

عنوان مقاله:

(Thermal Comfort in Rural Habitats of Mountainous Areas (Case Study: Roodbar, Iran

محل انتشار:

مجله پیشرفت تحقیقات محاسباتی در علوم و مهندسی کاربردی، دوره 3، شماره 4 (سال: 1396)

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نویسندگان:

Farnaz Farasati - *Department of Architecture, Art University of Esfahan, Esfahan, Iran*

Farhang Mozaffar - *School of Architecture and Environmental Design, Iran University of Sciences and Technology (I.U.S.T), Tehran, Iran*

Farshad Nasrollahi - *Department of Architecture, Art University of Esfahan, Esfahan, Iran*

Nasrolah Molaei Hashjin - *Department of Geography, Rasht Branch, Islamic Azad University, Rasht, Iran*

خلاصه مقاله:

Cold and temperate, cold and semi-arid climate due to the short summer life, low relative humidity, distance from the sea and mostly the environment's temperature under the comfort zone, requires more clever design in solving the problem of heating supply rather than the other climates. The present study evaluates a case with such climate in the northern Iran. First, several parameters such as temperature, relative humidity, sun radiation status and wind condition in the understudy area have been provided using the climate consultant software in a table format. In June, July, August and September, the areas are placed in the comfort range while in the rest of the year from October to May they fall below the comfort level which need using the active and inactive heating equipment. Then using Design Builder software, the building modelling has been investigated and thermally analyzed from various aspects. In the following, the predicted percentage of dissatisfaction and predicted mean vote graphs have been plotted and assessed for the different seasons and months which gave the same results for the comfort range. Also, these figures show the physiological sensation in terms of an intense cold stress for the months December to March. However, for June to September, they show the moderate heat stress. Field surveys and questionnaires also confirm that these months were quite desirable for the residents and did not need any heating equipment. The results of Design Builder software have been compared with those recorded by the data logger during the same timeframe and close agreement has been achieved.

کلمات کلیدی:

Thermal comfort, Mountainous habitats, Predicted mean vote, Predicted percentage of dissatisfaction

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