

Mutual influence between Human and Environment: the concept of Vernacular Design and Its Relation to Sustainability in Interior Space

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Absrtact:

Throughout history, mankind has tended to strengthen its relations with nature in order to maintain its continuity. This can be instinctively understood in trying to meet the main human needs from natural resources. This was also reflected in the sciences that deal with the relationship between man and the environment and the mutual influences between them. Thus, the concept of Biophilic Design has emerged as one of the modern trends in design, which deals with the relationship between man and the built environment.

It aims to improve the health of individuals within the interior spaces and to develop the design in relation to the history and culture of the society. The biophilic design has two important dimensions to achieve. The most important of these is vernacular design or time-and-place-based design, a term that refers to products or areas where culture, environment and history intersect to create meaning for the place. Vernacular design is also a term associated with vernacular architecture and a result of increasing awareness of its importance recently. Vernacular architecture is an architecture that reflects the environmental, cultural and historical contexts in which it was found. Although it is related to tradition, it can be regarded as a modern concept; it provides alternatives to current architectural practices that are a matter of debate for the energy crisis and sustainability

Through the study it turned out that vernacular design has a strong relation to sustainability because it does not consume local resources, it understands the environment surrounding the human being, strengthens its relationship with it, and respects the historical and human dimension of societies. Therefore, the concept of vernacular design in this research will be highlighted and analyzed its creative and productive processes in vernacular architecture through the assumption that the application of principles and features of the vernacular design present an important contributions in the field of formal design in the interior spaces to become the starting point for the production of designs More committed to the local culture and tradition of its people and achieving the principles of sustainability

Keywords: Sustainability, Biophilic design, Vernacular Architecture, Sense of Place.

Research Importance:

With the increasing interest in human beings and the environment and the mutual influence between them, the concept of sustainability has emerged and the voices of the need to be applied it in different fields. But with the failure of continuity of its application in a comprehensive manner, the importance of research appears in trying to reach the whole sustainability in the interior spaces and its relation to the principles of vernacular architecture and design

Research problem:

- Lack of application of comprehensive sustainability through the neglect of the moral and cultural aspect of human when applying the principles of sustainability in architecture and interior design.
- Delving behind modern trends and concepts in the field of design and ignoring the historical and human dimension of societies, which produced strange designs without spatial identity.

Research goals:

- Determining the features and principles of vernacular design through the study of vernacular architecture.
- Achieving comprehensive sustainability in internal spaces through the application of vernacular design principles.
- Highlight the importance of the sense of place and emphasis on respect for the historical and cultural dimension of societies and the impact of this in deepening the link between man and his environment.

Research hypotheses:

- The study of features of vernacular design and the analysis of their creative and productive processes in vernacular architecture can contribute in the field of formal design in interior spaces.
- The application of the principles of vernacular design helps to achieve a comprehensive sustainability in the interior space, and confirm the cultural identity of man.

Research Methodology:

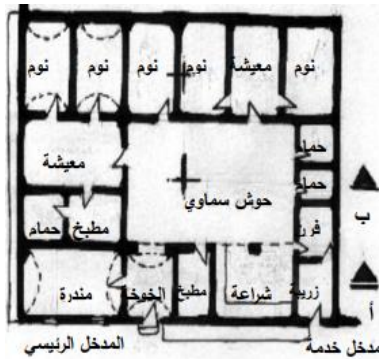
- Analytical descriptive approach by reviewing the literature on the concept of comprehensive sustainability, and monitoring and analyzing the features of the vernacular architecture.
- Inductive approach through reaching the principles of vernacular design and its relationship to sustainability in the interior spaces.

Principles of vernacular design:

Through the study of vernacular architecture, the following principles can be sources of inspiration and guidance to solve the problems of sustainability in internal spaces, as well as deepening the connection to the environment and respecting the privacy and history of societies

1- Flexibility and partnership

Flexible, acceptable and responsive design is an important feature of the vernacular design style. Internal spaces that provide free choice and easy adoption of changing needs and family desires over time are also sustainable. Architects and designers must accept the fact that the economic and social situation of individual's changes over time and that the internal space should provide flexible and versatile spaces as a means of providing opportunities for selection and allocation. Buildings and interior spaces that can be used in many different tasks and are easily adapted to transform them into many other uses during their lifetime put less pressure on environmental and energy resources than on building new structures and demolishing old one.



