



**UNIVERSITI TEKNOLOGI MARA**

**INDOOR AIR QUALITY (TEMPERATURE AND  
VOLATILE ORGANIC COMPOUND) AND  
PREVALENCE OF SICK BUILDING SYNDROME (SBS)  
SYMPTOMS AMONG OFFICE WORKERS IN NEW AND  
OLD BUILDING AT TAIPING DISTRICT**

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**Project submitted in fulfilment of the requirements  
for the degree of**

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Safety**

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### Declaration by Student

Project entitled "Indoor Air Quality (Temperature and Volatile Organic Compound) and Prevalence of Sick Building Syndrome (SBS) among Office Workers in New and Old Building at Taiping District " is a presentation of my original research work. Wherever contributions of others are involved every effort is made to indicate this clearly, with due reference to the literature, and acknowledgement of collaborative research and discussions. The project was done under the guidance of En. Razi Ikhwan Bin Md. Rashid as Project Supervisor. It has been submitted to the Faculty of Health Sciences in partial fulfillment of the requirement for the Degree of Bachelor in Environmental Health and Safety (Hons.).

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## TABLE OF CONTENTS

CHAPTER TWO: LITERATURE REVIEW	
2.1 General Overview	19
2.2 Sick Building Syndrome Factors	
2.2.1 Humidity	
2.2.2 Temperature	
2.2.3 Air Quality	
2.2.4 Tobacco Smoke	
2.2.5 Carbon Dioxide	
2.2.6 Volatile Organic Compound	
2.2.7 Other Gaseous Substances	
2.2.8 Other Gaseous Substances	
2.3 indoor Air Quality in two different building	24
2.3.1 prevalence of sick building syndrome	
CHAPTER ONE: INTRODUCTION	26
1.1 Background of Study	1
1.2 Background of Study Area	4
1.3 Problem Statement	8
1.4 Study Justification	11
1.5 Conceptual and Operational Definitions	30
1.5.1 Conceptual definition	13
1.5.2 Operational definition	14
1.6 Conceptual Framework	16
1.7 Study Objectives	31
1.7.1 General objective	17
1.7.2 Specific objectives	17
1.8 Study Hypothesis	17
1.9. Variables	18
1.9.1 Ethical Considerations	34
1.9.2 Study Limitation	35



## CHAPTER 1

### Abstract

#### **Indoor Air Quality (Temperature and Volatile Organic Compound) and Prevalence of Sick Building Syndrome (SBS) Symptoms among Office Workers in New and Old Building at Taiping District**

**Nor Atiqah Binti Md Aini**

This study aimed to determine the association between indoor air quality and the prevalence of sick building syndrome (SBS) among office workers in new and old buildings at Taiping district. In this study, Taiping Municipal Council (MPT) was categorized as Old Building while the additional building Zoo Taiping department was categorized as new building. A cross-sectional comparative study was conducted among 45 office workers from new buildings (additional building of Zoo Taiping) and old building (Taiping Municipal Council). The SBS symptoms were assessed by using the questionnaires of Indoor Air Quality and Work Environment Symptoms Survey, NIOSH Indoor Environment Quality Survey (1991) while for the IAQ and IAP they were monitored by using the instruments. The results showed that the temperature level in the new building was not significantly higher compared to old building with the median 25.4 °C and 27.9 °C, respectively ( $z = -1.100$ ,  $p < 0.271$ ). Mann Whitney U test, it showed that the difference of indoor air pollutant in new building was not significantly higher compared to old building but the VOC concentration was significantly higher for new building. Besides, the prevalence of sick building syndroms (sbs) symptoms like Dizziness, Headache, Irritated / Stuffiness, Dry throat, Drowsiness and Eye Irritation which is significant value recorded highest percentage for new building with 87% for dizziness, 64% for headache, 56% for irritated, 36% for dry throat, 24% for drowsiness and 9% for eye irritation. Results of Mann Whitney U test in showed that the difference of indoor air pollutant in new building was not significantly higher compared to old building but the VOC concentration was significantly higher for new building. Although there was no significant difference for SBS prevalence between new and old buildings, both buildings can be concluded as having SBS since more than 20% of building occupants had experienced SBS during this study. Prevalence of SBS in new building was 77.8% while for the old building was 62.2%, indicating that both buildings have high risk on SBS. Thus, regular housekeeping and proper ventilation system maintenance are recommended.

**Keywords:** *indoor air quality, health effects, temperature, volatile organic compound*