

(153)

Managing Streetscape Vegetation for Sustainable Urbanization in Sri Lanka

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Abstract

Streetscape vegetation is an essential part of the urban ecology that supports the urban vegetation ratio, provides thermal comfort, maintains the visual image, and provides a sense of belonging and psychological relief to the urbanites. Hence, planting and proper maintenance of the streetscape vegetation is significant, especially, amidst escalated urbanization. The Sri Lankan streetscape is enriched by vegetation. However, poor planning and management decisions have become a threat to the prolonged lives of the vegetation. Therefore, it is crucial to mitigate the damages enforced upon them to create a sustainable and livable urban environment. This research aims to identify the factors affecting the proper maintenance of streetscape vegetation. Under a qualitative research approach, a three-step methodology has been adopted to conduct the study. A literature review was carried out identifying the factors affecting the streetscape vegetation maintenance followed up by interviews with three Sri Lankan urban landscape experts. Two case studies have been conducted in the Colombo Municipal Council area observing the challenges to proper maintenance and identifying the most significant factors to be considered during planting and maintenance. It is evident that current streetscape vegetation is subjected to numerous challenges. With the urbanization, the demand for utilities such as water, electricity, telecommunication, sewer, and storm water management has been increased resulted in the expansion of underground lines and frequent maintenance activities, damaging the root systems of streetscape vegetation. The intensified pollutants discharged from vehicles and the traffic congestion affects the growth of vegetation. Negligence of responsible managing authorities have increased the materialization of abandoned streetscape vegetation clusters. These challenges can be mitigated by considering factors including. Planting climate-compatible trees, plants that are immune to Sri Lankan tropical climate. Selecting native trees will boost sustainable urbanization with minimum maintenance effort. Selecting vegetation that promotes biodiversity, yet does not generate safety and comfort issues to street users such as easily breaking and falling branches, fruit-bearing trees in the center medians, pests, and birds attracting trees and plants near transit stops or pedestrian predominant areas. Planting trees with appropriate tree root radius and spread to prevent damages to the underground utility lines. The findings of this study will be benefitted to urban planners, designers, landscape architects, and other management personals during the decision-making and streetscape vegetation management process. The academic community can be benefitted through identifying core literature and research gaps to explore in the future.

Keywords: Urban streetscape vegetation, Maintenance, Factors affecting, Sustainability

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