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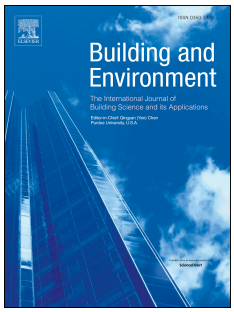

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Full-Scale Field Investigation of a Bio-Climatic House under Thailand Tropical Climate

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Abstract

The main objective of this paper is to present a full-scale field experimental investigation of a Bio-Climatic House (BCH) under the tropical climate of Thailand. The BCH included several innovative building envelope configurations, i.e., a Roof Solar Collector (RSC), a Bio-Climatic Roof (BCR), a Modified Trombe Wall (MTW), and a Glazed Solar Chimney Wall (GSCW) with the aim of maximizing natural ventilation for heat gain and indoor heat accumulation reduction as well as to improve the indoor air condition while providing appropriate natural daylighting. The field experimentation was set up to measure the indoor temperature, relative humidity, illuminance, and air velocity inside the BCH in the summer,