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MODELING LIFE CYCLE SUSTAINABILITY IN BUILDINGS USING SYSTEM THINKING

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The worldwide interest for a formal tool to efficiently evaluate sustainability of buildings is increasing. Many interventions have been documented for using holistic concepts by introducing rating systems such as LEED of the United States, BREEAM of the United Kingdom, Pearl of the United Arab Emirates, GPRS of Egypt. All rating systems efficiently evaluated environmental impact and resources use for an instance of the building in its life cycle. This paper investigates the use of system dynamics to evaluate building life cycle sustainability through activities interaction behavior. In other words, a way for comprehending impact and effect of suitability related activities over the whole building life cycle or period of time. A generic framework was developed with an initial task of selecting key parameters through benchmarking of worldwide rating systems. The output from the benchmarking was analysed to generate correlation ideas in order to identify the system thinking relationships.

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