UNIVERSITI TEKNOLOGI MARA

THERMAL COMFORT ASSESSMENT IN ELDERLY CARE CENTRE AND ITS HEALTH EFFECT

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Project submitted in fulfilment 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 assessment in elderly care centre and its health effect” is a presentation of my original research work. Whenever contributions of others are involved, every effort is made to indicate this clearly, with due reference to literature, and acknowledgement of collaborative research and discussions. The project was done under the guidance of Project Supervisor, Dr. Farah Ayuni Bt Shafie. 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 known as comfort of human in the environment and subjective matter to measure. There are two type of thermal factors that contributed to the thermal comfort in environment and building, which are personal factors and environmental factors. The personal factors included metabolic rate (the human activities level) and clothing insulations. The environmental factors have parameters which are air temperature, radiant temperature, relative humidity, and humidity of air. Indoor thermal measurements and questionnaire on thermal comfort in the buildings was conducted in the elderly care centre (ECC). American Society of Heating, Refrigerating and Air- Conditioning Engineers (ASHRAE) Standard 55 was used as a guideline to assess the thermal comfort in this study. The result indicates that the indoor thermal quality was not complied with the standard. The Thermal Sensation Vote (TSV) shows that occupants in ECC B facing thermal discomfort compared to the ECC A. The measurement for indoor thermal in the building showed that ECC A and B not comply with ASHRAE 55. This can be due to the building characteristic which defer between ECC A and ECC B. The clothing insulation for both ECCs showed that female prefer more clothes compare to man which female has higher mean for clothing insulations. Furthermore, occupants in both ECCs showed the health symptoms illness related to the thermal discomfort during staying in the ECC. This research should contribute to the baseline of thermal comforts and related to health effects in the buildings to provide thermal comfort when live in the building especially to susceptible groups.

Keywords: *Thermal comfort, air temperature, relative humidity, ventilation, elderly care centre*