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*"Flourish and Nurturing Sustainable
Innovation for a Prosperous Nation"*

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Preface Program Director



Assalamualaikum warahmatullahi wabarakatuh,
Salam Sejahtera, Salam Malaysia MADANI, and Salam
UiTM Dihatiku.

Alhamdulillah, we express our heartfelt gratitude to Allah
SWT for the successful organization of the Johor
International Innovation, Invention, Competition, and
Symposium 2024 (JIIICaS 2024). With great enthusiasm
and a shared sense of purpose, we delve into this year's

theme of "Flourish and Nurture Sustainable Innovation for a Prosperous Nation."

This event serves as a crucial platform for fostering innovation and collaboration among students, educators, and researchers. Since its inception in 2017 as the Innovation, Design, Exploration in Arithmetics & Sciences (IDEAS) Competition, JIIICaS has evolved significantly, welcoming participants from primary, secondary, and higher education institutions. It has now reached an international level, attracting participants from Indonesia and Brunei. This remarkable growth reflects the dedication and hard work of everyone involved.

On behalf of the organizing committee, I extend our heartfelt thanks to all participants. We look forward to continuing this journey and hope JIIICaS remains a premier event for innovators to exchange ideas. We hope to see everyone again at JIIICaS 2025.

Finally, a sincere thank you to my committee members for your hard work and unwavering commitment in making this event a success.

Thank you.

Dr. Hajah Norbaiti Tukiman
Program Director

(A-PP008) ISSUES AND CHALLENGES OF IMPLEMENTING GREEN BUILDING PRACTICES IN MALAYSIA CONSTRUCTION INDUSTRY

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ABSTRACT

The significance of green building standards in addressing environmental challenges and promoting sustainable development worldwide has been widely acknowledged. The construction industry is an essential sector that requires dialogue regarding sustainable development. The growing recognition of green buildings has compelled several industries to improve their quality standards. This research, through the implementation of green building practices in Malaysia, aims to pinpoint the most pressing issues that demand attention and devise solutions achievable through the application of these practices. The research examines (1) the implementation of green building in Malaysia, (2) the current challenges that are anticipated to be encountered, and (3) the implementation strategies for green building that aim to address the challenges identified. The current investigation utilises a quantitative approach, specifically employing an online questionnaire survey built on Google Forms. As of the November 2023 update on the website of the Board of Quantity Surveyor Malaysia (BQSM), a total of 181 surveys had been distributed to Selangor-based consulting firms. 56 out of 181 respondents completed the surveys, achieving a response rate of 31%. The results of the analysis performed using IBM SPSS Statistics Version 25.0 indicate that a vast majority of directors and senior quantity surveyors possess a comprehensive understanding of GB implementation. This research offers significant contributions to the understanding of the current state of green building practices, identifies areas that require improvement, and proposes approaches to foster sustainability within the construction sector.

Keywords: Green Building (GB), Current Issues, Strategies

1.0 INTRODUCTION

Green building (GB) is crucial to sustainable construction development, promoting effectiveness and a harmonious society. Sustainable construction development relies on incorporating green building characteristics across several aspects. Malaysia is poised to embrace green building because of the economic and environmental advantages it offers as it revolutionizes construction practices. Urban locations present both opportunities and challenges for incorporating green construction practices. Furthermore, metropolitan areas are a popular target for green building projects because they also have high energy consumption and a substantial carbon effect. Although GBs have increased since the last century, the Malaysian construction industry is slow to implement sustainable GBs. Because of this obstacle, one can learn about GB through structured courses in many fields, such as engineering, architecture, urban planning, construction, and real estate, which focus on the built environment.

2.0 OBJECTIVES

The primary aim of this research is to investigate the application of GB practices in Malaysia. The implementation of GB techniques has garnered significant attention and momentum in Malaysia in recent times. The second objective of this research is to examine the present difficulties and obstacles associated with ecological construction in Malaysia. There are challenges and prospects associated with the implementation of green construction practices in urban settings. The third and final aim of this research is to ascertain the GB strategies implemented in Malaysia. Cooperation between the construction industry, financial incentives, government regulations, and community engagement are a few of the measures required to implement GB practices in urban areas.

