

Checking Energy Efficiency by Simulation Tools: The Case of Algerian Ksourian Models

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Abstract : Algeria is known for its rich heritage. It owns an immense historical heritage with a universal reputation. Unfortunately, this wealth is withered because of abundance. This research focuses on the Ksourian model, which constitutes a large portion of this wealth. In fact, the Ksourian model is not just a witness to a great part of history or a vernacular culture, but also it includes a panoply of assets in terms of energetic efficiency. In this context, the purpose of our work is to evaluate the performance of the old techniques which are derived from the Ksourian model, and that using the simulation tools. The proposed method is decomposed in two steps; the first consists of isolate and reintroduce each device into a basic model, then run a simulation series on acquired models. And this in order to test the contribution of each of these dialectal processes. In another scale of development, the second step consists of aggregating all these processes in an aboriginal model, then we restart the simulation, to see what it will give this mosaic on the environmental and energetic plan. The model chosen for this study is one of the ksar units of Knadsa city of Bechar (Algeria). This study does not only show the ingenuity of our ancestors in their know-how, and their adapting power to the aridity of the climate, but also proves that their conceptions subscribe in the current concerns of energy efficiency, and respond to the requirements of sustainable development.

Keywords : dialectal processes, energy efficiency, evaluation, Ksourian model, simulation tools

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