REDESIGNING AN INSTITUTIONAL BUILDING FOR LOW-ENERGY USING ENERGY-10 SOFTWARE

PREPARED BY:

RICHARD ANYI
CENDRIC MASUIL @ALEXANDER

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ABSTRACT

A simulation study on the thermal performance has been done on tropical institutional building at Shah Alam. The Energy-10 software was used for this purpose and the building chosen was the medium sized Faculty of Information Technology and Quantitative Science building at Universiti Teknologi MARA.

The main objectives of the project were to study the energy consumption, to analyze the possible energy saving by redesigning the building parameters and to make recommendations on the possible energy efficient designed strategies.

Eight cases were studied, including the reference case where existing building parameters were considered. It was found that a minimum of 10% of the total annual energy consumption could be saved by applying some energy efficient strategies while a maximum saving of 70% could be produced if all the design strategies including daylighting in the software were considered.

The capabilities and limitations of the software are discussed. Suggestions for improvement of the software and recommendations for energy efficient building design in a tropical setting are also included in this report.
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