

Contextualism: A Strategy for Achieving Sustainable Architecture

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Abstract

Sustainability and context-based design is a recent issue in architecture. Architecture of each building is designed and implemented based on cultural, social, historical, climatic and specific conditions of the site and the building. Therefore, the building is ecology -consistent and elemental-coherent in its context and ultimately in the environment. All-round attention to environmental, social and economic issues in sustainable architecture is an attempt to benefit from the potential of the field and the design context. In the meantime, the sustainability approach is a balanced and comprehensive development of the sectors, because sustainability is realized when all these sectors develop and grow in a balanced and coherent way. In addition, the conditions necessary to establish strong relationships between sectors and the context of the plan should be available. In a sustainable design, the architect and urban planner must first consider features of a location in the field as a crucial issue in design process. Consequently, building is a small part of its peripheral nature in the contextual architecture. This paper aims to introduce contextualism as one of the main principles of sustainability. Accordingly, the present article seeks to study the effect of sustainability components on the creation of contextual architecture. The study is descriptive-analytical using library and documentary studies for collecting data. The results show that sustainable architecture is a multi-value combination that can emerge in a complete process with maximum compatibility with the design context.

Keywords: Contextualism, Sustainable architecture, Architecture, Context

Introduction

In recent years, various society classes ranging from state and industry to personal purchasers generally believe that they should minimize their impact on the environment; and think about both useful and harmful forms of their heritage. They should also consider all tasks have not only specific time and place- limited effects and unstable aspects, but also long-term results, which affect our later periods. Therefore, all the subjects of architecture and sustainable development are certainly related to morality, because considering immediate benefits and successes is a prominent feature of non-ethical acts. However, ethical acts consider broader and varied arenas, and considerably longer periods other than those we have in limited scope. Today, a growing number of social, business, professional and environmental leaders know issues of sustainable design in all areas of design, manufacturing objects and the artifact environment as a key driver of creativity and changes in social sustainability (Droodan, 2010, p. 60). By passage of time and emergence of environmental crises, sustainable design in architecture has become a principle. Factors such as excessive use of fossil fuels in the world, and consequently global warming, the growing greenhouse gas emissions in the atmosphere, which is also one of the factors of heating, pollution of the climate and soil, etc. The emphasis on the design of sustainability is increasing. For this reason, one of the recent issues raised in architecture, sustainability and, consequently, design is consistent with the environment (Montazeri & Rasooli Larami, 2015).

Rapid urbanization and its continuation in the future as well as the impressive growth of metropolitan cities and its harmful consequences for the inhabitants are the most important concerns that attract the attention of urban experts and planners to the concept of sustainable urban concept.

In addition, the world faces with irreversible changes due to the increase in pollutants and the increase in carbon dioxide concentration in the atmosphere and its irreversible consequences, and endangers our environment. Throughout history, human has communicated with its surroundings in various ways, and has concluded that it is necessary to preserve nature for the comfortable life of future generations. Therefore, preserving environment as a context of architecture is important. As a result, contextualism is an essential element for achieving sustainability. Based on OECD, sustainable buildings are the ones that have the least destructive impact on the built and the natural environment in addition to its context. As a result, achieving sustainable architecture with emphasis on context is possible. Contextual architecture focuses more on the physical characteristics of an area. For this purpose, first, definitions of sustainable development and its principles, and then the study of its most important principle, field orientation, its dimensions and native architecture are proposed. Finally, the recognition of the context characteristics is suggested to achieve sustainability. In order to understand the concept of sustainable architecture better, a clear definition of sustainable development should be represented.

Development

The development was essentially based on economic growth in past, while development is a comprehensive process that embraces all aspects of human life. For this reason, real development is a balanced development in which the economic, social, political and cultural spheres evolve simultaneously as interconnected components. Tavassoli regards development, in the general sense, as a complex and comprehensive transformational process that takes place in the social, economic, political, and cultural life of a society driving it from the present to the desired state (Harrison, 1997). Adoption of the new concept of development and trying to realize is accepting the features of the rationality age, in which logical action, calculation, and planning are present. In order to regulate the process of any development, it is necessary to coordinate the goals and the means of achieving them, and to use all potential natural and human facilities in a desirable and calculated manner (Harrison, 1997).

