

Leveraging R&D for the Australian Built Environment

BEIC Meeting, 6 July 2012, Canberra


Built Environment Industry Innovation Council (BEIC) Meeting, 6 July 2012, Canberra

Leveraging R&D for the Australian Built Environment

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Project Participants



Presentation Structure

1. Background to Australia's SBENrc
2. R&D Investment and Impact Project
3. Future collaborations ...



Our Mission

To be a world-class research and knowledge broker in sustainable infrastructure and building design, construction and management

Growth of Collaborative Research through Australia's SBENrc

QUT/CSIRO Construction Research Alliance



1996
↓
2001
↓
2009
↓
2010
↓
2012
↓
2015



- Program 1 - Greening the Built Environment
- Program 2 - People, Processes and Procurement
- Program 3 - Productivity through Innovation

- » A nation-wide collaborative research centre
- » Industry, government and research partners
- » Applied research and industry outreach across three integrated themes

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SBEnc Core Partners

Collaborating Partners

Collaborating Partners

SBEnc = Public Private Partnership in R&D

- Build innovative networks of industry, government and researchers to deliver applied outcomes
- Attract and mobilise resources globally
- Research skills training for industry

R&D Investment and Impact Project Background and Significance

- Australia's R&D spend 2% of GDP
 - Denmark and US 2.5%
 - Finland and Sweden > 3% (DIISR 2010:3)
- Australian Government target
 - 25% increased business engagement in innovation in the next 10 years
 - responses to climate change; improving workplace innovation capabilities; business innovation
- Built environment productivity growth is poor

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Project Phases

1. Audit R&D investment since 1990
2. Case studies of past investment
3. Develop strategic roadmap for future R&D
4. Develop policy guidelines to maximise the value of R&D investments

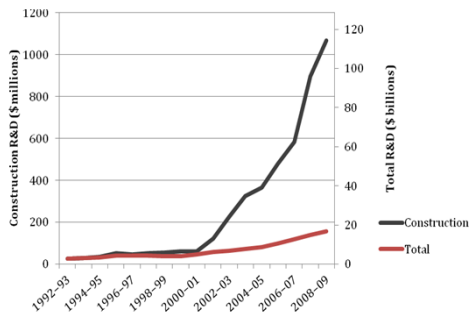
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R&D Strategy for the Built Environment

- SBEnrc support from strategic level 
- Built Environment Industry Innovation Council (BEIC) support 
 - Cathrin Bull on Project Steering Committee
- CIB New Task Group focus 
 - TG85: R&D Investment and Impact

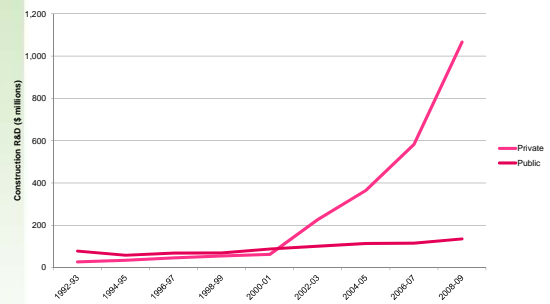
Retrospective Evaluation

Private-sector R&D on construction relative to total business R&D
(from Barlow 2011)



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Private Vs Public R&D on Construction



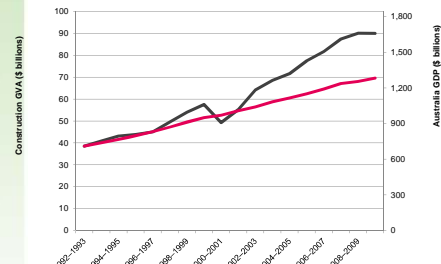
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Government Agency R&D on Construction



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Construction in the Australian Economy



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Questions for Future Research

- Why did construction grow its R&D investment so quickly?
- What happened to government R&D?
- What is most important role for public research organisations?
- Has the construction industry's perception of public research changed over the past decade?

