

The relation between sustainable development and sustainable architecture

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Abstract: The concept of sustainable development was introduced for the first time in 1970 to address economical social issues in order to protect the environment. In this context, various theories were provided and what is emphasized in this paper is to highlight the sustainable development and the sustainable architecture. Like other sciences, in the field of architecture, world architects have been provided many solutions to create better and more sustainable contexts in order to provide desired life for people. An architect considers activities such as leisure, work and play when designing spaces that these often involve environment. The main objective of this study is to examine the relationship between sustainable development and sustainable architecture. Research methods have done using library, documentation and other researchers' findings. Studies showed that there is a relationship between sustainable development and sustainable architecture and applying the concept of sustainable architecture is as same as architecture compatibility with the environment and sustainable development.

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1- Introduction

Environmental crisis in the 1970s led to the formation of pro-environmental groups has formed a broad concept called stability. Several committees were formed in this regard that the best solution was the solution of sustainable development. On the other hand, the concept of stability in order to create and design an appropriate environment for people was arisen. Application architecture concepts of stability and sustainable development in architecture was introduced a concept called sustainable architecture that the main topics headlines of that are "Eco - monochrome Architecture ", "Architecture and Energy" and "Green Architecture". Sustainable architecture that is actually a subset of sustainable design can be accounted as one of the most important contemporary streams that are accounted the logical reaction against problems of the industrial age. For example, 50 percent of the fuel supply is consumed in buildings, which in turn will lead to environmental crises. Therefore, the need to create and develop concept of stability in architecture is clearly visible. Like other categories of architecture, sustainable architecture has its own principles and rules, and it takes three following steps: Saving in resources, designing to return to life cycle and designing for human. Each one of these steps has its own specific strategies. Identification and study of these measures lead architect to greater understanding of the environment that he must design. Finding the long-term solution guarantees human welfare and survival. Architecture is one of the most significant forms of economic activities. Architecture follows increase of family income, the greater desire to own a bigger house with more expensive construction materials,

furniture and equipment, more favorable thermal conditions in the domestic spaces, and bigger yard or garden. A building, during its life, impacts on local and global environment through a set of human activities and natural processes related to each other. In the first stage, site preparation impacts on local features. Although the influx of constructions and workers and equipments to the construction site, as well as manufacturing process is temporary, it caused chaos in the local ecology. On the other hand, the provision of materials production impacts on the global environment. Completing the construction phase, operation of building time period has long-term bad effects on the environment. For instance, the energy and water inhabitants of the building use will become waste becomes toxic gases. Moreover, the process of collecting and refining and transportation of all resources consumed during the use and maintenance of the building has numerous influences on environment. This in turn increases overall architecture influences on global ecological system, which is composed of inorganic elements and living organisms and humans.

2- Sustainable development

Sustainable development is a noble and necessary aspiration. And over, is a visionary development paradigm Last 20 years, governments, private sector and civil society have committed to the objectives of sustainable development. Maurice Strong, Secretary General of the Rio Summit, the former in 1998, he said, sustainable development "The world has been embraced by the people." Despite the recognition and commitment to the principles sustainable development, action has not moved beyond the coast, and certainly did not lead to

core changes needed to support the transition to sustainable development. (Sustainable Development: From Brundtland to Rio 2012, 2010)

Sustainable development is an evolving concept, which was created in 1980 in response to the growing realization of the need to balance economic and social development for the sake of the environment and management of natural resources. It proved difficult to encapsulate sustainable development in the short, the definition of our sound, which is also precise and unambiguous. This is in the fact that it. No internationally agreed definition of what is meant by sustainable development reflect A series of general statements of general principle have been made and have been widely accepted, but it has to come to the nations, organizations and individuals have been left with more precise definitions. Accordingly, hundreds have been offered, and has recognized the importance of sustainable development is an area of intense academic debate in itself (2).

