INTEGRATED HYPERLEDGER FABRIC BLOCKCHAIN-BIM MODEL FOR DESIGN PROCESS DEVELOPMENT OF GREEN BUILDING

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Abstract

Integrated design process is the basis for green building planning, but how the integration among the designer in each stage of green building planning is questionable, makes this process difficult to implemented. BIM is a computer-aided modeling technology with the ability to develop the design, manage project information, and collaborate between project stakeholders, bringing efficiency for the processes in the project life cycle. However, despite its advantages, information transparency and operations within BIM in supporting the collaboration of the planning team are arguably still limited to certain entities. For those reasons the integrated design process is hard to achieve. Therefore, this study aims to develop the green building design workflow through blockchain integration in BIM for information transparency among the designer on BIM controlled with distributed ledger technology on a Hyperledger fabric platform. A qualitative approach through literature review, benchmarking study, and experiments were used to obtain this objective by considering the planning process of green building as a case study. The results of this study indicate that model of design workflow was built in Hyperledger fabric blockchain, but integration need an application as a tool for blockchain communicated with BIM.

Key words
Green building design workflow, Hyperledger fabric, Building Information Modeling