

SBS5498 Final Year Project 2 (Applied Research Project)

<http://ibse.hk/SBS5498/>

Suggested Topics from Supervisors (2018-2019)

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Title:	Indoor thermal comfort evaluation of an office in Hong Kong
Description:	The office is a place where office workers spend eight hours per day on average. Air conditioning system are widely equipped to achieve comfortable working environment. A comfortable and healthy environment should be provided for the office workers to remain comfortable during their working hours. In this project, basic factors affecting thermal comfort will be measured in site and indoor thermal comfort will be evaluated using an index, i.e., Predicted Mean Vote (PMV). Suggestions will be given to both the manager and occupants to provide better indoor thermal comfort.

Title:	Indoor thermal comfort evaluation of a classroom in Hong Kong
Description:	The most commonly used indicator of thermal comfort is air temperature. However, air temperature alone is not a valid or accurate indicator of thermal comfort. It should always be considered in relation to other environmental and personal factors. In this project, basic factors affecting thermal comfort will be measured in a THEi Tutorial Room and indoor thermal comfort will be evaluated using an index, i.e., Predicted Mean Vote (PMV). Suggestions will be given to both the manager and occupants to provide better indoor thermal comfort.

Title:	Feasibility study of double skin curtain wall application in Hong Kong
Description:	Glass curtain walls are very popular in modern architecture due to their attractive aesthetic features and characteristic benefits such as efficient daylighting. An air gap between two layers of masonry wall braced with metal ties constitutes a ventilated or double skin wall. Most commonly, ventilated walls are used to enhance the passive cooling of buildings.
	Objectives:

	<ol style="list-style-type: none"> 1. To discuss the potential of a building with double skin walls used in Hong Kong. 2. To analyze the thermal performance of the double skin wall in both winter and summer.
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Title:	Case study of a net zero energy residential building
Description:	<p>With the increasing development in the country day by day, the requirement of "net zero energy residential building" has also increased. Adopting such building formation can save energy consumption locally and as well as on global scale and we also get huge amount of saving on our electricity bill. The proper design and alignment of the building can make the building cheaper than that of the conventional type of buildings. For example, usage of hollow bricks and renewable sources will result in lowering of temperature inside the building.</p> <p>Objectives of this project:</p> <ol style="list-style-type: none"> 1. Design a building with Net zero energy concept. 2. To eliminate the necessity of active energy loads on the building. 3. Comparing the net zero energy building with conventional building.

Title:	Energy efficiency analysis of the Zero Carbon Building (ZCB) in Hong Kong
Description:	<p>In order to combat the increasing pressure from climate change, the Hong Kong Government has proposed targets for greenhouse gas (GHG) emissions reduction. Buildings are the major contributor to GHG emissions in Hong Kong. Therefore, Construction Industry Council, in collaboration with the Hong Kong Government, developed the first zero carbon building (ZCB) in Hong Kong. As a signature project, ZCB represents the state-of-the-art eco-building design and technologies to the construction industry and helps raising community awareness of sustainable living in Hong Kong.</p> <p>In this project, design and technologies applied in the ZCB ranging from photovoltaic panels to ventilation system will be reviewed. Energy efficiency of the ZCB will also be analyzed on an annual basis.</p>