Table 1. Different categories of development

Economic development	Economic development is the continuous economic growth of a society to achieve personal and social well-being. This transformation is only shaped by developments that have come from the economic, social, political, scientific and cultural foundations of the community.
Political development	The purpose of political development, which is one of the important pillars of development, is to provide the opportunity for political participation of citizens. Of course, each society is preserved with distinct combinations of loyalty and consensus, but what is happening in the context of political development in a country is the socialization process for the integrity of society.
Cultural development	Cultural development involves expanding the cultural participation of people through their participation in cultural activities. The first steps are literacy and public education by mass use of goods such as books and the creation of exhibitions and theater festivals, etc.

Sustainable Development

The concept of sustainable development has been used in various ways so far. The principle of sustainability is also set as a general international objective in development plans. However, the

most common definition of sustainable development is the definition defined at the Earth Conference in Rio stating that development that addresses the need, without compromising the ability of the next generation to meet its needs and demands can be sustained (Barton, et al., 2000). In other words, sustainable development involves economic efficiency, social equality, ecological sustainability, and a new form of governance that encourages Social participation of all stakeholders in decision-making process. Human being is introduced as the core of sustainable development. In other words, sustainable development is human-oriented, and it is a new field that simultaneously addresses politics, culture, environment, economics, trade and human rights. In other words, sustainable development has three principles of environmental, economic and social sustainability. Human beings and societies are the cornerstone of sustainable development. The goal of sustainable development is a comprehensive development.

In general, the expansion of industries, services, metropolitan areas, population growth and the provision of basic human needs equal to losing a part of the non-renewable resources endangering capacities and capabilities of future generation. Sustainable development is therefore a development that applies real justice in using potential and actual talents for the future generation. Moreover, sustainable development means the development of a society in such a way that does not destroy the material and spiritual benefits of next generations (Pour Afkari, 2010, p. 65). Nowadays, environment, saving on fossil energy and sustainable development are the most important and common issues on the international level. Preserving energy resources, preventing pollution of the earth and environment, reducing the consumption of fossil and biofuels with natural and climatic conditions are the most important measures in architecture and urbanization requiring architects and urban planners to adhere to the special principles of constructing. The steady increase in the population exposes the world's countries to energy shortage and threatens human life. Perhaps, the constant effort of scientists can make hope and eliminate the fear of the human civilization collapse due to the lack of energy and the increase of environmental pollution. (Zandieh & Parvardinejad, 2010) The concept of sustainability was the result of human awareness of environmental issues and socio-economic, cultural problems in the 1970s. Preserving nature and modifying its look is one of the most important goals of sustainable development. Moreover, manifesting sustainable development in the built environment is called sustainable architecture (Zandieh, Mi, Parvardinejad, 2010, p. 91).

Table 2. Three main principles of sustainable development

Ecological sustainability	Emphasis on maintaining the essential environmental processes, biological diversity and environmental protection.
Socio-cultural sustainability	emphasis on the control of the people over their promise through development.
Economic sustainability	emphasis on the optimal use of resources and their proper management to prevent problems for future generations.

