Applying the Principles of Green Architecture for Saving Energy in Buildings

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Abstract

Since the United Nations Conference, which was held under the title of "Earth Summit" in 1992, striving for achieving sustainable development must also include a complete realization for fulfilment buildings and towns which is characterized by sustainability principle, after the conference lots of serious global trends began to appear and tried to accomplish with the environment and these trends called contemporary trends of environmental design, one of the most important trends is "green architecture" which focuses on the relationship between buildings and natural, this trend appeared as a reaction for facing the environmental problems and health risks which occurred because of the buildings which have no environmental dimension in their designs or the importance of keeping the energy and the natural resources.

Most of buildings nowadays disregards weather and its effect, also the cooling purpose increases the energy consumption, on the other hand the problems of the rapid depletion of energy appears, because of the continuous need for energy to design and coexistence inside the buildings but all the time this energy is being wasted because of users or wrong design of building which make it exhauster for energy during the time, when we can figure out that it is possible with little effort and time to study how to improve the efficiency of energy used in building or decrease the waste of energy in return for energy saving and consumption regulation, here comes the importance role architectural designer to solve this problems, and there are lots of desirable trends provides using the new and rentable energy (like sun energy and wind energy) which cope up with the basics and principles of green architecture which is environment-friendly, and all of that just to provide the current needs of energy and try to save it or finding an future alternative. And as a extraction for the basics and principles of green architecture lots of real goals were resulted for this trend like achieving good thermal environmental for users and also good ventilation and natural lighting and that can be done by using many application and environmental processors to help rationalize consumption the energy and means of modern

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mechanical treatments to produce energy in clean and renewable way, also to be environment-friendly and that is the mean goal of that research which aims to create a building tandem with environment and comfortable for its users to help them doing their daily activities in a convenient way.

*Keywords:* environmental design; green architecture; new and renewable energy.

1. The Research Problem

THE MAIN PROBLEM LIES IN THIS PAPER IN THAT the design of most buildings in the hot and cold areas ignoring the affection of the climate that surrounds the building and its affection on the internal climate of the building and therefore this design ignore also the necessary of achieving the thermal comfort for users by using the natural techniques of the environmental designing and green architecture thought which affect obviously on users health and doing the different activates inside the building. On the other hand this design can achieve the thermal comfort but by depending on the different mechanical means which is economically costly and consuming energy and also pollute the environment in large percent, also achieving a lighting environment by consuming large amounts of electricity to light the lamps in the day, though it is necessary to provide the means and the environmental treatments which achieve the principle of saving and energy used in the buildings by provide the thermal comfort and natural lighting environment and also rationalize consumption the energy, and that can be applied using the basics and standards the green architecture on this buildings.

2. The Main Target of the Paper

The main object of the paper is applying the basics and the principles of the green architecture upon the buildings in order to rationalize consumption the energy by finding the environmental treatments architectural and means for and find new solutions for producing new and renewable energy.

3. The Main Axes of the Research

This research includes three chief axes as the following:

3.1. First axis: the means of rationalization of energy consumption in the building

3.2. The second axis: models of global and Arabian experiments, which apply the principles of the green architecture in some of the buildings

3.3. The third axis: The basics, targets, and the means of the green architecture in order to provide the buildings with energy

3.1. The ways of rationalization of energy consumption in the buildings

Due to the rising cost of energy resources and its techniques, the process of production and process of transmission and distribution, so great awareness started to appear to rationalization of energy consumption and improving its efficiency, some governments realized the consumed quantity in cooling and warming, so those governments organized that by impose taxes and laws in order to prevent the increase of energy consuming. Then a stormy wave of books and researchers started which forced the Economists and architectures towards rationalization of energy consumption, and trying to reduce of consuming it, and because of that, they refused the Economic valuation by using money, and decided to take the units of energy as a Standard instead of money (3).
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