

**UNIVERSITI TEKNOLOGI MARA PERAK
BRANCH**

**TITANIUM DIOXIDE 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 result 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.

In the event that my innovation project report, be found to violate the conditions mentioned above, I voluntarily waive the right of conferment of my degree and agree to be subjected to the disciplinary rules and regulations of Universiti Teknologi MARA.

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ABSTRACT

The Titanium Dioxide Precast Concrete Wall Panel, also known as TiO₂ PC Wall, is an innovative product that uses Titanium Dioxide powder as part of the raw material mixed together with cement. The production is to overcome the issues of wall elements in the Construction Industry, such as being dirty and mouldy. The issues have affected the building's external finishes. Manpower is required to guarantee the wall panels are always clean, but this demands a lot of maintenance. The aim of the study is to develop an innovative self-cleaning technology for walls in order to address the problem of quickly dirty and mouldy walls while avoiding the use of labour for maintenance. Referring to the previous research, the underlying issue of material influencing walls has resulted in numerous concerns. All the concerns have affected the quality of the wall element. The data collection method used in this research is quantitative. Literature review, observation, and data analysis methods were used to collect the data. By making observations on wall elements and analysing the issues, the key findings in the context of the whole study have been identified to demonstrate the performance of the new innovation idea. The simulation video using the Sketchup application is also used to give a clear description of the process of producing new innovative products. Overall, the implications of this study will improve the construction industry in advance with technology self-cleaning wall. It is believed to reduce labour costs as it does not provide manpower for building maintenance.

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