

Construction and Demolition Waste Management in Indian Cities

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Abstract : Construction sector in India is extremely resource and carbon intensive. It contributes to significantly to national greenhouse emissions. At the resource end the industry consumes significant portions of the output from mining. Resources such as sand and soil are most exploited and their rampant extraction is becoming constant source of impact on environment and society. Cement is another resource that is used in abundance in building and construction and has a direct impact on limestone resources. Though India is rich in cement grade limestone resource, efforts have to be made for sustainable consumption of this resource to ensure future availability. Use of these resources in high volumes in India is a result of rapid urbanization. More cities have grown to a population of million plus in the last decade and million plus cities are growing further. To cater to needs of growing urban population of construction activities are inevitable in the coming future thereby increasing material consumption. Increased construction will also lead to substantial increase in end of life waste generation from Construction and Demolition (C&D). Therefore proper management of C&D waste has the potential to reduce environmental pollution as well as contribute to the resource efficiency in the construction sector. The present study deals with estimation, characterisation and documenting current management practices of C&D waste in 10 Indian cities of different geographies and classes. Based on primary data the study draws conclusions on the potential of C&D waste to be used as an alternative to primary raw materials. The estimation results show that India generates 716 million tons of C&D waste annually, placing the country as second largest C&D waste generator in the world after China. The study also aimed at utilization of C&D waste in to building materials. The waste samples collected from various cities have been used to replace 100% stone aggregates in paver blocks without any decrease in strength. However, management practices of C&D waste in cities still remains poor instead of notification of rules and regulations notified for C&D waste management. Only a few cities have managed to install processing plant and set up management systems for C&D waste. Therefore there is immense opportunity for management and reuse of C&D waste in Indian cities.

Keywords : building materials, construction and demolition waste, cities, environmental pollution, resource efficiency

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