STUDY ON STRUCTURE DEFECT IN COMMERCIAL BUILDING IN MALAYSIA

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SUPERVISOR'S DECLARATION

I hereby declare that I have checked this thesis and in my opinion, this thesis is 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

Malaysia merupakan negara yang membangun dan berkembang maju dalam semua sektor terutamanya dalam industri pembinaan. Kerosakan struktur bangunan adalah salah satu isu umum yang berkaitan dengan bangunan komersial di Malaysia dan perlu diambil perhatian. Kerosakan struktur bangunan boleh berlaku disebabkan oleh kesilapan reka bentuk, bahan yang rosak, pemasangan dari segi bahan tidak betul, kekurangan reka bentuk dari kontraktor atau mana-mana masalah daripada semua faktor-faktor ini. Seterusnya, isu mengenai mutu kerja yang lemah juga sentiasa dikaitkan dengan kontrator yang tidak terlatih dengan cukup untuk berada dalam industri pembinaan. Di samping itu, reka bentuk bangunan yang tidak betul juga boleh mengakibatan kerosakan struktur bangunan. Objektif kajian adalah untuk mengenal pasti jenis kerosakan struktur bangunan yang biasa berlaku dalam bangunan komersial, mengenal pasti faktor kerosakan struktur bangunan dan juga menganalisis kerosakan struktur bangunan yang sering berlaku dalam bangunan komersial. Berdasarkan gabungan kajian literature dan kaji selidik, dapat dikenalpasti faktor yang mempengaruhi kerosakan struktur bangunan dan cara untuk mengatasi masalah kerosakan struktur bangunan tersebut. Satu kajian kuantatif telah dijalankan dengan mengedarkan 50 set soal selidik kepada responden. Keputusan dari 50 set soal selidik yang lengkap telah digunakan untuk analisis kualitatif. Dalam kajian ini menunjukkan, peringkat tertinggi dalam jenis kerosakan struktur bangunan komersial adalah keretakan rasuk. Diikuti dengan, keretakan tiang, sarang lebah dalam concrete dan keretakan dinding. Faktor yang paling penting dan mempengaruhi kerosakan struktur bangunan komersial adalah keadaan cuaca dan persekitaran. Sebagai kesimpulannya, masalah kerosakan struktur hendaklah menjadi satu perkara yang penting dan perlu di minimumkan dengan mnegetahui cara-cara untuk mengatasi apabila kerosakan struktur ini berlaku dengan serta- merta.

ABSTRACT

Malaysia is among one of the development countries that growing advanced in all sectors especially in construction industry. Structure defect is one of the issues that relate to commercial building and significantly needed attention. Structure defect can occur because of the design error, defective materials, improper use or installation of materials, lack of adherence design from the contractor or any combination of these cause. Next, issues about poor workmanship always associated with small contractor as they not well trained to be in construction industries. In addition, improper building design also contribute to the structure defect of a building. The objective is to identify type of structure defect in commercial building, identify factor affecting structure defect and to analyse the structure defect that always happen in commercial building. A quantative research was conduct by sending 50 sets of questionnaire to the respondents. The result form 50 set of completed questionnaire were used for the qualitative analysis.In this research shown that the highest ranked for the common type of structure defect in commercial building is cracking of beam. Follow by, cracking of column, honeycomb in concrete and racking of wall. The most significant factor affecting the structure defect in commercial building is weather and environment condition. In conclusion, this structure defect problem would be an important thing and should minimize the structure defect by knowing the ways to overcome when structure defect occur immediately.

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LIST OF SYMBOLS

ai	Constant expressing weight given to i
Xi	Variable that expressing the frequency of degree

LIST OF ABBREVIATIONS

SPSS	Software Statistical Package for Social Sciences

CHAPTER 1

INTRODUCTION

1.1 Introduction

This title of this research is study about structure defect in commercial building. According to the (Kreisson, August 2016) , the definition of structure defect means any defect in a structural element of a building that will attribute to defective design, defective or faulty workmanship or defective materials or any combination of these. In this century, Malaysia is one of the develop country that have many outstanding building which is currently built for many sector. Now, many of the buildings are already built such as shopping complex, office, company, hospital and many more. After the buildings had finish been built or in the construction process, there must be defect of structure in the building. This defect will automatically need high cost to repair it back. To restore the item to its required action, building services and maintenance can be use. This building services and maintenance is a combination of the several action that can take it. The relationship between maintenance and building design is closely to avoid any harmful during construction stage or during the building is occupied.

This defect of the building can cause to faulty design of the structure itself. There are many problem that arise due to this building defects. Defect on the structure occurs in many and different type of building irrespective of age. Building cannot remain new through their entire life. Furthermore, the new building also have their maintenance itself. Its not possible to rebuild or replace the new building again at the same time. The value of building decreases unless maintenance is carried out on the building (Lateef et al, 2010).

1.2 Problem Statement

Structure defect is one of the important component of a building that need to be taken seriously. This defect can cause a high risk to the building if not be repair. For example, if the building has some defect of column structure, the column was been broken, we must repair the defect back because column is important structure that accommodating load from roof and the upper floor.

There are many factor that cause this structure defect. Based on (N. Ahzahar, 2011) , defect can occur because of the design error, defective materials, improper use or installation of materials, lack of adherence design from the contractor or any combination of these cause. This structure defect of building requires of hiring a highly trained or experienced that more expert and professional.

Next, issues about poor workmanship always associated with small contractor as they not well trained to be in construction industries. In many case the quality of work is low because less experienced and also improper guidance from the relevant parties. The worker also not do their work properly during the construction. (Ahmad Suffiana, 2013)

In addition, improper building design also contribute to the structure defect of a building. It is important to decide the material that will be use in the construction. The design of the building also must follow the specification that has been set by the engineer.

REAL CASE STRUCTURE DEFECT IN COMMERCIAL BUILDING

Table 1.2.1 Real case of structure defect in commercial building

Date	Type of Defect	Location
22 January 2013	Building Cracking problem at Negeri Sembilan Matriculation College	Kuala Pilah
28 February 2006	Problem structure defect of wall in school building.	Padang Terap

1.3 Objective

The main objective of this research are the following :

- To study about type, factor and ways to overcome structure defect in commercial building.
- To design a questionnaire about what type, factor and ways to overcome structure defect in commercial building that always happen in the construction industry.
- To analyse the questionnaire to get the conclusion and solution for this problem.

1.4 Scope of study

In my research were focuses on the structure defect in commercial building in Malaysia. There are some scope of study in order to conduct this research :

- Seeking the guidelines of the building defects.
- Questionnaire will be distributed to the student, private employee and government employee that seen the type of structure defect in building.
- Carried a data about structure defect in commercial building.

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