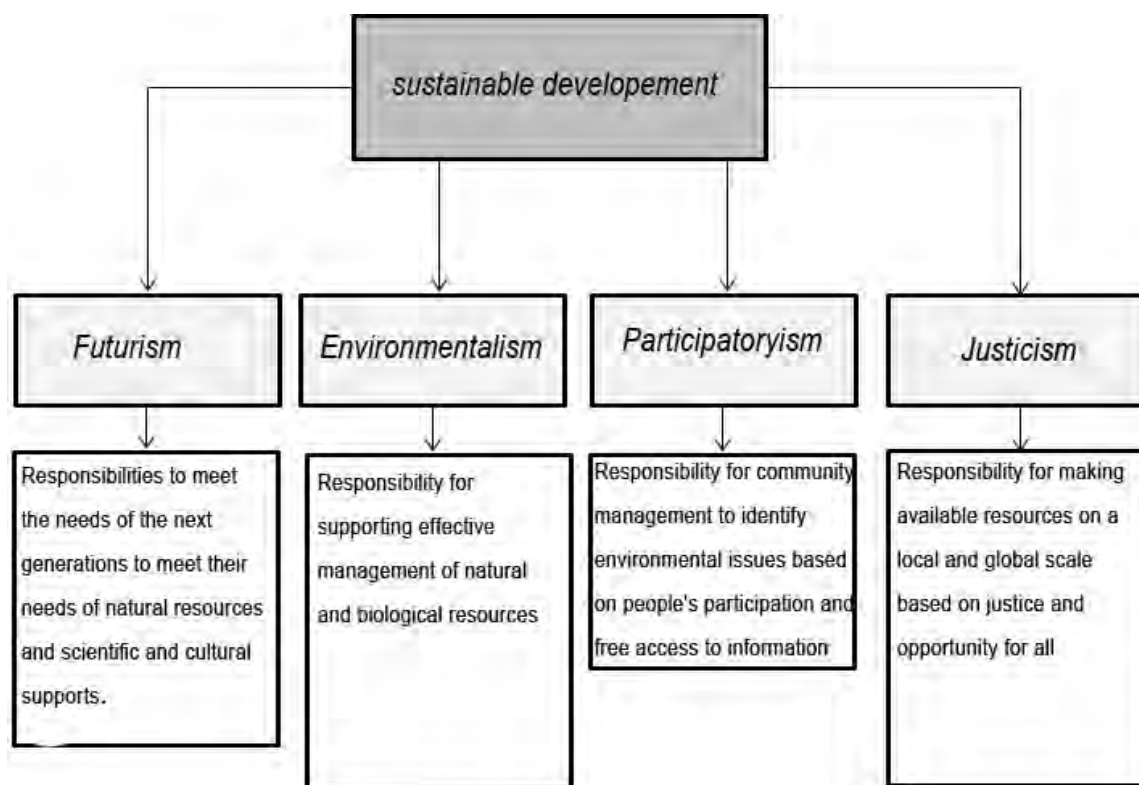


Figure 1. The Four- Concept Definition of Sustainable Development (Mufidi Shemirani, 2002)

Dimensions of sustainable development

Mae et al. (1996) emphasized futurism (intergenerational equality without its removal for the next generation), and social justice (intra-generational justice, or care for current needy and poor people). Other dimensions are public participation (individuals should have the opportunity to participate in decision-making which has an impact on them and the process of sustainable development), the environment (environmental conservation and protection) are the fundamental principles of sustainable development.

Table 3. Sustainable Urban Development Foundations at the Berlin International Conference (2000) (Sarafi, 2001)

Sustainable Urban Economics	Proper work and income
Sustainable urban community	Social Integration
Sustainable Urban Lodging	Affordable good housing to everyone
Sustainable urban environment	Stable ecosystems
Sustainable urban accessibility	Mobility with resource conservation
Sustainable urban life	Building a Resilient City
Sustainable Urban Democracy	Empowering Citizenship

Sustainable Architecture

Applying sustainability concepts and sustainable development goals to reduce energy waste and environmental pollution in architecture raise the issue of sustainable architecture (11). This architecture aims to provide user-efficient spaces by considering the potential of the environment, in

