

**FACTORS AFFECTING SITE SUPERVISION  
IN IMPROVING IBS PRODUCTIVITY**

**WAN RAMIZAH WAN SALLEH**

**B. ENG (HONS.) CIVIL ENGINEERING**

**UNIVERSITI MALAYSIA PAHANG**



## **STUDENT'S DECLARATION**

I hereby declare that the work in this thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at Universiti Malaysia Pahang or any other institutions.

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(Student's Signature)

Full Name : WAN RAMIZAH BINTI WAN SALLEH

ID Number : AA15198

Date : MAY 2019

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WAN RAMIZAH BINTI WAN SALLEH

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## ABSTRAK

Kejayaan dalam pembinaan projek-projek Sistem Binaan Berindustri (IBS) memerlukan seorang penyelia yang efektif, iaitu mempunyai gabungan antara kemahiran teknikal yang tinggi, interpersonal, komunikasi dan kemahiran dalam pengurusan. Namun begitu, pencarian konsisten mendapati bahawa terdapat banyak faktor yang mempengaruhi penyeliaan tapak dan kebanyakan kerja-kerja pembinaan tidak dapat disiapkan pada tempoh yang ditetapkan akibat daripada mempunyai masalah semasa pemasangan IBS. Oleh itu, matlamat utama kajian ini adalah untuk mengenal pasti faktor yang mempengaruhi penyeliaan tapak dalam meningkatkan produktiviti IBS. Kajian ini menggunakan pendekatan soal selidik untuk mendapatkan maklumat daripada responden, dan daripada tujuh puluh soal selidik yang didapati, lima puluh lima telah diambil. Maklumat dan data dari soal selidik telah dianalisis menggunakan kaedah purata indeks. Kajian ini akan memberi tumpuan kepada faktor yang mempengaruhi penyeliaan tapak dan masalah semasa pemasangan IBS. Ringkasnya, cara-cara untuk meningkatkan keberkesanan penyeliaan tapak dalam meningkatkan produktiviti IBS akan dihasilkan dalam kajian ini. Daripada analisis yang dicari, faktor utama yang mempengaruhi dalam penyeliaan tapak adalah ketika proses pembinaan di tapak. Manakala bagi masalah utama semasa pemasangan IBS adalah memerlukan perancangan yang tepat dalam menyiapkan projek pada masa yang ditetapkan. Sementara kualiti produk atau komponen IBS perlu dipertingkatkan untuk menggalakkan penyeliaan tapak yang lebih baik adalah disyorkan.

## **ABSTRACT**

Successful delivery of construction of IBS projects needs an effective supervisor's that have a combination of strong technical, interpersonal, communication and managerial skills. Unfortunately, a consistent finding is that there are many factors that affecting site supervision and most construction works are not delivered on time and consequently have a problem during installation of IBS. Therefore, the main aim of the study is to identify the factors affecting site supervision in improving IBS productivity. The study adopts a questionnaire survey approach to elicit information from the respondents, and out of the seventy questionnaires administered fifty-five were retrieved. The information and the data from the questionnaires were analyzed using average index method. The study will focused on factors affecting site supervision and problem during installation of IBS. Therefore, the ways to enhance site supervision in improving IBS productivity will be produced in this study. From the finding analysis, the main factors affecting site supervision is on-site construction process. While the main problem during installation of IBS is required planning on time delivery. It is recommended that the quality of IBS product or components should be enhanced to promote better site supervision.

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## **LIST OF ABBREVIATIONS**

IBS	Industrialized Building System
CIDB	Construction Industry Development Board
MIDF	Malaysian Industrial Development Finance
MATEC	Maricopa Advanced Technology Education Centre

## CHAPTER 1

### INTRODUCTION

#### 1.1 Introduction

Industrialized Building System (IBS) is one of the technology which can be categorized as an old in developed country but yet considered as a key technology when reached developing countries such as Asian region . Several world major construction industry authorities have recommended the industry to extend the use of modern construction methods and information technology. Specifically, the use of mechanization in construction that leads to the production of Industrialized Building System (IBS) may help to ease the pressures of labour requirements whilst boosting quality and productivity.(Nasrollahzadeh, Marsono and Masine, 2017)

IBS can be defined as a construction system which components are manufactured in a factory, on or off-site, positioned and assemble into structures with minimal additional site work (Mydin, Sani and Taib, 2014). Industrialized Building System (IBS) is a construction system that is built using pre-fabricated components. The manufacturing of the components is systematically done using machine, formwork and other forms of mechanical equipment (Aziz, 2010). The components are manufactured offsite and once completed will be delivered to construction sites for assembly and erection. Since the first project of IBS in year 1964 until today, IBS in Malaysia is not well accepted by the construction parties because of failure to adequately deal with risks. Failure to keep the cost within budget is still common in Malaysia, and it is one of the reasons that limit the development of IBS (Ismail *et al.*, 2012). Successful site management system for IBS construction had been categorised under five factors which include management (success integration, installed integration, caused delay, improvement), workplace (site preparation, space, components keeping).(Ismail *et al.*, 2013)

## 1.2 Problem Statement

Industrialized Building System (IBS) is admitted to be comparatively not new construction technique in Malaysia. Nevertheless, In order to ensure work on site is accomplished smoothly and without any risk, site supervision is required. In the IBS construction, improper construction site supervision will lead to problems on site including improper assembly, leakage and crack in the future. Moreover, it is an essential to IBS construction site supervisors to understand the provisions that have been published to supervise sites adequately. Effective supervisors need a combination of strong technical, interpersonal, communication and managerial skills.

(Bohn, 2009)in his research stated that a successful delivery of construction of projects within the measurable tenets is driven by effective site supervision. In many organizations efficiency of supervision is low even though the latest technology and trained manpower are made available. Based on article (Gan *et al.*, 2017) it indicated that there is lack of consideration in site supervision toward the improvement of IBS construction. During installation of IBS components, it is essential to have a good working collaboration, effective communication channel, improvement in planning and scheduling of the project, risk management(Ismail *et al.*, 2012).

During IBS site management, delay may cause by late arriving of IBS components at the construction site, erecting problems always occur without good handling by the supervisor and installer, unskilled labour and inexperienced workmanship, not enough plant and equipment, lack of teamwork and coordination and weather problems(Ismail *et al.*, 2013). Contractor faces with the difficulties during installation at the site in order to comply with the design and manufacturing requirement (Lou & Kamar, 2012).

### **1.3 Objectives**

The aim of this study is to provide a general perspective of the factor affecting site supervision in improving IBS construction productivity. The specific objectives of this study are as follows:-

1. To study the factors affecting site supervision in IBS construction.
2. To identify the problems during installation of IBS.
3. To analyse and suggest the ways to enhance site supervision in improving IBS productivity.



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