

**CENTRE OF STUDIES FOR BUILDING SURVEYING
FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING
UNIVERSITI TEKNOLOGI MARA**

**THE STUDY OF EFFECTIVENESS OF SOUND INSULATION AND
SOUNDPROOFING IN A CLASSROOM BUILDING IN UITM SHAH
ALAM**

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**Academic Project submitted in partial fulfilment of the requirements
for the degree of
Bachelor of Building Surveying (Hons)
Centre of Studies for Building Surveying
Faculty of Architecture, Planning & Surveying**

December 2014

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**“I hereby declare that this academic project is the result of my own research
except for the quotation and summary which have been acknowledged”**

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Date : January 22nd, 2015

ACKNOWLEDGEMENT

Bismillahirrahmanirahim,

First and foremost, I would like to express my deepest gratitude to my dissertation supervisor, Dr. Shahrul Yani Binti Said for her valuable guidance and unending support which helps me throughout my journey of completing this dissertation. Without her I would not have been able to complete this research.

Next, I would like to give my thank you to all the individuals who provided me with me the necessary information and tools in order to complete this dissertation. I would like to thank my lecturers in the Building Surveying Department for their knowledge and support, the staff member at the Faculty of Architecture, Planning and Surveying for allowing me to burrow their equipment, and finally the person in charge of the classroom building in OM block at Menara SAAS, UiTM Shah Alam, En. Halim for providing me with the information I needed.

Last but not least, I would like to respectfully dedicate this dissertation to all my friends, parents, classmates, and any other person who are either directly or indirectly involved in the completion of this research.

ABSTRACT

The purpose of this dissertation is to determine the effectiveness of sound insulation and soundproofing in a classroom building. It was predetermined that some classrooms in UiTM Shah Alam are lacking in terms of sound insulation and soundproofing capabilities. In other words, sounds created from outside of the classroom can be easily heard from inside of the classroom. This is due to the fact that most classrooms in UiTM are not fully equipped with necessary sound control systems and sound insulating materials which can help reduce the level of noise inside the classroom. The lack of sound filter will allow noise to penetrate through the walls of the classroom with no difficulty which can cause noise disturbance inside the classroom. Needless to say, the exposure of noise towards the students can disrupt their learning process and lowers productivity.

Which is why this research was carried out in order to identify the solution to the noise problem and to determine the best way to control noise. This also includes acoustic designs in a building. Also to determine the best approach to regulate the noise behavior, either controlling it at the source, at the path of transmission, or at the receiver. Moreover, the researcher is trying to figure out what type of acoustic materials and noise cancelling products to be used for the classroom. This research will be focusing on the classroom building in UiTM Shah Alam only.

The research methodology that was chosen to be used for this research is the sound level test experiment and observation of the case study that was chosen. The experiments involves the use of a sound level meter to measure the level of noise in the classrooms. Each classrooms readings was taken in specific intervals for each time period. After the data was obtained, it was compared and analyzed to obtain a finding. Based on the findings obtained, it is clear that there are variances in the noise level in accordance to the time and location of the classrooms which related to the acoustic insulation capabilities of the classroom.

CHAPTER 1

INTRODUCTION

1.0 BACKGROUND

Although taken very lightly by most people, the effectiveness of sound insulation in a building is very important for the occupants in the building space and the type of activities being conducted. Inadequate sound insulation levels can cause minor disturbance in the work and personal lives of the person. This disturbance is also known as noise pollution. In worst cases, the disruption of the person's privacy and state of mind can cause the increase in tension and stress levels, miscommunications between individuals, and safety endangerment in the workplace.

In any case, sound insulation is a branch of industrial noise control and is closely related to the OSHA (Occupational Safety and Health Administration) rules and regulations. This is because uncontrollable noise pollution in a workplace can jeopardize the level of work efficiency which can result to the downgrading of work output and decrease in profit margins.

1.1 INTRODUCTION

Sound insulation, also known as Acoustics insulation and soundproofing is the means of reducing the intensity of sound waves. It is the technique and process of reducing or even eliminating the sound pressure emitted by an external source in an enclosed space, particularly a room. This type of insulation involves certain principles with respect to the receptor, for example an occupant inside a building, and the source of the sound such as traffic noise outside of a building.