UNIVERSITI TEKNOLOGI MARA PERAK BRANCH

SMART WASTE DUMPSTER

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BSc

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AUTHOR'S DECLARATION

I declare that the work in this innovation project report was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This topic has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

In the event that my innovation project report, be found to violate the conditions mentioned above, I voluntarily waive the right of conferment of my degree and agree be subjected to the disciplinary rules and regulations of Universiti Teknologi MARA.

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ABSTRACT

In Malaysia, construction industry is considered as a key economic stimulus. Therefore, the construction industry is the major generation of waste especially in high-rise building construction. Construction waste management faces an issue it is not properly handled since it has a detrimental influence on the environment, society, and ultimately the economy. The implementation of Industrialised Building System (IBS) is becoming increasingly important for construction industry due to its numerous benefits especially minimising the construction waste. Besides, Malaysian government has made an effort to emphasise the importance of managing construction and demolition (C&D) wastes in order to reduce environmental impacts, but recycling rates remain as low as 15%. The purpose of this study is to determine the problem of waste management in construction site, to propose an innovative sustainable built environment product to address the problem of waste collection at the construction site and to investigate the marketability potential of the Smart Waste Dumpster to prevent waste collection from overflowing. This study is based on a review of the literature from the previous research related to construction waste management in order to establish sustainable methods in handling construction waste. Furthermore, a simulation of the Smart Waste Dumpster is constructed using SketchUp software to demonstrate the concept and implementation of the Smart Waste Dumpster. Contractors throughout Malaysia have also been sent online surveys to assess the marketability of the innovative product. The respondents pointed out that the innovative product has a unique concept and should be marketed. In a nutshell, the Smart Waste Dumpster has a marketability potential as a recycling practice, a preventative measure against accidents caused by overflowing construction waste, and a benefit to the environment at the construction site.