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

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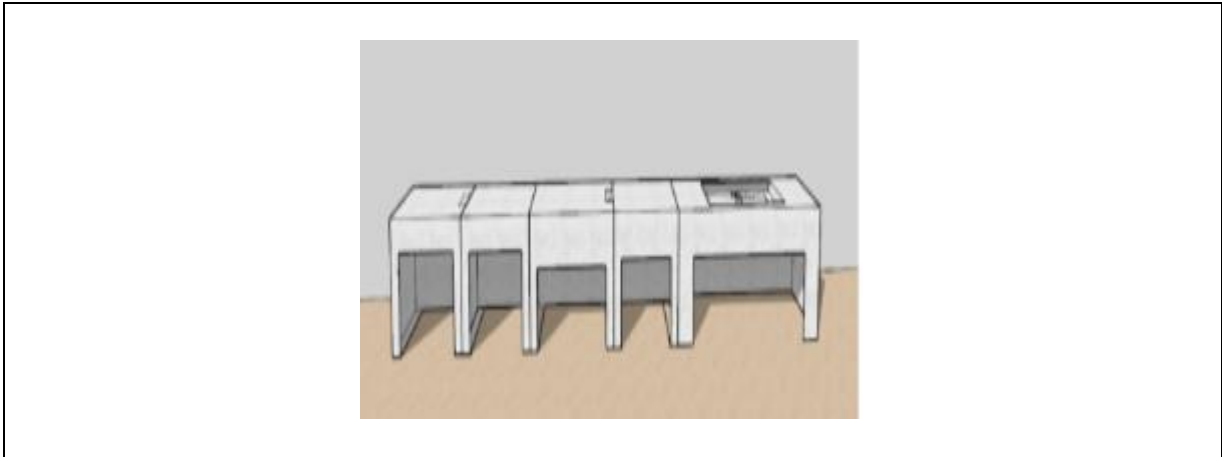
MODULAR PRECAST CONCRETE KITCHEN COMPONENT

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Modular Precast Concrete Kitchen Component

Innovation Idea:

This paper focuses on innovating the current concrete countertop using a new concept of precast concrete and modular coordination. Currently, there are frequent problems with regards to the conventional production of concrete countertops, resulting in poor finishes, labour-intensive issues, longer curing times, environmental impact affecting human health, and a lot of wastage. There are three main objectives in this study. The first objective is to develop a modular precast concrete kitchen component. To achieve this, evidence from literature review and document review were gathered to figure out the main problems regarding in-situ concrete countertop and find out the solution of the current problem. The second research problem is to demonstrate the performance of modular precast concrete kitchen component, focusing on its manufacturing and on-site assembling. To achieve this objective, a 3D model was produced using SketchUp Pro 2023 software in which the details of the component, its production, and assembly process were demonstrated in a 3D model. The final objective is to suggest the marketability potential of proposed modular precast concrete kitchen component. In achieving this, an analysis of the product's performance was conducted to compare the precast concrete kitchen component with the current product that are available in market. The results also revealed that there are two classifications of target customers for this product, i.e., contractors and homeowners. Qualitative data was used as the research design to gain a deeper insight into real-world problems, investigate and understand perceptions from different perspectives. The data was then analysed using content analysis. The research process employed an innovation framework that consists of four elements, i.e., ideation, selection, development, and 3D modelling. In this study, literature review was conducted on document reviews, articles, and other source of related documents. In addition, a 3D simulation using a computer software was also performed as one of the data collection methods. Finally, a comparative analysis was executed to illustrate how the new product ideas stacked up against the previous product. To conclude, the modular precast concrete kitchen component is feasible for real-life production, and it can address the current problems faced by contractors.

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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Kelulusan daripada pihak tuan dalam perkara ini amat dihargai.

Sekian, terima kasih.

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Saya yang menjalankan amanah,

SITI BASRIYAH SHAIK BAHARUDIN
Timbalan Ketua Pustakawan

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Setuju.

27.1.2023

PROF. MADYA DR. NUR HISHAM IBRAHIM
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