

**UNIVERSITI TEKNOLOGI MARA
PERAK BRANCH**

INSULATED LIGHTWEIGHT WALL PANEL

**MUHAMMAD QHAIRUL FIRDAUS BIN MOHD
NASARUDIN**

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

Department of Built Environment Studies and Technologies

AUGUST 2022

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.

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.

Name of Student	:	Muhammad Qhairul Firdaus bin Mohd Nasarudin
Student I.D. No	:	2019293996
Programme	:	Bachelor of Science (Hons.) Construction Technology
Faculty	:	Department of Built Environment Studies and Technology
Innovation Title	:	Insulated Lightweight Wall Panel
Signature of Student	:	
Date	:	July 2022

ACKNOWLEDGEMENT

Alhamdulillah, praise to Allah, with the blessing, I would like to take the opportunity to pleasure to acknowledge the roles of several individuals who were involve in the completion of my research.

Firstly, I would like to express my gratitude to my lecturer for subject Innovation Project I and Innovation Project II which are Associated Professor Dr. Siti Akhtar Binti Mahayuddin and Dr. Asmat Binti Ismail that contributed to many discussions and help to make sure this project is success since the beginning of brainstorming ideas until the structural writing of this report.

Besides, I would like to thank my supervisor for this project, Ts Azira Binti Ibrahim who encourages me to complete this project and had been given me a lot of knowledge and experience about related to this project theoretically and practically.

In addition, I would also thank my family for supporting me financially and never gives up giving me moral support to make sure that I am able to finish up this report. Last but not least, this report will not be able to be finish without the support and guidance from my classmate. My classmate is being very supportive and always giving a good cooperation when I need it. It was a pleasure working with them and I am very appreciating the ideas, helps and recommendation for all these years.

Table of Content

Author's Declaration	ii
Acknowledgement	iii
Contents	iv
List of Tables	vii
List of Figures	viii
List of Plates	ix
List of Abbreviations and Glossary	xii
List of Symbol	xiii

Abstract

CHAPTER 1: INTRODUCTION

1.1 Background of study	1
1.2 Problem Statement	5
1.3 Research Question	5
1.4 Research Aim and Objectives	6
1.5 Scope of Study	6
1.6 Limitation of Study	8
1.7 Significance of Innovation Idea	8
1.8 Outline of Report	9

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction to chapter	10
2.2 Overview of Wall Panel Issue	11
2.2.1 Thermal Comfort	11

ABSTRACT

Construction industry was one of the sectors that was very rapidly growth. However, the growth of the construction sector that is moving rapidly was affected the quality of the environment. In the other hand, the global warming that was be a global issue nowadays was one of the impacts of the rapidly construction works. Since the global warming occur, the drastic change on the weather nowadays makes the live of the living things was on a threat. However, the effort on to reduce the impact of the global warming and construction work into the environment need to be take. The concept of the green campus had been introduced as an effort to develop the attitude among the student to preserve the nature. The innovation project that going to be proposed is done at the student's hostel of UiTM Perak Branch, Seri Iskandar Campus. The innovation product that had been proposed was the insulated lightweight wall panel. This innovation product is aimed to produce the innovative product on the insulated lightweight wall panel base on sugarcane fiber as the insulation material. This study is conducted by research on literature review from the previous articles and the prototype of the product is built to carried on the experiment to test the performance of the prototype. The result that obtains by the experiment that had been carried out is satisfied and meets the objective of study. Finally, with the good performance that show by the product, this product is suggested to be in the market.