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ORIGINAL ARTICLE

Evaluation of the Green Egyptian Pyramid

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Abstract In January 2009 was established the Egyptian Council for evaluating green building, then the Board issue a primary version of the Egyptian pyramid in 2010, and as a result of economic, social and political changes that happened in Egypt after the Arab spring period, the study of regional experiences of neighboring countries in Africa and Asia in the development of evaluation system for green buildings of global systems that can contribute to the development of the Egyptian pyramid to promote development of future construction in Egypt, and here was this research that uses the analytical comparative method, and according to the study, the Egyptian pyramid system is developed from the USA LEED despite the great difference between the two countries in economic and technology and the difference in social problems and quality between the two countries.

The research concluded to the need of developing the Egyptian pyramid system through studying more global systems, in addition to the need to benefit from the Egyptian experience stock of solutions and environmental treatments in ancient architecture.

1. Introduction

The Green Pyramid Rating System was issued as a start to realize comprehension of green buildings in Egypt and the application of this comprehension increase its important to apply the complete economic development to go to the desert and to start construction and building and start a complete society in the desert to meet expected increase in the life needs as a cause of population development and increase, from that point, the use of environmental management to organize consumption of materials will be the first important need to realize development.

The comparative analysis of research course is used here and it is considered a try to evaluate the Green Pyramid Rating System through study of the construction system or knowing it from international no system comparing it with the system of constructing local systems in the nearby nations and starting to study the nations experiments to give a form or a symbol of local system from the international system and these experiments were selected on the bases of being tried and applied in the local market, and which are: the system of South Africa (SANS), and other two systems from Emirates: Leed, Estidama, and the system of Qatar – (QSAS), and the system of the Green Egyptian Pyramid, and all were studied through

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their specifications and goals and its standardization and its percentage weigh and the analysis of the whole frame of the system, then discuss the benefits of the system in false and defects then select the recommendations to develop the Egyptian system.

And we are going to study the comparative system according to the following measurements:

1. Weigh of selecting a system from the international evaluating systems.
2. The principal measurement forming the system and its goals.
3. The percentage weigh of measurement.
4. The whole system.
5. Participation of society in the application of the system.

2. The green architecture and rating system

The Green Architect is a way to design and execute and perform and manage buildings to limit and decrease the negative effects of the building on the environment to save the needs of today without neglecting the right of the coming generation from environmental resources, that means improving a design of the building to be more powerful and fit with minimum cost of performance and to keep more natural materials and sharing in the development of the interior environmental performance to realize increase of production and improve health of users and labors and that through realization the following design criteria [1].

Sustainable site, water efficiency, energy conservation, saving materials and resources, improve indoor environment quality.

Rating systems have been developed to measure the sustainability level of Green Buildings and provide best-practice experience in their highest certification level. With the given benchmark, the design, construction and operation of sustainable buildings will be certified. Using several criteria compiled in guidelines and checklist, building owners and operators are given a comprehensive measurable impact on their buildings' performance. The criteria either only cover aspects of the building approach to sustainability. like energy efficiency, or they cover the whole building approach by identifying performance in key areas like sustainable site development, human and environmental health, water savings, materials selection, indoor environmental quality, social aspects and economical quality. Furthermore, the purpose of rating systems is to certify the different aspects of sustainable development during the planning and construction stages. The certification process means quality assurance for building owners and users. Important criteria for successful assessments are convenience, usability and adequate effort during the different stages of the design process. The result of the assessment should be easy to communicate and should be showing transparent derivation and reliability [2].

Structure of rating systems: The different aspects are sorted in over all categories, like: energy, or quality groups: ecology, economy and social demands. For each aspect, one or more benchmarks exist, which need to be verified in order to meet requirements or obtain points. Depending on the method used, individual points are either added up or initially weighted and then summed up to obtain the final result. The number of points is ranked in the rating scale, which is divided into different levels: The higher the number of points, the better the certification [3].

And with the development of consciousness to apply the sustainable development we find in the neighbor nations of Africa and Asia, we find local rating systems to apply the comprehensive Green Architect, and the important and care of environmental causes start in Arab countries but it was late and it comes up and out in the Gulf nations first, perhaps because they are related and in connection with the international system, and to increase the amount of development and increase of architect and population buildings witch help to be effected early with the permanent causes and which was parallel to the need of power to save the continuous cost to the buildings and make water available as it is rare and this area and that in Emirates and Qatar, in South Africa as it is enjoys economic and political stability more than other countries and thus these countries are considered the countries that created the system and build with it a suitable period from the year 2008 and at last came up the care to get out local systems in Egypt and Lebanon, Jordan, Morocco, Kuwait, Saudi Arabia but it was not applied and experienced very well and for that we are going to study the system in the following: South Africa, United Emirates and Qatar.

3. South Africa

On 2007, The Green Building Council was established in South Africa GBCSA, and on 2008, local system was established to evaluate and classify The Green Buildings. And that after the study of several international systems BREEAM (United Kingdom), LEED (United States of America), Green Star (Australia), and after the analysis and study of these systems and after consulting industrial businessmen and experts which are specialized The Green Star system was selected to be the suitable system because it is the easy one and also help to apply the system to reduce the consumption of electricity in the building up to half of it. And also in the uses of water, and it is expected to reduce consumption of power to come up to 40% in the commercial buildings [4].

3.1. Goals

The principal goal is to realize the comprehension of permanent building that results presentation of a lodging that never harms the environment in a simple calm, attractive way with suitable price for the citizen and that will be through four goals [5]:

1. To limit the environmental effects of the building during construction.
2. To limit the environmental effects of the building during operation of renting and lodging.
3. To limit the environmental effects at end of its existence.
4. Give occasion for this experiment and developing performance and accumulation of experiments of human beings.

3.2. The Rating categories

The Rating Tool makes use of eight categories (see Table 1).