3.0 METHODOLOGY

This research aims to identify the challenges and obstacles to implementing GBs as perceived by the director and senior quantity surveyor. In 2023, the research identified 181 consultant firms in Selangor, Malaysia, according to the Board of Quantity Surveyors (BQSM) website. We obtained a sample size with a response rate of 30.94% to shed light on the challenges encountered. The research necessitates a questionnaire survey as a means of gathering quantitative data. Afterwards, we analysed the data using a 5-point Likert scale to assess the level of agreement for each statement concerning the issues and challenges of implementing GBs. Charts and tables then display the data.

Table 1: Current Issues and Challenges of GB in Malaysia

Current Issues and Challenges of GB in Malaysia	Ranking	Mean	Standard Deviation (SD)
Initial financial commitments discourage developers	1	4.75	0.44
Contractors import materials increase costs	2	4.75	0.44
Government offer GB incentives	3	4.59	0.50

Table 1 analyses Malaysia's GB issues and challenges. The highest mean value is 4.75 (SD: 0.44) for the initial financial commitments that discourage developers. The structural equation modelling demonstrated that monetary green tax incentives and green skills had considerable incidental effects on supply. Furthermore, the statement that contractors import materials increase costs has the second highest mean value of 4.75 (SD: 0.44). The net green outcome of a construction project is the total of the efforts done at the various supply chain phases. Lastly, the third highest mean value is 4.59 (SD: 0.50) for government GB incentives. To enhance the development of GBs in Malaysia, the government has sponsored and offered numerous initiatives to the key construction actors in adopting GBs.

Table 2: Strategies of the Implementation of GB in Malaysia

Strategies of the Implementation of GB in Malaysia	Ranking	Mean	Standard Deviation (SD)
Research and development resulting in GB materials and technology cheaper	1	4.79	0.41
Implement LEED or BREEAM Certification Programs	2	4.79	0.41
Integrated Planning and Design	3	4.59	0.50

Table 2 shows the analysis of the strategies to overcome the current issues and challenges of GB in Malaysia. The highest mean value is 4.79 (SD: 0.41) for the statement of research and development resulting in GB materials and technology being cheaper. The use of purely quantitative statistical methods to determine end users' happiness with GBs is misleading because qualitative interactions show end users' tolerance levels better than quantitative metrics. Furthermore, the second highest, with a mean value of 4.79 (SD: 0.41), is the implementation of LEED or BREEAM certification programs. British BREEAM green certification systems possess a dominant competitive position. Lastly, the third highest with a 4.59 (SD: 0.50) mean value is Integrated Planning and Design. Thus, good site planning is an important component of the community.

4.0 RESULTS

Most participants comprehended the challenges faced by the Malaysian construction sector in relation to GB issues. In addition, the survey participants also mentioned that developers are deterred by significant upfront financial obligations for specialized gear, equipment, and important players. The survey participants also concurred that contractors are needed to import materials because of the absence of local options, resulting in increased costs. In addition, the respondents expressed that the government should provide incentives, like as investment tax credits, to facilitate the implementation of GB projects. According to the findings, it is recommended that the Malaysian government provide financing for GB research and development. Encouraging the use of these cutting-edge technologies created through research and development efforts may greatly speed up innovation, enhance the quality of building projects, and boost the overall efficiency of GB implementation.

5.0 CONCLUSION

This research study examines the implementation of green building principles in Malaysia's construction industry and makes major contributions to both theoretical knowledge and actual execution. Furthermore, this study highlights the essential elements that influence the outcome of GB implementation in the Malaysian construction industry by comprehensive data collection and analysis. Hence, possessing this knowledge empowers experts and decision-makers to focus their efforts and resources on critical areas, ultimately enhancing the overall efficiency and effectiveness of green construction activities. The research's findings can be utilized

by researchers, practitioners, and policymakers seeking to enhance the implementation of GB practices in Malaysia.