UNIVERSITI TEKNOLOGI MARA PERAK BRANCH

COOLING PAINT FOR PRECAST CONCRETE WALL PANELS

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Innovation project report submitted in partial fulfilment of the requirements for the degree of
Bachelor of Science (Hons.) Construction Technology

Faculty of Architecture, Planning & Surveying

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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.

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ABSTRACT

Cooling paint for precast wall panels is a new innovative product that will be produced to overcome the issues of wall elements in the construction industry by improving thermal comfort. Excessive heat causes overheating of the building walls, which may affect the health and well-being of building occupants. Mechanical air-conditioning systems are commonly used in buildings for thermal comfort in occupied spaces. This necessitates the production of electrical energy to satisfy the demands, which is a significant contributor to CO2 emissions in the atmosphere, which causes the Green House Effect and Heat Island, that raise temperatures. The aim of the study is to develop an innovative new material for external wall coatings in order to address the problem of thermal comfort in buildings and energy consumption. This research uses the quantitative data collection method. The data was gathered through observation and data analysis, which is known as data thinking. The key findings in the context of the entire study have been identified by making observations on wall elements and analysing the issues to demonstrate the performance of the new innovation idea. In simulation videos, the Sketchup application is also used to provide a clear description of the process and performance of the new innovative products. Overall, the findings of this study will advance the construction industry's use of technology in transform existing buildings into green buildings while reducing energy consumption.

Keywords: Thermal comfort, Energy consumption, Thermal insulation external wall coatings, Wall

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