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Evaluating the Impact of Qualitative Elements of Space on Social Aspects of Sustainability

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Abstract

In recent years, after the subsidence of the styles which had been popular during the post-modernism in recent decades, attention to human oriented architecture as a product that must be responsive to the human needs in different aspects, leaded to the formation of attitudes which are known as social attitudes. These approaches beside the sustainable architecture attitude, can lead to a new approach called social sustainability. In architecture sustainability can be divided into two categories in architecture. Environmental sustainability, which is also named as climatic sustainability, deals with the stability of the building's body and consumption optimization of materials and energy. And non- environmental sustainability which is mentioned as social sustainability, deals with improvement of the quality and stabilization of the events that are going on within the body of the building in architecture. Sustainable design can be defined socially as: designing an appropriate space to accommodate culture, behaviors and lifestyle of people. By enhancing the space quality it will also increase the quality of life which will contribute to sustaining the space. To increase the range of social stability period it is possible to utilize solutions which make the space flexible. Thus it can be expected that mentioned space could respond to the changes in behavior pattern in future.

Keywords: Sustainable development, environmental sustainability, social sustainability, society, culture, space quality.

Introduction

In recent years, after subsidence the styles which had been popular during the post-modernism in recent decades, attention to the human oriented architecture as a product that must be responsive to the human needs in different aspects, leaded to the formation of attitudes which are known as social attitudes. These approaches beside the sustainable architecture attitude, can lead to a new approach called social sustainability in architecture. In fact what we know today as sustainable architecture, is a subset of the category of sustainable development which has been obtained along with plenty of actions in thought and action at the end of second millennium AD, and goes on to offer strategies at the beginning of the third millennium. The rebellious development which marched forward by using the modernity and modernism resources, received the warnings of the risk of the life continuity on the planet, after tracking of the causes of climate chaos and its losses results. Regarding per capita income and consumption growth tables, whatever economic growth, consequently per capita income exceeds, and the amount of consumption will increase sharply. Architecture also follows this issue that will cause growth in demand for the land, building and energy. The aim of sustainable architecture is to find architectural solutions to provide good living and coexistence conditions of this issue. Therefore, the design should be based on three principles of "Conservation of resources", "Design based on life cycle," and "Human design". The first two principles are more technical and related to materials, construction methods and renewable energies, while the third one is derived from human his lifestyle. In modern society, more than 70% of each person's life is going on in the interior, so the most important architectural role is to create the built environments that can sustain their safety, Health, Physical comfort, psychological heath and Productivity. The formulated strategies to achieve a human-designed can be noted as "Maintaining natural conditions", "Urban design" and "Site planning and human well-being comfort". Regarding three defined "environmental", "economic" and "social" goals in sustainability battle McCarthy refers to the following points: i. Environmental goals: create environment of superior quality, re-usability, eliminating waste and residues, consumption of low transformative materials, recycling materials, water recycling from sewage and eliminate emissions. ii. Economic goals: create superior value, reducing ongoing cost, reduce energy consumption, offering perfect solutions, production methods with ease, prospective Solutions, iii. Social goals: security, compatibility, to recruit quality, eliminating energetic poverty, creating sound insulation, flexible programs, living with health, home care, permanent teaching.

Environmental and economic development in the area of sustainability and sustainable development have been better. While environmental and economic sustainability are considered as a prerequisite for social sustainability. Social sustainability can be thought of generally positive social change[1].

Sustainable design while enhancing the quality of living and working environments, should not interfere with human comfort, thus it increases the efficiency and reduces stress and will have a positive impact on the health and welfare of individuals.

Body of Research

As discussed, sustainable architecture is considered as part of sustainability and subcategories of sustainable development. But the mentioned triple divisions that have been considered in sustainability are not able to be applied with the same performance in architecture. Because these divisions have been prepared by authorities such as World Bank and economic experts, and have specialized addressing to natural, economic, human and etc matters, for this reason and in order to be more clear about sustainability divisions in architecture, it can be studied in two main areas, that provided each of the above objectives and in some cases they will overlap. First "Environmental sustainability" which also called climate sustainability and green architecture that deals with stabilizing the building body and optimizing the material and energy consumption. This comment has been developed greatly in recent years and is divided into several branches. The other area where the architectural sustainability can be studied is "non-Environmental sustainability", here it will be called "social sustainability". Architectural design can play an important role in finding solutions for social nodes interaction[2]. A stable social structure, in case of being successful, could help people to understand the benefits of sustainable living, and so the architecture can lead to a better society. In fact, this attitude deals with "quality improvement" and "stabilization events that are within the architectural framework"[3].

In such a these works the planned aspects are twice more effective than architectural aspects to formation the projects. Thus concepts those were under attention of architectural discussions like static, form and function, depending what pass in and out of the building, according to the activity and expectations should be changed and briefly defined for the right social aspects.

Blkyng defines social sustainability this way: change, growth or evolution of social systems in order to improve of life for all members of the community with regard to the talents and capacities of society.

According to Johnston, social development basically means strengthening the vitality of civil society and increasing social and cultural values[4-6].

