

Architectural Engineering and Sustainable Development, Architectural Technology and Sustainable Development

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Abstract In keeping with today's architectural world and the use of new energy in the buildings, a climate-compatible building can save energy and reduce air pollution. Apart from this, the use of valuable models of traditional Iranian architecture is only a small sample. It is a measure used by the ancestors of this land. In the discussion of sustainable development, and consequently, a sustainable architecture, and that each building must interact with the context and conformity with natural environment around it has become obvious. The controversial part and

attention has been given to the controversial parts and how interactions are organized and the types of measures which have to be taken. The architecture and rules used in this architecture clearly have many of the new concepts in the field of sustainable architecture. This paper first refers to the concepts related to sustainable architecture and then examines the traditional architecture of Iran architecture and technology in building and modern construction technologies. One can mention nanotechnology technology. Finally, it can be concluded that traditional Iranian architecture and building construction in terms of climate can have a favorable outcome, such as the use of modern technology and technologies for energy consumption, and maintenance and less use of fossil fuels.

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Introduction

Human being has always been in search of his needs in the idea of creating a space in which he can find the best answer by understanding peace, security and goodness. An inseparable part in relation to man is nature, to the extent that the rule governing life is thinking that it has been extensively manifested in traditional Iranian architecture. Iranians, inspired by the foundations of their worldview and culture, have created a space for biosphere during history, which, at the same time, presents a manifestation of their

attitude to life. By the time and the advancement of science and technology into technologies for understanding peace and enjoying nature.

Considering the importance of technology in the industry today and its growing trend, recognizing these technologies is of great help to us. Today, saving energy and sustainable development is one of the most important issues at the International level, conservation of energy resources, prevention of pollution of the environment and land, and reduction of fossil energy consumption and coexistence with natural and climatic conditions have become one of the most important determinants in architecture and urbanization.

Architects and urban planners are required to adhere to certain principles and rules in the field of construction. The continuous increase in population is threatening the world's countries with a shortage of energy and threatening human life. One of the environmental pollutants in Iran, the use of fossil fuels in residential areas is used for the electricity generation and heating of houses and warm water supply.

The traditional architecture of Iran, whether in the residential or non-residential area, and also the combination of the two in a wider area of the city, has the features of the exclusive features, while paying special attention to the aesthetical perspective and preserving the environment, have been responsive to the climatic needs of each region. Architectural technology is one of the debates for which a clear future is anticipated, and the extent of its impact on the formation and development of sustainable architecture has been so high that it is said to be capable of most aspects and great effect on human life future.

Levant stability

In a certain culture, the term means sustainability and resistance from the infallible (meaning) of sustainability and endurance (a certain culture). In Dehkhoda's dictionary, sustainability means durability and survival (Dehkhoda Dictionary) the verb sustain is from the Latin root of the sustiner and consists of two parts (sus) meaning down to top and tiner meaning to be kept. Since 1290, it has been used in English. This

verb has implications such as support and stirring and continuity (Asadpour Ali 2006).

Sustainable development and its definitions

The term sustainable development has not been used since the mid-1970s and after the 1973 oil crises. Today, the issue of sustainable development is one of the most important and important discussions on the international level. The world's most popular organizations and institutions, as well as the United Nations, are among the most important organizations involved. The culmination of this discussion in 1992 was at the World Conference on Sustainable Development (known as the Earth Summit) in the city of Rio de Janeiro, Brazil, which later became known as the Summit, which issued a resolution calling for strategies for the sustainable development of the world, nations and obliging them to do so.

The most important definition that has been presented at the Rio de Janeiro Summit on sustainable development is the development that meets the current human needs without compromising the needs of future generations, and fulfills the environment and future generations, Definitions of sustainable architecture sustainable architecture dates back to the nineteenth century. John Ruskin, William Morris, Richard Lethbridge, is one of the pioneers of the sustainable architecture movement. In his book (Architectural Seven Principles), Ruskin says that he has harmonized the harmonic order of nature in order to achieve growth and development. The return to the greenery of the city's suburbs and self-sufficiency and the revival of local industries have been developed. The goal of sustainable buildings design is to reduce the damage to the environment in terms of energy and the exploitation of natural resources, which includes the following rules: Non-renewable resources, natural environmental development, removing or reducing the consumption of toxic substances or damaging to the environment in the construction industry.

Definitions for sustainable architecture

A building with the least inconsistency with its surroundings and in the wider area with the region

and the world. Creation of a human environment and its commitment to management on the basis of the principles of canopy adaptation and resource efficiency of these principles are minimizing non-renewable resources, improving and improving the natural environment and minimizing ecological damage on the environment. The explanation of a more balanced and life-like relationship between the work of architecture and the environment, which is the self-consciousness of the architectural effect on environmental conditions.

