

Comparative Study of Timber and Conventional Structures in Terms of Environmental Emissions

Timber has re-emerged as a promising construction material due to its renewable nature and ability to act as a carbon sink. In contrast, conventional materials such as concrete and steel are associated with high carbon emissions during production and construction. While the operational performance of different building types has been widely studied, fewer analyses exist that focus solely on embodied emissions.

This thesis aims to compare a timber building with a conventional concrete or steel building using Life Cycle Assessment (LCA). The focus is on embodied greenhouse gas emissions as well as the carbon storage potential of timber. The results will provide valuable insight into the role of timber as a climate-friendly alternative in the construction industry.

Main Tasks

1. Literature review on embodied emissions and carbon storage potential in construction materials.
2. Selection of two case study buildings (timber vs. concrete/steel) or use of reference building models.
3. Collection of material data and construction process information for both buildings.
4. Implementation of LCA calculations.
5. Comparison of the results between timber and conventional construction.
6. Quantification of carbon storage capacity of timber.
7. Analysis and discussion of results, with contextualization in existing research and benchmarks.

Details

- Start: Available immediately
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Source: Kebony



<https://www.aurecongroup.com/insights/timber-buildings-myths>



<https://www.ubm-development.com/magazin/en/timber-high-rise-with-guaranteed-recycling/>