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Why invest in a reversible building design?

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Abstract. Commercial buildings often have a much shorter service life compared to their technical life. Change in market needs is a leading reason for their premature demolition. “Reversible buildings”, which are capable of transformations in function and structure, are of high relevance for this building category. Reversibility starts with design. How can the investors be convinced to invest in a building with reversible design in the first place? The market value of commercial buildings is determined by the revenue they can generate through their service life. If the flexibility enabled by reversible buildings can be translated into higher market value, that could provide short-term incentives to invest in a reversible design. In this study, a quantitative financial model has been developed based on a real-life commercial office building in Flanders. The Net Present Value (NPV) of the building is calculated for both reversible design and conventional design. It was concluded that reversible design can deliver a more positive NPV compared to conventional designs, already with today’s available technologies and market conditions. The key value driver of reversible design is investment risk reduction. In particular, it reduces the risk of low return-on-investment or even loss due to early demolition. Stakeholder engagement (such as real estate investors and appraisal professionals) will be essential to validate such added value. Sensitivity analysis recommends future research and development of reversible buildings in reducing initial investment (design and build costs) and increasing use phase benefits.

This study will be presented at the BAMB’s final event “BUILDINGS AS MATERIAL BANKS – A PATHWAY FOR A CIRCULAR FUTURE” on February 6-7th in Brussels, Belgium. A full version of this document will be published in the conference proceedings.