

Designing a Waste Management System for an Urban Area in Sri Lanka

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Abstract : Waste management is one of the predominant aspects of resource utilization and sustainability. The absence of a proper waste management system may lead to adverse troubles and catastrophic tragedies ultimately. Sri Lanka has faced different predicaments for a long time due to the unavailability of a systematic manner in the waste management process. The main objective of this research is to design an efficient waste management system for an urban area in Sri Lanka. The research was dispersed into three categories as biodegradable, non-biodegradable, and hazardous waste. Different waste materials were researched for each category by probing the entire process from the beginning to final disposal for perceiving the prevailing problems in the waste management system. The distinctive segment of this research is comparing efficient foreign waste management strategies with efficacious approaches on increasing public commitment to uncovering cognizable ways of implementing such a system in the Sri Lankan context. Waste management systems in Singapore, Japan, Malaysia, USA, Maldives, and China incorporated their exemplary plan of action on tackling the waste problem in diverse sectors were studied. Ultimately, three coherent models were proposed for each category pertaining to the concepts of circular economy and lean manufacturing from the inception to the final disposal of the waste. This research also includes concealed financial opportunities regarding waste management.

Keywords : circular economy, efficient waste management system, lean manufacturing, sustainability, urban area

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