

UNIVERSITI TEKNOLOGI MARA

**A MODEL FOR IMPLEMENTATION
OF GREEN CONSTRUCTION**

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of the requirements for the degree of
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CONFIRMATION BY PANEL OF EXAMINERS

I certify that a panel of examiners has met on 19th May 2016 to conduct the final examination of Afzan Binti Ahmad Zaini on her Doctor of Philosophy thesis entitled “A Model for Implementation of Green Construction” in accordance with Universiti Teknologi MARA Act 1976 (Akta 173). The panel of examiners recommends that the student be awarded the relevant degree. The panel of examiners is as follows:

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I declare that the work in this thesis/dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

The recent shift from conventional construction to green construction has brought about efficiency and improvement to the construction industry. However, the construction industry is still reluctant to embrace this new development. This circumstance is primarily due to a fundamental problem of the lack of clarity in grasping the concept of green construction. Consequently, it has called for a need to explore the current practice of green construction in the construction industry with which this research has attempted to deal. In this research, a considerable effort was made towards identifying the solution to the problem through the establishment of a green construction model. In the process of establishing the model, four objectives were outlined; (1) To identify the current practice of green construction, (2) To investigate the level of awareness and understanding of the benefits and disadvantages of green construction, (3) To investigate factors of green construction innovation, and (4) To determine the major challenges for the implementation of green construction. The findings used for the establishment of the model were structured and analysed based on the data from 346 usable questionnaires and 25 semi-structured interviews with the aid of SPSS19 and NVivo-9 respectively. The datasets from the questionnaire survey were analysed using several statistical analyses; exploratory factor analysis, reliability analysis, assessment of normality, descriptive analysis (mean and ranking), and analysis of variance (ANOVA), while the datasets from the semi-structured interview were analysed using content analysis. A structural equation modelling (SEM-AMOS) was further employed in order to establish and validate the statistical model analyses that involved pooled-confirmatory factor analysis, structural equation modelling, and moderation effect for the latent constructs. From the findings, it was found that the implementation of ISO 14001: Environmental Management System attained the highest mean score for the current practices. The mean scores for the level of awareness and understanding in green construction were almost equal; the highest mean score for benefits was “Improve customer satisfaction” and the highest mean score for disadvantages was “High cost of green construction material.” Subsequently, the highest mean scores for green construction innovation and challenges were “Environmental Policies and Procedures in Green Construction” and “Lack of Awareness of the Environmental Preservation” respectively. Based on the overall establishment and validation of the model, it was found that the model performed well and all five hypotheses of the model establishment were supported. From the practical perspective, the model should be able to encourage construction stakeholders to be more attentive in the area of green construction. Hence, it can be used as a diagnostic tool for the continuous improvement of green construction in the Malaysian construction industry.

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