

The Integration of Cradle-to-Cradle Principles in Building Practices in Flanders: An Assessment of the Current Situation

Wim Debacker, Karl Vrancken and Nele D'Haese, VITO, Belgium

This paper is set within the context of the building sector, a group of activities that can be held responsible for about 31% of the material use and approximately 33% of the amount of waste produced in Europe (Eurostat, 2012). Accordingly, many see this sector as one of the key areas in which profound change is needed if Europe is to meet the challenge of resource scarcity.

Cradle to Cradle (C2C), a concept launched by William McDonough and Michael Braungart (2002), is just one among many ways to tackle this issue – be it one for which attention has been increasing steadily over the past years. The main reason for that is that C2C is an innovation philosophy which takes the intended benefits of a product as a starting point instead of focusing on minimizing environmental impacts. Or, said otherwise, the bottom-line message of C2C is not that material consumption should be reduced, but that the quality of the materials circulating in the economy should be retained (via recycling) or even improved (via up-cycling) so that products deliver a positive contribution to the environment.

According to Braungart and McDonough, such *eco-effectivity* can only be achieved when, first and foremost, toxic substances are banned out of production chains and, secondly, materials are brought into closed biological and technical loops in which they can infinitely circulate. A third requisite is that production processes should make use of renewable energy.

What this means at a practical level for the building sector, can be read in two quite recent publications: 'Cradle to Cradle in Architecture' (2009) and 'Cradle to Cradle Criteria for the Built Environment' (2010). However, although these publications attempt to translate the C2C-philosophy towards the building level, they do not provide a detailed manual or extensive methodology for the realisation of a C2C building. We therefore conducted a study, about which we report in this paper, that aimed to find an answer to the following questions: 1) How are building practitioners today dealing with the C2C principles (on product, building and district level)? and 2) What are the opportunities and barriers related to the implementation of C2C in policy today?

This study, based on desk research, case studies, interviews with key stakeholders and a workshop with experts, revealed that the answer to the first question can be summarized as follows: Only a very limited amount of building products available on the Flemish building market are (yet) C2C certified, mainly because product manufacturers find the procedure to obtain the certificate long and costly. Consequentially, the C2C philosophy is used in the first place as a framework for thought. As demonstrated by the building projects examined, this lead to significant innovations at the building product level, such as the introduction of product leasing agreements, alternative building methods and product-service systems. In contrast with this, the concept was of little or no use at a district level. The C2C philosophy didn't seem to provide any guidance in dealing with specific spatial environmental challenges such as land use, density of infrastructure or mobility issues. Finally, the answer to the second question is that policy programmes in Flanders aimed at stimulating the implementation of C2C-principles should, according to the people interviewed, focus on the integration of C2C-thinking in educational programmes and the diffusion of C2C-related knowledge. In relation to this, a key measure granted support by stakeholders is the development of a database with objective, scientifically based information on environmental characteristics of building products. The main barrier perceived is the aversion to more stringent regulation in the building sector.