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

PASSIVE NOISE CONTROL DESIGN FOR RESIDENTIAL BUILDING NEAR HIGHWAYS

NAFISAH BINTI MAHUSSIN
(2012814146)

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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”

Student’s Name : Nafisah binti Mahussin
Signature : [Signature]
UITM No. : 2012814146
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ABSTRACT

Noise is derived from the Latin word “nausea” implying ‘unwanted sound’ or ‘sound that is loud, unpleasant or unexpected’. The noise originates from human activities, especially the urbanization and the development of transport and industry. The passive method is a simple approach which includes the use of absorbers, barriers to reduce the interior noise in an enclosure. For enclosure structures on passive vibration noise control, the vibration and the noise are reduced either by adding appropriate passive elements or by modifying the system. It also can use the method to reduce noise such as acoustical site planning, architectural design, construction method and barrier construction. With use the soundproof window will reduce noise levels by 75-95%. More than 90% of all the exterior noise comes in through the door and window. Glass or Acrylic interior windows for maximum sound control, an 80% sound reduction and more can be had over the performance of the prime window. This research was conducted to investigate the method use to absorb noise in residential area/ building, to identify affect of sound pollution to the occupant, to identify the materials for noise control in residential building and to recommend the best method for noise control in residential area/ building. The opinion and views of related parties in the residential areas near highways were obtained from questionnaire and equipment in case studies which have been identified to give a clearer picture of the situation of the noise pollution and find the ways to reduce noise in residential building near highways
CHAPTER 1

INTRODUCTION

1.1 Introduction

In the recent years, noise control has become a significant factor in the design (Barbara Tiseo and Antonio Concilio, 2011). Noise is derived from the Latin word "nausea" implying 'unwanted sound' or 'sound that is loud, unpleasant or unexpected'. The noise originates from human activities, especially the urbanization and the development of transport and industry (Narendra Singh and S. C. Davar, 2004).

According to Margaret Rouse (2014) noise is unwanted electrical or electromagnetic energy that degrades the quality of signals and data. Noise occurs in digital and analog systems, and can affect files and communications of all types, including text, programs, images, audio, and telemetry (Margaret Rouse, 2014).

In the September 2009 Environmental Health Journal article, Bodin states that older people may not be as vulnerable to the negative effects of road traffic noise because the ability to detect changes in noise decreases with age and Bodin added that age groups may perceive noise annoyances differently. A study published in Science Daily in February 2008 found that continual exposure to noise levels above 50 decibels can increase the risk of heart attacks by 40%.

Noise emanates from a variety of sources, examples of sources include Industrial, Commercial and leisure, domestic, construction, transport and street noise. Industrial noise are from agricultural, manufacturing, workshops, transport noise are