**The carbon footprint of structures: the case study of prefabricated dwellings**

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**Abstract** Prefabrication is a construction technique applied in many constructions in the last years. Unlike conventional construction methods, where buildings and infrastructures are constructed entirely on-site, prefabricated building components are produced in factories under controlled conditions and then transported to the construction site for assembly. Prefabrication offers significant advantages, such as reduced construction time, improved quality and accuracy, and waste reduction.

The carbon footprint as well as the pollutants emitted from the construction of a prefabricated house was investigated in this research study. The environmental and human impacts of the construction process of prefabricated building elements were also investigated. The OpenLCA software was used to analyze the life cycle of the prefabricated building elements, from the raw materials extraction to the construction of a prefabricated house.