

**RELATIONSHIP BETWEEN INDOOR AND OUTDOOR
DAYTIME TEMPERATURE OF CEILING INSULATED AND
NON-INSULATED NATURALLY VENTILATED BUILDING**

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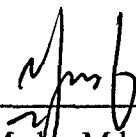
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This Final Year Project Report entitled “**Relationship Between Indoor and Outdoor Daytime Temperature of Ceiling Insulated and non-Insulated Naturally Ventilated Building**” was submitted by Siti Nadzirah binti Abdul Karim, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Physics, in the Faculty of Applied Sciences, and was approved by



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ABSTRACT

The purpose of this study mainly is to find the relationship between indoor and outdoor daytime temperature of building in natural ventilated mode. Two identical buildings located inside the main campus of UiTM Shah Alam, Selangor were used as test building. The buildings are labeled as Test Cell A (TCA) and Test Cell B (TCB). Both Test Cells are similar except for insulation installed for thermal purpose above ceiling of TCB. Running in natural ventilated mode, windows were let to open at 20-30° for the air flow. Thermocouple wires were used for temperature sensor for measuring temperature and a data logger device was used for data taking. Data obtained from the field study were processed and analyzed. Temperature profile graph was plotted to study the thermal insulation performance on test buildings. Scattered graph was then plotted to extract equation relating both parameter, indoor and outdoor temperature, with an R^2 value. R^2 value represents how strong the outdoor temperature effect to the indoor temperature and range between zero to one. Same procedures of processing data were done to computer simulation data from the Integrated Environmental Solution (IES) software and previous study data on the same cases. The comparisons of R^2 value in Table 4.7 shows that the outdoor temperature is highly effecting to the indoor temperature as most of the R^2 value obtained were greater than 0.5.

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