



DESIGN FOR OUTDOORS IN A HOT & DRY CLIMATE
A Study of Outdoor Thermal Comfort
in Dubai, United Arab Emirates

by

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ABSTRACT

With the growing interest on sustainability, design consideration for thermal comfort in the outdoors is seen as an important factor enhancing the quality of life in the urban setting. The topic has received significant interest and several studies have been made in mostly temperate and tropical climates. However, not much investigation into the matter has been done in hot-arid climates characteristic to that of the middle-eastern countries. The study then aimed to understand the relationships between the several factors (air temperature, solar radiation, relative humidity, wind speed, clothing and activity) affecting thermal comfort, determine the actual comfort zone for Dubai UAE through field measurements and interview surveys, and recommend design considerations to achieve thermal comfort.

The findings of the study show that majority of the sample population in Dubai reported overall thermal comfort for the three seasons observed. Solar radiation has most direct influence on thermal comfort outdoors thus it is recommended that shading be of primary consideration during summer. It was also found that relative humidity is an amplifying factor for air temperature. Wind should be accounted for its cooling effect thus high wind speeds are encouraged during summer while protection from this must be provided during winter. Contrary to the common notion that middle eastern climate is very harsh and that thermal comfort could only be achieved in a controlled indoor environment, the study shows that with proper design consideration of the findings in the study, it is possible to achieve thermal comfort for outdoors in Dubai for longer periods of the year.

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DEDICATION

This book is dedicated to the shiny happy people of Dubai.
May you continue living a full life – both indoor and outdoor.

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