



## Environmental factors step towards achieving sustainable architecture and environment

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**Abstract.** The Term of development of sustainable architecture was used in the early 1970s and after the Rio conference in 1992, inclusive that the situation of sustainable architecture became clear at the conference. In this context, the architects category in preserve the environment is very important because they directly or indirectly about seventy percent are involved in climate change. Now someone with designed inappropriate spaces regardless to environmental conditions, the controller actually, not only does not play a role in protecting the environment, but sometimes they cause damage to the environment and nature. Providing solutions to the model of mortal physical, social and economic and sustainable can prevent the problems such as the destruction of natural resources, global pollution, climate change, environmental degradation and Destruction of biological systems. This study want to identify environmental factors that is consistent coordinated with regard to climate and architectural features by using the latest achievements in sustainable architecture, will provide an architecture that will completely satisfy the needs and will not damage the environment. And can believe that following these tips can achieve sustainable architecture and sustainable development report is very effective. The research in this study is qualitative research with library studies and at the end with field information obtained is analyzed.

**Keywords:** Sustainable architecture, global pollution, climate, Environmental factors, environment

### 1. INTRODUCTION

The term sustainable development from the mid-70th century after the oil crisis of 1973 is used a lot Especially when the United Nations Conference on Environment and Development in 1992 held in Rio, as sustainable development was one of the most important words in the behind the debates was located celebrities as they attempt to solve problems of natural environment and eco-biological and concerns about the protection of nature. (Admas2001) and in fact one of the three key areas which on sustainable development focuses is environmental issues.

Sustainable development in relation to construction activities and the built environment often called Sustainable building or Sustainable structure, the construction sector is one of the biggest social and economic sectors in Europe and the world, and with the built environment significantly affect the natural environment, building sector and built environment as the two key areas are presented in development of global sustainable.

Buildings with other artifacts have relatively longer life and during the process of drawing the construction and equipping of the destruction or re-use it in sustainable development has been impressive, in fact, a building is with combination of building materials and materials compounds That has a huge impact on human health so that it can be said that 90% of the people living is in architecture Domain. Therefore, understanding of the sustainable architecture and Steps to achieve it is important, in the sustainable architecture is discussed. Collective attitudes toward this issue have been met, after that with Architectural look and Removal of the traditional buildings to use environmental factors to be considered in building and the survey of Sustainable environmental factors and on the other hand at the traditional house, offered some

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proposals In this regard. By these thinking that the factors would be helpful in architecture of our country with preserve the environment to achieve sustainable development to be useful and effective.

**In addition to coordination in this article attempts to answer the following questions:**

1. How to bring down the manufacturing costs of the environmental factors?
2. Do environmental factors and local materials in order to achieve sustainable architecture and execution environment is appropriate?

Of course, any scientific study requires a methodology and selecting appropriate research methods and considering principles and rules is the strategic principles of scientific research in the same direction our research methods is qualitative and library, as well as use the site and articles and Finally, by field method data analyzed and detail and the final conclusion is reached.

**Sustainable Development**

Sustainable development is one of the most important and common discussion in international area that environmental organizations in the world are involved in this important issue that the high point was in 1992 as the Earth Summit in Rio de Janeiro, Brazil, also known as Rio was continued in 2002 in Johannesburg, South Africa examined the implementation of the Rio Conference, Rio definition of sustainable development Sustainable Development is proposed that the current human needs without risking shed meet the needs of future generations and the environment and their generation's attention.

**Stability literally**

In Dehkhoda dictionary Sustainability means durable and lasting. In Moein cultures this word means sustainable and resistance, the source of "monitoring" means show stability and endurance. the verb of sustain is from the Latin roots of sustainere and is formed from two components sus (which means a bottom-up) and tinere (meaning keep, keep up) and since 1290 is used in the English language and this verb integrated with terms such as "support and sustain" and the adjective sustain able use to describe as "terms, conditions or something" that is continuing by support or assistance by providing support (Asad poor 2006).

**Definitions of sustainable architecture**

Sustainable architecture goes back to the 19th century. John Ruskin, William Morris and Richard Laby are the vanguard of sustainable architecture. Ruskin in "seven torches architecture," says to achieve the growth and development can be consider the harmonic order in nature model. Morris recommend returned to green space of countryside and self-sufficiency and revitalization of local industries. The objective of sustainable building design is to reduce damage on the environment in terms of energy and any use of natural resources, which include the following rules:

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- Reduce the consumption of non-renewable resources
- The development of the natural environment
- Eliminating or reducing the use of toxic or harmful to the environment in the construction industry
- But the three following definition of sustainable architecture can be raised

"Creating man-made environment and committed management base on the ecological compatibility principles and resource efficiency. These principles are:

Minimize non-renewable resources, to promote and improve the natural environment and minimize ecological damage to the environment "(Charles K. Barrett 1994).

"Balanced and symbiotic relationship between architecture and architectural environment that has been established base on the conscious Architectural act to the environmental condition" (Hagan 2001)

"Sustainable architecture involves a combination of values, aesthetic, environmental, social, political and moral issues" (Samuel Clients B).

