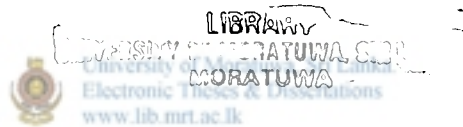


## Effect of Urban Vegetation

Design Strategies for a Thermally Comfortable Environment



A Dissertation submitted to the University of Moratuwa  
as partial fulfilment of the requirements for the degree of  
Master of Science in Architecture

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## Abstract

The rapid urbanisation has brought many unknown changes and side effects to humans, other life forms and physical environment. Therefore it is important to understand nature's benefits and their impacts, from a design and planning point of view.

The objective of this research is to broad base our knowledge on how vegetation effects the human environment. In urban planning, vegetation is one element of the ecosystem that can be manipulated in order to create necessary ecological effects. Changing the amount and spatial distribution of trees can change the flow of energy, water, carbon and pollutants through the ecosystem.

Vegetation is renewable and has the potential to yield a wide range of important benefits.

The intensity of urban development also influences the amount of trees in a city, with tree density generally decreasing with urbanization.

Vegetation within urban and urbanizing areas may change with time and space. Besides trees, a wide range of other urban surfaces interacts with the surrounding environment and effect local gas and energy exchanges, visual quality, human stress, etc. Urbanization makes a great contribution to it's own microclimate, that are essential to recognise urban element changes. (Built areas, tree covered area, green, grass areas etc.) To identify urbanisation effects



on it's microclimate, the change that occurs in a particular area is used to calculate the thermal comfort change.

In this research we try to examine the degree to which the climate, the people and the surrounding Buildings in the city are influenced by trees. The general research approach is to use air temperature and humidity at site and the nearest reference point to compare differences in varying climatic conditions.□



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