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Poster Book

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ASSESSING SEMI-OUTDOOR THERMAL ENVIRONMENT AT HIGHER LEARNING INSTITUTION IN A HOT HUMID CLIMATE

FINDINGS

Location	Thermal Environment Parameters					PET (°C)
		Air Temperature, T_a (°C)	Globe Temperature, T_g (°C)	Relative Humidity, RH (%)	Air Movement, v (m/s)	
Semi-outdoor A	Mean	31.0	31.9	61.9	1.40	42.3
	Standard Deviation	1.4	1.6	7.1	0.70	2.1
	Range	28.1–33.4	28.5–34.2	51.0–76.0	0.50–3.80	37.4–46.6
Semi-outdoor B	Mean	31.7	32.6	59.7	0.80	44.5
	Standard Deviation	1.0	0.9	4.8	0.30	1.3
	Range	29.8–33.0	31.0–34.1	53.0–69.0	0.30–1.40	41.6–47.6
Semi-outdoor C	Mean	29.3	30.1	66.8	1.34	40.1
	Standard Deviation	0.6	0.7	2.9	0.50	2.4
	Range	27.9–30.3	28.7–31.6	61.9–71.7	0.55–2.42	34.2–45.8

Figure 1 Level of PET at location A, B and C.

The mean PET values for the three different semi-outdoor sites were 42.3 °C, 44.5 °C and 40.1 °C respectively. While the range PET values for all sites studied were between 34.2 – 47.6 °C. These data indicated that all semi-outdoor sites in this study can be classified as between hot to very hot.

NOVELTY

This study might be beneficial to the students in UiTM Shah Alam, especially those who highly engage in the outdoor environment to see whether they feel comfortable outdoors. For instance, we can identify a suitable range of selected outdoor environmental parameters which will bring comfort to students. In addition to that, this study might be useful for designers to grasp the idea of creating comfortable outdoor spaces to bring the most comfort to outdoor life.

CONCLUSION

Thermal environment of semi-outdoor microclimate measurement was carried out in three different area in higher learning institution at hot humid climate. The result reveal that air temperature and relative humidity influenced the level of PET. Also, vegetation or plant surfaces and area features have significant contribution to PET.

COMMERCIALIZATION

This study is crucial as it can give knowledge that can be utilize to enhance the quality of thermal comfort at semi-outdoor. Commercialization through collaborating with university will enhance the value and quality of this study.

RECOGNITION

Kolej Kediaman Mawar Universiti Teknologi MARA, Dataran Cendikia, Kolej Kediaman Melati Universiti Teknologi MARA, Faculty of Applied Sciences (FSG), Faculty of Architecture, Planning and Surveying (FSPU).

CONFERENCES & PUBLICATION

Galeri Kolej Alam Bina, Kampus Puncak Alam, UiTM Cawangan Selangor.

INTRODUCTION

Outdoor thermal comfort (OTC) refers to a person's subjective perception of the temperature and other thermal conditions in an outdoor environment. Outdoor environments on a campus can have a significant impact on students' experience and well-being.

ISSUES/ PROBLEM STATEMENT

The outdoor spaces on a campus can provide students with opportunities for recreation, exercise, and social interaction, which can contribute to their overall physical and mental health. Factors such as the thermal comfort, lighting, and overall aesthetic appeal of the space can all influence how students use and perceive the space.

OBJECTIVES

The objective of this study is to evaluate the outdoor thermal environment by applying PET assessment.

METHODOLOGY

This study was conducted in selected semi-outdoor areas at the main campus of Universiti Teknologi MARA (UiTM) in Shah Alam, Selangor. The locations that have been chosen were Kolej Mawae (Location A), Dataran Cendikia (Location B), and Kolej Melati (Location C). The thermal environment of the semi-outdoor microclimate was measured using a Delta Ohm data logger (HD32.3 instrument). The data was collected at 10-minute intervals between 1000 and 1500 h each day for a two-week sampling period. All microclimate parameters were measured 1.5 m above the ground.



a) Location A



b) Location B



c) Location C