

Green Architecture in Built Environment

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GREEN ARCHITECTURE IN BUILT ENVIRONMENT

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EFFECT OF AIRBORNE PARTICULATES TOWARDS HISTORICAL HERITAGE AT MANJUNG, PERAK DARUL RIDZUAN AND NATIONAL MUSEUM, KUALA LUMPUR

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ABSTRACT

Malaysia becomes one of the main countries in Asia with the highest level of air pollution problems. However, the consciousness among the publics about the issues is not as wide as the problems occurred. The research is focusing on the airborne particulates from different sources that can give harmful effects towards historical heritage at Manjung, Perak Darul Ridzuan and National Museum, Kuala Lumpur. Particulate Matters commonly attack on the materials such as stone, clay, metal, fibre and glass. This research come out with the comparison of mass concentration and physical characterization of airborne particulates from different source at different site studies in which the dust sample had been collected at National Museum, Kuala Lumpur that are crowded with visitors, transportations and construction works nearby, while other case studies are the historical heritages at Manjung, Perak Darul Ridzuan such as Beruas Museum and Pasir Salak Historical Complex which are exposed to the combustion of coal and fuels from power plant stations at Manjung and Lumut. The result from the dust sampling shows that the concentration of inhalable and respirable dust at National Museum, Kuala Lumpur is the highest among all site studies with 0.490mg/m^3 and 0.455mg/m^3 . The levels of the particulates indoor and outdoor at site studies are all over the limit of National Standard TSP in Malaysia which is 0.08mg/m^3 per 8 hours period. It can be concludes that the Industrial activity like construction work is one of the main source of airborne particulates that suspended in the air. For that reason, it is important for the facilities management department of the buildings to use the particulate emission equipment to control the level of contaminants within the buildings other than conserving and preserving the historical heritage items from the damages and decays by the airborne particulates matter.

Keywords: Air Pollution, Airborne Particulates, Mass Concentration, Health, Heritage Site, Historical Items And Materials