

IEQ performance and occupants' satisfaction of a mixed-mode ventilated shopping mall in hot-humid climate of Malaysia

ABSTRACT

This study is an evaluation of the IEQ performance and occupants' satisfaction of a selected mixed-mode ventilated Malaysian mall under the following objectives: 1) to evaluate the IEQ performance of the mixed-mode ventilated mall, 2) to study how occupants (shoppers and retailers) of the mall perceive the IEQ factors, and 3) to reveal the effect of the mall's performance on retailers' work activities and shoppers' intention of revisiting the mall. In this study, five measured environmental factors (air temperature, operative temperature, relative humidity, air speed, and CO₂) and five satisfaction factors (thermal comfort, indoor air quality, air movement, workplace/present location, and overall building performance) were evaluated in the case study mall through field measurements and questionnaire survey. The results revealed that although high indoor air temperature and low occupants' thermal satisfaction was recorded, the majority of the retailers still found their work activities enjoyable and the majority of the shoppers would still revisit the mall if given the opportunity. Generally, results from this study will contribute to the knowledge on the advantages of adopting sustainable designs in commercial buildings for improving the indoor environment and general the well-being of occupants. Finally, it will open more opportunities for future IEQ studies to be carried out in hot humid climatic regions.

Keyword: Hot-humid climate; indoor environmental quality; Mixed-mode ventilation; Shopping mall; Thermal comfort