UNIVERSITI TEKNOLOGI MARA

THERMAL COMFORT AND OCCUPANTS ADAPTIVE BEHAVIOUR IN OFFICE ENVIRONMENT

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Project submitted in fulfillment of the requirements for
the degree of
Bachelor in Environmental Health and Safety
(Hons.)

Faculty of Health Sciences

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DECLARATION BY STUDENT

Project entitled "Thermal Comfort and Occupants Adaptive Behaviour in Office Environment" is a presentation of my original research work. Whenever contributions of others involved, every effort is made to indicate this clearly, with due reference to the literature, and acknowledgement of collaborative research and discussion. The project was done under the guidance of Dr. Farah Ayuni binti Shafie as Project Supervisor. It has been submitted to the Faculty of Health Sciences in partial fulfilment of the requirement for the Degree of Bachelor in Environmental Health and Safety (Hons).

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ABSTRACT

Thermal comfort is also known as human comfort which is very difficult to measure because it is subjective. There are two types of factor that contribute to thermal comfort which are environmental factors and personal factors. The environmental factors include air temperature, radiant temperature, relative humidity and air humidity. Meanwhile, personal factors involve the human activity level (metabolic rate) and their clothing insulation. Indoor environmental air quality measurement and questionnaire on occupants adaptive behaviours was conducted in the office environment. American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 55 was used as a standard of thermal comforts. Standard seven-point ASHRAE Standard 55 were focused on the questionnaire. The result indicates that, the indoor environmental quality complied with the standard. The relationships between Thermal Sensation Vote (TSV) and Thermal Preference vote (TP) showed that occupants were still in the comfort zone. Furthermore, clothing insulation indicates that females have higher tolerance of heat as compared to males. This research should contribute to the baseline of possible thermal comfort and occupants' adaptive behaviour for workers in Malaysia to assist in providing additional knowledge to the management and safety officer to control the exposure of heats or cold condition for their workers to avoid from leading cases of clinical health effects, work capacity loss and production reduction.

Keywords*: Thermal comfort, adaptive behaviour, indoor environmental air quality.*