



Green Cities 09
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(Research and Commercialisation)

CRC for Construction Innovation

Re-Lifing Commercial Buildings



CRC Construction Innovation
BUILDING OUR FUTURE

Cooperative Research Centre (CRC) for *Construction Innovation*

- Collaborative R & D
- Business Case
- Critical Steps
- Future Research

Working collaboratively

20 Industry, Government and Research partners

Industry	Government	Research
       <p>RLB Rider Levett Bucknall</p> 	 <p>Queensland Government Department of Main Roads Department of Public Works Department of Tourism, Regional Development and Industry</p>   <p>Department of Housing and Works</p>   	   



Construction 2020 Visions

1. Environmentally sustainable construction
2. Meeting client needs
3. Improved business environment
4. Welfare and improvement of the labour force
5. Information and communication technologies for construction
6. Virtual prototyping for design, manufacture and operation
7. Off-site manufacture
8. Improved process of manufacture of constructed products



What is re-Lifing?

Building owner – concerns of your building:

- obsolete in 10 years?
- able to meet the energy-efficiency demands of tenants?
- outgoings spiral as utility costs increase?
- able to attract the best tenants?
- part of the problem, rather than part of the solution?

You may need to Re-life your building



Re-Living Commercial Buildings

Design and construction solutions for existing buildings

As a building owner, are you concerned that your building:

- may be obsolete in 10 years?
- may not be able to meet the energy-efficiency demands of federal or state government tenants?
- may see outgoings spiral as utility costs increase?
- might not be able to attract the best tenants?
- could be part of the problem, rather than part of the solution?

If you or your clients answered 'yes' to any of these questions, you may need to 're-Life' your building ...



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What is Re-Lifing?

Re-Lifing is the process:

- existing buildings undergo significant refurbishment or transformation
- to extend their useful life.
- allows owners to improve the serviceability of their buildings
- apply the principles of ecologically sustainable development



Business Case and Benefits

Maximise efficiency & retain appeal to tenants

1. deliver reduced operating & maintenance costs
2. reduce energy & water consumption (saving costs)
3. deliver improved ROI & potentially higher rental income
4. improve a reputation & corporate reporting results

Business Case and Benefits

5. be future-proofed - future tenant demands & regulation
6. Reduce environmental footprint of an existing building
7. deliver sustainability improvements for reduced costs
8. deliver indoor environment quality improvements
9. make a building more attractive to investors & tenants



Five Key Elements

1. Project Management

- analysing market demands - building type, location & tenancy

2. Floor space optimisation and structural strengthening

- providing flexible internal spaces – changes in work practices

3. Recycling and waste management

- minimising construction waste



Five Key Elements

4. Residual service life

- understanding the condition of the building

5. Sustainability and building efficiency

- Enhancing green rating – façade, building services solutions





Future Research

National sustainability performance assessment system

- New & existing infrastructure and buildings**
- National database**
- collecting sustainability and performance data**
- Multi-criterion decision-making approach**
- Weighted factors (ie energy, water, materials, waste).**
- Regional (local, state, national) benchmarks**



Future Research

A real-time eco-efficiency assessment tool

- Full life cycle assessment assessing**
- cradle to cradle**
- support decision-making during the design process.**

Identification of future sustainability innovations

- materials, processes and services**
- Future horizon 10-20 years.**



Climate change adaptation strategy

- an industry-led strategy
- adapt built environment industry practices/technologies
- reduce carbon emissions
- manage the impact of future climate change.
- impact of future climate change on infrastructure.

Guidelines for a carbon-neutral community development.



More Information

Websites:

construction-innovation.info

yourbuilding.org

