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OVERVIEW OF URBAN HEAT ISLAND (UHI) PHENOMENON TOWARDS HUMAN THERMAL COMFORT

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Abstract

Urban Heat Island (UHI) is expected to be a disastrous challenge to human in the following decade as a result of continuous urbanization without appropriate planning and design. The impacts of UHI are even getting worse due to large population density with improper building design especially in dense metropolitan cities. A lot of research has been carried out for UHI phenomenon both in tropical and seasonal climates. There are many factors contributing to the formation of UHI phenomenon that includes increasing rate of urbanization and population density, uncontrollable factors and controllable factors. In a fundamental study, a prolonged exposure to heat impact will significantly contribute to human discomfort and health problems resulting in heat-related illness. The cases of heat related deaths, such as heat strokes, are due to the result of climate changes and further the problem of heat waves will increase year by year. Since the consequences of UHI are considered to be more significant, the severity of the problem should be critically examined and carefully reported. Many research efforts have been implemented for making conceptual design and also a wide range of literature is available for continuing the mitigation strategies. Therefore, this study is emphasized on the critical investigation of the features, factors and impacts of UHI towards evaluating human safety and thermal comfort. Future research direction should also be encompassed on the design and planning parameters as well as assessment of climate change risks and vulnerability for reducing the effects of urban heat island onto human health and safety.

Keywords: heat related illness, human safety, thermal comfort, urban heat island

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