

# Application of Evaporative Cooling in the Building Ventilated by a Solar Chimney

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## **Abstract**

Over the last two decades, the interest in natural ventilation in buildings has been revived because of the growing awareness of greenhouse gas emission and the need for an efficient passive ventilation system as part of a building. In this respect, solar chimney is a promising solution. In the hot-dry climate, solar chimney has been widely studied to use with a water evaporating system to reduce air and surface temperatures in the buildings. In the hot-humid climate, several applications of solar chimney with indirect evaporative cooling were reported. Successful results were shown in air temperature reduction to meet human thermal comfort. The effect of incorporating the evaporative cooling on air velocity, volume flow rate, relative humidity and air temperature are reviewed in this study. In addition, the mathematical modelling of this integrating system are discussed.

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