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3 Case Studies

Examining mechanisms and impact of research and innovation in organisations

1. Digital Modelling
2. Green Building
3. Construction Worker Safety

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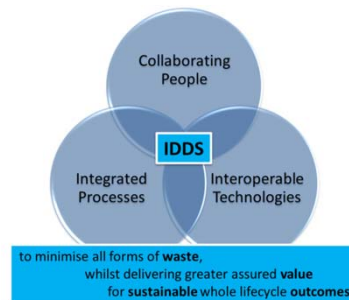
Digital Modelling (CADD to IPD Pathway – Qld Govt)



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Three IDDS Imperatives



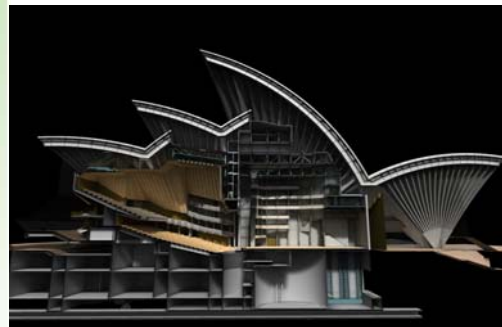
CRC for Construction Innovation

(2001-2009)

IDDSP - Digital Building Timeline



National Exemplar Leading Industry Change

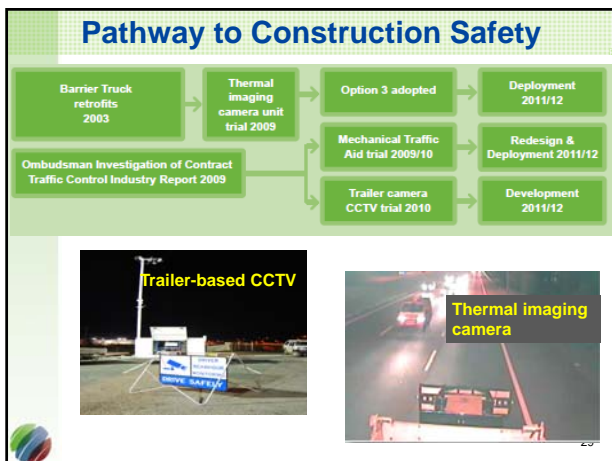
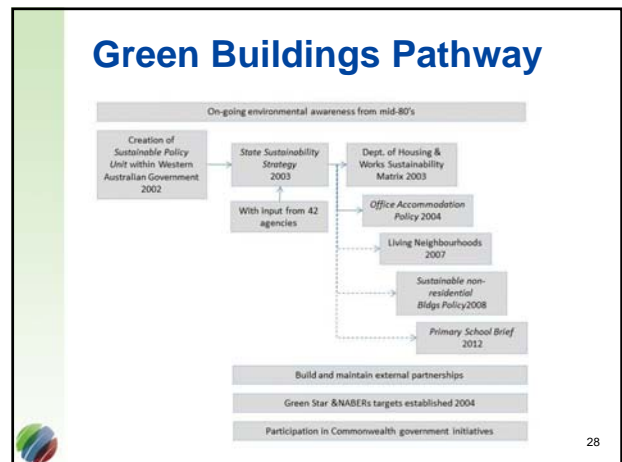
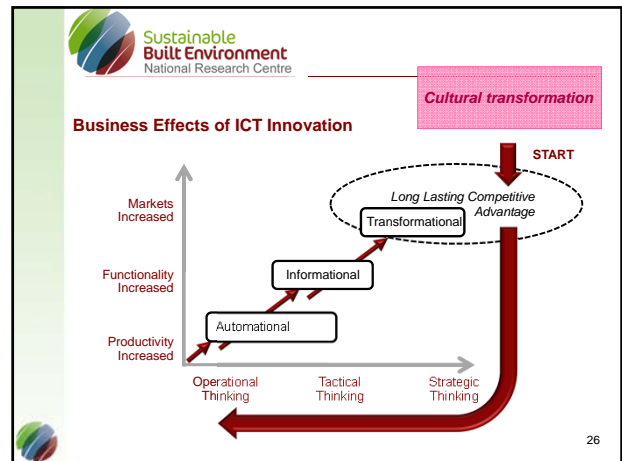
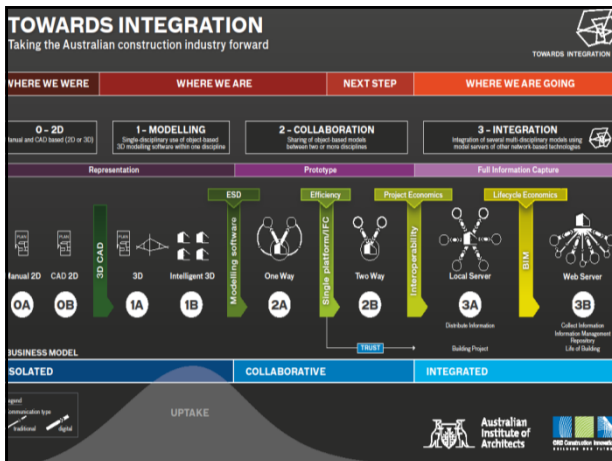


