# Giving Demolished Building Materials a New Life through Recycling

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“Out with the old and in with the new,”....or so they say. In the United States, a cloud of dust and debris paired with a wrecking ball and bulldozer tends to represent signs of forward progress, innovation, economic activity, and the hope for a better future through architectural design.

In fact, our perceived old and outdated structures have generated a $4 billion dollar demolition industry, with the number only expected to rise as time goes on. In 2010 alone, an estimated 104 million tons of materials flowed from project sites to the rest of the country, accounting for just shy of 40% of the nation’s annual solid-waste stream.

Our society is flooded with campaigns to recycle paper, plastic, and metal- so much so that it feels ingrained in our nature to properly dispose of our soda can or plastic cup in the right bin without a second thought. But what about how we recycle the buildings we tear down? If a building can’t be repositioned for adaptive reuse, how can we transform its materials and give them a new

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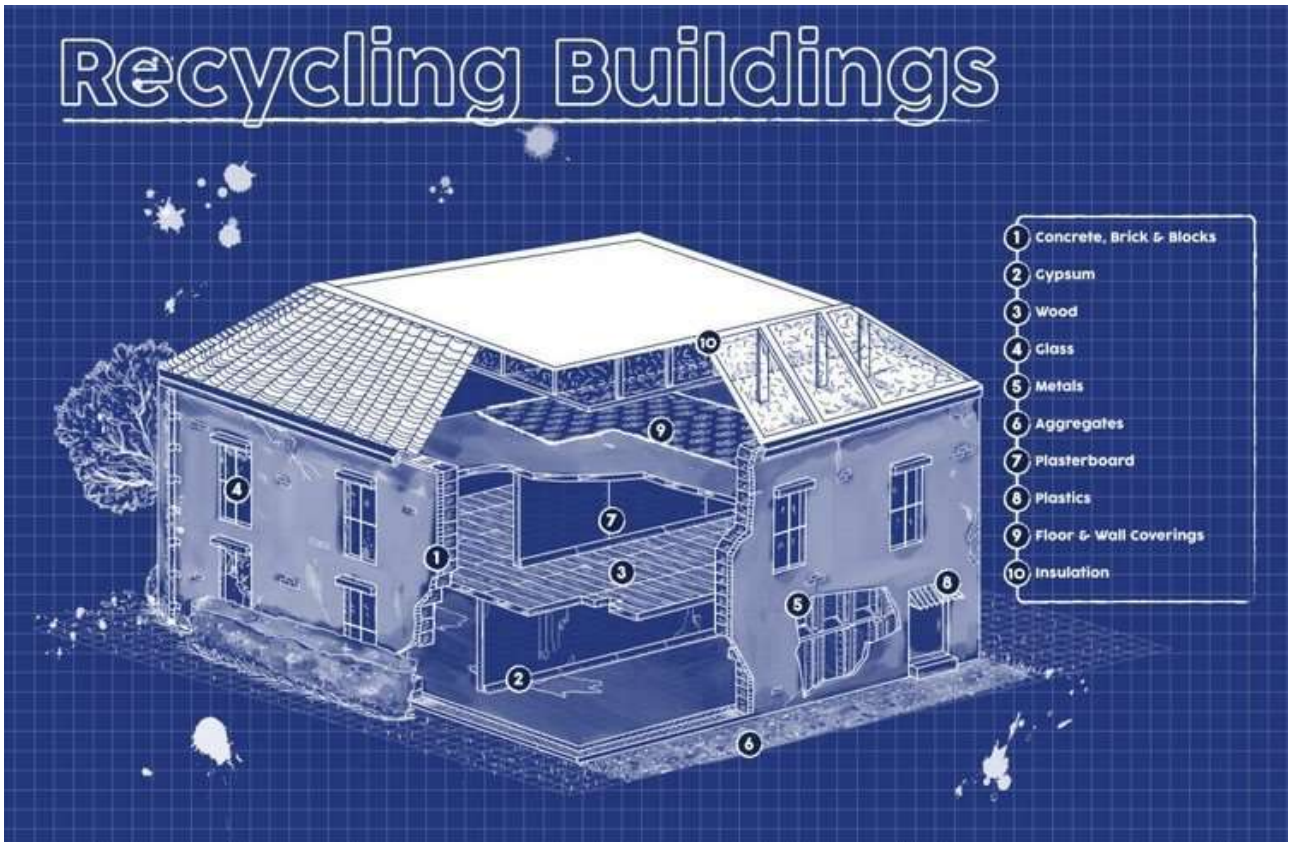
The Carbon Cost of Key Raw Materials in Architecture




Considering the way that our consumption habits are trending, we may soon be left with no choice but to quickly strategize ways to better conserve our resources. In the UK, the construction industry accounts for 60% of all materials used, while also generating a third of the measured waste, and 45% of all CO2 emissions through the construction and demolition process. The current projections show that material extraction will triple over the next three decades, and also triple the waste production by the end of this century. It's important to note that the waste comprises not only large scale materials such as concrete, steel beams, insulation, and wood, but also the smaller (and literal) nuts and bolts of a building.

The standard process for clearing a demolition site has remained rather consistent for the last several decades. A contractor will hire a demolition firm that tears down the building on the site and brings in a waste hauling company that then takes the demolished pieces to the dump. Pieces of the building that could be salvaged, like doors, windows, high-end finishes, and large scale materials, are often not preserved due to both an often compressed schedule, the lack of space to store the mater knowledge of who would even be willing to purchase and reuse them. It's often much easier to repeat

Copenhagen-based Lendager Group has already explored the possibilities of reusing materials from a demolition site in a newly constructed building. Their Resource Rows project is a housing complex built out of recycled materials from the area. Most notably, the facade features a unique pattern of brick tiled in different directions that pays homage to the character and history of the Carlsberg breweries, old schools, and abandoned homes that they were reclaimed from. Since it's no longer possible to recycle individual bricks due to the strength of the mortar, the bricks for the Resource Rows project were sliced into modules, processed, and placed to create a new facade. This technique reduced the overall CO2 emissions of the construction phase.

Fortunately, due to the practice's growing environmental awareness and pressure from society to create more sustainable solutions, we are slowly moving towards a better recycling process. As landfill prices slowly rise and project budgets become more stringent, many architects and contractors are discovering ways to give a second life to building materials. The desire for all new things in construction, which stemmed from the factory improvements during the Industrial Revolution, is slowly becoming a thing of the past, especially as technological advancements make the process faster. Recycling plants can transform more materials, and demolition equipment itself has been swapped out for machinery that can cut down and sort, rather than destroy building pieces.

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