

UNIVERSITI TEKNOLOGI MARA

**INDOOR AIR QUALITY AND SICK
BUILDING SYNDROME (SBS) AMONG
OFFICE WORKERS IN BUILDING IN KUALA
LUMPUR**

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**Project paper submitted in fulfilment of the requirements for
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Declaration by Students

Project entitled “Indoor Air Quality and Sick Building Syndrome (SBS) in Office Building in Kuala Lumpur” is a presentation of my original research work. Wherever contribution of other are involved, every effort is made to indicate this clearly with due reference to the literature and acknowledgment of collaborative research and discussion. This project was done under the guidance of Dr. K. Subramaniam. It has been submitted to the Faculty of Health Sciences in partial fulfilment of the requirement for the Degree of Bachelor in Environmental Health and Safety (Hons).

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TABLE OF CONTENTS

TITLE PAGE	
DECLARATION BY STUDENT	ii
APPROVAL BY SUPERVISOR'S	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS	v
LIST OF TABLES	vii
LIST OF FIGURES	viii
LIST OF APPENDICES	ix
LIST OF ABBREVIATION	x
ABSTRACT	xi
ABSTRAK	xii
CHAPTER 1: INTRODUCTION	
1.0 Introduction	1-3
1.1 Research Background	4-6
1.1.1 The role of safe and Healthy environment in Workplace	6
1.2 Problem Statement	7-8
1.3 Significant Study	9
1.4 Objectives	10
1.4.1 General Objectives	10
1.4.2 Specific Objectives	10
1.5 Hypothesis	10
1.6 Conceptual Framework	11
1.7 Study Framework	12
CHAPTER 2:LITERATURE REVIEW	
2.1 Indoor Air Quality	14

ABSTRACT

Indoor Air Quality Related To Sick Building Syndrome (SBS) In Offices Among Office Workers In Kuala Lumpur.

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Nowadays indoor air quality has increasingly been attracting attention worldwide. In at most dwellings in developing countries, the level of indoor air pollution is very low because there are controls on design, ventilation and construction of buildings. However, for many, due to more exposure of indoor air pollution than outdoor air pollution the risk to health may be greater. The purpose of this study is to determine the indoor air quality related to Sick Building Syndrome (SBS) in offices among office workers in Kuala Lumpur. The measurements of indoor environmental quality was identified for each level (level 10, level 25 and level 33) and to find the normality of data distribution for each level the normality test was performed. The result of this study was compared to the Industry Code of Practice 2010 by Department of Safety and Health Malaysia. Result from the difference of TVOC in office building is 1.99 ppm (1.69-2.88), 2.02 ppm (1.32-3.09) and 1.37 ppm (1.94-2.44) respectively which shows the TVOC is under an acceptable limits. Particulate matter (PM₁₀) in this study shows that at all level exceeding the acceptable limits. The median for PM₁₀, for level 10 is 0.522 ppm (0.54-0.56), 0.560 ppm (0.53-0.57) for level 25 which is the highest and at level 33 which is 0.531 ppm (0.52-0.54). For the temperature and relative humidity, the p value is significant since the p-value result is less than 0.001 (<0.001). The median of relative humidity is 58.18% (38.5-65.7), 58.68% (42.5-65.4) and 65.82% (45.7-72.3) respectively. The temperature also shows significant different with less than 0.001 (<0.001) with 23.1⁰C (16-27.1), 21.6⁰C (23.0-27.1) and 25.1⁰C (20.6-24.5) respectively. For the air velocity, shows that there is significant different with p is less than 0.001 (<0.001). The median for each level is 1.76m/s (0.01-3.18), 0.16m/s (0.03-0.21) and 0.12m/s (0.01-0.19) respectively. According to DOSH 2010 the result of TVOC, air velocity, relative humidity and temperature are complying with the acceptable limits, however PM₁₀ are not complying. The study showed that the SBS symptoms were independent factors towards the IAQ concentration since SBS symptoms can be experience even at a moderate level of IAQ.

Keyword: TVOC, PM₁₀, indoor environmental quality, sick building syndromes