

**UNIVERSITI TEKNOLOGI MARA
PERAK BRANCH**

**INNOVATION ON INSULATION MATERIAL
FOR A CONTAINER HOUSE**

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BSc

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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 acknowledge as referenced work. This topic has not 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 be subjected to the disciplinary rules and regulations of Universiti Teknologi MARA.

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ABSTRACT

Building materials having low thermal load and low thermal conductivity will provide thermal comforts to the occupants in building. In an effort to reduce the use of high energy and waste products from the agricultural industry, sugarcane bagasse and recycle paper from the recycle material has been utilize as an insulation material for container house. The aim of this study is to reduce heat in the container house using eco-friendly material and the effectiveness of this material. The comparison between the existance material have been made to show the wco-friendly material are better than them. The reason using the eco friendly material as thermal insulation is because it can help to improve the environmental effect of the product, sustainability, recyclability, low in cost, decrease environmental pollution and decrease global warming issue. Benefits to use sugarcane bagasse as insulation material is sugarcane bagasse contained the lowest thermal conductivity, the highest specific heat capacity and improve the sound of absorption. For cellulose recycle paper, the cellulose blocks air flow better than any insulation materials and cellulose has a high fire resistance. Furthermore, a simulation is created by using SketchUp software to visualize the idea and the application of the eco-friendly material. On the other hand, a small scale of prototype has been manufactured to conduct an experiment to evaluate the innovation product's performance. The result that came out from the experiment is successfully achieved and the objectives which to reduce heat in the container house.