### **Principles of sustainable architecture**

The principles that must be adhered to building sustainable buildings classified as follows (GHiyasvand 2006)

- First principle: Preservation of Energy
- The second principle: harmony with the climate
- The third principle: reduce the use of resources
- Principle IV: providing the needs of residents
- Principle V: Aligning site
- Article VI: holism

Buildings make up a large part of the environment as well as a large part of environmental pollution although it can not be to protect the environment stopped the construction, but with a thinking, careful planning can build buildings that have the least negative impact on the environment in generally in definition of architectural stability, sustainability principles can be there the following principles:

- Improve the quality of life and human health
- Providing Everyday human needs
- The preservation of ecological systems and energy resources the overall objective of sustainable design in a building is that by the right productivity of Energy and Natural Resources approved the building on the environment is reduced
  
- With regard to the reported cases presented the patterns in sustainable architecture.
- Sustainable architecture patterns:
  - To minimize the exploitation of non-renewable resources and the use of natural and renewable energy
  - Improve the quality of the environment and developing the natural environment
  - Eliminate or minimize the use of pollutants and toxic

- Preserve cultural and ethnic identity
- Promoting a healthy lifestyle
- Wise use of time and homogeneity of the building with the environment
- Economical construction using Efficient alternative technologies
- Avoid noise and air pollution
- Variety of residential architecture in Iran

Great land of Iran is one of the few countries that have been able to create a diverse architecture by historically and cultural characteristics that various factors such as topography, environmental and water resources, climate, soil, and ...is a significant cause of such attention, these factors and specific geographic position with the intelligent use of natural energy such as wind and sun... What in the desert and in temperate and moist altogether created so unique architecture arose, but found The people of this country with negligence ignore it and looking for inspiration and a model outside of this country that none of which is compatible with the architecture and our environment. In this section we will try to explore some environmental factors, as well as study the construction techniques in the design of residential address.

**orientation:** For the application and use of natural resources and energy is one of the principles of construction that has been highly regarded in the past, positioning buildings to use or avoid direct exposure to sun light and Taking advantage of wind energy is important in the study of orientation, which should be one of the principles of the structure which positioning building can be announced as an instruction according to the climate.

**Green space:** with gardens, the broad-leaved trees or needle, vegetation height, absorption of light, the distance of species from the building, species, and height species in benefiting from green space to achieve sustainable architecture is very important that protect the environment. Select species according to regional climate and growth rates as well as provides the relative comfort for occupants, in addition to the above, create the impression of paradise environment of space has an important role in the regulation of indoor environmental conditions and stylized the air of environment and region.

**Materials:** The use of ecological materials with provides good thermal properties due to the climate are tricks used in sustainable architecture, by this method will be only used appropriate materials of each Region so the side costs such as transportation, saving For example using the wood in the north and brick in the desert regions. In fact, the use of local materials consistent with the climate of each region, not just focus on reducing the cost of transport but also fully compatible with the climate and the environment factors flexible.

**The use of cooling system and natural ventilation:** to achieve relative comfort factor that need twenty-one to twenty-eight temperature and humidity 30 to 60 percent by using environmental factors in the structure of the building by creating a wind deflector, calculated windows, insulation building, choice of materials, creating circulation, making the waterfront and the prevailing wind is important. Appropriate Use of air conditioning in every region in order to reach the comfort factor is important.

**The Climate measures harmony is with the culture, tradition and belief.**

each area of the land has special customs arrangements so the climate coordination with customs and traditions of the culture of each region, along with religious beliefs is also very important, for example, coordination with culture of people in desert with compact housing tissue and its covered architecture compared to the people of north region with the veil of dense housing and open them to deflect and repel moisture can be noted in the area.

## REFERENCES

- [1] Afhami, Reza, Mostafa, Ali "flexible architecture housing" Magazine Book of the Month art in an era of demographic changes, No. 92,177 (2014)
- [2] Edvard, Brian, translation: Shahrouz TehranI, Iraj, "printing guidelines on sustainable architecture", Tehran, Mehrazan publishing (2010)
- [3] Shateriyan, R " Tehran's climate and architectural" a second edition of Simaye danesh publishing (2009)
- [4] Azimi, N "physical plans of national, regional in Iran: a step for Sustainable Development " MA, Shiraz University, Faculty of Engineering (2010)
- [5] AlksandEr, Christopher and Serge Chrmyaf (1996), areas of public life and private life, translator M. Mazini, publisher Tehran University, Tehran.
- [6] Falamaki, Mohammed Mansoor (2002) roots and theoretical tendencies of architecture, Faza publishing, Tehran.
- [7] Memariyan, GH (2005), course in Theory of Architecture, published by Soroush Danesh, Tehran.
- [8] Adams w.m.(2001) 'green development: environment and sustainability in the third world (2ad edition) London: routledge.
- [9] Edwards brian and paul hyatt(2001). Rough guide to sustainability. London: riba publications.
- [10] Asadpoor, Ali, a model of stability in the Iranian desert architecture, our magazine, No. 25, 2006.
- [11] Poordeyhimi, SH, the impact of shadow of the instruments on the amount of thermal energy through windows, Soffe magazine, Issue 3\_4, 1990.
- [12] Azizi, M., Soffe magazine, No. 33, Eleventh, 2001.
- [13] GHobadiyan, Vahid "Climate check of traditional buildings in Iran", Tehran University Press, Fifth Edition, 2008.
- [14] GHiyasvand, J., interaction Architecture and Renewable Energy (stable), construction paper, No. 38, February 2006.
- [15] Memariyan, GH (2005), familiar with Iranian residential architecture typology introverted, Soroosh Publications of 2008.
- [16] Mofidi, Majid Mahmoodi, M. Analysis of the architecture of Yazd funnel and find the optimal way of your work, Arts Magazine No. 36, 2008.
- [17] www. Logha tnameh.com
- [18] www. Mehrazi. Blogfa.com
- [19] www. Pdf factorg.com