ISSUE IN BUILDING CONSTRUCTION DUE TO QUALITY CONTROL AND QUALITY ASSURANCE IN MALAYSIA

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I hereby declare that I have checked this thesis and in my opinion, this thesis adequate in terms of scope and quality for the award of the Bachelor Degree of Civil Engineering

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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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ABSTRAK

Masalah dalam pembinaan bangunan disebabkan kawalan mutu & jaminan kualiti adalah isu biasa di Malaysia. Antara punca adalah disebabkan kekurangan pengawasan kontraktor yang betul terhadap kerja, kekurangan prosedur kualiti, tiada sistem kualiti, kekurangan audit projek, menggunakan bahan berkualiti rendah, lukisan dan spesifikasi yang tidak lengkap, kerumitan reka bentuk, kekurangan sumber yang diperlukan dan tidak ada jabatan yang berkualiti. Di samping itu, perbahan konsep reka bentuk pada saat akhir, prestasi yang lemah, kekurangan alat dan teknik yang berkualiti juga akan menimbulkan isu kualiti dalam pembinaan bangunan. Objektif kajian ini adalah untuk mengenal pasti faktor utama isu dalam pembinaan bangunan berdasarkan kawalan mutu & jaminan kualiti di Malaysia, mengenalpasti penyelesaian terbaik untuk mengatasi masalah ini dalam pembinaan bangunan berkaitan dalam bidang kualiti. Berdasarkan gabungan dan analisa melalui kajian lepas dan kaji selidik, kajian ini dapat menenrangkan tentang masalah dalam pembinaan bangunan disebabkan oleh kawalan kualiti & jaminan mutu di Malaysia dismping mengenalpasti kaedah pengurangan yang mungkin untuk meminimumkan isu itu, dan juga hubungan antara langkah-langkah yang boleh dikenalpasti dengan faktor-faktor tersebut. Penyelidikan kuantitatif dilakukan dengan menghantar set soal selidik dan mendapat kira-kira 115 bilangan responden. Hasil daripada 105 set soal selidik yang lengkap telah digunakan untuk dianalisis melaui kuantitatif. Dalam kajian ini menunjukkan kedudukan tertinggi dalam isu dalam pembinaan bangunan disebabkan oleh kawalan kualiti & jaminan kualiti menggunakan bahan berkualiti dan ketahanahanan yang rendah untuk pemasangan yang betul dalam pembinaan akan menimbulkan masalah. Selepas itu, diikuiti prestasi yang kurang baik, kekurangan alat dan teknik yang berkualiti, tidak mempunyai prosedur yang berkualiti, tiada projek pengauditan, reka bentuk yang rumit atau reka bentuk yang kurang berkualiti, kurang ketersediaan sumber yang diperlukan, dan tiada jabatan kualiti juga akan menimbulkan isu berkaitan dengan kuality. Penyelesaian isu yang paling berkesan dalam pembinaan bangunan berdasarkan oleh kawalan kualiti & jaminan kualiti adalah kerajaan perlu menamatkan atau mendakwa kontraktor yang tidak mematuhi spesifikasi dan piawai perlindungan prosedur kepentingan para pembeli. Kesimpulannya, isu ini adalah penting untuk mengenalpasti dan meminimumkan isu dalam pembinaan bangunan dari segi aspek kawalan kualiti & jaminan kualiti di Malaysia.

ABSTRACT

The problem in building construction due to quality control &quality assurance are common issue in Malaysia. Common type of includes lack of proper contractor supervision of the work, poor or lack of quality procedure, no quality system, lack of project auditing, using low quality materials, not complete drawing and specification, design complexity, poor availability of required resources and no quality department. Besides that, late design concept and poor performance, lack of quality tools and techniques also will occur of quality issue in building construction. This research objective is to identify the main factor of issue in building construction due to quality control &quality assurance in Malaysia and identify the best solution to overcome the issue in building construction due to quality. Based on a combination of literature review and questionnaire surveys, this paper explores the issue in building construction due to quality control & quality assurance in Malaysia and possible reducing method to minimize the issue, and also the relationship between measures identified with the factors. A quantitative research was conducted by sending sets of questionnaire and got about 105 number of respondents. The results from 101 sets of completed questionnaire were used for the quantitative analysis. In this research shown that the highest ranked for the issue in building construction due to quality control &quality assurance is using low quality materials and zero durability for improper installations in construction will raise the issue. Then, poor performance, lack of quality tool and techniques, not having quality procedures, without auditing project, complex design or lack of quality design, poor in availability of required resources, and no quality department also will cause occur of issue on quality. The most significant solution of issue in building construction due to quality control &quality assurance is government need to terminate or sue contractor where did not follow the specification and standard of procedure protection of the interest of the purchasers. In conclusion, this issue would be important to identify and should minimize the issue in building construction due to quality control & quality assurance in Malaysia.

