Soft Landings
Down Under

Roderic Bunn, BSRIA

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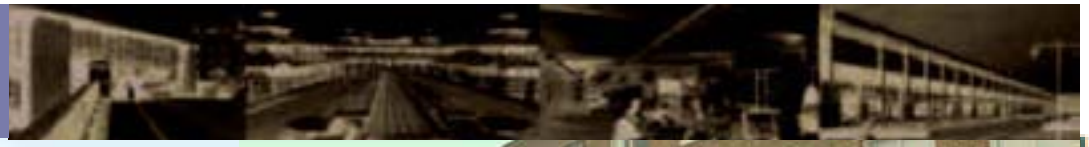
Soft Landings timeline



- **Late 1990s:** devised as ‘Sea Trials’ for new buildings, by architect Mark Way
- Soft Landings developed on a subsequent project for Cambridge University
- **2004** scope of service documentation developed with construction industry sponsorship
- **2008** Open-source documentation developed into a Framework by industry task group led by BSRIA
- **2009** The *Soft Landings Framework* authored by BSRIA and the Usable Buildings Trust. The Soft Landings User Group established by BSRIA to support early adopters

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The five key stages of Soft Landings

- **Stage 1: Inception and briefing** *clarify operational outcomes in the client's requirements*
- **Stage 2: Design development & construction** *review past experience, agree performance metrics, agree design targets, regularly reality-check*
- **Stage 3: Pre-handover** *Prepare for occupation, train FM staff, demonstrate control systems, review monitoring strategy of occupants and energy use*
- **Stage 4: Initial aftercare** *support staff in first few weeks of occupation, be resident on site to respond to queries and react to emerging issues*
- **Stage 5: Long term aftercare** *monitor, review, fine-tune, and perform periodic feedback studies for up to three years*

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Why should you do Soft Landings?

- It's a better way of working, a new professionalism that enables us to change the way we do things to deliver better buildings
- It's designed to foster greater mutual understanding between clients, project managers, designers, builders and occupiers about project objectives
- It is designed to reduce tensions and frustrations that occur during initial occupancy, and to ensure clients and occupiers get the best out of their new asset
- It involves greater investment in problem diagnosis and treatment, and in monitoring, review and post-occupancy evaluation – skills needed to deliver truly low-carbon buildings

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CIBSE ANZ-organised lecture tour

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TRIPLE 'M' GROUP OF COMPANIES
'the team you can trust'

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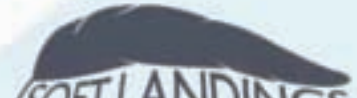
CIBSE & KINDRED ORGANISATIONS



CIBSE & KINDRED ORGANISATIONS

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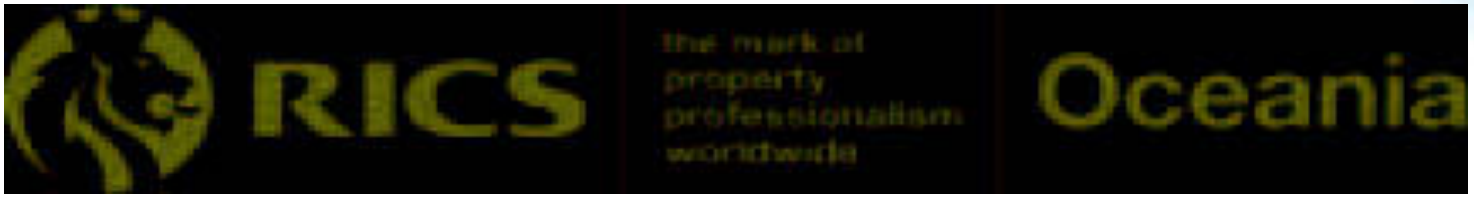

CIBSE & KINDRED ORGANISATIONS

CIBSE & KINDRED ORGANISATIONS

Government of **Western Australia**
Office of **Energy**

ies
The Lighting Society

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Australia

Darwin

Kakadu

Cairns

Broome

Exmouth

Alice Springs

Uluru

Brisbane

New Zealand

Perth

Adelaide

Sydney

Canberra

Margaret River

Auckland

Melbourne

Wellington

Hobart

Christchurch

Queenstown

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Posh venues, high delegate numbers

