

How much recycling makes sense?

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Urban mining in the existing building stock can contribute significantly to securing raw materials and conserving natural resources if the potential of recycling construction and demolition waste (C&D waste) is consistently exploited. In order to produce high-quality recycling products, several steps must be taken to collect and process the C&D waste. This cannot be achieved at zero cost. From an ecological point of view, it is particularly interesting what amounts of energy need to be invested here. Based on the results of a research project, this paper presents the results of investigations which consider material savings of recycling options on the one hand and energy expenditures on the other hand within a holistic approach. Recycling paths were described and analysed for defined material groups along waste management processing steps from the delivery of construction waste to the recycling plant to the finished recycling product. This was done using methods of material flow analysis and life cycle assessment, in close dialogue with practical experts - representatives of Germany's major building materials associations. The result is a clear plea for more consistent recycling - from the point of view of materials as well as energy and therefore climate. However, the limits of recycling can also be made clear where the energy requirements of recycling exceed those of products made from natural materials. Products affected by this must be questioned very critically if climate protection is to be taken into account as well as the conservation of raw materials.

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