

# Investigation and Evaluation of Thermal Comfort and Walking Comfort in Hot-Humid Climate Case Study: The Open Spaces of Mega Kuningan-Superblock in Jakarta

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## Abstract

This paper investigated and evaluated outdoor thermal comfort and walking comfort in the hot-humid city in Jakarta. This paper used two approaches to show the valid result, through the field measurement of thermal comfort and simulation of the walking comfort of Indonesian people. The simulation of walking comfort was used to calculate how far an individual might be able to walk before experiencing discomfort in an outdoor environment in the hot humid city. Mega Kuningan-superblock in Jakarta, the first superblock developed in Jakarta, was the study area. The interesting factor why this superblock chosen was the compact design. The thermal comfort indices used The Physiologically Equivalent Temperature (PET) calculated using Rayman Software. Walking comfort indices used skin wettedness to simulate the physiological of body that react to environment and use the information to define how far an average Indonesian people can walk while keeping thermal comfort. The three condition were made during simulation, shaded area, light shaded area, and open area, to promote different possibilities of thermal conditions. The results show thermal comfort was difficult to be achieved during the daytime. The heat trapped amongst the buildings in the nighttime affect the temperature in the morning, thus made Tmrt rise significantly during the daytime that affect thermal comfort in next day. Tmrt did not only affect the thermal comfort in open space, but also affect the walking comfort. Shadowing affects the walking distance, the four minutes walking distance or 320 m average is the propose to revise the standard of facilities placement in the urban design.

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