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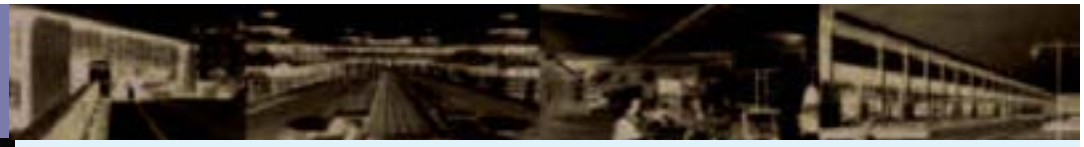
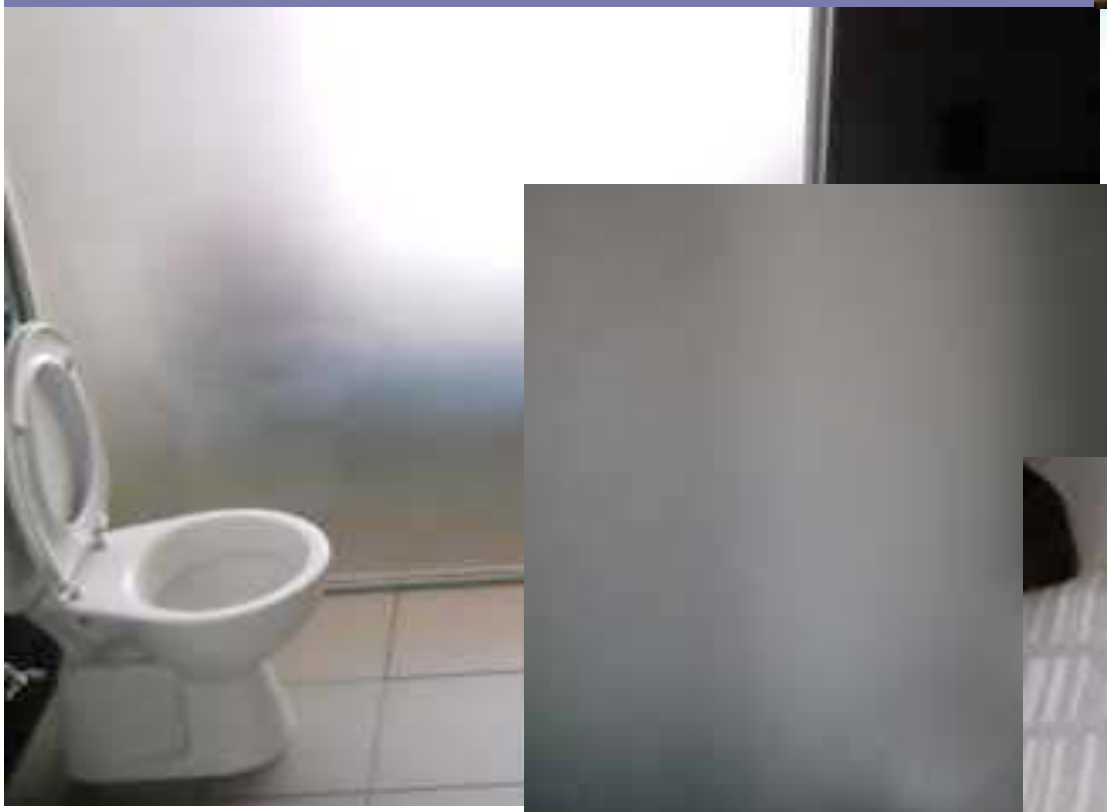
They make mistakes out there too…





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Australia vs UK

Source: UN 2007

	Australia	United Kingdom
Annual greenhouse gas output (million tonnes)	406·64	577·47
Growth 1995 - 2005	43%	4%
Carbon contribution from buildings	23%	45-50%
Electricity generated by coal	95% (35% of CHG emissions)	35%
Global league table of highest emitters	6	18
Population	22 million	61 million
Latest export	The Ashes	Katy Perry

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NZ carbon dioxide conversions

Fuel type	Carbon factors $kgCO_2/kWh$	
	New Zealand	United Kingdom
LPG	0·25	0·23
Biomass	-	0·025
Diesel	0·25	-
Oil	-	0·26
Natural gas	0·2	0·19
Coal (*anthracite*)	0·33	0·29 (*0·31*)
Electricity	0·15	0·55

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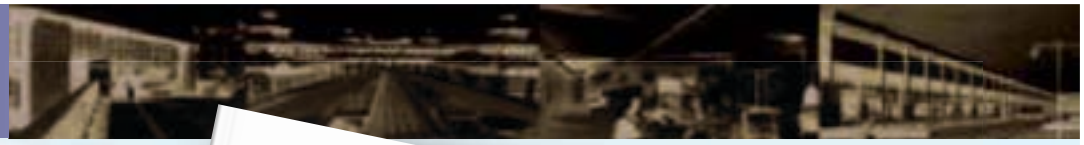
Task Group on energy efficiency



