

**CENTRE OF STUDIES FOR BUILDING SURVEYING
FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING
UNIVERSITI TEKNOLOGI MARA**

**THERMAL COMFORT EVALUATIONS IN SCHOOL BUILDING IN
SHAH ALAM**

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**“I hereby declare that this academic project is the result of my own research
except for the quotation and summary which have been acknowledged”**

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ABSTRACT

Nowadays, rapidly development in urban area can affect local climate. This micro-climate change may disturb the surrounding environment, including schools. However, the investigations and evaluations of thermal comfort in learning and teaching environment are very limited, especially for school building. Thermal comfort is defined as "that condition of mind, which expresses satisfaction with the thermal environment" (ISO Standard 7730 in 1994).

Thermal comfort is affected by indoor temperature causes by heat, humidity, air velocity and human metabolism. Thus, Malaysian standard was suggesting the thermal comfort range for conventional building. Any gains or losses outside this range, the heat will cause discomfort.

These studies reports on the findings of a preliminary survey conducted to identify and investigate the thermal comfort evaluations in school building in Shah Alam using Velocicalc meter instrument.

The main objective of this study is to study the criteria for thermal comfort performance in school building in Shah Alam, Selangor, to assess the thermal comfort performance in classroom in school building and lastly researcher will recommend the best practice to achieve thermal comfort performance in school building.

The study was conducted at 3 number of school, which are SMK Seksyen 7, SMK Seksyen 24 and SMK Sultan Salahudin Abdul Aziz Shah. Besides using Velocicalc Meter, sample of questionnaire are distribute to student at each school to assess the student perception on thermal comfort performance of their classroom.

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May the Almighty God richly bless all of you.

CHAPTER 1

INTRODUCTIONS

1.1 Introduction

Rapid development in urban area can influence local climate. This micro-climate change may affect the surrounding environment, including schools. However, the study of comfort in teaching and learning environment is very limited in their number of publications, especially for schools. Thermal comfort is defined as “that condition of mind, which expresses satisfaction with the thermal environment” (ISO Standard 7730).

Thermal comfort describes the synthesized feeling about the body's thermal state. Hensen, (1991) defines thermal comfort as “a state in which there are no driving impulses to correct the environment by behavior”. The definition by ASHRAEE Standard 55-200 (2004) is “the condition of mind in which satisfaction is expressed with the thermal environment”. Thermal comfort is strongly related to the thermal balance of the body, which itself is influenced by environmental and personal parameters

Achieving occupant comfort is the result of a collaborative effort of environmental conditions, such as indoor air temperature, mean radiant temperature, relative humidity, air movement, illumination, sound, air quality and other factors. Nowadays, there are a lot of issues regarding thermal comfort in school building such as classroom. This is because of several reasons that cause thermal discomfort such as global warming. The indoor environment in classrooms can have a large effect on comfort, health and learning performance. Some of school in Malaysia does not use air