innovation research project **Sustainability and the Building Code of Australia** has been uploaded on the CRC internet and intranet site. This report will have important ramifications for the future of the Building Code of Australia. Visit www.construction-innovation.info and go to Publications.

Construction Innovation's Second Year Review has been successfully completed, with assured funding from the Federal Government for the next three years. For more information contact enquiries@construction-innovation.info

CONSTRUCTION INNOVATION Byte Sized NEWS

The CRC is sponsoring the CIB 2003 on Smart and Sustainable Built Environment (**SASBE 2003**). This conference is being held 19-21 November 2003 at Stamford Plaza Brisbane, and includes speakers Dr Keith Hampson, CEO, Cooperative Research Centre for Construction Innovation; Professor Volker Hartkopf, Carnegie Mellon University, USA; Professor Peter Brandon, University of Salford, UK; and Maria Atkinson from the Green Building Council of Australia.

Construction Innovation's first **International Conference** will be held on 25, 26 and 27 October 2004 in Brisbane. The theme is 'Clients Driving Innovation'. Calls for Refereed Papers will be in the near future. For more information, contact p.scuderi@construction-innovation.info

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Early building design – drawing heat away

Too often when we think of bushfires, we concentrate on rural and residential properties and the risks they encounter. However, you might remember the historic buildings situated at the Mount Stromlo observatory in Canberra were also badly damaged during the bushfires of last summer. The lesson from this is clear: commercial buildings also need to be designed to resist bushfires.

The Cooperative Research Centre (CRC) for Construction Innovation is keenly aware of the need for continuing to improve early building design for commercial buildings when it comes to addressing the risk that bushfire poses, and amongst other factors considers bushfire issues in early building design, as demonstrated in one of its 26 research projects where these issues are being addressed in collaboration with the Bushfire CRC. Ultimately, this project will affect the way commercial buildings are designed and built.

Titled **Parametric Building Development During Early Design** and led by Project Leader John Crawford, Senior Research Scientist, from CSIRO, the Parametric Building Design project is developing integrated computer software which will allow designers to cover multiple factors, including response to bushfires, during the early stages of building design. Project team members on the research project include research, government and industry partners, including: CSIRO, RMIT, Arup Australasia and Woods Bagot. The project is expected to be completed mid-2004.

Building projects follow the Pareto Principle or 80:20 rule, where 80% of decisions affecting a project outcome are made during the first 20% of a project's life. Crucial to improvements in the early design phase are a range of architectural and engineering parameters believed by both researchers and industry stakeholders to characterise the building category and project type. Significantly, the design phase is where the most far reaching decisions are made and where bushfire resistance can be built into the end product.

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Beginning with relatively simple descriptions of buildings, and with architecture and engineering knowledge of various "rules of thumb" already in use by the industry, the research team will work with **parametric descriptions** of building projects during the *early design stage* to determine how a wide range of user requirements can be assessed from this simple outline.

Dr Keith Hampson, CEO of Construction Innovation says the research is necessary to assist the Australian community to occupy the built environment with a greater sense of safety.

"The Canberra bushfires highlighted shortcomings in our current built environment. Construction Innovation is strongly focussed on sustainability and this research will go a long way towards creating a safe, secure and sustainable built environment for both new and existing buildings, helping to minimise the high impact that disasters bring in terms of human, social and economic grief," Dr Hampson said.

Currently in its early days, the research project plans to investigate leading edge software tools and develop, as necessary, interfaces to promote the rapid optimising of architectural and engineering systems based on parametric models. Model relationships will be based on parameters such as 'building usage mix', 'respective floor areas', 'resistance to bushfire', etc. which are key features in the architectural domain, while structural parameters such as structure type (reinforced or pre-cast concrete, steel, etc.) and minimum column centres are all crucial to the early design phase. In a similar way, the standard of HVAC and the forms of vertical transportation are vital mechanical parameters, while lighting levels and type of metering are key electrical parameters. Important environmental factors will also be considered as relationships or combinations of parameters normally represented across these traditional descriptions of architectural, structural, mechanical and electrical systems.

Once the project is completed, Construction Innovation partners, and in turn the industry, can expect a specification of the key parameters which play major roles in determining the outcomes of the early design process in mixed use commercial / residential multi-storey developments; a formal assessment of the strengths, weaknesses and opportunities to employ a range of widely-used commercially-available software to undertake design at the early sketch stage, and to maintain the information distilled from the interactions between professions (including design constraints as well as client requirements) in the transition from early design stage into detailed design; and an implementation of the software interfaces necessary to assist in the transition from early to detailed design.

