

Investigation of natural ventilation function in Shavadoon by using CFD modeling (a vernacular architectural pattern).

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Abstract

Heat and the intensity of solar radiation both have significant impact on housing in Dezful in summer. In this case, shavadoon has been used as a solution in order to achieve the thermal comfort and deal with the mentioned situation. Shavadoon is the space approximately at the depth of 5 to 12 meters underground. The following project first, introduced various components of seraglio to prove their temperature performance during warm days, following the functional comparison of shavadoons with each other. Finally, the natural ventilation and cooling times of this space were investigated by using a software named Designer Builder which is one of the most reputable and reliable soft wares in this field. The results have revealed that the rise of temperature doesn't have a notable impact on the function of shavadoons, but the geometrical parameters like the shape of shavadoons, stairs, diameter and the number of canals affect the tempreture of shavadoons.

Key words: Shavadoon, Dezful, energy, Design Builder, CFD.