عنوان مقاله:

Investigating the role of natural airflow for indoor air quality- Residential buildings in Tehran case study

محل انتشار:

پنجمین کنفرانس بین المللی پژوهش های کاربردی در علوم و مهندسی (سال: 1399)

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نویسندگان:

,Maryam Ghaderi Bafti - *Pars University of Architecture & Art Science Quarterly*

Asma Hojati - *Art university of Isfahan , Department of Architecture & Urban Design*

Mahsa Kazemi Sabet - *Islamic Azad University, Department of Architecture, Gonbad Kavous Branch*

خلاصه مقاله:

Today we face two factors of reducing fossil fuels and increasing global population is faced with a lack of energy. Fossil energy consumption also leads to many problems such as the emission of greenhouse gases which cause environmental pollution and climate change, effectively decreasing the quality ofhuman life. Moreover, the price of fossil energy is high and continually increasing. Worldwide energy consumption must therefore be slowed. Hence, achieving a healthy environment with minimal energy consumption has become a concern. Stack-ventilated consume less energy than mechanical ventilation. While the wide use of air-conditioning helped to improve thermal comfort, health problems associated with poor indoor air qualities have appeared more frequently. This paper investigates how natural ventilation design and shape the architecture of advanced naturally ventilated (ANV) buildings. In this paper seeks to investigate Zaferanie and Vanak residential buildings in terms of their geometric structure, and design qualities such as existence of trees in the middle of residential, smart design of corridors, open and semi-open yards, building orientation, and position of openings. In these examples natural airflow in indoor is a crucial factor of air quality, comfort, durability and energy consumption. This knowledge can be applied to effective and efficient ventilation strategies to optimize indoor air quality and energy consumption. Hopefully the guidance and case study examples will give architects and environmental design consultant confidence to embark on the design of ANV buildings

کلمات کلیدی:

Residential Buildings, Low Energy, Advanced Natural Ventilation, Indoor air quality