The circular economy as a framework for establishing more effective methods of collaboration in the design process

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Abstract

This paper establishes the need for new, more effective design processes for facilitating creativity, collaboration and integration in the design process. The current prevalent design process is not able to respond with the urgency, imagination and ambition required to meet the conflicting demands of rapid urbanisation, ageing infrastructure and climate change mitigation and adaptation. The circular economy is proposed as a framework for a new design process. The Circular Building is presented as a prototype project, exploring how a new design process could operate and identifying gaps in existing knowledge.

Keywords: circular economy, climate change, design process, collaboration, integration, materials

1 Introduction

Current design processes are not able to respond with the urgency, imagination and ambition required to meet conflicting demands of rapid urbanisation, ageing infrastructure and climate change mitigation and adaptation. These are systemic rather than project-specific challenges.

What is needed, therefore, is a framework which fosters collaboration by integrating professionals from different disciplines into a single team that can negotiate trade-offs and arrive at creative, socially useful and deliverable design solutions. In other words, what is needed is a system-based rather than project-based approach.

Emission reduction targets place a strict timetable on implementing a new approach.

2 Current design process

At present, we operate a linear economy, using a 'take-make-dispose' model. Design follows a similar linear, project-based approach; communication in the supply chain is limited and end-of-life is not adequately considered, Figure 1.

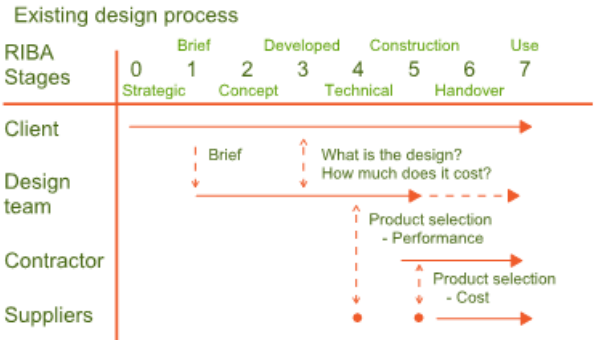

Figure 1 Existing design process

3 The circular economy

The circular economy is a system-based approach to the challenge of reducing environmental impact from resource consumption. Its implementation requires new design processes and business models. It requires consideration of the whole asset life cycle, taking input from all parties involved in an asset from inception to deconstruction.

https://doi.org/10.2749/222137817821233071
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