THERMAL AND ENERGY PERFORMANCE OF TRADITIONAL RESIDENTIAL BUILDING IN MALAYSIA
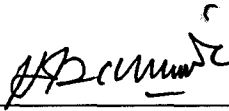
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This Final Year Project entitled "**Thermal and Energy Performance of Traditional Residential Building in Malaysia**" was submitted by Farah Safura Bte Othman, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Physics, in the Faculty of Applied Sciences, and was approved by

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ABSTRACT

This research evaluates the thermal and energy performances of traditional residential buildings in Malaysia. These are appraised by the thermo physical properties of the material and construction via physical field monitoring and computer modeling. Real time internal and external thermal environmental data were logged and analyzed for the thermal performance evaluation. The energy performance was predicted using commercial modeling software.

For the thermal performance, five types of traditional houses in Mini Malaysia, Melaka were used for these studies which are the Kedah, Negeri Sembilan, Melaka, Terengganu and Sarawak house. External and internal data loggers were used to collect the environment data. The internal data logger was U12 Temp/RH/light, and the external was HOBO Pro series with solar radiation shield were used. The environment data collected were temperature, RH and light intensity. A temperature difference and decrement factor are used to appraise thermal performance for the house.

For the energy performance, cooling energy was predicted using Energy-10 as the computer simulation tool. A wall material normally used for traditional building was chosen. The thickness was varied to evaluate the cooling energy needs.

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