

RESEARCH UPDATES.

GREEN HOMES INITIATIVE: **DESIGNING AN ENERGY PERFORMANCE BENCHMARKING (EPB) TOOL FOR MALAYSIAN RESIDENTIAL BUILDINGS, WITH EMPHASIS ON LANDED HOUSES**



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Aligned with the objectives of the National Energy Policy 2022-2040 (DTN), which prioritizes a 10% reduction in energy consumption for residential areas, GreenRE is undertaking a collaborative initiative with Universiti Malaya to create an Energy Performance Benchmarking (EPB) tool for existing Landed Houses. The EPB tool will facilitate the retrofit audit process for the energy assessors systematically as the initial step in decision-making process of building retrofitting towards a carbon-neutral country.

The research indicates that energy consumption in buildings aged 18 years and older is nearly 1.5 to 2 times higher compared to new buildings with similar characteristics. Considering the substantial embodied carbon in existing building stock, demolition is deemed an environmentally unfavourable option. Consequently, there is a pressing global urgency to markedly escalate retrofitting rates. Building energy consumption depends on several parameters such as building envelope, building system, and operation. Commencing this research initiative, the primary focus is on investigating the most influential factors affecting energy performance. This involves analyzing statistical data on the current electricity usage patterns of existing landed houses in Kuala Lumpur. Simultaneously, we will explore the scope, features, and assessment criteria of international in-use frameworks.

The ultimate aim is to ascertain a comprehensive minimum energy efficiency (EE) requirement stipulated by legislation, establishing a crucial baseline for the benchmarking tool.

The collected data and information from the phase one will undergo analysis to create an Assessment Checklist and Score report. This report will serve as a comprehensive tool for the energy auditor to systematically assess the current energy performance status of the house. Recommendations for appropriate retrofit packages will be provided based on the EE score obtained through the audit. This strategic advice aims to guide homeowners in making informed decisions and taking beneficial actions when investing in their housing's energy efficiency retrofit plan.

Phase One – Data Collection & Analysis

- Check je huis
- Home Energy Yardstick
- MyHomeEQ
- Totalkredit
- Quickscan tool
- SWAHO
- ALICE
- INSPIRE
- 1 2 3 Reno
- Energijhem
- HEC
- SOLIHA
- 4ECasa
- Home energy saver
- HOT2XP
- TARIH Δ
- Beopt
- EPIQR
- INVESTIMMO
- AS6opt-tool
- RenoFase tool
- EZ Retrofit
- EHeD
- ENERPAT
- EnergySavingCheck 3.0
- eeMeasure
- The HERON-DST
- Em Build Navigator
- EDGE
- Easykemak
- RdSAP
- NHER
- HEMP
- DanRETRO
- NatHERS
- RESNET HERS

Scope, features & assessment criteria of international EP tools

The most influential factors affecting EP

Analysing statistical data on the current electricity usage patterns of existing landed houses in Kuala Lumpur

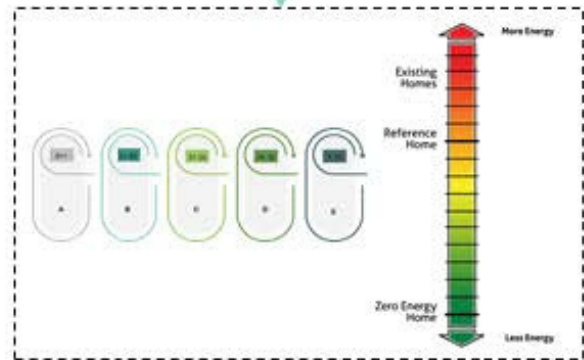
- Building envelope
- Building system
- Building operation



Phase Two – EP Benchmarking

Audit Assessment Checklist

Audit Assessment Baseline Score



Retrofit Packages



To Generate Certification Report

