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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
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PNEUMATIC MAILBOX SYSTEM

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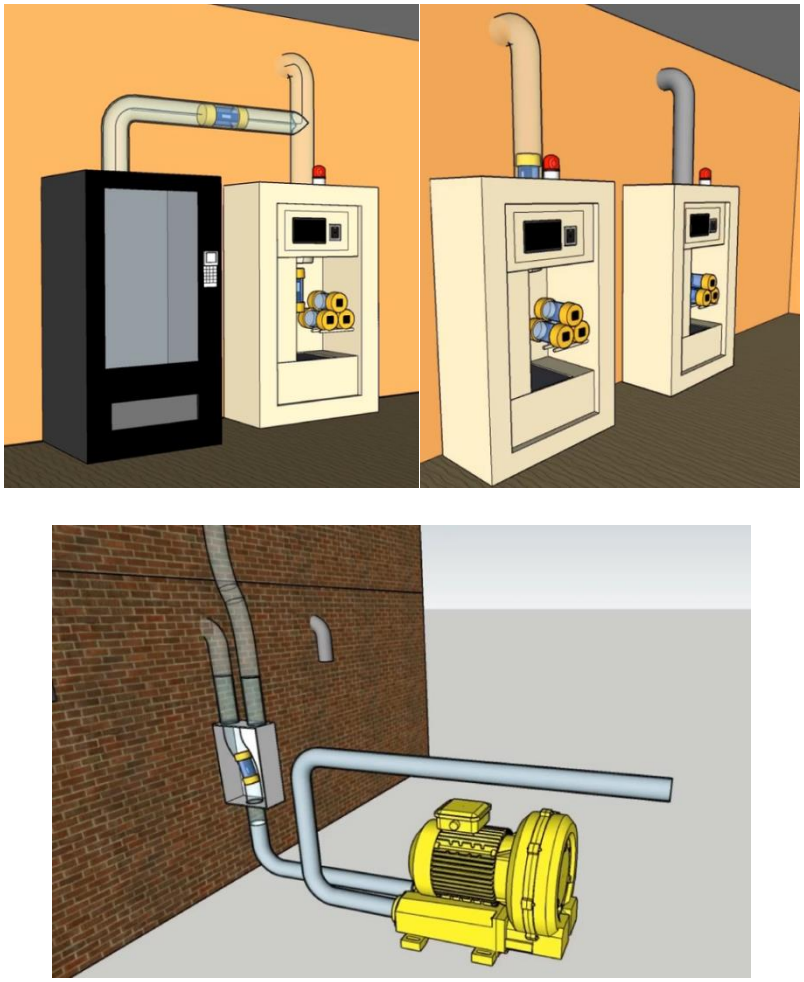

Pneumatic Mailbox System

Innovation Idea:

The fluctuating nature of package shipments makes it challenging for buildings to anticipate residents' package locker requirements. This may attributed to a lack of locker capacity in high-rise buildings and the impracticality of contemporary courier services in such settings, often requiring door-to-door delivery, which can be time-consuming and costly with multiple delivery attempts. In Malaysia, courier service management is still exercising outdated and inconvenient practices. Therefore, the study aims to facilitate and upgrade courier service delivery, as well as to provide solutions to problems that arise from courier services specifically for high-rise buildings in which individual item deliveries can be more practical. The objectives of this research are to develop Pneumatic Mailbox System design ideas, assemble a simulation from the improvised design, demonstrate the performance of

the improvised design, and demonstrate entrepreneurial skills in proposing it to be marketable. The methodology of this research is qualitative, consisting of a document review, literature review, design thinking method, and 3D simulation. The Pneumatic Mailbox System comprises seven (7) components and materials, which are the blower, diverter transfer, dispatch tubes, transfer and receiving station, carrier for packages, solar energy, and locker. The Pneumatic Mailbox System exhibits the capability to be implemented on both pre-existing and newly constructed buildings owing to its minimal maintenance demands during installation, rendering it a convenient system for building installation. The utilisation of air pressure provided by the blower system in the Pneumatic Mailbox System facilitates maintenance procedures and contributes to cost reduction. Several recommendations for the future endeavours of fellow researchers are to enhance the capabilities of the Pneumatic Mailbox System and to develop a functional prototype of the Mailbox System.

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