Architects use from what passes in various parts of science such as biology, psychology, philosophy, religion and etc, in the contemporary period in different places and times, and have converted them into the means to look what is going on in the world today. For example, perhaps somewhere outside of architecture, there is no such thing as climate approach; but architects by utilizing various sciences such as biology, climatology, and building technology,have made something to be able to see analyze and plan the architectural world. In this study from different approach to architecture it has been based on the cultural-social approach. Give importance to form and body is the interface of architecture with other approaches. However sometimes it has been dealt with more qualitative issues, in the social approach, the researcher makes his addressed familiar with the cultural and semantic world of the spaces users and then presents and analyze its architecture. In the socio-cultural approach all the people of the planet from tribal to urban communities' people and their constructions can be discovered and studied. While in some attitude such as spiritualism, the attention is on the religious art that the creators had particular religious traditions. To achieve the desired results in a social perspective, the researcher will enter in the intended community and utilizes the existing methods in the social sciences, and will measure social relations and behaviors with his specific tools[7].

Acclaimed authors such as Amos Rapoport with their specific attitude have studied architecture and society culture. They believe that the memorial architecture has been the main theme of historians since the advent of "Art History". While the art historians believe many people in the past lived in the buildings without artistic and aesthetic values of memorial monuments. Considering the large part of the past architecture which has been ignored until that time was theresult of this human made boundary. Social scientists act based on an important theory. They reject the influence of climate, economy and technology as the prime factor in shaping the buildings; on the other hand they believe architecture is influenced by culture and society. In fact from their point of view architectural buildinghas been achieved from interaction in nature, society, worldview, lifestyle, material and spiritual needs, individual and collective, economy and technology[8].

Generally Amos Rapoport does not deny the relationship between form of the building and natural and economic factors. But he believed factors and specific meanings of human mind such as traditions; ways of life, symbols and etc has more compulsive influence on architecture[9].

As mentioned, in the study of social attitudes, culture, beliefs and way of life are the most determining factors in shaping the architecture and other factors such as climate, economy and etc are part of the quadraticfactors. Based on this approach a socially sustainable design can be defined as: space designing to be a suitable container to accommodate culture, behaviors and human ways of life which are making people lives, be able to be present for a longer period[10-12].

Goes without saying that socially stable environment should improve the quality of life besides enhancing the flow of life. Because this approach by excessive considering the normal

issues, theories from outside of the architecture and etc is formed against the movements which look at buildings as a machine or sculpture that just respond the artistic needs, and space users lifestyle does not play role in formation of them. Thus by living in such a space, which is consistent with the culture and social behavior, and providing living standards quality, could be optimistic the relationship between man and architecture be strengthened and the culture and the public perception about architecture be enhanced. This issue leads to creation a process where humans will become conscious consumers and permanent observers[13,14].

Although the climate and social sustainability both have the same title of "sustainability" and pursue common goals on the macro scale, which is providing a living environment for humans in a way that does the least damage to the natural and human resources and preserve it for future generations, they have differences. Climate sustainability focuses on the body of the building and keeps it for many years with the lowest energy consumption and damage to the environment by means of appropriate materials and techniques and also under the observance of specific regulations. According to the constant variation of human behaviors, the social sustainability, which is in direct relation to human's condition, cannot be guaranteed as much as physical sustainability.In other words, the time extent which social sustainability addresses in theory is shorter than its physical form. Thus, social sustainability, instead of stabilization of happenings for many years, mostly focuses on reconciling the space with present time behavior patterns and increasing the quality of life. But to prolong the life durability, the space must be capable to adopt itself to changes in lifestyle in other words considered the design criteria to make the space flexible. Thus the behavior patterns will change over time still can be located in the flexible space which was located previously. In the following the two topics "space quality" and "flexibility" will be reviewed.

Space quality

Favorable urban spaces have human and physical desirable aspects. Spending the leisure time in urban open spaces is not just to enjoy the variety-seeking; also it is considered as an important element in healthy living. He believes the fear and uncertainty of citizens from each other caused by the lack of proper urban open spaces where people are able to easily communicate with each other[15].

Yangl in his book and philosophy about cities notes that cities have become places where people are engaged with each other and the built environment. Vibrant and thriving places that people enjoy their attendance in them. Christopher Ayngnhvvn German is an architect who designed a building to encourage interaction of people, inside and outside the building. He set up a plaza on the ground floor, providing a safe place to visit and happy environment. The interaction between environment and society in this way could improve the quality of life[16].

Attention to the body does not necessarily make desirable spaces.Appropriate quality of life for all members of society at the individual, group and community must grow. Security, confidence, sense of belonging, sense of place, education, welfare, health, income and finally that all people have the opportunity to develop personal and social improvements[17]. Therefore the relationship between the physical and human aspects of a favorable space design is shown in figure-1.