Some concepts seem captured the public and political imagination more than the "sustainable development". The concept is intended. The idea that embrace the future generations inherit a world that supports their livelihood in a way that they are no worse off today than generations While there are numerous precursors (see, for example, Barry, 1977, Page, 1977) is the most famous formulation of the concept that given by the World Commission on Environment and Development (Brundtland Commission) in 1987: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs "(WCED, 1987, p43 , Pearce , Giles, 2011, 1-24)

Sustainable development in technical language can be defined as a development path which welfare optimization of present generation not leads to a decrease in welfare of future generation. Exposure in the pathway involves the removal of excess, which leads to depletion of natural resources and environmental degradation. (Kirkpatrick C. & et. Al, 2001, p2). Moreover, the concept of equality as one of the foundations of sustainable development that integrates within generation justice and between generation justices needs to change the structure of income distribution patterns. Therefore, some experts consider it as a precondition for adoption any strategy related to sustainable development (UNDP, 1994, p28). Nowadays the importance of sustainable development is something that everyone will agree with. Human activity on the Earth using resources with current practices, risks for opportunities and facilities future generations. Cities are the main stand of human activities and the largest consumer of natural resources, so it is vital to achieve the highest

possible stability in cities. Cities' sustainability is not only related to environmental issues but also dynamics of economic, livable environment and social equality is important in this context. Development defines a quality concept can be considered equivalent to increasing the quality of life that includes issues such as health, education, welfare, speech freedom, rights, etc (Hosseinzadeh Dalir, 2001, p 92). In recent years, various concepts of sustainable development paradigm were presented that different branches of geography form most of its sections. Urban sustainable development includes concepts such as green city, green canvas, livable city, ** city and environmental king. It is observed that the development paradigm just not restricted the protection of the natural environment or wildlife but is included concepts such as urban, rural, energy, social justice, equitable distribution of wealth, public participation in decision-making and planning. Sustainable development has global dimensions as same size as local dimensions that it means there is interaction between local and global processes in sustainable development (Shokuei, 1999, p 283). Therefore, the concept of sustainable development is broad meaning that encompasses all aspects of life that which in politics in the areas such as economic, business, technology, natural resources, industry, health and etc has been planned and designed so that can improve economic, social and environmental development. It seems difficult and from some planners' point of view, the process of economic development and growth will reduced. In such development, the desired result is not reachable too fast, and more time than other development programs will be needed. Development starts by people, not by the production and its content is in consistency, not the rule of human over nature. Development should increase people's choices and create opportunities, greater efficiency, and global Justice and sustainable environment (Tabibian, 2000, p 41). Although the term sustainable development at Kokoyok declaration on environment has been used in early 1970s and origins of the term referred to ecological development approach has stated in the World Conservation Strategy, The formation of it is related to establishment of the World Independent Commission on Environment and Development and providing report of the principles of sustainable development. (Barrow, 1995, P370)

The report, is called Bertnald has been adopted the name of chairman of the Norwegian, includes a set of legal principles and recommendations to achieve sustainable development in developing countries. It defines sustainable development as "meeting the needs of the present generation without wastage abilities of future generations to meet their

needs." It is a simple definition as a sustainable development plan for the 21st century (Roseland, 2003 , P 197). In order to call a development as sustainable, it must have four characteristics, which are:

- 1) Productivity: In fact, it is a dynamic equation between natural systems and socio-economic systems that guarantees producing food and other goods for people with no harm for the system. Productivity, measures society capacity for using or changing form of natural systems to produce food and goods with optimum efficiency;
- 2) Justice: it means the capacity of society in the distribution of opportunities and threats arising from the use or change on natural systems, such as the distribution of what is obtained from the development process. The term is used for the distribution of wealth among people;
- 3) Flexibility: it refers to capacity of society in response to natural or imposed stress or sudden trauma. Flexibility means system capability to repair or maintain the level of productivity in the short or long term disorder;
- 4) Stability: It means the capacity of society in continuous use or change in the natural systems process without major changes (Moldan and Bilhadz, 2002, p 378).

