

عنوان مقاله:

Estimating the size and location of the window to minimize energy consumption of an office building in Tehran

محل انتشار:

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خلاصه مقاله:

The building industry plays a key role in global energy consumption. According to the 2014 International Climate Change (IPCC) report, 32% of the world's total energy consumption and 19% of the total greenhouse gas emissions comes from the construction sector. In middle eastern countries, population growth and amount of energy consumption are much higher than the global average while most of these countries have the most of non-renewable energy sources that will cause more concern. On the other hand, these countries have a high potential for the use of clean energies such as sun light. This is the reason that why modifying energy consumption in these countries is important for global future. In designing a building, there are several parameters that affect the energy needs and energy consumption, and all of them could be optimized in the first design phase. Parameters such as form of building, glazing, orientation, physical-thermal characteristics, materials, spacing between adjacent buildings, and so on, which requires experienced professionals to calculate everything and propose solutions, and that is the main problem. Because most of the buildings are designing and constructing by formal architects and engineer without enough knowledge about energy. Providing a simple way to apply energy-saving strategies for them without need of any specific knowledge could be a great step in reducing buildings part of energy usage. One of the highest usage of energy in the construction sector in Iran is to provide light for office and commercial buildings. So in this paper we tried to find a simple way to estimate the dimension and place of needed windows to offer enough daylight and reduce the need of artificial light.

کلمات کلیدی:

Daylighting, Thermal comfort, Energy consumption, window sizing, office buildings

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