

(33)

**Effect of Flora Density on Thermal Comfort in Urban Parks in Tropical Region:
A Review**

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Abstract

Urban areas are heating up due to escalating population and unlimited and unplanned building construction. Moreover, this heating up is more predominant in tropical micro-climate in urban settings. According to sustainable development programmes, urban greening and flora landscaping at urban contexts become more imperative to mitigate Urban Heat Island effect (UHI) and to enhance thermal comfort. It is revealed that flora population can increase the thermal comfort in urban settings. Flora population, its density and landscape can mainly influence to thermal comfort in parks significantly. In urban parks, thermal comfort improves via flora density, through modifying micro climatic conditions. High density of large canopy trees provides huge shade and decrease of air temperature, increase cooling intensity effectively. Considerable density of grasses and bushes carry out responsible roll on improving air quality and moderate micro climatic on thermal comfort. When selection flora species to urban parks, parameters like leaf area index, number of leaves and plant height can be considered as major requirements since these factors controlling solar radiation penetration which influence the temperature and thermal comfort. In order to provide appropriate thermal comfort conditions to urban parks, it is inevitable to design suitable landscape sketches against the challenge of less ground space to the highest flora density. Thermal comfort conditions in urban parks depending on air temperature, wind speed, solar radiation and absolute humidity, but all these factors can be influenced by flora population. In order to succeed the sustainable development programmes in tropical region countries, green urban spaces have been considered as vital component in the microclimate. By formulating appropriate park designs with greater flora density at compacted city areas, especially in tropical region, can increase thermal comfort which can assist urban planning to make better use of green spaces for microclimate regulation. Under this review, the strengths, weaknesses, opportunities and potential challenges of flora density on urban microclimate were highlighted and knowledge gaps were identified. Research priorities and future challenges that will support in urban planning with multi-prong strategies were also discussed.

Keywords: Flora density, Urban parks, Thermal comfort, Landscape