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“HIERARCHY BASED INFORMATION REQUIREMENTS FOR SUSTAINABLE OPERATIONS OF BUILDINGS IN QATAR”

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ABSTRACT

Traditionally, information flow in the built environment concentrates on the needs of the design and construction, rather than on the operation. This leads to inconsistencies and disruption within stages, clearly found at handover of information. It commonly hinders delivery of client's requirements for the operation of buildings along the project development as well. A structured information delivery enabled by BIM protocols, established at project's inception, could prevent information loss during the project development. It could as well ensure the coordinated delivery of the clients' requirements as stated at the pre-design stage, and help anticipating the impact of clients' decisions at early project stages on operations performance.

In this paper, a methodology to obtain, categorize and weigh sustainability and facility management values with the subjective driven priorities from high level management is outlined as part of a decision support system. The latter will assist, in the context of a digital project delivery, in translating these priorities into objective parameters and information categories to include within the bidders' BIM Execution Plans. Additionally, it will help in checking compliance with both sustainability and client's goals during the project development and judge them appropriately focusing on the building operation applied to the Qatar context.

Keywords: Sustainability; KPI, Clients' requirements; Decision support system; hierarchy based information; Building Information Modelling.

Highlights:

- This paper addresses the difficulties to ensure alignment to the clients' priorities throughout the building project development on the onset of the design stage.
- The approach described is both compatible with sustainable development principles and the building environment digitisation, commonly known as Building Information Modelling (BIM).
- The methodology used is intended to be part of a decision support system, aimed to bridge the existing gap between the client and the design team, and to provide a framework in which the requirements established within the project brief are compatible to the use of BIM information structure and sustainability values and are established in a measurable way.
- The described approach makes use of the analytical hierarchy process theory (AHP) for sustainability and facility management (FM) values.
- The paper shows a methodology to ease the way in which the digital delivery process is done for building projects, by translating clients' and sustainability values into information categories.

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