

## Creating a better world: circularity in real estate and construction

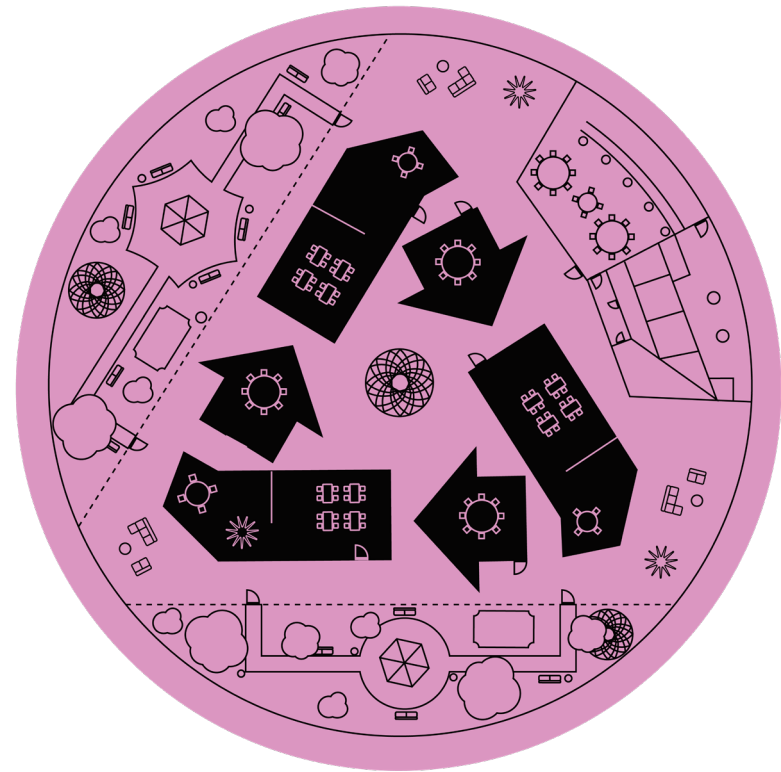
All around the world, governments, companies, and NGOs have committed to minimizing raw material usage in the real estate and construction industry. In the Netherlands, for example, it was recently agreed that by 2030 a 50 percent reduction of raw materials usage needed to be realized.

Actions like these dictate a fast transition toward a circular economy—that is an economy where resources and energy are renewable and regenerative and cycled back into supply chains. Though the transition to circularity faces several barriers, there are also opportunities. One of the opportunities being explored is the possibility of “activating” materials in financial reporting.

Use cases have shown that real estate owners are often unaware of or underestimate the financial value of the materials in their real estate assets. These use cases show that upon demolition of a real estate asset, substantial financial value—adjusted for demolition, transport, and re-usage costs—can be captured. This untapped value can impact financial reporting, prompting the financial incentive needed to transition the real estate and construction sectors to a circular economy.

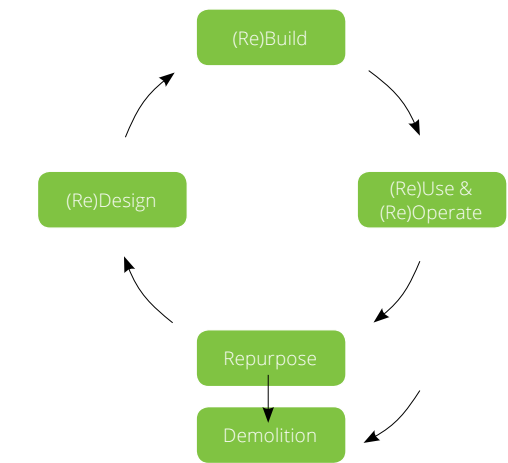
**Facilitating the transition to circularity**  
The potential positive impact of applying circular ways of working in the real estate and construction industry is huge: research shows that buildings consume approximately 40 percent of all energy and approximately 40 percent of all primary raw materials. And while circularity can be achieved through a combination of material reuse and efficiency improvements, only strict regulation and/or financial incentives can achieve the desired radical change circularity can accomplish.

Promoting circularity in buildings via regulation, however, ultimately comes down to political will—which is not expected to emerge any time soon. And current circularity financial incentives are not as clear and straight-forward as a circular office building’s impact on brand. As such, not all stakeholders are motivated to support the transition toward circularity, with many waiting for hands-on tools.



**Financial incentives of a circular economy**  
There are several avenues of financial incentives that can be pursued to achieve a circular way of working in the real estate and construction industry. One example is increasing the adaptability of buildings. If buildings can be easily adapted to changing needs over time that can translate into lower costs. This also creates an increased expectancy of real estate usage as the building can be used for a longer period of time with decreased renovation costs and perhaps lower periodic maintenance.

This approach is particularly apt for real estate with high maintenance, such as schools, care facilities and offices, with reversible building design having the potential to lower periodic in-use costs. While this definitely applies to new construction, can it be done for existing buildings? A possible solution lies in applying a materials passport and, by extension, giving financial meaning to materials.



*Building phases from a circular perspective (Sander et al. 2016)*

**The possibilities of a materials passport**  
A materials passport provides materials with an identity, stimulating reuse of products, preventing material destruction, and making it easier to eliminate waste. A materials passport is designed as an online library of materials in the built environment, providing one central repository of all real estate data. This data includes all relevant information during the planning and execution phases of building administration and maintenance. The documentation and data can be useful for designing tenders for renovation, demolition, or new developments as well as for certification and sales/lease purposes. One of the leading organizations in this approach is the [Madaster Foundation](#), with its materials passport fast becoming the global standard. For example, one of the world’s largest tech companies recently announced it will be working with the Madaster materials passport and support the foundation wherever it can.

A real estate materials passport can also lead to a new way of viewing the financial value of materials. One possibility that is being researched is how to incorporate the raw materials identified in a material passport into financial reporting—that is, financially activating the identity of these materials. The idea is simple: based on global price benchmarks and corrected for demolition, transport, and re-usage costs, the residual value of the materials is identified. This way, the value of real estate assets is calculated more precisely. Of course, the impact will differ among segments due to varying rules on the valuation and depreciation of real estate assets.

**Moving materials value forward**  
In the Netherlands, research into the financial activation of materials and its impact on the balance sheet and financial reporting is being spearheaded by well-known architect Thomas Rau and the “Circular Seven” (C7)—a group of seven of the most prominent organizations in different segments of the real estate and construction industry that is seeking to be a frontrunner in the transition to circularity. The reasoning for the C7’s range of stakeholders is two-fold. First, the financial activation of materials will differ per segment based on regulations, such as the different rules for real estate valuation and depreciation. Secondly, the C7 can each share segment-specific insights and best practices, providing a more comprehensive view of materials valuation within real estate.

The C7 research will be published in Q2 2019 and available worldwide. The first of many steps toward a resource-efficient, low-carbon economy with sustainable growth, it is research that may very well change the potential for circularity in real estate and construction.

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