ANALYSIS FRAMEWORK FOR THE INTERACTION BETWEEN LEAN CONSTRUCTION AND BUILDING INFORMATION MODELLING

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ABSTRACT

Building with Building Information Modelling (BIM) changes design and production processes. But can BIM be used to support process changes designed according to lean production and lean construction principles? To begin to answer this question we provide a conceptual analysis of the interaction of lean construction and BIM for improving construction. This was investigated by compiling a detailed listing of lean construction principles and BIM functionalities which are relevant from this perspective. These were drawn from a detailed literature survey. A research framework for analysis of the interaction between lean and BIM was then compiled. The goal of the framework is to both guide and stimulate research; as such, the approach adopted up to this point is constructive. Ongoing research has identified 55 such interactions, the majority of which show positive synergy between the two.

KEY WORDS

Building information modelling, information flow, lean construction.

INTRODUCTION

Lean Construction and Building Information Modelling (BIM) are effecting fundamental change in the architecture/ engineering/construction (AEC) industry. While the two are conceptually independent and separate, there appear to be synergies between them that extend beyond the essentially circumstantial nature of their approaching maturity contemporaneously. Their parallel adoption in state-of-the-art construction practice is a potential source of confusion when assessing their impacts and effectiveness. Does BIM, as a process, have features that would be intrinsically instrumental in eliminating dominant wastes in construction? Will the organizational forms stimulated by the introduction of BIM be neutral, conducive or hindering regarding lean? What characteristics of BIM systems promote flow, and what characteristics interrupt flow?

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