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QUT student receives CRC award for design

QUT industrial design student Carrie Osborne was recently acknowledged for her success in a design competition held within QUT to design Construction Innovation's Reception Area Entity (RAE).

Twenty people attended a ceremony for Ms Osborne held at Construction Innovation headquarters beside the new RAE, at QUT on 22 October.

Carrie was awarded with a framed certificate and a $200 book voucher.

Construction Innovation began in 2001 and tasked QUT industrial design students to design an icon that would be a symbolic representation of the Construction Innovation partnership between government, industry and research organisations.

Ms Osborne designed RAE and it was subsequently created using typical construction materials.

The block that forms the basis of RAE is an original piece of sandstone from Queensland's Parliament House and represents the partners' solid commitment to Construction Innovation and the construction industry's long and distinguished history. The steel represents the united strength of Construction Innovation's partners while the acrylic represents innovation.

The three sides of RAE symbolise the collaborative role the CRC partners – industry, government and research institutions – play in advancing the Australian property and construction industry through Construction Innovation.

Industry adds value

Break away from your comfort zone of doing what you always do, and shift your thinking to tailored made delivery strategies.

This is the message delivered by Ken Moschner, Director of the Asset Management Unit in Queensland Department of Public Works, who recently represented Construction Innovation at an international conference in Singapore.

Mr Moschner told conference participants at the Joint International Symposium of CIB Working Commissions on 22-24 October that a new tool being developed by Construction Innovation will provide project teams with an alternative approach that addresses the fundamental drivers of successful delivery.

"The Australian construction industry has a way to go to becoming a world leader," Mr Moschner told conference participants.

"But the decision support tool being developed provides the industry with an opportunity to help project teams better deliver projects," he said.

(See page 4 for editorial on the new tool)

Construction Project Delivery – have you got a system?

Construction Innovation is undertaking research to produce a decision support system that will help clients and professional advisors better design project delivery systems.

The project titled *Value Alignment Process for Project Delivery* and due to be completed by the end of 2003 is led by QUT Professor Tony Sidwell and is developing a decision and a best practice guide, which builds upon Professor Sidwell's previous research examining the potential for re-engineering the established Australian construction delivery process.

Best practice case studies form the heart of the Project Delivery Decision Support Tool.

Dr Keith Hampson, CEO of Construction Innovation said this research project was central to the CRC's aim of helping the construction industry in Australia meet and exceed world standards.

"Our commitment is to find better ways of working, and in this vein, the indications from this research are promising. The decision tool will soon be available for testing on our partner's own projects," Hampson explained.

"After testing, the tool will be made available commercially to help the Australian construction industry improve its performance."

Instead of providing generalised information based on broad principles, the new decision tool will offer specific advice about what action should be taken on a particular project based on actions taken on previously successful projects, and carefully matched to the specific needs and circumstances of individual clients and their project teams.

Best practice case studies form the heart of the Project Delivery Decision Support Tool; the fundamental idea being that all projects involve essential activities that directly design and construct the facility required by the client. The overall profile of this direct work determines the level of risk the project will come up against if the project team does not adopt an appropriate delivery system. In broad terms, the more difficult the pattern of direct design and construction activities, the better the coordination needs to be if the project is to succeed.

The decision tool asks the user a range of questions. Firstly, it asks for general information about the project, including questions that distinguish between building and civil projects, and helps to establish the client's experience of similar projects.

Then, the user is asked questions to establish the nature of the design and construction activities likely to be required in undertaking the project. The decision tool uses the answers to create a profile of the project's inherent difficulty, based on size, complexity, risk profile and the objectives it aims to achieve. With this information the decision tool is able to advise the user of the level of risk encountered on projects with similar profiles, and the level of co-ordination required to minimise those risks.

The basis for the advice provided to users is a carefully classified set of construction project case studies incorporating features of best practice. The case studies come from earlier research and similar studies of leading practice in Australia. As the case study database is built up, it will include cases from Construction Innovation partner projects and cases identified by other research that use at least some best practice actions.

A key benefit of the decision tool is that it allows users to state their own objectives and priorities in terms of key performance indicators. The decision tool will provide descriptions of actions on projects that performed exceptionally well in terms of the user's own top priorities. At the same time, when a project has performed badly in respect of some key performance indicators, the user will be able to see this, and avoid actions that have not been successful in terms of outcomes they regard as important.

