CREATING AWARENESS AND UNDERSTANDING IN GREEN CONSTRUCTION

INSTITUT PENGURUSAN PENYELIDIKAN UNIVERSITI TEKNOLOGI MARA

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BY:

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1. Letter of Report Submission

Tarikh: 4/11/2013

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Prof. Dr.,

PENGHANTARAN LAPORAN AKHIR PROJEK PENYELIDIKAN
TAJUK PROJEK: CREATING AWARENESS AND UNDERSTANDING IN GREEN CONSTRUCTION (600-RMI/ST/DANA/5/3/Dst (489/2011))

Dengan segala hormatnya, perkara diatas adalah dirujuk.

2. Sukacita dimaklumkan bahawa pihak kami telah menyiapkan laporan penyelidikan ini dalam masa yang telah ditetapkan oleh pihak RMI, menghasilkan 2 *index proceeding* dan telah melatih seorang pelajar PhD dalam bidang kejuruteraan awam dan seorang pelajar master dalam bidang perniagaan.

3. Bersama-sama ini kami majukan 2 salinan laporan berkulit keras dan satu salinan softcopy dalam bentuk CD.

4. Segala kerjasama daripada pihak tuan kami dahului dengan ucapan terima kasih.

Yang Benar,

DR INTAN ROHANI ENDUT
Ketua Projek

s.k
1. Rektor, UiTM Sarawak
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5. Report

5.1 Proposed Executive Summary

Construction Industry Environmental issues are now the most important issue in the twenty-first century. Traditional construction not only consumes large resources, but also does harm to the environment. Most of enterprises only concern about green construction on the surface level, the reduction of construction noise, disturbance to residents and environmental pollution. The green construction is understood incomprehensively and incompletely, and relevant technology is accepted passively. Moreover, the construction is still conducted with traditional thinking model and standard. Subsequently, it is unable to utilize appropriate technology and scientific management mode in the whole process management of green construction systematically. In Malaysia, there is no standard risk management framework for green construction. Therefore, this research intends (1) To identify the comprehensive management and procedures improvement of the environmental influence on the green construction and (2) To develop and validate a Risk Management Action Plan (RMAP) for green construction. The research methodology applied in this research includes literature reviews, questionnaires and interviews. It is found that although there are some forms of risk management systems being used in the Malaysian construction industry, most of them are not well structured, documented and implemented in a formal manner. Therefore, the idea of establishing the Environmental Risk Management Action Plan (RMAP) for Malaysian Green Construction is paramount and cannot be over-emphasized. It is in line with the Strategic Reform Initiatives (SRI) under National Economic Model as the government intends to create a competitive domestic economy and ensure the sustainability of growth.

5.2 Enhanced Executive Summary

This research critically presents the current practices, benefits and barriers in implementing green construction in the attempts to create awareness and understanding of green construction in Malaysian construction industry. Green construction is seen to gain an increasing attention in the global context and is a beneficial approach that can improve the way projects are being planned and executed. However, the area of green construction is not comprehensively and completely understood, and the relevant technology in the green construction is passively accepted. Up to this point, there is no empirical research conducted in the area of creating awareness and understanding in the construction industry. This research was conducted under the academic rigour and sound methodological grounding to provide awareness and to document the current practices, benefits and barriers of green construction in the Malaysian construction industry. The research methodology in this research includes quantitative data collection by using descriptive statistical analysis. An effective area of green construction is proposed at the end of this research with the hope that it will provide a better awareness and understanding of green construction among construction project participants.

5.3 Introduction

5.3.1 Background

Construction is one of the major contributors to environmental problems (Qi *et.al.*, 2010; Xian-feng and Hui-qiang, 2008; Ding, 2007; Tam *et.al.*, 2004; Ball, 2002). Most of the resources consumed in construction are non renewable and create adverse environmental pollution, energy consumption and resource depletion (Xian-feng and Hui-qiang, 2008; Tam *et.al.*, 2004). Environmental pollution is caused by construction activities which include those related to noise, air, solid waste and water pollution. (Tam *et al.*, 2007 and Majdalani *et al.*, 2006).

The construction industry plays a vital role in meeting the needs of society and enhancing the quality of life (Burgan and Sansom, 2006; Tam *et. al.*, 2004). The construction industry in Malaysia has contributed 3% to 5% to the GDP over the past 20 years, and has played a vital role in the country's development (Wong, 2007). However, it consumes 30% of the total energy resources (Wu, Yan and Huang, 2012; shengshi, 2010) and has a significant impact on the environment (Zhu, 2012; Tatari and Kucukvar, 2011), economy and society (Ye, Shen and Zuo, 2012; Tatari and Kucukvar, 2011).

Green construction is the construction activities that conserved energy, land, water and material to reduce negative effect to environment while assuring essential demand on quality and safety during project construction (Zhu, 2012; Liu, 2011). Green construction requires