

## **Construction and Demolition Waste Generation and its Management in Sri Lankan Building Construction Projects**

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Construction and demolition activities in the construction industry is a significant contributor to the waste generated globally. Disposal of the generated waste is a major environmental issue. In the construction industry, building construction takes a considerable portion of the construction activities. Construction and demolition waste generation has been an emerging problem in Sri Lanka with the huge boost in the construction industry in the recent past. Unfortunately, in Sri Lanka the data on the waste generation in construction industry has not been investigated. Therefore, it is necessary to investigate the construction and demolition waste generation in Sri Lankan construction industry. In this study, construction and demolition waste generation and its management of building construction projects in the Colombo and Kandy districts were investigated using a questionnaire survey. The total waste generated in observed building construction projects was estimated as  $2.6 \pm 1.0$  % of total building materials used. Further, estimation revealed that out of its' total composition steel ( $4.7 \pm 3.2\%$ ), cement ( $3.3 \pm 0.6\%$ ), timber ( $3.3 \pm 1.5\%$ ), sand ( $3.3 \pm 0.57$  %), concrete ( $3.0 \pm 1.7$  %) and bricks ( $3.0 \pm 1.0$  %), are the highest wasted material in constructions sites. Furthermore, when the contractor grade decreases the construction waste percentages increase simultaneously. The wastages were  $2.7 \pm 0.9\%$  in C1 grade and  $4.3 \pm 3.9\%$  in C2 grade. Demolition waste mainly consisted of cement plaster ( $41.0 \pm 8.0\%$ ), concrete ( $21.8 \pm 13.8\%$ ), steel ( $13.5 \pm 7.2\%$ ), brick ( $13.6 \pm 7.2\%$ ) and other materials ( $12.1 \pm 6.7\%$ ) such as aluminum, glass, asbestos and other materials. The changes to the original design and bad weather were identified as the main reasons for waste generation in the building construction projects. Moreover, study revealed that steel, timber, sand and cement are the most wasted materials in the building construction industry while cement plaster and concrete are the major components of demolished waste.

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