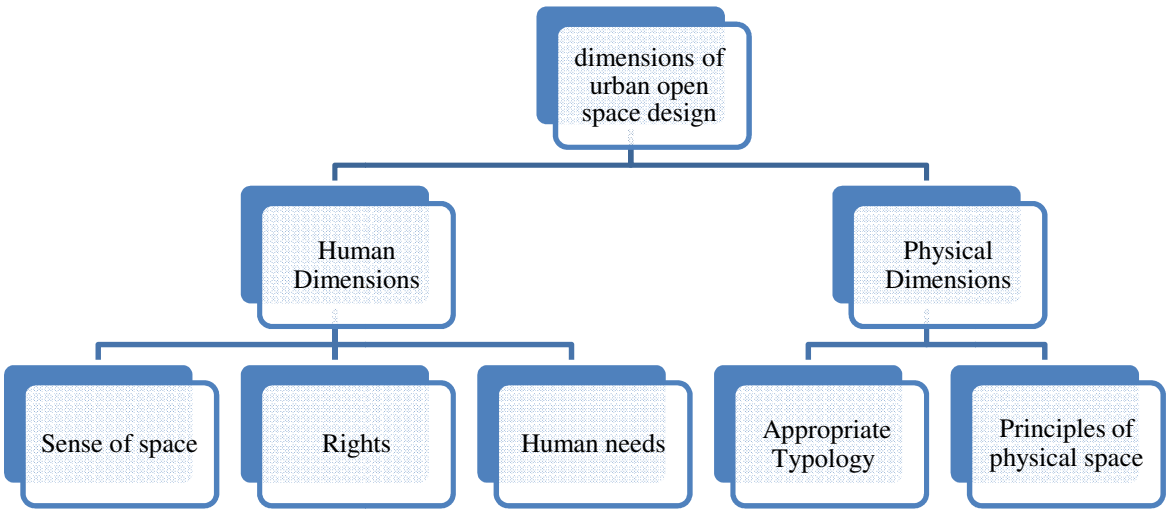

Figure-1
Dimensions of urban open space design

To be able to consider a space as a good environment, the space should respond to the basic human needs. Maslow's theory regarding hierarchy of human needs is one of the most complete dealing with this issue. Most people generally behave according to Maslow's hierarchy of needs. The conversion of the Maslow's various needs classification reaches to the table 1 design.

Table-1
Translation of Maslow's needs to design elements

Physiological Need	Shelter
Security Need	Mental & Physical Security
Attachment	Symbolism in Environment
Self-actualization	Freedom of Choice
The need forbeauty	Beautification

Maslow acknowledges that many of these needs are not prohibited in the environment, so that some of these needs are based on physiological, psychological, social, or set of these factors.Human needs aspects in urban spaces based on Maslow's hierarchy can be classified into five categories:

Convenience: This is a the most basic human needs and climatic concerns such as controlling rain amount, sunshine, wind intensity and physical and psychological security can be help a space to be comfortable. Security depends heavily on the individual's level of culture and social situation.

Comfort: It is a situation where internal pressure is released. The level of releasing pressures in the comfort is much higher than convenience. For deep relaxation, a feeling of comfort is required.

Inactive presence in space: Inactive presence in space can lead to relief, without being active. Passive involvement is a case that individual look at the environment, but does not do any particular thing.

Active presence in space: Generally lack of private spaces where people can be with themselves increases the stress on the other hand the excessive fragmentation of the none-self is too risky for human health.

Discovery: The need of arouse emotions and pleasure of new spaces experience is related to the quality of space discovery. Finding and Discovery is a strong incentive that causes people to enter to a new space and move in the city to find other spaces and events.

Thus it can be said that the projects have social sustainability that creates harmonics and harmonious living, reduce inequalities and social rifts and generally enhance the quality of life[18].

Flexibility: For designers this tendency is created to consider a dedicated space for any of a variety of activities within the building. Mostly, assigning makes it hard to run other activities in the specialized space; on the other hand it is also true about public spaces. Current activities in public spaces are communal activities. People come to these communal spaces to experience other people. So if communal spaces are divided into different pieces for separated activities, much of its flexibility will disappear.Space users need to be able to modify it according to their needs, in order to work easier. This concept is called adoption by psychologists. John Lang explains that when the environment is not appropriate it is required to be changed in order to respond to the situation. If the environment does not adapt to the users activities, will not be used ultimately and will become desolate.

Individual, community life and environment must be able to respond appropriately and creatively to the changing needs of human[19,20].

Conclusion

Sustainability can be divided into two categories in architecture. Physical sustainability, which is also named as climatic sustainability, deals with the stability of the building's body and consumption optimization of materials and energy. Non-physical sustainability which is mentioned as social sustainability deals with improvement of the quality and stabilization of the events that are going on within the body of the building in architecture. Sustainable design can be defined socially as: designing an appropriate space to accommodate culture, behaviors and lifestyle of people. The life which is composed of the same elements could able to be present for a longer period. By enhancing the space quality it will also increase the quality of life which will contribute to sustaining the space. Access to good space quality, requires that while considering the physical cases, human aspects must also be considered. To increase the range of social stability period it is possible to utilize solutions which make the space flexible. Thus it can be expected that mentioned space could respond to the changes in behavior pattern in future.

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