

## **Waste Material Management on Building Construction in Sri Lanka; Mitigation of Concrete Waste Factor and Cost Effect During Construction Stage**

KHP Ruwanthi<sup>1#</sup> and AARK Amaratunga<sup>1</sup>

<sup>1</sup>Faculty of Built Environment and Spatial Sciences, General Sir John Kotelawala Defence University,  
Ratmalana, Sri Lanka

<sup>#</sup>paramiruwanthi@gmail.com

### **Abstract**

Material waste is one of the most important factors which affects the contractor directly by reducing profit and affecting the employer by increasing project costs. As a result, most of the building projects have planned to address multiple levels to reduce this waste. Concrete debris is one of the waste materials in construction that costs the project's stakeholders the most. When compared to other material wastes, the volume of waste concrete generates as a primary component of the construction is disproportionately high in Sri Lankan construction projects. Most countries are currently working to reduce concrete waste while pursuing sustainable growth. As a result, traditional methods were used to reduce concrete waste which have not been effective over time. The aims of this research study is to achieve waste material management in building construction in Sri Lanka, mitigation of concrete waste factors, and cost-effective during the construction stage. To achieve the aims, a comprehensive literature review, semi-structured interviews and a questionnaire were conducted to gather data through both qualitative and quantitative procedures. The empirical findings revealed that concrete waste has a positive relationship with project cost. Precast elements, lean construction techniques, 3R concept, and a few more others were identified to minimize concrete waste, which reduces the project cost in the Sri Lankan construction industry. These research findings deliver beneficial evidence to the practitioners with an in-depth understanding of the important necessity for the construction industry and thereby benefiting to reduce the project cost in construction projects.

**Keywords:** *Building Construction, Cost effectiveness, Concrete waste*