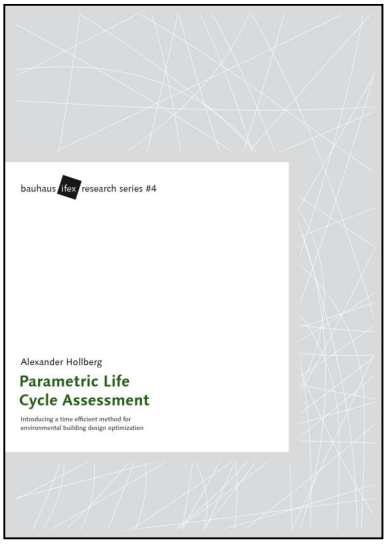
Parametric Life Cycle Assessment

Introducing a time-efficient method for environmental building design optimization

The building sector is responsible for a large share of human environmental impacts and architects and planners have a major influence on them. The main objective of this thesis is to develop a method for environmental building design optimization based on Life Cycle Assessment (LCA) that is applicable in the design process. The research approach includes a thorough analysis of LCA for buildings in relation to the architectural design stages and the establishment of a requirement catalogue. The key concept of the novel method called Parametric Life Cycle Assessment (PLCA) is to combine LCA with parametric design. The application to three examples proves the method to be applicable from the beginning of the early design stages and much more time-efficient than conventional solutions.



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