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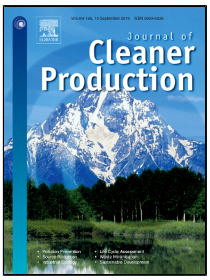

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LIFE CYCLE ASSESSMENT DATA STRUCTURE FOR BUILDING INFORMATION MODELLING

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Abstract

The assessment of the environmental impacts related to the building lifecycle is a very complex issue because of the high number of variables involved. The aim of the research is to structure the information content into the Building Information Modelling (BIM) framework in order to conduct a Life Cycle Assessment (LCA). An information flows matrix is developed through the investigation of the parameters responsible for the environmental impacts of buildings. Such information content is tested on a case study after implementing the proposed parameters into a BIM. The purpose is to verify that the identified parameters, implemented in the BIM environment, are sufficient to conduct the LCA. The results show that the proposed parameters could potentially improve the data reliability and consistency in the process of sharing information from the digital model to the LCA software.

Keywords

Building Information Modelling (BIM)
Life Cycle Assessment (LCA)
Design process
Sustainability

1. Introduction

The achievement of sustainable projects involves the management of a large number of environmental variables throughout the stages of building's lifecycle. The construction industry consumes a large amount of natural resources (Yeheyis et al., 2013), contributing to their depletion and to the generation of significant