

The use of architectural treatments for optimal utilization of solar energy

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Abstract:

Recent technological development in the manufacture of photovoltaic solar cells, the use of modern materials such as silicon, and the discovery of nano-cells have led to an increase in their efficiency in generating electrical and thermal energy, as well as in their ease of use. Which allows its exploitation in the architectural formation of the building, especially the facades, where the traditional exploitation of solar cells is to place them on the roofs of buildings in a horizontal manner, which wastes the exploitation of roofs in serving users. Where the research dealt with the definition of sustainability and its principles, then the study of solar cells and their types as one of the applications of benefiting from solar energy in generating clean energy according to the principles of sustainability in order to preserve the environment, then studying the role of architects in achieving the principles of sustainability by providing clean energy through the optimal exploitation of solar energy in power generation Clean through architectural treatments, studying and analyzing some international and Arab architectural examples in which the optimal utilization of solar cells was made through architectural treatments such as facades and how they added the aesthetic shape of the building and maintaining the sustainability of the surrounding environment, then access to the results and discussion and finally the conclusion and recommendations that encourage architects to How to exploit solar cells through architectural treatments on a large scale.

Keywords:

Sustainability- Solar energy - Architectural treatments

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