

6th Nordic Conference on Construction Economics and Organisation  
*Sustainable Innovation Strategies*  
Copenhagen, 13-15 April 2011

**Leveraging R&D Investment for the Australian Built Environment**

**Challenges and Responses to Sustainable Management of the Built Environment**

Dr Keith Hampson, CEO  
Sustainable Built Environment National Research Centre (SBEncr)  
Australia



## Personal connections ...

- 1999 Study Tour and Report:  
***Innovation in the Construction Process in Denmark and Australia***
  - Selwyn Tucker and Keith Hampson
- Australian Department of Industry, Science and Resources
- Demonstration Projects
  - Habitat, PPU, PPB, Project House







2



## Presentation Structure

1. Background to our SBEncr
2. Leveraging R&D Investment
3. Challenges and Responses  
... some thoughts



4



## Our Mission

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

5

## Growth of Collaborative Research through Australia's SBEncr

QUT/CSIRO Construction Research Alliance




1996  
↓  
2001  
↓  
2009  
↓  
2010  
↓  
2012  
↓

6



### QUT/CSIRO Construction Research Alliance (1996-2000)

- First direct engagement of CSIRO in Queensland
- Leveraged CSIRO global research with QUT's regional strength
- Developed early digital modelling and integrated sustainability and procurement analysis
- Reviewed Australia's first building project alliance
- Initiated valuable partnerships with industry, government and research partners nationally and internationally

8

### CRC for Construction Innovation 2001 - 2009

- A\$70M in cash and in-kind over 8½ years
- Industry, government and research partners
  - 28 partners; 450 people involved = 65 EFTS
- Headquartered at QUT in Brisbane
- Only national centre in Australia focusing on building, infrastructure and FM supply chain
- Key industry outcomes in innovation, productivity, digital modelling, safety and dispute resolution

### Working collaboratively Partners 2007-08

Industry	Government	Research

10

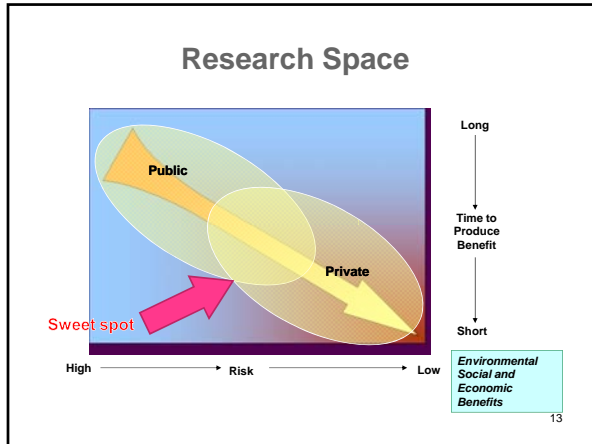
### Sustainable Built Environment National Research Centre 2010 -2012

- > A nation-wide collaborative research centre
- > Industry, government and research partners
- > Applied research and industry outreach across 3 integrated themes

11

### Program Leaders

<b>Peter Newman</b> Curtin	<b>Russell Kenley</b> Swinburne	<b>Robin Drogemuller</b> QUT



### Partners

14

### Leveraging R&D Investment for the Australian Built Environment

**Co-author:**  
Dr Judy Kraatz  
Senior Research Fellow  
Queensland University of Technology  
Australia

### The Leveraging R&D Project

- Background and significance
- Research method
- Outcomes/Discussion

16

### Project Support

- SBEnc support from strategic level
- Australian Built Environment Industry Innovation Council support from national level
  - on Project Steering Committee
- OECD support
  - *Innovation Strategy: Getting a Head Start on Tomorrow, 2010*

17

### Background and significance

- Australia's R&D spend is 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; and business innovation
- Built environment productivity growth is poor

18

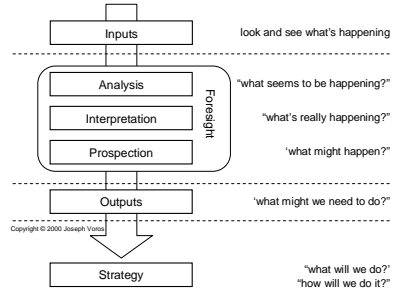
### The Project ...

1. Audit R&D investment in the Australian built environment since 1990
2. Examine impact of research and innovation in public and private organisations (case studies)
3. Develop a strategic roadmap – assess industry future that R&D will respond to and help shape
4. Devise policy to maximise the value of R&D investments to public and private organisations

19

### Foresight Framework

VOROS, J., 2003, "The Basic Process (GFP): A Generic Foresight Process Framework", Foresight, Vol. 5, No. 3, p.14



20



OK ... pause, reflect and gather breath while we change gear ...

