**Title:** Life Cycle Cost (LCC) and Sustainability. Proposal of an IFC structure to implement LCC during the design stage of buildings.

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**Abstract:**

Sustainability in the construction sector, as well as from its economic dimension is increasingly a requirement in today's society. According to ISO 15686, LCC (Life Cycle Cost) methodology is a useful technique that allows the assessment of comparative costs over a specific time period, taking into account all relevant economic factors, both in terms of initial capital costs as future operating costs. However, the integration of this powerful methodology in building design tools is still scarce, limiting the capacity of the projects to optimize the costs of the buildings during their life cycle. Moreover, the emergence of the IFC (Industry Foundation Classes) technology in the field of architecture, engineering and construction has transformed the way of designing and managing buildings, within design platforms, such us Building Information Modeling (BIM). According to buildingSMART, IFC has been designed to develop all building information throughout its lifecycle, from blueprint to implementation and maintenance, through the various stages of design and planning. Consequently, its ability to manage building data as well as its structure facilitates the implementation of the LCC methodology in BIM platforms. Therefore, this paper presents a structured IFC proposal to implement LCC. The proposed structure has been developed based on the ISO 15686, containing the main costs according to building phases. With this proposal it is expected to encourage the implementation of LCC during the project design phase in BIM, to achieve economically more efficient buildings.

**Keywords:** Life Cycle Cost (LCC); IFC; building data structure; ISO 15686; cost optimization; economic building sustainability; Building Information Modeling (BIM); building design tools.