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Towards an Automated Environmental Assessment of Building Designs

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Abstract

Designing buildings to have a smaller environmental impact is a time-consuming task. For example, the process of manufacturing each component of a building results in environmental effects that are spread throughout the economy; computing these effects for every building component is a major effort. A software program developed at CMU known as Economic Input Output-Life Cycle Assessment (EIO-LCA) evaluates environmental effects accounting for the entire economic supply chain, but this program requires each component to be entered separately. In this project, we explore the concept of developing software that can translate information from design models to be used as inputs to EIO-LCA. Such software would allow for automated environmental evaluation of alternative design models, and thus provide the user with a greatly improved tool for assessing designs of environmentally friendly buildings.