23

### Challenges and Responses to Sustainable Management of the Built Environment

24

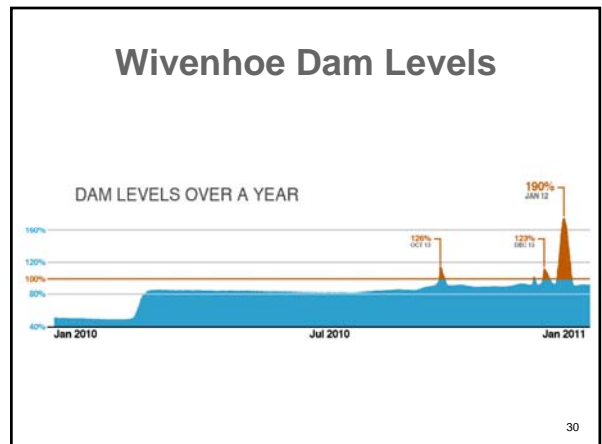


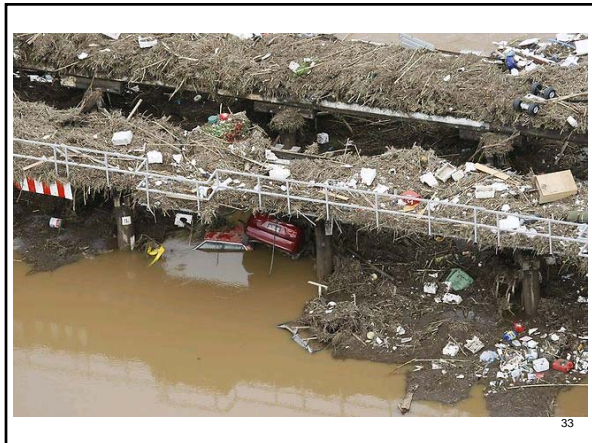


### Recent Queensland Events

- Rainfalls of double the intensity than average across broad area of Queensland
  - 20,000 homes inundated Nov 2010 and Jan 11
  - Cyclone Yasi – Jan/Feb 2011
- 35 people dead
- Cost to Queensland \$10B
  - Mines, farms, tourism ++
- An opportunity to re-think ... ?

27





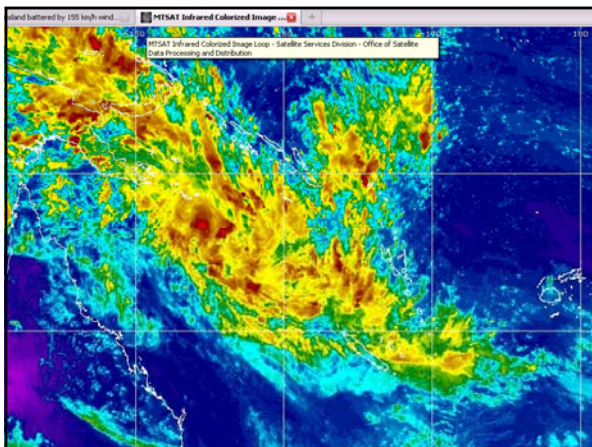
Internal QUT email 1<sup>st</sup> Feb 2011...

- How huge is this big mother of a cyclone? Very very scary!

This is the US Government Satellite site and it gives you a better picture of the next Cyclone, it's much bigger than Anthony (Very scary stuff).

<http://www.goes.noaa.gov/sohemi/sohemiloops/shirqmscol.html>

34





## Background

- Last major flood 1974
- Brisbane's population doubled since then
- Construction of major water storage and flood mitigation dam – Wivenhoe Dam
  - False sense of security?
- Drought for last decade – and severe water restrictions in place
- Sub-tropical climate and flood prone land

37

## Early responses ... adaptation

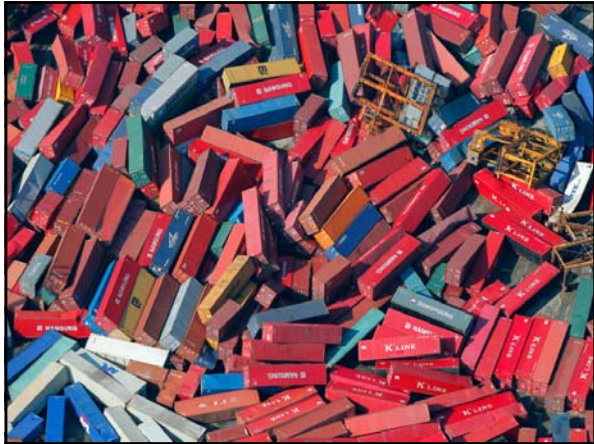
- Dam operations
  - Flood mitigation Vs water storage
- Planning laws
  - 565 councils in Australia; 8 state or territory governments
  - Brisbane City Council
    - New building levels, building heights, security of building services
  - Need for nationally coordinated approach?
- Infrastructure design and management
  - Riverside developments, dredging, waterway management
  - Resilience of critical infrastructure

38

But let's keep our problems in perspective ...

39





***The bend in the road is not the end of the road unless you refuse to take the turn.***

47

Thank you for your attention ...

**[www.sbenrc.com.au](http://www.sbenrc.com.au)**

48