



UNIVERSITI
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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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ECO-FRIENDLY TILES BY USING EMPTY FRUIT BUNCHES (EFB)

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Eco-Friendly Tiles By Using Empty Fruit Bunches (EFB)

Innovation Idea:

Tiles are manufactured furnishing materials with technical and aesthetic functions that are commonly used to cover internal walls, ceilings, and floors in buildings. They are available in a wide range of materials, both hard, such as ceramic, porcelain, stone, marble, clay, slate, glass, etc., and soft, such as timber, vinyl, cork, etc. Agricultural practices, especially the open burning of waste materials, can affect the environment as they release harmful pollutants and greenhouse gases into the atmosphere. The release of these pollutants and gases worsens air pollution and increases climate change. Using eco-friendly materials or products is good for the environment and causes minimal harm both to the environment and people. In the context of tile manufacturing, the utilisation of eco-friendly materials involves selecting sustainable sources that can mitigate the impact of climate change, such as utilising agricultural waste instead of burning it. Hence, this study was carried out to develop eco-friendly tiles design ideas, assemble the prototypes of eco-friendly tiles, demonstrate their performance, and showcase entrepreneurial skills. The study utilised both primary and secondary sources, including experiments and extensive literature research from articles and journals. In order to thoroughly assess the mechanical characteristics of the tiles, compression strength and density tests were performed throughout the testing stage with the preparation of a total of 9 concrete cube specimens. Both tests were performed on concrete at the ages of 14, 21, and 28 days. The incorporation of EFB fibre in the concrete mix to develop eco-friendly tiles enhances not only their strength and environmental sustainability but also their market potential in the development of environmentally friendly building materials.

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

Tarikh : 20 Januari 2023

Prof. Madya Dr. Nur Hisham Ibrahim
Rektor
Universiti Teknologi MARA
Cawangan Perak



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Sekian, terima kasih.

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Saya yang menjalankan amanah,

SITI BASRIYAH SHAIK BAHARUDIN
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Setuju.

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