For more information on this research project, contact Project Leader
Professor Tony Sidwell
T: 07 3864 4108, E: a.sidwell@construction-innovation.info

www.construction-innovation.info

BRITE surveying industry innovators early 2004

Construction Innovation's BRITE Project will carry out a major survey in March/April 2004 to measure the innovation activity of the property and construction industry.

The survey will cover New South Wales, Victoria and Queensland; and seven sectors of the building and construction industry including engineering construction contractors, non-residential building contractors, construction trades, architectural services and related professional services including building surveyors, consulting engineering services, suppliers and clients.

The BRITE survey builds on the success of two previous surveys - the Australian Building and Construction Industry Innovation Survey <http://www.acif.com.au/dwn/20104_Proposal_V5%202%20col.pdf> undertaken by the QUT/CSIRO and AGSEI team led by Price Waterhouse Coopers (PWC) in 2001; and the Queensland Road Industry Innovation Survey <http://www.brite.crcci.info/publications/pdfs/draft_fieldwork_report.pdf> undertaken by Queensland University of Technology in 2002. The BRITE survey will be used to benchmark performance and enable appropriate public policy development.

THE BRITE PROJECT

In related work, the BRITE Project carried out six innovation case studies in the building and construction industry in 2003. The case studies have been highly successful, due largely to the support and assistance of industry partners: ARUP, Queensland Department of Main Roads, Queensland Department of State Development, Queensland Department of Public Works, and CSIRO. The case study collection will be revealed at a formal launch in February 2004.

The collection highlights the benefits of innovation and successful implementation practices. The goal is to promote best practice and contribute to the enhancement of industry capabilities. The case study element of the BRITE Project is inspired by the success of the Rethinking Construction, Egan Demonstration Projects, a UK initiative which has had a positive impact on the building and construction industry performance in that country.

The BRITE Project's overall objective is to improve the incidence and quality of innovation in the Australian building and construction industry by generating and disseminating knowledge about: the rate of innovation overtime; what makes one business a better innovator than another; best practice implementation process; and the need to innovate and share those innovations with others.

The research project's industry partners have been central in determining the scope of the BRITE project and developing the project's aims. They have also actively driven the case study and survey programs.

For more information on the BRITE project, visit: -

www.brite.crcci.info

Crosschecking predictions

Construction Innovation scholar Marcello Tonelli from QUT discusses his research topic: "A systems dynamic approach to forecast rental escalations in the short-mid term".

Researchers from all over the world have recognised the cyclical influences and negative impacts of overbuilding on office vacancy rates and, consequently, on office rents.

Numerous econometric models have been proposed for forecasting property market performance, but limited success has been achieved in finding a reliable and consistent model to predict property market movements over a 5-10 year timeframe.

The research I am conducting is exploring questions such as:

- Can "System Dynamics" inform property economics? and
- Can the model be used to estimate rental growth in the short-mid term?

System dynamics is a methodology for conceptualising theoretical frameworks in order to better understand complexity across disciplines, so that systems can be created to respond well to policy and structure.

System dynamics theories offer the opportunity to model the complex interrelationships of the real estate environment and to observe their dynamic behaviour over time, with particular respect to how these interrelationships impact on the investment prospects facing building companies or even the private investor.

By using "System Dynamics" to structure the commercial real estate market, I hope to be able to develop a structural equation model that decision makers can adopt in simulation exercises to forecast rental escalations based on their internal data and expertise.

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In the shoes of a design assistant, machine thinks

Construction Innovation scholar Wei Peng from University of Sydney talks about his Research Topic – "An adaptive design tool"

Standing on the shoulders of nearly half a century's research, it is hard to believe we ha not yet developed a new generation of design tool that can learn by itself.

To leverage design productivity, the focus has been on the computer as the assistant, and in this scope has prompted extensive investigations across a wide variety of research fields, including design science, artificial intelligence, human computer interaction, cognitive science, etc.

Conclusions generated to date suggest existing design tools are not able to bridge the gap between need and supply. This is increasingly apparent in light of the upsurge in business drive for knowledge based support for design processes, especially in the early stage of design (conceptual design).

A new design tool that learns through being used, reuses design experiences learned, infers designers' intentions, and adapts to the designer's design activities with the aim of improving design practices (efficiency, creativity, etc.) would fill an overarching demand in the market.