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Stuart Bull - Wayne Dickerson
Animation by Wayne Dickerson Associate JPW

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Data Gathering

- Departmental reports
- Meetings
- Literature review
- Interviews

Executive	1
Champion	1
Project Leader	1
Implementer	1
Allied Agency	2
Supplier*	2
Industry Rep.*	1
Researcher*	1
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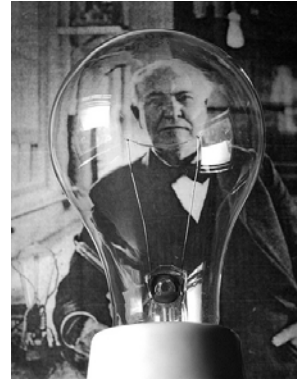
* External interviewees

Key Messages ...

- External innovation linkages are essential
- Timely and practical research a priority
- Range of innovation pathways



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Future Case 4 – Nature of R&D

Aim – describe nature of R&D investment in Australian built environment in past decade with a focus on *private sector engagement*

How? - On-line nation-wide survey with follow-up interviews as required

5 Phases :

Profile – Contractors; Sub-contractors; Consultants; Suppliers

Motivation – productivity, safety, market; R&D tax incentives etc

Nature – internal/partnering; fields of investment; top projects; future targets

Dissemination/Uptake – internally and externally; mechanisms

Impact – self-reporting; profitability; implementation; results in practice



R&D Priorities for Australia's Property and Construction Industry

1. Model-based design – business models
2. Intelligent buildings and infrastructure
3. Solutions for a greener built environment
4. ICT for radical redesign
5. Nanotechnology for interface systems
6. Tree-based materials
7. Educational curricula



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Future Collaborations ... R&D Strategy

- Internationally ...
 - CIB Task Group 85
 - Stanford, US; Alberta, CA; Constructing Excellence, UK; BRANZ, NZ; VTT, FI; CSTB, FR
- Australia ...
 - Commonwealth
 - State Governments
 - Private sector across supply chain
 - Research centres/universities



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International Council
for Research and Innovation
in Building and Construction

Task Group 85: R&D
Investment and Impact

Objectives:

- Establish international network to exchange knowledge and new understandings related to leveraging R&D investment in construction
 - Comparable data, metrics
 - Develop knowledge-base and theory
 - Establish forum for exchange of information and knowledge - focus on dissemination and impacts
 - Strengthen collaboration between firms, government agencies and research institutions to deliver better outcomes



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CIB TG85 Members



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5-9 May 2013, Brisbane

