Rehabilitation vs Demolition

Methodology to compare the waste generated

in alternative scenarios of building elements in BIM

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The construction sector is one of the highest waste generators in many countries. Several studies evidence the close relationship between the decisions taken during the design phase and the reduction of the construction and demolition wastes (CDW). Moreover, many studies show the advantages of Rehabilitation versus Demolition. However, a main barrier to apply waste minimization strategies in projects is the lack of information included in the design tools themselves. The present paper aims to describe a methodological framework based on a Quantification and Reduction Model of Construction Waste, used during design stages of buildings and integrated into a building's design methodology such as Building Modelling Information (BIM). The method is conceived to guide designers, contribute to measure and predict CDW. A case study is also provided. CDW of two alternative scenarios are obtained and compared: the demolition versus the refurbishment of a roof. It also contributes to develop a sustainability simulation of a building by obtaining the construction waste from its BIM model.

Key words:
SUSTAINABILITY, BUILDINGS, CONSTRUCTION AND DEMOLITION WASTE, BUILDING INFORMATION MODELING, DESIGN.