

Sustainable Pandemic Resilient Guideline for Healthy Office Building Using Indoor Environmental Quality Elements

Prof. Sr Dr. Hishamuddin Bin Mohd Ali (Project Leader)
Sr Dr. Shazmin Shareena Ab. Azis
Prof. Dr. Ibrahim Sipan
Dr. Rohaya Binti Abdul Jalil
Dr. Zaleha Daud
Dr. Juhaizah Talib @ Harun
Nur Amira Aina Zulkifli
(Universiti Teknologi Malaysia)

ABSTRACT

Coronavirus disease (COVID-19) as one of the recent airborne transmission diseases has rapidly affected day to day life, business and disrupted the world trade and movements. The various industries and sectors are affected by the cause of this disease; these include the pharmaceuticals industry, solar power sector, tourism, and so forth. This virus creates significant knock-on effects on the daily life of citizens, as well as about the global economy. Several new regulations have been enforced in Malaysia such as the COVID-19 Standard Operating Procedures (SOP) in workplace to reduce the spread of COVID-19. However, the workers need to comply to the COVID-19 SOP such as physical distancing, avoiding public meetings, and so forth. Past research proves to believe that built environment could produce a valuable contribution in addressing solutions for COVID-19 as it provides a huge significance to the social and economic environment. Besides, several researchers suggest that green measurement such as Indoor Environmental Quality (IEQ) would ensure long-term social and environmental protection. Hence, it is important to integrate the IEQ attributes in the recent guideline for workplace. Hence, three objectives outlined; 1) To identify important IEQ attributes for office building.; 2) To analyse important IEQ attributes that relate to the existing COVID-19 management guideline for office building; and 3) To develop sustainable COVID-19 resilient framework for office building. This study adopted qualitative and quantitative method which includes several layers of analysis; systematic analysis, and content analysis. First findings for second stage of objective 1 resulted that there are 25 important IEQ attributes that could prevent the spread of COVID-19 in workplace based on panel experts' perspectives. For second objective, it is found that there are only 7 important IEQ attributes based on building management perspectives, and it will integrate with 20 important COVID-19 SOPs to develop COVID-19 resilient framework for office building. Overall, the developed framework extends current guidelines for COVID-19 SOP by integrating important IEQ attributes into the present guidelines. This study significant in encouraging building manager or COVID-19 management team in workplace to set up a COVID-19 resilient framework as an improvement for current COVID-19 SOP by adding green element which is the IEQ attributes.