With the financial support from Construction Innovation, researchers from the Key Centre of Design Computing and Cognition at the University of Sydney are undertaking a research project to explore issues of adaptation, learning and memory within the multidisciplinary scope.

This research is aligned to Construction Innovation's research project *Lifecycle Modelling and Design Knowledge Development in Virtual Environments*, led by Project Leader John Gero from the University of Sydney. By the end of the project we hope to have a computational model of an adaptive design tool that learns, which may assist in filling the gap between a recognised deficiency in design tools and the latest computing and cognitive science research findings.

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Highways – managing monies, realising plans

A Construction Innovation public seminar looking at the benefits of integrated budget planning processes to achieve optimal distribution of highway budgets among the sub-agencies of a highway organisation was held 18 November at RMIT.

Presented by Professor Tien Fang Fwa from the National University of Singapore, the seminar examined how budget allocation planning in highway management occurs at several levels of decision-making. In normal practice, the central level is usually concerned with the allocation of budget to several regional agencies in order to improve the health of the overall road network, while the regional level is responsible for the programming and scheduling of road improvement and maintenance activities in their respective networks.

Non-optimal distribution of funds among sub-units of a highway agency will lead to sub-optimal performance of the pavement network. As a result, the improvement and maintenance funds allocated by the central management to regional highway agencies may not be best utilised to achieve the central objective.

The seminar presented an artificial intelligence agent-based budget allocation procedure that takes into account information integration between the central and regional management levels using agent technology.

The procedure mimics interaction between decision-making entities at different management levels, thus providing a means for vertical information integration.

Pavement management needs, constraints and objectives of the highway organisation and the agencies under its charge are considered. An iterative procedure between the central and sub-level agencies has been developed using genetic algorithms to arrive at an optimal solution for the budget allocation problem. It simulates an interactive process between the road management planning processes of the central and sub-level agencies. This is practically achievable in today's modern IT environment in which sharing of pavement network databases and management planning data among agencies is encouraged.

The presentation showed that with better integration of information at different management levels, the budget allocation strategy obtains higher savings in maintenance costs for a given target level of pavement performance.

The seminar is directly linked to a Construction Innovation research project titled "Investment Decision Framework for Infrastructure Assets Management", led by Professor Arun Kumar from RMIT.

For more information contact:
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www.construction-innovation.info

Deconstructing at AsiaConstruct

For the first time members of the Australian Construction Industry have an opportunity to participate in the annual AsiaConstruct conferences.

Carole Green, Business Manager with Construction Innovation is presenting at the 9th AsiaConstruct Conference, "Construction in Asia - Trends and Opportunities", from 8-9 December 2003 at the Sydney Convention and Exhibition Centre.

The first AsiaConstruct Conference was held in Tokyo in 1995, and meetings are held annually at locations around Asia and include country representatives from government, quasi-government and leading research organisations of member countries.

The AsiaConstruct conference aim is to provide a venue for exchanging information on trends in the construction economies and construction markets of the East Asian and Southeast Asian regions, as well as on the structure of the construction industry, construction industry policies, and major construction projects.

For more information on AsiaConstruct, visit:
www.eng.newcastle.edu.au/abe/AsiaConstruct/AC.html

Diary Dates

24 November
Construction 2020 Workshop, 4:00-7:00 pm, The Old Woolstore Apartment Hotel, 1 Macquarie St, Hobart

25 November
Construction 2020 Workshop, 4:00-7:00 pm, Rydges Hotel, 186 Exhibition Street, Melbourne

26 November
Construction 2020 Workshop, 4:00-7:00 pm, Engineers Australia Auditorium, Eagle House, 118 Alfred Street, Milsons Point, Sydney

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4 December
Construction 2020 Workshop, 3:00-6:00 pm, Crowne Plaza Hotel, 32 Mitchell Street, Darwin

8-9 December
AsiaConstruct Conference, Sydney Convention and Exhibition Centre

10 December
Construction Innovation Seasonal Celebrations QUT Gardens Point

Read your stories in
Construction Innovation's
free bi-monthly newsletter.

Articles should be 500 words or less. All contributions should be sent to the Editor at the following contact points: T: 61 7 3864 9295
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CRC Construction Innovation
BUILDING OUR FUTURE

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If you want to receive UPDATE bi-monthly, please email: enquiries@construction-innovation.info. Your feedback and articles are welcome. All contributions should be emailed to The Editor k.finlayson@construction-innovation.info or T: 07 3864 9295. The editor reserves the right to edit all contributions in consideration of content, length and file size.