World Academy of Science, Engineering and Technology
International Journal of Energy and Environmental Engineering
Vol:12, No:07, 2018

Improving Comfort and Energy Mastery: Application of a Method Based on Indicators Morpho-Energetic

Authors : Khadidja Rahmani, Nahla Bouaziz

Abstract : The climate change and the economic crisis, which are currently running, are the origin of the emergence of many issues and problems, which are related to the domain of energy and environment in à direct or indirect manner. Since the urban space is the core element and the key to solve the current problem, particular attention is given to it in this study. For this reason, we rented to the later a very particular attention; this is for the opportunities that it provides and that can be invested to attenuate a little this situation, which is disastrous and worried, especially in the face of the requirements of sustainable development. Indeed, the purpose of this work is to develop a method, which will allow us to guide designers towards projects with a certain degree of thermo-aeraulic comfort while requiring a minimum energy consumption. In this context, the architects, the urban planners and the engineers (energeticians) have to collaborate jointly to establish a method based on indicators for the improvement of the urban environmental quality (aeraulic-thermo comfort), correlated with a reduction in the energy demand of the entities that make up this environment, in areas with a sub-humid climate. In order to test the feasibility and to validate the method developed in this work, we carried out a series of simulations using computer-based simulation. This research allows us to evaluate the impact of the use of the indicators in the design of the urban sets, on the economic and ecological plan. Using this method, we prove that an urban design, which carefully considered energetically, can contribute significantly to the preservation of the environment and the reduction of the consumption of energy.

Keywords : comfort, energy consumption, energy mastery, morpho-energetic indicators, simulation, sub-humid climate, urban sets
Conference Title : ICEER 2018 : International Conference on Energy and Environment Research
Conference Location : Dublin, Ireland
Conference Dates : July 23-24, 2018