

AN INNOVATIVE SELF-ASSESSMENT APPROACH FOR MINIMIZATION OF CONSTRUCTION PECULARITIES ON LEAN-ORIENTED D&B PROJECTS

Christy P. Gomez¹

ABSTRACT

It has been established that the three peculiarities (3 P's) of construction production, namely: site production; one-of-a-kind product; and temporary production organization, leads to variability and thus to waste, as well as low performance levels affecting delivery of value to the client. This phenomena is often taken for granted as a permanent characteristic and a given feature of the construction industry. However, there are a growing number of findings regarding established benefits (especially based on whole-life costing approach) to be gained from long-term relationships, systems formwork, industrialized building systems, automation in construction though using light-weight construction materials, and planning and scheduling techniques such as Line-of-Balance etc. It is argued in this paper that it is necessary to challenge these basic assumptions and secure innovative approaches to drive concerted fundamental efforts towards minimizing waste and maximizing value in construction. In line with this argument, a Lean Excellence Assessment Framework Driver (LEAF-D) for construction project organizations that is focused on minimizing site production; implementation of generic production and installation tools and techniques; and incorporation of elements towards development of more permanent organization structures, is proposed. Additionally, taking into account that the construction industry is confronted with immense communication difficulties, and an evidently ineffective use of information and communication technology, the LEAF-D is being designed as a simple-to-use web-based tool, entitled Web-Lean Assessment Framework Phase 1 (Web-LEAF1). The assessment will be consistently undertaken by representatives of the various disciplines of the novated design-and-construct (ND&C) organizations on a continuous basis (to stimulate continuous improvement) within certain set time-frames to fit with the project durations, that will only require input of new and updating of existing data based on specific elements as identified under the 3P's. With respect to the often regarded traditional nature of the construction industry, this innovative approach is viewed as one of the necessary drivers to initiate action for transforming construction so as to be within the relevant eco-system to support lean concepts and principles. The framework is designed to be implemented on ND&C project organizations that are committed to developing their potential for minimizing waste and maximizing value.

Keywords: Lean Excellence Assessment, novated design-and-construct, innovative.

¹ Senior Lecturer, Department of Construction and Property Management, University Tun Hussein Onn Malaysia (UTHM), Batu Pahat, Johor, Malaysia. PH: (+6)07-453 7193; FAX: (+6)07-453 6021; email: cpgomez@uthm.edu.my