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LIST OF SYMBOLS

QA/QC	Quality assurance/quality control
RII	Relative important index
JKR	Jabatan Kerja Raya

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF STUDY

Construction industry is one of the industries that play an important role in developing and enhancing economic sector and also the development of one's country. Although the construction industry contributes to the development but at the same time this is not an environmental friendly activity because a lot of problems may exist if the progress and development of this industry are not well planned. This is supported by Shen (2002), where construction industry is not by nature an environmentally friendly activity and it is a major contributor to environmental impacts, which are typically classified as air pollution, noise pollution and water pollution. While according to Tam et al., (2006), construction industry is one of the biggest generators of pollution in Hong Kong and becoming a critical issue. Moreover, wastes generated from construction industry consist of relatively huge amount of chemical waste (Bossink, 1996).

Malaysia is one of the countries that are categorized as emerging industrialized country; and of the 20 largest export nations worldwide. It is ranked 29th out of 118 countries by the "Global Enabling Trade report 2008". This industry is an important element of Malaysia economy because it is widely linked with many other parts of the economy such as basic metal products which include the iron and steel industries and electronics. This industry also shares 3.3 % of the country's GDP (2003) and employs

over 500,000 workers in some 54,500 local companies. 80 % of these companies are small and medium sized company. (MGCC, 2009).

Quality is the symbol of human civilization, and with the progress of human civilization, quality control will play an incomparable role in the business. It can be said that if there is no quality control, there is no economic benefit. Construction projects are an extremely complex process, involving a wide range. There are plenty of factors affecting the quality of construction, such as design, materials, machinery, topography, geology, hydrology, meteorology, construction technology, methods of operation, technical measures, management systems, and so on. Because of the fixed project location, large volume and different location of different projects, the poor control of these factors may produce quality problems. During controlling the whole process of construction, only accord with the required quality standards and user promising requirements, fulfilling quality, time, cost, etc., construction companies could get the best economic effects. Construction companies must adhere to the principle of quality first, and insist on quality standards, with the core of artificial control and prevention, to provide more high quality, safe, suitable, and economic composite products. (Examda)

Quality control are parties that monitoring specific project result to determine if they comply with relevant quality standards and identifying ways to eliminate cause of unsatisfied performance Contract documents comprise a clear, complete, and accurate description of the facility to be constructed, correctly conveying the intent of the owner regarding the characteristics of the facility needed to serve his or her purposes. The contract documents define a constructed facility considered acceptable under the applicable regulatory codes and standards of professional practice, in terms of its reliability, the ease with which maintenance and repairs can be performed, the durability of its materials and operating systems, and the life safety provided to its users.

1.2 Problem Statement

Building defect is one of the main components building that needed attention. We must immediately look for answer when the building fails to perform as it should. Is the problem is causes from someone fail to install the building properly? Or the problem of natural act? Maybe the building do not get the proper maintenance so that the building not perform as it should? All these answer always depend of some factor which is the age

of the affected the building component, the true nature of the problem, the mistake of human error or maybe the combination of all three factor.

According to the Roslan and Mohd Zailan (2015), internal defects generally caused by inadequacies in design, poor workmanship, building usage not suitable with design and also lack of maintenance. The main reasons can operate singly or in combination and result in defects indicated by changes in composition of the material, in the construction or simply in appearances.

The study found the common building defect detected in a new house through visual inspection of 72 new terrace house located in Bangi, Selangor. This prove that defect are mainly caused by poor workmanship. (Ishan, Adi and Mohd Zulhanif, 2015). A survey was manage to 310 residents of three type of housing, which is terrace, flat and detached house, located in four different region in Klang Valley. This affordable housing or low cost housing has always been criticised for poor quality building. The most commonly defect in these house are from piping system, structural defect and water supply system (Hamzah, Chen Wang, Lincoln and You Min, 2012). According to Ringker (2008), the affordable housing issues also related with poor design and insufficient maintenance.

Because building not only a product but rather a collection of individual parts and components that often put together by different contractors, and because materials used often need regular maintenance to maintain their service life and because of acts of nature always test the resistance of buildings, leakage and damage to materials, it usually never exactly clear why a particular building defect occur.

1.3 Research Objective

The aim and objective of this case study is to analysis the road improvement strategies of the road authorities. To achieve the aim of this study, the following objectives have been set as:

I. To study in quality control and quality assurance operation for building construction

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