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A Brief Note on Design for Deconstruction Building

Feng Ling*

Department of Engineering, The University of Mostaganem, Ningbo, China

***Corresponding author:** Dr Feng Ling, Department of Engineering, The University of Mostaganem, Ningbo, China, E-mail: fengli123@njfu.edu.cn

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Abstract

Deconstruction design (also known as disassembly design) is an important part of green design and the study of a structure's whole life cycle. It allows for the reuse of building components at the end of a structure's life cycle. Deconstruction design is utilized in conjunction with other aspects like as sustainability and recycling. A list of construction materials and how they may be reused, recovered, or recycled most effectively. One of the benefits of planning for deconstruction is that it reduces the carbon impact.

Keywords: Deconstruction; Design; Construction materials; Green design; Landfills

About the Study

To guarantee that construction procedures will allow the deconstruction plan to be effective, a thorough deconstruction plan should be developed and distributed to all parties at the start of any contract. Included in the strategy should be:

- The building's/strategic project's statement
- A list of construction materials and how they may be reused, recovered, or recycled in the most efficient way.
- The deconstruction of components is outlined in these instructions

Advantages

The following are some of the advantages of designing for deconstruction. Lowering a project's overall environmental effect:

- Keeping construction trash to a minimum
- Keeping expenses down
- Contributing to the local economy
- Transportation is being reduced
- Reducing the carbon footprint
- Pollution reduction
- Lowering the amount of garbage disposed of in landfills

Designing For Deconstruction (DFD)

DFD stands for Designing for Deconstruction, and it is an upstream approach to deconstruction that may be included into the structural design process. In the field of sustainable architecture, this is a current trend. Simple building methods and high-quality, long-lasting materials are generally used in DFD constructions. Separating and making visible the layers of a building's infrastructure may make demolition much easier. The ability to rapidly and efficiently disassemble materials is also aided by making components inside systems detachable. Mechanical fasteners, such as bolts, can be used to join parts in this way. Another need of this design is physical access to these fasteners, as well as the usage of standardized materials built uniformly throughout the project. The necessity for lengthy service lines, as well as points of entanglement and conflict with other building elements, is reduced when plumbing, HVAC, and other utility service points are consolidated within a structure. Similarly, raising the floor or dropping the ceiling provides for better access to mechanical and electrical services, which can cut down on the time it takes to remove these components during the deconstruction process. Nails and adhesives slow down the deconstruction process and render components that could be reused worthless. Deconstruction is further hampered by the existence of dangerous materials. The use of various material grades makes it difficult to identify parts for resale.

Built-in anchor points and other elements developed according to DFD principles are used in certain commercial buildings to give extra fall prevention alternatives. These design factors can improve overall worker safety while also reducing the amount of time spent deconstructing. DFD may help a building not only reach the end of its life cycle, but also make it simpler to maintain and adapt to new uses. New buildings can have a lower environmental effect if the shell of a building is saved or inner areas are adapted to fit new demands.

Deconstruction is usually divided into structural and non-structural categories. Reclaiming non-structural components, appliances, doors, windows, and finish materials is the goal of non-structural deconstruction, often known as "soft-stripping." In many places, the repurposing of these materials is routine and considered an established market. The removal of a building's structural components is known as structural deconstruction. Previously, this procedure was primarily employed to recover valuable or uncommon materials such as used brick, dimension stone, and extinct timber. It was normal practice in antiquity to dismantle stone structures and reuse the stone; it was also customary to collect stones from a partially ruined structure, this is the exact origin of the term decrepit. Because of their endurance and color variations through time, used brick and dimension limestone, in particular, have a long history of reuse.