According to the OECD, sustainable buildings, buildings that are considered to have the least destructive effect on the surroundings of the natural (natural) artefacts adjacent to them and their immediate surroundings, as well as their general context. Sustainable and homogeneous design is considered to be a design in which any part as part of the larger one should be well considered (Rocky Mountain Institute).

Sustainable architecture contains an aesthetic of aesthetic, environmental, social, political, and ethical values (Samuel Mukabi). Sustainable design will be referred to the inner and basic concept of the site. A process that leads to a recovery rather than a distortion. Aesthetic design will result from the inner and fundamental concept of the site. A process that is more than a reduction to the process of restoration. In fact, art science is the proper communication between the human environment and the natural world (Ondrine).

Variety of residential architecture in Iran

The great land of Iran is one of the few countries that have historically been able to create a diverse architecture with its cultural and geographical features. This diversity, even in the geographical divisions of the restricted area, can be observed with a little precision, for example, the great diversity of residential architecture in green areas Gilan province in the Lahijan region, Langhorod and around Rasht. Stara area and north of Talesh, Foomeat area, Dilman highlands and Masouleh Rudkhan heights or Kiver Abayaneh, Natanz and Kashan residential buildings with a distance of 50-60 km from the well it illustrates this issue.

The techniques used in Iranian homes

Four seasons houses

The adaptation of the lifestyle to the climatic conditions of different seasons can be seen well in the interior houses of the warm and dry regions of Iran. The rooms around the courtyards of these houses are used according to be chapters, such that the northern side of the gardens was warm in the courtyard. It was used in the winter and it is famous for the winter, and it is just the opposite of this act on the south side of the courtyard and back to the sun and it is famous for the summer.

Introversion

Instead of working on the inside and on the inside of the caricatures of the architecture, it has been drawn into the field. Features of home-based houses: 2.1.1: Not having a direct visual connection of the inner spaces of the city with its outlying urban spaces. 2-2: Different spaces are organized such as a central courtyard or covered rooms.

Outsourcing

Extroversion typology has a type of housing architecture with features such as having a direct physical and physical connection with the outside of the house, having no yard, expanding space, and organizing space relative to the other space of the corridor.

Orientation

Traditional collections, the application and use of natural resources and resources is one of the basic principles of their construction and spatial planning. In traditional buildings of Iran, there are three direction orders (North-east-southwest). Isfahani (northwest - eastern southern) and kermani (eastern-western) showed the best way to establish a building in any climatic region. The city includes central cities such as Tehran, Yazd, Jahrom and Tabriz in northwest Iran, Direction orders Isfahan (Ron Isfahani) north of Isfahan city-Shiraz. Finally, direction orders Kerman (Ron Kermani) includes the cities of Kerman, Hamedan, West Azarbayjan and Khoy.

Gardens with ribs

Waterlogged trees, while providing shade and play a role in the production and creation of aesthetics, creates a moisture environment for the environment. These green surfaces absorb the sunrays to prevent reflection of radiation and increase unwanted heat. Sometimes this trees play a role of wind turbine. Electing the type of always green or depressed trees varies depending on each climate.

Climatic principles of architecture

The principles to be considered for the classification of a building as a permanent building are as follows (Richard 2016) : (1). Energy conservation principle, (2). Coordination with the climate principle, (3). Reducing the use of new resources principle, (4). To meet human needs.

Principle 1. Energy conservation

Each building should be designed and designed to minimize the need for fossil fuels. The necessity of accepting this principle in the earlier principles undoubtedly is undeniable according to the type of construction, and may have only been forgotten due to the large variety of materials and technologies in contemporary such buildings (Hatami Golzari 2008).

Principle 2. Coordination with the climate buildings

Should be designed in such a way that they can use the local climate and sources of energy. The shape and manner of establishing the building and the location of the spaces within it can be such that it will enhance the level of the inside of the building, and at the same time by creating the correct structure of the structure, it has led to a decrease in fossil fuel consumption. These two processes have inevitable overlaps and many common points (Hatami Golzari 2008).

Principle 3. Reducing the use of new resources

Each building should be designed in such a way as to minimize the use of new resources and, at the end of its useful life, create a source for the creation of other structures.

Principle 4. To meet the needs of residents

Sustainability architecture respects everyone who uses the building. But the architectures sustainability process, including respect for all shared resources in building a complete building, does not exclude a person from these collections. All buildings are made by humans, but in some buildings the reality of human presence is respected. While in others, attempts are made to reject human dimensions in the manufacturing process (Hatami Golzari 2008).

