UNIVERSITI TEKNOLOGI MARA
PERAK BRANCH

INNOVATION OF SELF-HEALING CONCRETE WALL PANEL

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

Department of Built Environment Studies and Technology

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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

Crack formation is a relatively typical event in concrete structures that enables water and various types of chemicals into the concrete and reduces its durability, strength, and also affects the reinforcement when it comes into touch with water and other chemicals. To overcome the cracks problem Self-Healing Concrete (SHC) is introduced. Self-Healing Concrete is a concrete made from bacteria-derived calcite crystals created by Bacillus Subtilis and Super Absorbent Polymers, which can form limestone or calcium carbonate. Also, the cracks problems of the IBS precast wall are mostly during handling especially lifting, transportation, connection for installation and concrete strength. The aim of this research is to investigate the potential for SHC wall panel for construction IBS in Malaysia. Hence, the objectives are to review the causes of crack in current wall panel concrete product, proposed the new innovation idea to enhance the performance of wall panel concrete product by using SHC and study the marketability and potential of SHC wall panel in the industry. Furthermore, an experiment is conducted to test the workability of the concrete. On the other hand, observation is done via online platform to investigate the procedure of making SHC and desk study to review previous research. The result that came out from the experiment is successful achieved and the objectives which to use a new material for a crack remedy in Self-Healing Concrete.