Sustainable Development of Built Environment by Managing Building Waste: Two Case Studies in India

A. K. Kasthurba

Department of Architecture, National Institute of Technology, Calicut, Kerala, India
kasthurba@nitc.ac.in

Expansion in construction activities due to population growth and fast urban development has resulted in increasing quantities of building waste. Rising quantities of such waste materials has adversely affected cost of landfills, construction cost, and environmental quality. Disposal of waste in landfills has been challenging due to the stringent environment protective regulations and high cost of land. Management of building waste needs multi-disciplinary expertise in planning, engineering and material management. Two case studies which demonstrate effective utilization of waste in construction projects carried out in India are outlined.

Problems associated with increasing waste due to rising urbanization and its environmental concerns are reviewed. This paper presents an overview of current building waste management and then highlights challenges, opportunities and future outlook for a sustainable built environment based on a comprehensive review of research studies undertaken worldwide. Resource needs posed by the construction industry ought to be supported by recycled alternative building materials and re-use for effective waste management and a sustainable built environment. These scientific approaches of utilizing waste in building construction should help private and governmental agencies to incorporate sustainable waste management strategies in future. The study will offer the background and provide an useful guide for engineers and material scientists to develop standards and specifications for cost effective alternate building materials and adopt techniques for economy, energy and environmental benefits.