



UNIVERSITI
TEKNOLOGI
MARA

Cawangan Perak



BUILDCON2023

**COMPILATION OF PROJECT INNOVATION IDEAS
SEMESTER MARCH – AUGUST 2023**

EMBRACING SMART CONSTRUCTION TRANSFORMATION

BUILDERS' CONVENTION DAY 2023

**Department of Built Environment Studies and Technology
College of Built Environment
Universiti Teknologi MARA Perak Branch**

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Organised by
Department of Built Environment Studies and Technology
College of Built Environment
Universiti Teknologi MARA Perak Branch
Malaysia

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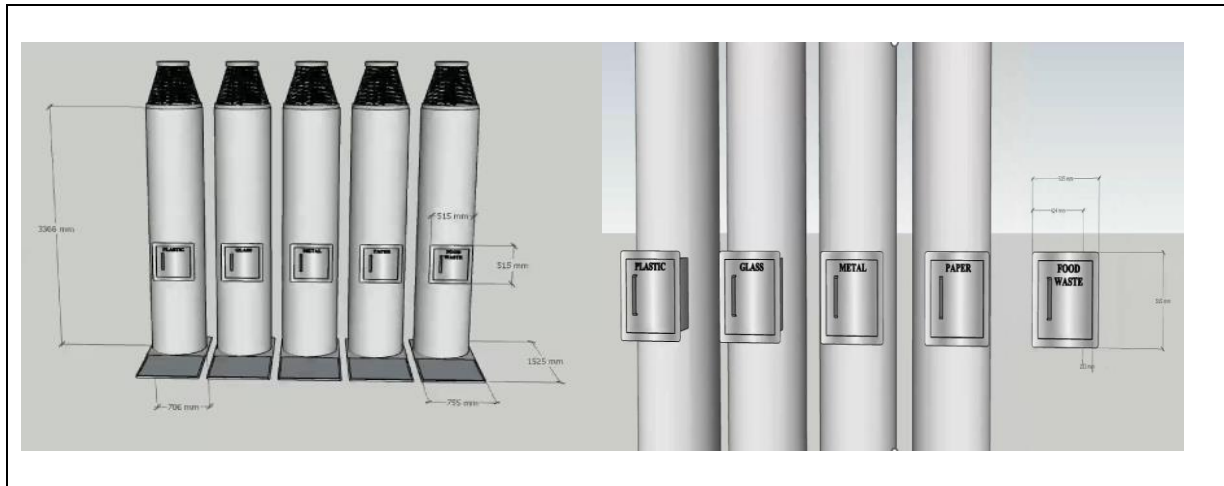
SMART WASTE MANAGEMENT SYSTEM FOR RESIDENTIAL AREA

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Smart Waste Management System For Residential Area

Innovation Idea:

A growing population, ongoing economic progress, and greater quality of living have resulted in an unavoidable increase in demand and consumption, resulting in a rise in waste generation. Most researchers concentrated primarily on the final treatment, but few paying attentions to the collection and transportation. Besides, people are confronted with the challenges of waste categorisation on Municipal Solid Waste (MSW), in which people must first learn about various forms of waste to properly identify them. Without modern waste detection technologies, effective waste sorting and categorisation takes a longer time. The objectives of this research are to develop smart waste management system design ideas, assemble the proposed smart waste management system, demonstrate the performance of the improved system, and suggest the marketability potential of the proposed system in Malaysia. The research design was qualitative in nature as the data collection method adopted for this study are based on document analysis, literature review, design thinking method, and 3D modelling. There are several types of waste management techniques covered in this research which include waste from residential area, collection of waste, and segregation of waste from delivery to recycling depots or transfer stations. The proposed innovative product in this study was developed from existing products and various innovation approaches, specially designed for landed houses (new construction) with a system for waste separation within the house. The recommendations for further studies include the maintenance measure for the underground piping system using advanced technology and ways to ensure that the system has the longest life expectancy. The separation of the waste from the source level makes it easier for the waste management to ensure the collected wastes are managed properly at the sorting center or recycling depots.

Surat kami : 700-KPK (PRP.UP.1/20/1)

Tarikh : 20 Januari 2023

Prof. Madya Dr. Nur Hisham Ibrahim
Rektor
Universiti Teknologi MARA
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Sekian, terima kasih.

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27.1.2023

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