

**ENERGY PERFORMANCE OF A TEST BUILDING WITH ROOF AND
CEILING INSULATION DURING OFFICE HOURS COOLING**

By

DK NOORIAH BINTI PG MOHD YASSIN

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Universiti Teknologi Mara, Shah Alam.**

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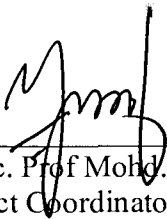
This Final Year Project Report entitled “Energy Performance of a Test Building with Roof and Ceiling Insulation During Office Hour Cooling” was submitted by DK Nooriah binti PG Mohd Yassin, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Physics, in the Faculty of Applied Science, and was approved by



Prof. Dr. Azni Zain Ahmed
Supervisor
Research Management Institute (RMI)
Universiti Teknologi Mara
40450 Shah Alam
Selangor



Dr. Nor Zaini Ikrom Zakaria
Co-Supervisor
Faculty of Applied Science
Universiti Teknologi Mara
40450 Shah Alam
Selangor



Assoc. Prof Mohd. Yusoff b. Tehran
Project Coordinator
B.Sc (Hons.) Physics
Faculty of Applied Science
Universiti Teknologi MARA
40450 Shah Alam



Dr. Abdul Malik Marwan Ali
Head of Programme
B.Sc (Hons.) Physics
Faculty of Applied Science
Universiti Teknologi MARA
40450 Shah Alam

DATE: 14/12/09

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ABSTRACT

The aim of this research is to evaluate the energy performance of insulated and noninsulated test building for office hour cooling mode. Two test cell buildings named Test Cell A and Test Cell B. Test Cell A was built with no insulation while Test Cell B was built with insulation in a different location which are at the roof and on the ceiling. The objectives of this research is to measure and analyze the energy consumption and to determine the energy saving for insulated test building during office hour cooling mode starting from 7.00 am until 6.00 pm. Two different materials were used for insulation which is Mineral Wool at the roof pitch and a Fiberglass laid on the ceiling. The research divided by two parts. Part 1 is to measure energy consumption and energy saving for roof insulation during office hour cooling mode which is run for six days. Roof insulation then removed and ceiling insulation was installed laid on ceiling. Part 2 was run for ten days to measure energy consumption and energy saving for ceiling insulation during office hour cooling mode. Both parts were running by switch on air-conditioning during office hour and the energy consumption was measured by Energy Meter. All data are represented by graph and table. The result shows that both insulations give the energy saving determined by comparing the energy consumption between Test Cell A and Test Cell B. Energy saving for roof insulation is about 1.47 % and 13.0 % for ceiling insulation.