3- Sustainable Architecture

The variety of images of what sustainable architecture Could be, that is what it might look like, where they are located, what technologies it could include what materials could be built there from, and so on is quite confusing and rather than diminishing over time seem to be accelerate. Three decades of debate on sustainable Architecture and a search for some form of Universal consensus on best environmental practice seems to have failed. As Hagan puts it, "Environment architecture, in other words, Environment architectures, and the plurality of approaches with some emphasis on performance against over appearance, and some appearance on performance". This situation often provokes deep Depression among some architects. For example James Wines desperate that " a major proportion the architectural profession remained blind to the size of his irresponsible attacks on the Land and resources," while contemporary architecture Practice tends to confuse" to reinforce rather than a progressive image of the earth-friendly Architecture." Of course contradict other architects. Harry Gordon takes the opposite view that after decades of intensive efforts by designers, Architects, individuals and organizations a tectonic shift in design thinking has occurred: Sustainability is now main stream. One

might even say it has become a social to Design standard. (Guy & Moore, 2007, 15-23)

Literally, sustainable architecture pays attention on stability of architecture as and as a product of a scientific discipline. In cases where the emphasis is on themes such as the future, it is focused on the best approach of designing and planning of public realm. In this regard, cases such as key arguments, urban, architecture and stability concepts are interesting and intriguing, which are strongly tied together. Methods for ecological and cultural sustainability cannot be committed separate and distinct. Environmental guarantee responsibility means cultural sensitivity and cultural stability that should be included ecological knowledge. For cities without consistent combination of these two, there would be no viable future (Cole, et al, 2004). Using the concepts of sustainability in architecture, a new subject called sustainable architecture or green architecture or environmental architecture will be proposed. Sustainable architecture is responsible for constructing buildings that are sustainable in nature, as well as maintaining identity and matching objectivity with subjective images in the layers of history, present and future (Gorji Mahlabani and Yaran, 1389, p 43-54). Some theorists, know sustainable architecture as a design for people, so in their point of view, the quality of interior spaces is so important. Clearly, desired quality is not provided without attention to nature, appropriate lighting of spaces and ventilation. In addition, since the stability and sustainability of the building is considered as a phenomenon, so construction using high quality materials with long life cycle must be considered (Mellat parast, 2009, p 121-128). Therefore, the objectives of sustainable architecture in relation to the environment can often be sought in relation to energy. Creating buildings that are sensitive to local needs, consuming the minimum energy and etc as well as considering the cultural, social and content is essential to implement environmental technologies. In the objectives of sustainable architecture, nature must be maintained because human needs it, while in the past, it was in another way and the relationship between human and nature in addition to the capture and use of it, was included another relationship that was nature sanctification. Such meaning of nature (sanctification) has been led to create a respect sense to nature when they used it and so by doing it, all the problems that modern human follows, had been solved (Gorji Mahlabani, 2010, p 91-100). Finally, the pictures reflect sustainability in developing countries, which management, administrative, social and educational structure are them is not consistent, are faced with numerous obstacles. Traditional social structure, the profit

interests of individuals, institutions and lack of long-term planning and enforcement led to the possibility of change in these countries than in developed countries become more complex (Hosseini, 1387, p 221-213). It is normal in these countries documentation and informed individuals will not be used to implement sustainable architecture and finally, sustainable architecture will be failed.