which the users' needs are met and ecosystems that guarantee the survival of future generations are preserved (Sattar Sarbanqoli & Badri, 2011). Based on the OECD, sustainable buildings are the ones that have the least destructive impact on natural and artistically constructed, their immediate surroundings, and their general context. Sustainable buildings consider the life cycle of the building, high quality environment, desirable performance and future (Rogers, 2007). The study of buildings or spaces is related to their environmental factors, and any changes and interferences in them are dependent on these factors (Stokols & Altman, 1987). One of the important issues in sustainable architecture is that each building should establish constructive communication with its natural environment. There are identical principles to establish this interaction based on the sustainable architecture. However, the form of coordination and compatibility with the surrounding environment can change depending on the different environments, so that appropriate communication with that particular environment can be established. The communication should be available in both the environmental field, and other dimensions of sustainability, such as social and economic dimensions. Changing the attitude towards sustainable architecture as a repetitive process and paying attention to the socio-cultural, environmental, and economic context of design are important issues in sustainability (Georgy Mahlbani, 2010). Sustainable buildings are a good model for Today's architecture due to the use of non-fossil fuels and renewable energies, organic growth, consistent design with the climate zone, attention to the environment, and saving and maintaining energy in the construction and maintenance. Other reasons include using indigenous natural materials and considering the energy required to maintain environmental conditions, with the proper design of large and small spaces, the correct orientation of buildings and using inactive systems (Shams Dehkordi, 2014). Regarding other reasons, the following can be mentioned:

- Reducing non-renewable resources
- Developing natural environment
- Removing or reducing the consumption of toxic substances or damaging the nature in building industry

Contextualism

In the 20th century architectural encyclopedia, contextualism was described as the ideal of modern city planning after World War II, which was implemented on a city scale. Therefore, creating linear, open, and one-dimensional spaces required destroying the city and texture. Hence, historical monuments and traditional city centers lost their role as cultural spots. Meanwhile, contextualism as a method of architectural planning respects architectural heritage and interprets it within the urban framework. Contextualism became an important paradigm in urban thinking and architecture from the 1960s (Shirazi, 2009)

Contextualism has a close link to sustainable development in contemporary times. Contextual architecture focuses on land and the environment link with space. In addition, context message shapes this architecture and it actualizes and designs the message of architecture context. As a result, the building is a small part of surrounding nature. In this type of architecture, each building is designed and implemented based on cultural, social, historical, physical and climate conditions and the specific conditions of that site and building. Contextualism is a method of architectural planning aiming to respect architectural heritage and interpret it within a city framework (Bolandyan & Nasser, 2015).



Fig 2. Context formation elements

The importance of contextualism in architecture

In most definitions for contextual architecture, the emphasis is on a holistic view of design (building) in relationship with its context. However, view comprehensiveness is possible when the design process is considered as an inseparable whole to the specialties of structure, architecture, and facilities. Thus, integrated design is a necessity of a contextual architecture. The choice of contextualism architecture cannot be a fashion or style-related approach. Contemporary architecture is bound to engage constructively with surrounding environment, and this approach affects architecture in both the appearance and efficiency and mode of operation. Therefore, return to contextualism is not possible only by validating the values that have been forgotten for many years in modern-day architecture. However, modern processes and international style as well as the postmodern historicist circles, which reduced contextualism to formal communication and appearance, are equally guilty. Brilliant Brent, "Architecture in the Field" in the 1980's mentions this issue. James Wines, as the leader and theorist at the Institute for Environmental Design of the Site, admits in an interview that the risk of superficial ecology is present in contextualism, which is an ecology that merely native architecture with organic forms or covered with ecological materials forms it (Poglasses, 2007).

Contextual architecture

Experts and critics widely used Contextualism in architecture, which dates from about 1978. Design considerations about a building's structure, if not progressive, are not at least hostile to architecture. In fact, contextual architecture is a way to design a new, homogeneous and architecture –consistent construction (Aminzadeh,2008). This context can present in native architecture, which includes traditions, beliefs, culture, and religion, or include historical and social issues. In fact, contextual architecture aims to use methods to create a more compatible intuitive communication among constructions (Rezazadeh, 2007). In fact, the spatial form follows the meaning; and meaning of the phenomenon is understood in the context in which it appears. If we include the cultural context of a region, we can find similarities in definitions of habitat and context. In addition to the physical dimension, different aspects are raised that are intended to improve the interaction with the necessary context in modern projects. Based on research findings, contextual architecture does not emphasize imitation, nor impedes innovation and creativity. The goal is to create a better relationship between architecture and context, while considering aesthetic and semantic aspects.