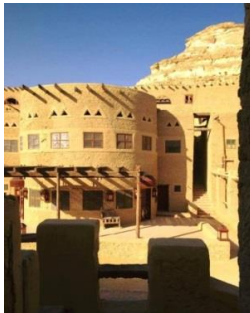
A model of Abu al-Rish housing in Aswan consists of one level, the courtyard in these houses is considered a place for the future extension of the family, where it is used to create small housing units consisting of a room or two bedrooms, a guest room and a living room. This model demonstrates the principle of flexibility and the internal space to meet the needs of its occupants changing

2-sense of place

The traditional vernacular architecture depicts the building as a living architectural entity in itself, formed in accordance with the distinct needs of social and cultural requirements. The designs must be in full conformity with the cultural and environmental conditions of the site in which the building and internal space are located. The integrated system of these integrated spaces creates a sense of place that respects the local character and provides comfort and delight.

3- Self-sufficiency

New design practices should take into account the use of local technologies and materials. Local materials are less expensive and readily available, compared to imported industrial products. Local materials and simple manufacturing techniques are suitable for a wide range of people in order to maintain their basic needs of products at reasonable prices.



A model for a tourist resort in Siwa, where the constructed with the stone is available in it, this called the archipelago, and the lighting depends on the sun all day and at night the firecrackers are outside Rooms and candles inside, the location of the village drops about 18 meters from the sea surface, which reduces the temperature in the day and the quality of the stones work to acquire heat and heating at night. This is a clear application of the principle of self-sufficiency and the use of simple technology and less expensive for local materials and easy to recycle.

4- Compatibility with the environment:

The vernacular design aspires to a symbiotic relationship between man and the environment. Recognizing the exact climatic factors and topographical features of the site where the building is located can enhance many natural energy patterns and reduce energy consumption. Taking advantage of the building's guidance to exposure to solar energy, wind, and the effect of vegetation on internal space treatments creates a special climate.

Results:

- The comprehensive sustainability is achieved only through full awareness of the human nature and the mutual influence between him and the environment.
 - There is a strong relationship between vernacular architecture and the concept of comprehensive sustainability as it provided useful examples of sustainable solutions to the problems of the built environment.
 - The vernacular architecture was able to reflect a successful model for dealing with the surrounding environment in terms of the use of materials, local technologies that adapt to the climate created in it, as well as the style and lifestyle of the society.
 - Vernacular design is a design based on the needs, materials and local traditions of the people so this gives the place its cultural identity thus can be a valuable lesson for modern design.
 - Sense of place is an important principle of Vernacular design. The design begins with a close knowledge of the place and responds to both of the local conditions and the social and cultural needs of the users. So if we are sensitive to subtle differences in place, we can ensure sustainability.

Recommendations:

- Preserving the cultural and human heritage and benefiting from it in solving contemporary human problems related to issues of sustainability and environment.
- Awareness of the importance of the positive impact of the environment on the human to ensure sustainability in general and in interior design in particular
- It is necessary not to cling to the modern currents and concepts in the design and ignore the historical and humanitarian dimension of our society.

References:

- 1- Amanda C. Cleveland. "Symbiosis between Biophilic design and Restorative healing environment: The impact of overall well-being of urban dwellers. Florida" State University Libraries 2014-<https://diginole.lib.fsu.edu/islandora/object/fsu%3A185368>. (accessed on 22 July 2017).
- 2- Edwardes, Sara. "Vernacular Architecture and the 21st Century".ArchDaily. www.archdaily.com/155224/vernacular-architecture-and-the-21st-century. (accessed on 28 July 2018).
- 3- Dabaieh, Marwa. " Energy efficient design strategies for contemporary vernacular buildings in Egypt". Vernacular Heritage and Earthen Architecture: Contributions for Sustainable Development Correia, Carlos & Rocha (Eds),2014:599-604
- 4-Green, Judith." Back to Nature for Good: Using Biophilic Design and AttentionRestoration Theory to Improve WellAbeing and Focus in the Workplace". Master Thesis. Faculty of the Graduates School, the university of Minnesota,2012.
- 5-Kazimee, B.A. " Learning from vernacular architecture:sustainability and cultural conformity, WIT Transactions on Ecology and the Environment, Vol 113,2008. www.witpress.com, (accessed on 20 June 2018).
- 6-Kellert, S. R." Beyond LEED:From Low Environmental Impact to Restorative Environmental Design". Yale University School of Forestry and Environmental Studies New Haven, USA 2004.
- 7-Kellert, S., Calabrese, E. "The Practice of Biophilic Design".2015 www.biophilic-design.com