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Composition and Characteristics of Construction Waste Generated by Residential Housing Project

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ABSTRACT: The construction industry is a major consumer of new materials. Given that material production for construction work accounts for a significant percentage of all energy consumed nationally in newly developing countries, it becomes vital that the construction industry strives to reduce waste at all stages of construction. However, the importance of these construction wastes in terms of types and sources have yet to be identified. Established systems to record quantitative data for the generation of construction waste have yet to be formally standardised and are still lacking across much of Europe and developing countries. Although categorisation of waste assists segregation of construction waste and increases the potential for reuse and recycling, little progress has been made in Sarawak, the largest state in Malaysia. To address this need, this pilot study is carried out as the logical first step towards construction waste management in Sarawak by categorisation of construction waste at residential construction projects. Through this study, useful information concerning waste assessment data necessary to achieve a better understanding of construction waste is obtained. Case studies involving quantification and classification of construction waste for several on-going residential construction projects in Miri City, Sarawak, Malaysia are presented. A database of information concerning the quantification of local construction waste was developed, in addition to current construction waste management practices.

Key words: Construction waste, Waste quantification, Composition

INTRODUCTION

The construction industry has long been regarded as one of the major contributors of negative impact to the environment, due to the high amount of waste generated from construction, demolition, renovation and activities associated with construction. The construction industry plays a significant role in Malaysia's development both in terms of infrastructure and economic development. After some decades of an extensive "use and throw away" philosophy, it has now been recognized that this uninhibited use of natural resources and resultant pollution levels are unsustainable (Chong, Tang & Larsen 2001). Therefore, it is essential to raise the awareness and revise previous common practices within the construction industry.

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Construction waste generally refers to waste resulting from construction, demolition, renovation, real estate development, infrastructure development, earthworks and land clearing operation (US EPA 1998, Tang, Soon & Larsen 2003). It consists of, but is not limited to, wood, concrete, metal, brick, drywall, roofing, material packaging, plastics, papers, cardboard and others. Categorisation of construction waste is a study into the composition and amount of construction waste generation; categorisation enhances understanding of the sources and causes of waste generation. Associated information is usually obtained via construction waste assessment, such as quantification of waste raisings, field surveys and site observations. The definition of construction waste varies and depends