Numerical Investigation of Indoor Air Quality and Thermal Comfort inside the Saint Mary Church (Hanged Church)

By

Eng. Abanoub Elias Fouad Samouel

A Thesis Submitted to the Faculty of
Engineering at Cairo University in Partial
Fulfillment of the Requirements for the Degree of

MASTER OF SCIENCE

In

MECHANICAL POWER ENGINEERING

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Summary:

The HVAC applications in churches are considered as one of the important applications with wide variety of heat load, water vapor, and carbon dioxide sources because of high occupancy load of prayers, heat dissipation of electrical equipments in the church and other heat sources such as bowls, incense and candles. So, the present thesis is devoted to numerically investigate indoor air quality and thermal comfort inside the Saint Mary Church (Hanged Church) Focusing on air flow patterns, thermal behavior and carbon dioxide dispersion in the hanged church prayer hall.

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