The necessity of using modern building technologies in order to protect the environment

Sustainable architecture - Green architecture and Ecological architecture are concepts that are all in one direction, namely, the optimal use of facilities, materials and construction technologies, in order to optimize energy and building materials consumption, and reduce the cost of building construction and quality improvement. In all of these cases, durability sustainability is reducing potential risk and responding better to the economic and social needs of the standards. The current conditions in Iran indicate that, despite the fact that technology-reducing energy consumption and insulation have been responding for years now. There are ecological and naturalistic needs, and for most of them there is an etiquette, but lack of quality supervision over the implementation or even lack of quality supervision has led buildings to continue with the same traditional methods.

Each Iranian family consumes energy about 4 times the world average. With the dramatic increase in the price of energy carriers in our country, reducing energy consumption is one of the demands of every Iranian individual. Also, surveys show that saving from 20% to 35% in residential buildings and up to 55% in office buildings can be achieved using technology that can be accessed, remote control of building performance, high efficiency of equipment and facilities, reduction of maintenance costs and the benefits of using modern technologies and technologies in the building.

The purpose of using modern building technolo-

gies in order to protect the environment is as follows: Saving and saving energy, Meeting the needs of the residents by creating an appropriate environment, Reducing the use of fossil fuels, Reduction of environmental pollutants, Reduced maintenance and repair costs.

Nanotechnology and sustainable architecture

Environmental sustainability has been defined so that the exploitation and exploitation of resources, to the point where the current needs of the world are met by energy and the needs of future generations will not be compromised. Not only the effective use of energy resources, but also the raising of useful materials and building materials, are among the most important criteria for maintaining environmental sustainability. Principles that must be observed to be considered as design and sustainable architecture are: Increasing the durability and useful life of the building, Saving on energy and materials, Non-degradation of the environment, Conservation of natural and structural resources and on the other hand, the architecture and construction industry faces a huge range of building materials. In fact, it is the core material of the building and its effects on the environment cannot be ignored. From the nano achievements in this field, materials can be introduced that reduce energy consumption and increase the life span of the building. In general, effective measures in to protect the environment and natural resources. All of these are effective steps towards the realization of sustainable design (Mohammadi 2011).

Smart buildings

Smart, intelligent, responsive and consistent everyone is used to define structures and materials that include the sense of heat and stimuli and the ability to adapt to external stimuli such as loads and stimuli of the environment. Smart architecture is dynamic, which means that the main functional parameters change themselves according to the need, demand and dynamic and changing conditions. An intelligent architecture, like a living system, is capable of experimenting with the use of business in a new environment, and with this feature the dynamics and self sustainability of the system are guaranteed.

The main features of intelligent architecture are: Dynamic and active, Flexibility and adaptability to be environment, Reacting and responding Ghobadi (2008). It is necessary to point out that between intelligent materials and intelligent systems should be distinguished. The intelligent matter may simply be made of intelligent materials or of the combination of stimuli and the sensors got software intelligence.

Intelligent building purposes are as follows : Creating a favorable environment for people in the building, Optimum use of equipment and increased useful life, Provide a control system with timely scheduling function, Significant savings in maintenance and optimization costs and energy savings, The need for a permanent contractor for the building, It is possible to monitor and control all points controlled by the Internet, Due to the integration of the building, all the equipment works in a coordinated manner and the possibility of interference and problems arising from coordination are eliminated.

How smart is how affordable?

The principles of a building say that the real costs of a building are not just construction costs, but also have to add strategic costs and repairs to them. Intelligent building lowers all of these costs by automatic and integrated control, communications and management systems. If we pay attention to the cost of a building over a lifetime of about 40 years, it is clear that maintenance has the highest share in the current cost of the building. In this regard, the maintenance costs of an intelligent building will be reduced by up to 50% on the return of costs, there are many welfare facilities. Today, buildings are a kind of technology. They use their technology to create a safe, comfortable and energetic environment. A smart building is a building that boosts the efficiency and efficiency of its inhabitants and provided the possibility of effective management based on specific requirements and at the lowest cost (Memarian 2008).

Conclusion

The wide and growing need of the society for building and housing, the need to use building systems and new materials to increase the speed of construction,

lightweight, increase the useful life, save energy, and also more resistant buildings to earthquakes more than before has constructed. In this regard, the promotion of the scientific and professional level of society is unavoidable. Problems such as long run-time or low cost of buildings in the housing sector require the provision of solutions for the practical use of modern building systems and building materials new for weight loss, reduced build time, longer durability, energy conservation, and ultimately lower operating costs. The traditional architecture of Iran, whether in the residential sector or in the non-residential sector, combining the two at a wider level of urbanism has unique characteristics that, while paying attention to aesthetic issues and preserving the environment, have also been responsive to the needs of each region. The rules used in this architecture are clear in many of the new concepts in the field of sustainable architecture. The present paper is a scientific review article

that provides the required information as a library of books and articles on architecture and sustainable development. The desire for sustainable development has been gathered.

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