UNIVERSITI TEKNOLOGI MARA
College of Built Environment

Poster Book

IIIDBEEX 2023

20 JANUARY 2023

International Invention, Innovation & Design Exposition for Built Environment and Engineering 2023

College of Built Environment
UiTM Puncak Alam
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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

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"g-PAT" : REVITALISING PRODUCTIVITY GROWTH IN GREEN CONSTRUCTION PROJECTS (GCP).

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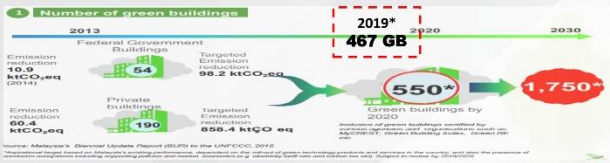
UNIVERSITI TEKNOLOGI MARA | College of Built Environment (CBE)

A TOOL DESIGNED FOR MONITORING & EMPOWERING GREEN CONSTRUCTION PROJECTS (GCP) PRODUCTIVITY PERFORMANCE

INTRODUCTION

"Productivity" is often used as a **performance indicator** in construction projects, also to evaluate the effectiveness of a building project performance. Conferring to Construction Industry Transformation Programme (CITP) 2016 – 2020, under strategic thrust number three, it is highlighted that PRODUCTIVITY is the primary engine of growth towards Malaysia's high-income target. Driving toward sustainable development across the country, Malaysia is amid a robust increase in the level of green activities driven by **Green Technology Masterplan (2017 – 2030)** and several green initiatives.



MALAYSIA aims to green at least 1750 no. of buildings in MALAYSIA by 2030. Construction productivity can be a basic and determining factor to secure the achievement of this target. However, the statistical data from Green Building Index (GBI) shows that the number of GB is still LAGGED BEHIND due to performance and productivity issues.

ISSUES & PROBLEM

The construction of **G**reen **B**uildings (**GB**) differs from that of traditional buildings in terms of the design, materials, and processes(. The barriers to the development of green buildings, such as the **HIGH COST AND PROJECT DELAY**, further indicate that the **PRODUCTIVITY** of green building construction needs to be **tackled.**

As for CURRENT STATE; Malaysia has **NOT DEVELOP ANY PLATFORM TO ACCESS PRODUCTIVITY PERFORMANCE** in construction project. **Monitoring productivity performance** is **important** to ensure the project is successful delivered without any hiccup especially in term of :

TIME, COST, QUALITY & SAFETY.

Due to aforesaid emerging issues, the development of g-PAT can be one of the **potential solution** to solve the problems.

"g-PAT"
GREEN PRODUCTIVITY ASSESMENT TOOL

A TOOL DESIGN FOR MONITORING & EMPOWERING GREEN CONSTRUCTION PRODUCTIVITY PERFORMANCE

OBJECTIVE

To **DEVELOP** an appropriate **PLATFORM (tools)** for monitoring and assessing productivity performance in Green Construction Projects.

"g-PAT" FEATURES

1) Detail **PORTFOLIO** of the Green Construction Projects
2) **PRODUCTIVITY & RESOURCE MONITORING** (Financial, Manpower, Construction Plant &Material)
1) **PERFORMANCE ASSESSMENT** (TIME, COST, QUALITY & SAFETY)
2) **PROJECT REPORT**

- **CLOUD BASED SERVICES** = easy login and can be access at anywhere in the world where the internet can be captured.
- ***"Pay-as-you-go"*** for services such as storage, networking, and virtualization.

METHODOLOGY

1. IDENTIFICATION OF GCP KEY FEATURES
- To identify the **project feature , procurement, type of contract, project cost, stake holder information** etc)

2. GCP RESOURCE INPUT
- Identification **issues & factor influence to green construction productivity**
- Information about **RESOURCE INPUT** *(Questionnaire Survey – GCP practitioners)*

3. RISK ASSESSMENT & KEY STRATEGY
- **Risk Assessment** Analysis
- **Strategy** to improve green construction productivity *(Semi-structure Interview)*

4. "g-PAT" TOOL DEVELOPMENT
- **Modelling Framework &** Prototype the **Tools Development**

NOVELTY / VALUE PROPOSITION

- Prelude **full productivity computation**
- Provide an **accurate measurement** of overall efficiency and establish a target for productivity improvement at all levels.
- **Efficient RESOURCE Management**
- Provide valuables and **efficiency information** to Company

COMMERICIALIZATION

POTENTIAL CUSTOMERS SEGMENTS :
- Organization involve in GCP **Contractor Supplier Consultant Project Stakeholder (Private & Public)**

FUTURE COLLABORATION:

Potential collaborative teams:
CIDB / Build-it Software Company / Local University (Research & Grant)

RECOGNITION

GRANT AWARD :

1) GERAN PENYELIDIKAN KHAS 2020 - File no. 600- RMC/GPK 5/3 (196/2020) : Research Amount RM20,000.00

2) GERAN PENYELIDIKAN UiTM CAWANGAN SELANGOR - 600-UiTMSEL(PI. 5/4)(128/2022) : Research Amount : RM45,000.00

OTHERS AWARD :

GOLD AWARD – 2ND GRADUATE DIGITAL INVENTION INNOVATION & DESIGN (GDIID 2021)

CONFERENCES & PUBLICATION

CONFERENCES :
- *1st Asean Quantity Surveying Association Academic Conference (AQSA 2022)*
- *5th International Conference on Research Methodology for Built Environment & Engineering (ICRMBEE 2021)*
- *4th International Conference on Research Methodology for Built Environment & Engineering (ICRMBEE 2019)*

PUBLICATION:

1. *Productivity Improvement Strategies in Green Construction Project: Formulation of Theoretical Framework: IOP Conference Series: Earth and Environmental Science, Volume 385, 4th International Conference on Research Methodology for Built Environment and Engineering (2019)*

2. *Analysing Factors Affecting Green Construction Productivity: Exploratory Factor Analysis International Journal of Sustainable Construction Engineering And Technology Vol. 12 No. 5 (2021) 197-204:*

3. *Analysing Issues In Green Construction Productivity Performance: MCRJ Special Issue Volume 11, No.3, 2020*

TEAM MEMBERS :
NOOR AISYAH ASYIKIN MAHAT , PROFFESOR DATIN SR DR HAMIMAH ADNAN & AP SR DR NORAZIAN MOHAMMAD YUSUWAN