

An Innovative Approach to Solve Thermal Comfort Problem Related to the 100m² Houses in Erbil

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Abstract : Due to the rapid growth of Erbil population and the resulting shortage of residential buildings, individuals actively utilized 5x20 m plots for two bedroom residential houses. Consequently, poor and unhealthy ventilation comes about. In this paper, the authors developed an old Barajeel (Wind Catchers) approach for natural ventilation. Two Barajeels (Wind Catchers) are designed and located at both extreme ends of the built unit. The two wind catchers are made as inlet and outlet for the air movement where the rate of air changes at its best. To validate the usage of the wind catchers a CFD Software was used to simulate the operation of the wind catchers for natural ventilations for average wind speed of 2 m/s. The results show a positive solution to solve the problem of the cramped such built units. It can be concluded that such solutions can be deployed by the local Kurdistan authorities.

Keywords : wind catcher, ventilation, natural, air changes, Barajeel, Erbil

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