CENTRE OF STUDIES FOR QUANTITY SURVEYING

FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING

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SARAWAK

IMPLEMENTATION OF LEAN CONSTRUCTION IN CONSTRUCTION PROJECT TOWARDS SAFETY IMPROVEMENT

Final Project submitted in partial fulfilment

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DECLARATION

"I declare that this Final Project/dissertation is the result of my own research and that all sources are acknowledged in the references"

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ABSTRACT

Occupational accidents are wasteful and inefficient in the construction work process and lean construction is a promising concept that has been extensively debated in the construction industry towards safety enhancement. The emergence of lean construction is seen as a positive approach that can be used to establish best practices and it is seen as a push to bring the construction sector to a more ideal degree of profitability with outstanding use of resources whilst delivering the most extreme value. Hence, the aim of this research is to ascertain the lean construction concepts and implementation towards safety improvement in construction projects. In order to achieve the aim of this research, the first objective is to study the concept of lean construction including its components towards safety and how it is applied in construction projects. Through literature review, it was found that lean construction is known to be the technique used to create opportunities for improving safety culture. The second objective is to identify the level of knowledge and application of lean construction towards safety in construction projects. A questionnaire survey was distributed to G7 contractors in Kuching, Sarawak, who are registered under the CIDB to obtain information. The result shows that most contractors are unaware of lean construction despite applying the tools in their construction projects as they are unfamiliar with the terminologies. Additionally, the third objective is to determine factors that hinder the implementation of lean construction in construction site in which the data was gathered through a questionnaire survey as well. A significant number of respondents agree that lack of awareness is causing the slow implementation of lean construction in construction projects despite its benefits towards safety enhancement. In summary, it is expected that this study can improve the awareness and implementation of lean construction in any organisation or workplace.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

This chapter will highlight the research background, problem statement, research aim, research objectives, research questions, research scope, research structure and research methodology as well as research methodology flow.

1.2 RESEARCH BACKGROUND

The construction sector is known amongst industries as one of the most dangerous. Lack of safety, in particular, is one of the chronic construction issues, as is evident from the high accident rates (Nahmens & Ikuma, 2009). Every year thousands of construction workers globally are wounded or killed in construction sites (Azmy & Mohd Zain, 2016). Nevertheless, despite the awareness of the increasing amounts of casualties, there is still no improvement in construction safety around the world (Ghosh & Young-Corbett, 2009).

Work-related incidents and casualties are deemed a significant cause of construction wastage which are high in costs (Awada, Lakkis, Doughan, & Hamzeh, 2016). When these issues remain uncontrolled, they will cause disruption due to multiple cost-related issues, such as workers' compensation, high emergency healthcare costs, rehabilitation plans, administrative costs, reduced productivity and many more (Ghosh & Young-Corbett, 2009). These accidents introduce volatility in