

Project 1.29

Strategies and Solutions for Housing Sustainability

RESEARCH PROGRAM 1: GREENING THE BUILT ENVIRONMENT

Housing is more than human shelter – it is a significant national and family asset, requires considerable upfront and ongoing capital, contributes to national carbon emissions, impacts on physical health and wellbeing, and reflects social and cultural identity.

The housing supply chain must respond to increasing stringency and scope of building regulations, as well as rising energy costs, and affordability challenges. To address this, researchers are working to improve the economic, social and environmental sustainability of the Australian housing market. The first part of this project, now completed, focused on the housing sector and related infrastructure as a whole. It asked if building information files and broader concepts of customer value can be applied to the housing market to enhance the value of sustainable housing for stakeholders. The second part of this project focuses on housing and building construction, examining what contribution manufactured buildings can make towards improving performance outcomes and adding value to the construction industry.

Objectives

The first part of the project identified the typology, format and location of data about individual dwellings from industry stakeholders representing the Australian housing supply chain. This information was used to develop a draft impact relationship map and formulate stakeholder engagement strategies. Results from stakeholder workshops were analysed to develop the potential applicability of a building information file and building performance certificate. The second project component will carry out a SWOT analysis of manufactured building construction in Australia, comprising a comparison of traditional construction methods and prefabricated construction methods. The next phase, due for completion in September 2014, will investigate the business case for manufactured building methods. The outputs of this project will feed into the ARC Linkage Project From Innovators to Mainstream Market.

Industry Outcomes

The project will disseminate knowledge on construction standards that will assist the construction industry in reducing its overall project costs, on-site construction duration, and waste and improve on factors such as project safety, quality and client satisfaction. The project will assist the construction industry in becoming more systematic, organised and predictable by changing the focus from a linear sequence driven onsite work-flow to a parallel or simultaneous work based on repetitive processes and procedures performed in a controlled factory and production conditions with greater emphasis on three cardinal elements of project success known as time, cost and quality.

The research team's findings will be used to better understand and convey value to stakeholders in the housing market. Further, they will improve industry productivity through the development, delivery and marketing of manufactured buildings that reflect environmental and social sustainability needs of modern society.



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