



UNIVERSITI
TEKNOLOGI
MARA

College of
Built Environment

Poster Book

IIIDBEE X 2023
20 JANUARY 2023
*International Invention, Innovation & Design Exposition
for Built Environment and Engineering 2023*

**College of Built Environment
UiTM Puncak Alam**
20 January 2023 | Friday

Editors:

*Dr Aidatul Fadzlin Bakri, Nurzafira Zainul Abidin, Sr Dr Noor Akmal Adillah Ismail,
Dr Har Einur Azrin Baharuddin, Assoc. Prof. Ts Gs Dr Abdul Rauf Abdul Rasam*



BY SUBJECT | 2022



kab.uitm.my



kab.uitm



KAB UTM

#weareAlamBina

Generations of Professional Excellence

Unleashing Potentials
Shaping the Future

CONTENTS

01 Contents

02 Preface

03 Welcome remarks

04 Exhibition layout

05 Event programme

06 List of entries

**07 Poster category: Academician &
Professionals**

08 Poster category: Postgraduate

09 Poster category: Undergraduate

10 Appreciation

GREEN ROOF SYSTEM IN MALAYSIA: THE CONSTRUCTION PRACTITIONERS' PERSPECTIVES

INTRODUCTION

- Green Roof System is one of the methods that can sustain the environment. It is also a vegetated system where plants are planted on the roof using an engineered growing medium laid on certain layers of the system [1].
- Green roofs are turfed as open spaces that are positioned atop buildings with artificial landscaping and greenery surrounding them. These spaces are suitable for a variety of outdoor activities and leisure pursuits [2].
- From a global viewpoint, the green roof industry began in Germany in the early 1970s and in Central and Western Europe in the middle of the 1980s. Singapore, Eastern Europe, and the United States began using green roofs in the early 2000s, while Hong Kong, Manila, and China did not begin using them until the mid-2000s.
- Recently, green roofs have gained popularity in Malaysia [3].

ISSUES/ PROBLEM STATEMENT

- Globally, green roofs are recognized as one of the most effective and impactful green building techniques for reducing carbon footprint in fully developed urban areas [4].
- Due to rising urbanisation and increased investments in the housing, transportation, and energy sectors, the need for both horizontal and vertical infrastructure on a global scale. A significant burden has been imposed on resources and the environment as a result of this increase.
- Instead of being welcomed as a potential component of an accessible public area, green roofs are currently seen as a unique architectural feature for sustainable development strategies in Malaysian cities.
- However, material resources, product design, and manufacturing process delivery are a few of the challenges that Malaysia's construction sector must overcome to install Green Roof Systems [5].

OBJECTIVES

- This paper aim to investigate the Green Roof System implementation from the construction practitioners' perspectives.

- The objectives of this research are :

- To study the development of Green Roof System in Malaysia
- To investigate the awareness of Green Roof System among construction practitioners
- To study the challenges of Green Roof System implementation in Malaysia. *4.1 Objectives 1: The Development of Green Roof System in Malaysia*

The integration of aim and objective will lead to clear direction of the future for Green Roof implementation in Malaysian urban areas.

METHODOLOGY

- To acquire the answer for each objective in this research, sets of questionnaires were distributed to the registered Quantity Surveyor companies in Johor Bharu via Google form through email and WhatsApp's, the questionnaires were distributed to the companies with total of 75 sets of questionnaires.
- According to the company background, there were 75 numbers of practitioners in the company.
- However, out of 75 sets of questionnaires that has been distributed, only 49 of them responded to the questionnaires.
- The response rate of these questionnaires is 65% where it is good enough to be analysed.

FINDINGS

4.1 Objectives 1: The Development of Green Roof System in Malaysia

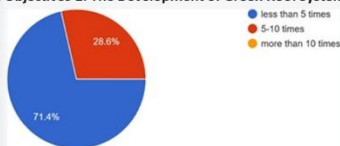


Figure 1: The experience in Green Roof System

- Based on the Figure 1, Malaysia has less than five times experiencing with Green Roof Systems.
- 71.4% of the respondents' responses less than five times in their experience demonstrates that Malaysia still lacks structures with green roofing systems installed.

4.2 Objectives 2: The Awareness of Green Roof System Among Construction Practitioners

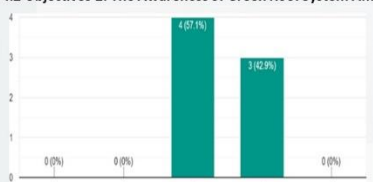


Figure 2: The awareness of Green Roof System in Malaysia

- Figure 2 shows that most respondent have medium knowledge about green roof implementation which is 57.1%.
- It follows by 42.9% of them have a higher knowledge in green roof implementation.
- This analysis shows that even a practitioner themselves do not have a strong knowledge in Green Roof System.
- Therefore, study has been made to create awareness for them to learn about this system for future uses.

4.2 Objectives 3 : The challenges of Green Roof system implementation in Malaysia

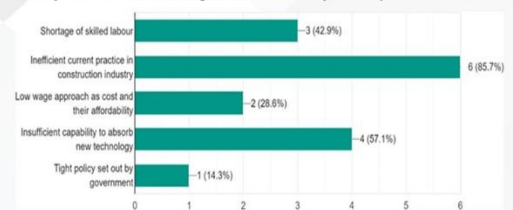


Figure 3: The challenges of implementing Green Roof Systems

- Figure 3 state that the inefficient current practice (85.7%) is the highest challenges in Green Roof implementation.
- The following 57% is lack of capability to adapt new technology.
- Shortage of skilled labour (42%); Cost (28%) and Rigid policy (14%) are the following three challenges in Green Building implementation.

NOVELTY

- All parties in the industry and government body have the responsibility to promote Green Roof System as one of the approaches for green technology application in the country.

CONCLUSION

- Due to certain barriers including lack of knowledge and technical expert, expensive cost of green roof and green roof application techniques are not widely disseminated or spread among professionals led to less interest to use the system.
- Malaysian professionals involved in the construction of green roof need to import construction materials from abroad the western countries.
- However, the cost of green roof construction could be decrease if we have our own green roof supplier and manufacturer in the country.
- Thus, all parties in the industry and government body have the responsibility to promote Green Roof System as one of the approaches for green technology application in the country.

COMMERCIALIZATION

- Malaysian professionals involved in the construction of green roof need to import construction materials from abroad the western countries.
- However, the cost of green roof construction could be decrease if we have our own green roof supplier and manufacturer in the country.

RECOGNITIONS

- Submission of the student Final Year Project (FYP) as part of partial fulfilment of the requirement for the award of Bachelor of Quantity Surveying (Honours).

CONFERENCES & PUBLICATION

- Submission of the student Final Year Project (FYP) to Centre of Studies for Quantity Surveying in July 2022.