The Business Case for Re-Usable Buildings – Business Models, Systems Diagnosis and Case for Action

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1 Introduction

This paper is focussed on the challenges and benefits identified in the literature review for the business case for re-usable buildings and components.

2 Main Findings of the Literature Review

2.1 Application of Circular Economy within the Building Sector

Research by (Adams et al., 2017) found that one of the largest challenges for adopting circularity in the built environment is the unclear financial case which ranked number one for the majority of stakeholders; having a clear business case was the most important enabler.

2.2 Re-Usable Buildings

One of the key drivers identified within the literature is that of obsolescence. When a certain level of obsolescence is reached, a building may require adaptation in some form. Conversion (changing use or sometimes known as adaptive reuse), is a growing strategy for dealing with vacant buildings such as offices. There is a debate on the costs of re-use verses demolition and new build, though studies tend to show that it usually lower for the former. Buildings are generally demolished because they are perceived to no longer have any value (Kohler and Yang, 2007).

In a survey of high profile UK property developers and agents, 94% saw the need for an adaptable building solution providing associated capital cost increases were minimised (Gregory, 2004). There are challenges for speculative developers, whereas owner/occupiers may recoup the benefits through lower rates of depreciation or increased price at sale, but both funders and owners are risk averse in respect of novel technologies.

2.3.1 Costs of adaption of existing buildings

Cost is usually cited in the literature as the main obstacle to developing more adaptable (re-usable) buildings, with the assumption being that adaptability results in higher initial construction costs. Spending more on the initial construction costs of a building to make it more...
adaptable can only usually be justified if the adaptability is likely to generate some form of benefit or return on investment in the future.

2.3.2 Whole life costs
A critical component to aid re-usable buildings is the use of whole-life costing (WLC), including the cost of the demolished building. High discount rates give little weight to more distant entries in the cash flow and place great emphasis on the early years, thus favouring a short-term approach and the minimisation of capital investment.

2.3.3 Financing
Studies have shown that there is a fundamental shortcoming in the current financing of buildings (Circle Economy and ABN AMRO, 2017). Commonly, a bank issues a loan (mortgage) to buy a building, including the land. However, costs of demolition and recycling (as well as any residual value) at the end of life are not part of financing. Banks such as ABN Ambro are investigating how to allow for higher investment costs which justify lower running costs and a higher final value of the building elements.

2.3.4 Valuation
A building constructed according to a circular method has added value for investors. Often, the value of the raw materials in the building is of secondary importance. This view will change fundamentally in the transition from a linear to a circular economy. Baum (1994) concluded that ‘Flexibility reduces the risk of an irreversible and major reduction in the market value of a building’.

3 Summary of Results
The reuse of buildings is gaining more interest. The benefits and challenges for commercial re-usable buildigns are well defined though not often quantified. Spending more on the initial construction costs of a building to make it more adaptable can only usually be justified if the adaptability is likely to generate some form of benefit or return on investment in the future.

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References