Faculty of Engineering
Department of Architecture

Building Information Modeling (BIM) Technology Implementation in Lean Architecture Through Managing Human Resources

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Statement

This thesis is submitted to Ain Shams University for the degree of Master in Architecture.

The work included in this thesis was accomplished by the author at the Department of Architecture, Faculty of Engineering, Ain shams University from 2010 to 2014.

No part of this thesis has been submitted for a degree or a qualification at any other university or institute.

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Abstract

Title: Building Information Modeling (BIM) Technology Implementation in Lean Architecture through Managing human Resources

Description:

Lean Architecture has given very high importance to the people. It is the force of people which makes lean concepts a reality. The Human resource is a key area in today's business and the most important and most valuable of all resources any organization has. Every manager and department must manage its human resource effectively to make his organization leaner and to cope with the competitive market.

The construction industry as a whole has low profitability and invests too little in research, development and training. Whether a company is making good profit or a loss, there should always be an interest for the improvement of efficiency, quality and profitability. New processes, such as lean Architecture, bring a solution to the trilogy of problems encountered in the Architecture, Engineering and Construction (AEC) industry: time, cost and quality.

The change for better in the Architecture, Engineering and construction (AEC) industry requires the combination and integration of the four key functions: process, technology, organization and knowledge and information management to seamlessly integrate the other three.

BIM has tremendous potential, but this potential can be wasted if it is considered that the technology on its own will provide the answers without managing the human resources in the project.

This research aims to define clearly the concepts of Building Information Modeling and that of Lean thinking, their goals, benefits and challenges faced when first implemented and how to implement them successfully in an AEC firm. Then discussed how they can be integrated together for the sake of an organization and the whole industry achieving less wastes and adding value to architectural projects reaching client satisfaction.

Finally three case studies are presented and analyzed to show how BIM implementation can be supporting lean practice achieving its goals.

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