…to construct a zero-emissions building a range of industry skills are needed so that the building's 'system' works effectively

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Broad agreement on carbon abatement

- **ClimateWorks estimates that improving the energy efficiency of buildings (and the appliances within them could save 30 Mt CO_2 equivalent annually by 2020**

- **The Australian Sustainable Building Council also estima that energy efficiency measures could achieve more than 30 Mt CO_2 equivalent annually by 2030**

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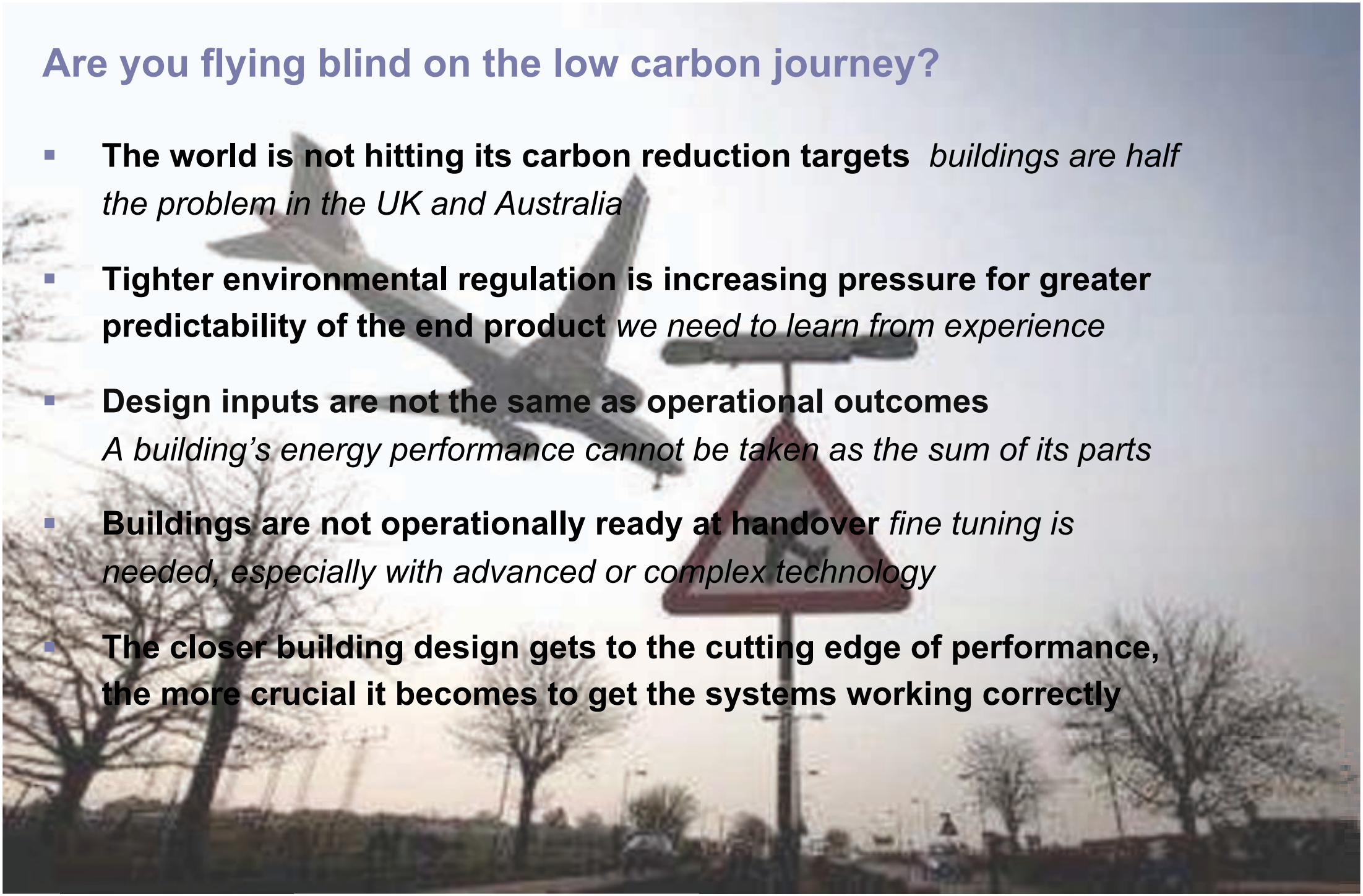

Are you flying blind on the low carbon journey?