Based on the comparison of the indices and domains in contextualism and the steps involved in architectural planning, attitude of architects, audiences, and employers should change in addition to a deeper definition of architectural creativity. The contemporary Iranian society in architectural planning should consider the spirit of place, along with the spirit of time, geographical, climatic, physical, visual and social characteristics of the context, the proper education of architects and the discourse of the architect, audience and employer in order to provide the desired environment in architecture and on a larger scale than architecture (Faraji Asl, 2014). Relationship of a building has its own characteristics in relation to the sky such as its definite definitions and specifications with floor and ground. The social cultural constraints of each habitat are some of the basic features of contextual architecture. The index of building review in this kind of architecture is not global and universal, but native and regional indicators. Indicators of social relations of humans show that extending communication and the using various cultures can strengthen architecture. The ability of contextual architecture to meet human needs in a variety of dimensions can be one of the important indicators in the contextual architecture study (Darbandi et al., 2014).

Table 4. Contextual architecture objectives (Rasfijani & Fattahi Sadeh, 2014)

1	The determinant of geometry and architectural form
2	To respect the architectural heritage
3	To create harmony between adjacent buildings of different periods or styles
4	To create a visually beautiful view
5	To Assimilate, balance, fit between architecture and urban texture
6	To understand methods for making a consistent relationship between buildings and the natural environment

Contextualism and sustainable architecture

The international style believes that the building should not have any regional, urban, local and climatic characteristics, and all buildings in each location may have the same characteristics. Unlike Venturi, the postmodern style architect has no belief in the international style, and believes in contextualism. It believes that any building should be designed and implemented based on cultural, social, historical and physical conditions, and the conditions of that site and building. Postmodernists have a cultural attitude towards architecture, and culture is different in every region. In other words, postmodern architects want to turn architects' look toward the history of the tradition culture and what shapes the human identity and physical environment around it (Ghobadian, 2006). Human- constructed places have their own special spirit. In the native architecture, the spirit of human-made place must be well responsive to its natural location (Schultz, 2015). The recent tendency in architecture emphasizes on design-consciousness towards the environment. Buildings that ignore the surrounding environment and exclusively use natural resources to provide comfort conditions damage their environment and area, and have a profound impact on the entire ecosystem. Building connectivity with its site, community and surrounding makes the building more interconnected with its context, and can successfully increase the energy efficiency of the building through successful environmental interaction.

Conclusion

Contextualism is a model for creating a more desirable environment, so architects and designers should know more about context and environment. Generally, the emphasis on

contextualism architecture comes from the fact that the buildings and the texture of the city or region in general do not conform to and coexist with other buildings. In other words, the coherence and absolute dominance of a construction method and form limits the space for co-existence with other constructions. Contextual architecture emphasizes on the environment surrounding the architecture, and believes that the interplay between architecture and environment can be an effective factor for both the work itself and the context. Contextualism is a model for creating a deeper understanding of the context and environment for contextual architects to demonstrate the power of an optimal visual environment on a larger scale than architecture. Lack of architects and urban planners' attention to the site environment (the context of design) and the lack of interconnection with the environment in the construction of a new building is one of the main reasons of current environmental crises. Because environment and the artifact environment (built constructions) have relationship on a micro or macro scale, the impact on the element is felt tangibly on the whole, and biological crises should be taken serious. Attention to contextualism (the link with the environment, attention to physical and site features of where the architecture is supposed to be) is very important in sustainable architecture. As a result, paying attention to the physical, historical, social, cultural and climatic contexts are important principles in sustainable architecture. Therefore, in sustainable design, architecture does not oppose the environment, but it construct and design by interacting with the environment, by recognizing the specific features of the context and respecting nature (site design). Therefore, understanding the context at the start of the design process is very important for achieving sustainable architecture.

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