Waste generated in high-rise buildings construction: A current situation in Thailand

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Abstract

The construction industry is one of the key economic development activities in Thailand. An increasing of the construction sector also contributed to the increasing of environmental pollution. It was estimated about 13-30\% of all solid waste deposition in landfills worldwide comprised construction and demolition waste. The international researches were showed that the construction industry generated high volume or quantities of material waste often attributed to the lack of on-site material control. Consequently, reducing construction waste was becoming a key environmental issue in the building construction industry. This paper aimed to provide an overview of waste generated in high-rise buildings construction and the situation of construction waste management in Thailand. By investigating the statistical information on construction waste and waste management of high-rise building projects, the analysis of environmental impacts was conducted to identify the most potential materials for minimizing construction waste.

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1 Introduction

Over the past ten years, Thailand has enjoyed exceptionally rapid economic growth, achieving a Gross Domestic Product (GDP) growth of up to 3.5\% annually (http://www.tradingeconomics.com/thailand/gdp/forecast)\textsuperscript{1}. As seen in Fig 1.
The average generation rate of waste from residential demolition and nonresidential demolition were 98.4 tons per year or 0.3 kg capita per day while the generation rate of municipal solid waste was 1.25 kg capita per day. Presently, the volume of construction area obtained from building permit data collected by the National Statistic Office in 2012. Result in average generation rates of waste from total building construction were 56.23 kg/m², respectively. In the year 2012.

Fig. 1. Thailand’s of Gross Domestic Product (GDP)
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