

Night natural ventilation and energy saving in high thermal mass historical building in hot dry climate

BENCHEIKH HAMIDA

ABSTRACT: The thermal comfort and air quality inside buildings spaces is much recommended in Nowadays for human's health and environment protection, especially if the inside comfort conditions are assured by passive systems means. In hot dry climate such Laghouat city in the south of Algeria, the first consideration in architecture design is given to the building envelope referring to the vernacular architecture in the region. The buildings with high thermal inertia envelope ensure the inside thermal comfort while it is properly closed during day time when the outside air temperature is very

high, in hot dry region the night outside air temperature varies between 15 to 20°C, the night natural ventilation through windows properly oriented and dimensioned can lower the inside air temperature during night and evacuate the polluted inside air. The low inside temperature during night leads to a low inside temperature during day time, which has a good effect on energy saving during summer period where air conditioning is needed for more than seven months per year in this region..

Biography

Hamida Bencheikh, held an MPhil from Bath university UK, PHD from Constantine university, Professor in architecture and environment, lecturer in department of architecture Ammar Telidji university, supervision of PHD student in sustainable architecture, a head of laboratory working group, heat and moisture transfer in buildings and new buildings material, wrote three books in the two recent years, passive cooling, urban green cover and cooling.

Recent Publications

1. H. Ben Cheikh, B Belkacem, KM Mouldi (09/01/2014) The effect of alleviating the sand concrete by wood shavings on wall time lag and decrement factor Civil and Environmental Research, Vol.5 2013
2. Hamida Bencheikh, The effect of wind velocity and night natural ventilation on the inside air temperature in passive cooling in arid zones, Proceedings of ICONARCH-II - November 2014-KONYA-TURKEY

Citation: Hamida Bencheikh, Night natural ventilation and energy saving in high thermal mass historical building in hot dry climate.

GC LABORATORY LRGC, LAGHOUAT ALGERIA CHAKALI MERIEM AMAR TELDJI UNIVERSITY LAGHOUAT ALGERIA



This open-access article is distributed under the terms of the Creative Commons Attribution Non-Commercial License (CC BY-NC) (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits reuse, distribution and reproduction of the article, provided that the original work is properly cited and the reuse is restricted to noncommercial purposes. For commercial reuse, contact reprints@pulsus.com