- **The world is not hitting its carbon reduction targets** *buildings are half the problem in the UK and Australia*
- **Tighter environmental regulation is increasing pressure for greater predictability of the end product** *we need to learn from experience*
- **Design inputs are not the same as operational outcomes**
  A building's energy performance cannot be taken as the sum of its parts
- **Buildings are not operationally ready at handover** *fine tuning is needed, especially with advanced or complex technology*
- **The closer building design gets to the cutting edge of performance, the more crucial it becomes to get the systems working correctly**

So if not through carbon trading, how?

- **By improving energy efficiency standards, ratings and labelling for appliances and equipment** *That will certainly help, but more efficient products just improve specifications, not the construction delivery process, nor functionality or usability*

- **By establishing high energy performance standards for buildings and energy ratings schemes** *Will motivate everyone to do better – clients, designers, constructors (politicians) – but warning from UK: this could easily lead to credit-chasing rather than improvements matched to specific contexts*

- **By mandatory disclosure of energy performance** *but credible, detailed and widely available information regarding the full costs, benefits and real experiences of energy improvement measures will be needed*

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Environmental schemes won't do it…

October 2010: A lawsuit has been filed against the US GBC in a New York Federal Court. The plaintiffs in the class action suit are seeking US$5 million in damages, claiming that the US GBC has:

- **Engaged in monopolization through fraud**
- **Unfair competition**
- **Deceptive trade practices**
- **False advertising**
- **Wire fraud**
- **and unfair enrichment**

Go to

www.greenrealestatelaw.com/wp-content/uploads/2010/10/Class-Action-Suit-v-USGBC-SDNY-10.12.10.pdf

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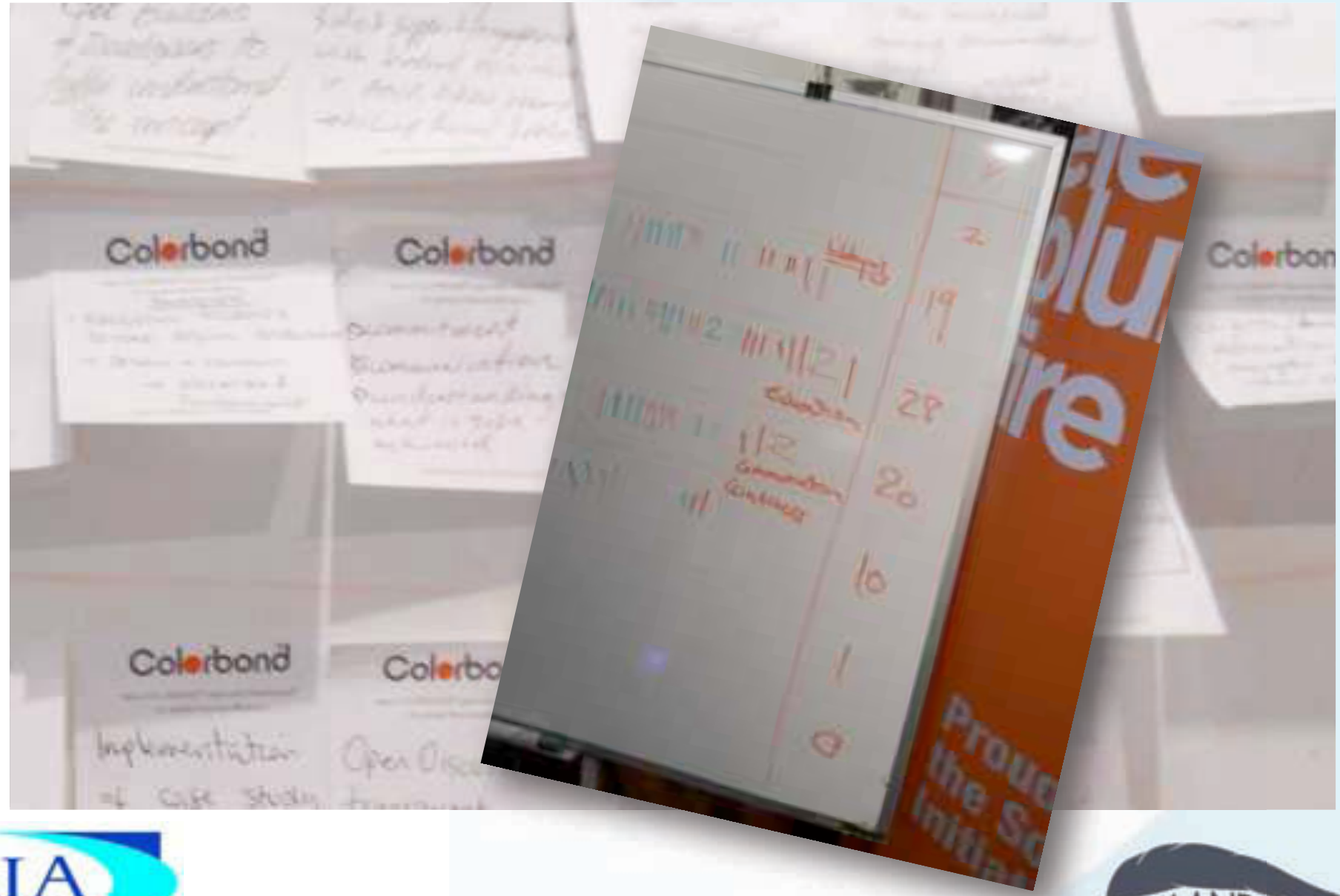
Workshops to decide next steps



