UNIVERSITI TEKNOLOGI MARA

THE INDOOR AIR QUALITY ASSESSMENT OF VOLATILE ORGANIC COMPOUND AND SICK BUILDING SYNDROME IN STUDENT HOSTEL

NOR MAWADDAH BINTI HALIBA

Project submitted in fulfillment of the requirements for
the degree of
Bachelor in Environmental Health and Safety
(Hons.)

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DECLARATION BY STUDENT

Project entitled “The Indoor Air Quality Assessment of Volatile Organic Compound and Sick Building Syndrome in Student Hostel" is a presentation of my original research work. Whenever 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 Encik Razi Ikhwan Md Rashid as Project Supervisor. 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).

Student’s signature:

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(Nor Mawaddah Binti Haliba)

2014247234

930618-11-5856

Date: ……..

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In the name of Allah, The Most Gracious, The Most Merciful.

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ABSTRACT

Volatile Organic Compounds (VOCs) is the group from the organic chemical that usually found in the building material, cleaning supplies or furnishing in the indoor environment. Sick Building Syndrome (SBS) is effect of the exposure pollutants from the in the building or indoor environment that can cause illness or symptoms such as headache or dizziness. The symptoms usually gone when step aside out of the building. As the symptoms can goes by quickly, usually the occupant does not realize that their symptoms are the SBS and cause by the building itself. By this, it is very important to know the level of VOCs in the indoor building and health effect syndrome in the student hostel. To evaluate the indoor air quality and health effect in the different building are the aim of this study. The measurement of VOCs was done in 25 houses for each old and new building. The reading of VOCs was done using ppbRae 3000 with 24 hours monitoring for each sample. For SBS, the questionnaire from Industrial Code of Practice (ICOP) 2010 was used and distributed to 100 occupants from each building. The study found that the average reading concentration for VOCs for old building was 0.133 ppm while for new building was 0.183 ppm. Both of the average reading concentration was complied with the VOCs limit from the ICOP. The prevalence for SBS symptoms in both building shown there was statistically significant in headache, fatigue or lethargy also irritation of the eyes. The finding shown that the emission from the paints and furniture in building can contributed to the increasing level of VOCs and also the SBS among the occupants. Thus, this study can be used to formulate strategies to overcome the issues.

Keywords: *Volatile Organic Compounds, Sick Building Syndrome, Industrial Code of Practice, new building, old building.*