4-Conclusion

To better understand sustainable architecture, first we need to get a clear understanding of the concept of sustainable development and to know what sustainable development is. In the 1970s, the environment was suffering from a severe crisis and many solutions were presented to solve this problem by scientists in academic for development, in which sustainable development was the only concept that has been accepted by most of the international communities. Sustainable development is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable development is not a fixed position; it is "continuous process of change, adaptation and adjustment" in which the exploitation of resources in order to investment, the orientation of technological development and changes are all together to meet potential actual needs of human. Sustainable development, as a universal concept, has various dimensions including economical, environmental, social, and cultural. In order to maintain development stability in the long-term, the interaction between the four dimensions listed is necessary. Therefore, sustainable architecture also means such design that is stable in environment and has minimum damage to the environment and maximum using of solar energy and be compatible with economical, social, cultural and biological needs of people. The sustainable architecture should also be in line with sustainable development and till sustainable development is not provided, sustainable architecture will not be formed. According to the findings, it is concluded that there is a close relationship between sustainable development and sustainable architecture and sustainable architecture is a part of sustainable development.

References:

- 1- Sustainable Development: From Brundtland to Rio 2012, (2010), prepared for consideration by the High Level Panel on Global Sustainability at its first meeting, 19 September 2010, United Nations Headquarters, New York, pp 1-26
- 2- Tom Edwards. (2009), Sustainable Development, NSW PARLIAMENTARY LIBRARY RESEARCH SERVICE , Briefing Paper, No 4/09, pp 1-36
- 3- Barry, B. (1977), Justice between generations, in Hacker, P. and Raz, J. (eds.), Law, Morality and Society, Clarendon Press: Oxford.
- 4- Page, T. (1977), Conservation and Economic Efficiency, Johns Hopkins University Press: Baltimore.
- 5- Pearce D , Giles A. (2011), THE CONCEPT OF SUSTAINABLE DEVELOPMENT: AN EVALUATION OF ITS USEFULNESS TEN YEARS AFTER BRUNDTLAND, Centre for Social and Economic Research on the Global Environment University College London and University of East Anglia, CSERGE Working Paper PA 98-02, pp 1-24.
- 6- Kirkpatrick C. & et. al; (2001) Development of criteria to assess the effectiveness of national strategies for sustainable development; Institute for Development Policy and Management; Universit of Manchester, 2001, p2.
- 7- UNDP; (1994) Human development report; New York: Oxford Univercity Press, 1994 p: 28.
- 8- Hosseinzadeh Dalir, 2001, "Regional Planning", Tehran, publication of Samt, p 93.
- 9- Shokuei, Hossein, 1999, "New Thought in Philosophy of Geography", Tehran, Institute for Geography and Cartography geographical Press, 286 pp.
- 10- Tabibiyan, Manouchehr, "Sustainable Urban Development, Municipal Journal", 2003, fifth year, No. 50, page 41
- 11- Barrow, c, j, 1995, sustainable development: concept, value and practice, twpr.
- 12- Roseland, mark, 2003, dimension of eco-city, cities.
- 13- Moolderan Bedrich, Bilhadz Susan, 1381, "Sustainable development indicators", translated by Neshat Haddad Tehrani and Naser Moharram Nejad, Tehran, Publications of Department of the Environment, p 387.
- 14- Guy S & Moore S. (2007), Sustainable Architecture and the Pluralist Imagination, Journal of Architectural Education, volume 61, pp 15-23
- 15- Cole, Raymond and Richard, Lorch (2004), Buildings, Culture & Environment: Informing Local and Global Practice, Taylor & Francis Group, www.tandf.co.uk/journals.
- 16- Gorji Mahlabani, Yusof, Yaran, Ali, 2010, "Strategies for Sustainable Architecture in Gilan compared with architecture in Japan" , Magazine of Fine Arts, Architecture and Urbanity, No. 41, p 43-54
- 17- Mellat parast, Mohammad, 2009, Sustainable Architecture in the Iranian desert cities, Armanshahr Magazine , No. 3, p 121-128
- 18- Gorji Mahlabani, Yusof, 2010, "Sustainable architecture and its critique in the field of environment", Scientific - Research Journal of Society of Architecture and Urbanity in Iran", No. 1, p 91-100.
- 19- Hosseini Seyed Bagher, et al, 2008, "Sustainable architecture training in Iran, barriers and attitudes", Journal of Education and Technology, Volume 2, No. 3, p. 213-221.

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