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Communication

"The Soft Landings User Group to gather case study material (widely and locally in ANZ) from practitioners and publish in formats understandable by clients, lobby groups and professionals, in print and as free downloads from a publicly accessible SL website"

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Education

"The Soft Landings User Group to instigate tailored programmes for educating stakeholders, construction professionals and legislators using lessons learned from Soft Landings projects"

"The Soft Landings User Group to instigate a programme for reaching schools of architecture and engineering to raise awareness of Soft Landings principles"

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Lobbying

"The Soft Landings User Group to determine the appropriate industry and political bodies to be lobbied to support Soft Landings. For example: GBCA (Greenstar), NEBB (National Environmental Balancing Bureau), Property Council Australia, Australian Standards, DECCW (Nabers Energy), and the Building Codes Board"

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CIBSE ANZ Sydney Task Group

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Strong media coverage

Issues to be addressed

- **Difficulty** Soft Landings is yet another set of activities to plug into an already highly populated and prescriptive set of procurement procedures – will they be ignored?
- **Opportunity** A chance to streamline procurement, and embed operational outcomes through briefing, design, construction and handover?
- **Difficulty** Proving the cost benefits, as there are many financial variables on all projects (beneficial energy tariffs, negotiated maintenance contracts, ability to charge-out costs). Proof of benefit slips through fingers
- **Opportunity** Can you afford not to do it? Particularly if renewables and other technologies are adding unmanageable complexity and more asset management, rather than driving down cost and improving customer benefit. Will under-performance lead to litigation…?

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Soft Landings revelations

- Building projects will soon be judged on their operational outcomes, not their design specifications
- Practical completion will no longer be the point at which a project team is paid and begins to disband
- The Defects Liability period will be replaced by Soft Landings-type processes
- Project teams will take greater responsibility for long-term performance of the buildings they create
- Final payment will be on achievement against a range of Key Performance Indicators

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We're playing low carbon as a game of Top Trumps

Where the winner is the one with the most sustainable design inputs

Whereas, in truth…

Low carbon is a game of Poker

The stakes are high: Zero carbon is the target

And the rules of the game have changed…

The cards of highest value cover operational outcomes

inherently robust maintainable systems, usable controls, good commissioning and follow-through, professional aftercare, low energy consumption

Cards of lowest value are the modelling predictions

..and environmental rating credits, and complex technologies

…and architectural awards without performance monitoring

How much would you gamble on your designs?

And are you prepared to bluff your clients…?

Essential next steps

- Clients: Reconsider the best approach to procurement to deliver your performance objectives – are existing forms of contract up to it?
- Consultants: Get real about energy use. Count everything - regulated and unregulated loads - and take responsibility for all of it
- Main contractors: Don't just pretend, *do* Soft Landings. And create integrated teams to deliver it – don't force it on subcontractors to deliver
- M&E sub-contractors: Bone up on Soft Landings, understand how to respond in tender responses, reorganise your resources to deliver it
- The new professionals: Use feedback routinely – **carbon confessions are good for the soul and becoming better for business than secrets and lies**
- Everyone: Take greater custody of the performance of the buildings you deliver

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