

**UNIVERSITI TEKNOLOGI MARA
PERAK BRANCH**

**EXTRUDED POLYSTYRENE (XPS) SOUNDPROOFING
WALL PANEL**

SOFIA AMIRA BINTI ABDUL HAMID

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

Faculty of Architecture, Planning & Surveying

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 : Sofia Amira binti Abdul Hamid

Student I.D No. : 2020859744

Programme : Bachelor of Science (Hons) Construction
Technology

Faculty : Architecture, Planning & Surveying

Innovation Project : Extruded Polystyrene (XPS) Soundproofing Wall
Title Panel

Signature of Student :

.....

Date : March 2022

ABSTRACT

Green building technology has emerged as one of the most popular construction approaches where the applications of green technology in construction can provide far-reaching and comprehensive benefits, with the employment of both new and existing buildings. Green technology makes buildings more energy-efficient and sustainable, resulting in a lower carbon footprint and less environmental effect. The existing material used in construction of building face with many issues because of the ignorant design and materials of building towards the environment, which causing to many of problems occurred, either to the building or environment. Hence, a study a made with the objective of introducing and normalization of the application of green building materials in the construction, other than proposing a new material and method of improving sound insulation in the building. The method used in the research including literature review, experimental and simulation. A few research of existing green wall building are studied and observes to gain knowledge regarding the material and the experiment are made with the used of BIM. Simulation are made with the purpose of the testing of the product's effectiveness. The transmission of sound are founded and studied. Through that, a new material of sound insulation are proposed along with the method of the construction in the determination of green buildings implication.

ACKNOWLEDGEMENT

First and foremost, praises and thanks to the God, the Almighty, for His showers of blessings on us in completing this report successfully. We would like to express our deepest appreciation and gratitude to our lecturer, Dr. Asmat for the endless support, kindness, and understanding during the project duration.

The completion of this report could not have been possible without assistance providing the necessary information and resources from her for this report. Not to forget, to Dr. Rofdzi for giving guidance throughout this report as my report supervisor. I would like to give my appreciation to Dr. Rofdzi for his advices, recommendation, views and opinion regarding this innovation prject.

I also like to give my gratitude to my parents, who is providing necessary need including shelter, internet data, food and love endlessly. Thank you for the great hospitality and pray given to me. Last but not least, I would like to thank my fellow friends and classmate that sharing and guide throughout the semester and this report.

Thank you

TABLE OF CONTENTS

AUTHOR’S DECLARATION	i
ABSTRACT	ii
ACKNOWLEDGEMENT.....	iii
TABLE OF CONTENTS	iv
LIST OF FIGURE	vii
LIST OF PLATE.....	viii
LIST OF TABLE	ix
LIST OF ABBREVIATION.....	ix
CHAPTER 1	1
INTRODUCTION.....	1
1.1 Introduction	1
1.2 Background of the Study	1
1.3 Problem Statement	6
1.4 Research Question	7
1.5 Research Aim and Objectives	7
1.6 Scope and Limitation of Study	7
1.7 Significance of Study	8
1.8 Summary	9
1.9 Report Outline	10
CHAPTER 2.....	11
LITERATURE REVIEW	11
2.1 Introduction	11
2.2 Previous and Current Wall Panel	11
2.2.1 Rammed Earth	11
2.2.2 Modular Bamboo Composite Wall	13