Abstract

In this eco-conscious era, energy conservation has become an important aspect in architectural designs. With the intelligent buildings, emphasis on energy conservation is further heightened. Studies on energy consumption in buildings had revealed a devotion of resources into the air-conditioning systems for purpose of ventilation.

This dissertation looks into various ways of ventilation techniques which may improve both the indoor and outdoor environment. These methods include both natural ventilation through architectural means as well as the application of passive cooling systems. These ideas may be existing and implemented, but some issues had been neglected or forgotten with the availability of modern design approaches. Recapitulating these proven methods of ventilation is also an attempt to bring about the awareness in this field of building studies.

A case study is conducted at the Institute of Technical Education at Bishan, Singapore, designed by Akitek Tenggara. The questionnaire and experiments conducted attempt to study the environmental conditions, taking into consideration of the solar radiation, air movement and temperatures at various locations in the campus.

The dissertation concludes with suggestions which hope to open up new thoughts and awareness of improving the built environment through effective ventilation in our tropical climate.