



# Development principles of Sustainable Urban Design in Contemporary Cities

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**Abstract:** *Developments resulting from globalization have led to structural changes in the urban body of most countries in the world. Modern interventions, such as the implementation of comprehensive urban plans, road widening projects, and the creation of new urban land uses, have had adverse and irreversible consequences, both in terms of spatial architecture and in terms of spatial bone scaling and urban physical organization. In recent decades, the principle of sustainability and its impact on urban life has become one of the main goals in development programs and plans at the global, national, and regional levels. Numerous studies have been conducted to transform the concept of sustainability into principles, rules, and practical solutions in urban development planning. Given the importance of sustainability in the development goals of global cities, the main perspective of the study is to emphasize the existence of a direct and one-to-one relationship between human needs and acquired fundamental criteria for sustainable cities. In other words, the wide range of social, economic, cultural, and ecological needs that are considered to be achieved or moving towards sustainability can be defined and formulated in the form of human needs in the urban environment. The purpose of this paper is to examine the theoretical issues related to the concept of sustainable urban design and use it as a tool to critique the experience of modern urban design in new cities from the perspective of sustainable development and environmental considerations.*

**Keywords:** *urban design, sustainable development, the body of contemporary cities, concepts of sustainable architecture*

## INTRODUCTION

The challenge between tradition and modernity is the inexhaustible hadith of our time. Where the attainment of the ideals of modernity is likened to a failed plan, many believe that modernity is an unfinished project. In this field, on the sidelines of the great turmoil of modernity and the abandonment of the construction of our precious cultural heritage, what role are we playing? The history of our contemporary architecture is the story of astonishment during such a challenge.

After the spiritual crises of contemporary man, especially after World War II, the validity of the values of modernity and its various cultural forms was hardly questioned. In the field of architecture, too, the revision of the students of the School of Modern Architecture to the teachings of their masters led to the fanaticism of the historicism and forms of indigenous architecture. And such a confrontation with modern architecture became the main concern of the identity-seeking

tendencies of the societies that lived on the fringes of Western civilization and tasted the bitter taste of colonialism directly and indirectly (Aicher, 1998: 34-36).

The architectural trends of that period can be categorized into two general forms. The first tendency, which considers tradition as eternal wisdom and eternal principles, is a possibility in all eternal and eternal human life and considers neglecting it as a perversion and misunderstanding and considers knowledge about it as a ruling and philosophical. This tendency tries to realize its mental forms, which carry the basic concepts of tradition, in a new format, and based on today's needs and methods, without any apparent adaptation of the past architecture. Another tendency of tradition is considered as a form developed in the context of history and geography of a particular land and considers it as an extract of the answers that human beings have given to their special vital issues during civilization. They are sociological and can be explained by a scientific approach (humanities). In this trend, we try to restore the lost balance between architecture and the city by continuing these forms in response to today's needs, in a metaphorical way and accordance with the new concepts of architecture and cultural urbanism (Ashuri, 1997).

With the growing population and the lack of proper urban design and the lack of careful planning of city functions, big cities with many problems such as chaos, imbalance in urban functions, and perhaps most importantly overuse of resources. We are facing natural and non-renewable resources, which over time not only do not solve any of the problems of urbanization today but also add more problems to the city. The population of green spaces has given way to modern vertical buildings, where instead of seeing the city, we will have an eternal view of air pollution. One of the most important approaches to addressing the city's problems is sustainable urban design, which, in addition to being a new global hub for the development of renewable energy technology, follows new standards in sustainable living (Bahraini, 1997).

The emergence of sustainable urban design knowledge is the result of experts' deep insight into the knowledge that space quality is not a coincidence but the result of conscious action. This is due to the failure of urban designers and landscape architects to create desirable human spaces and reduce the quality of life in today's cities. This situation has occurred while with the industrialization of people's lives in cities, the need to adapt and design these spaces seemed more tangible. Qualitative improvement of the urban environment, the creation of social interaction spaces, the recreation of memorable and identity spaces that include the principles of urban design knowledge. At the same time, the idea of sustainable development was a fundamental and very important issue for decision-makers and thinkers. The realization of this idea in human life required a change in political, social, physical, and economic infrastructure. The present study uses an interpretive descriptive method to study the concepts of sustainable urban design and its relationship with the theory of sustainable city by adopting library studies and interprets the relationship between the two categories. Knowledge of sustainable urban design expresses. In this research, after defining and explaining each of the topics of sustainable urban design and sustainability of urban landscape, an attempt is made to categorize the goals of each. Then, considering the needs of urbanization in today's metropolises and the aspirations of contemporary human life in the city, it seems that with sustainable urban design, one can take a step towards the quality of urbanization and alongside today's machine life without harming the environment. Biology used renewable sources instead of non-renewable ones (Bertolini, 2005).

### **Sustainability and sustainable development**

The idea of root sustainability in the distant past is in line with the ideas of environmental movements. The traces of the concept of sustainability can also be found in geographical literature.

Perhaps it can be said that sustainability and its subject matter are the results of the ideas of geographical algebra and feasibility. And that taking into account environmental laws and restrictions along with human thinking and foresight can help sustain human life and construct spatial and natural forms.

Although the term sustainable development was used during the Kokovi Declaration on the Environment and Development in the early 1970s, it is also rooted in the ecological development approach outlined in the World Conservation Strategy, but its formation by the World Independent Commission. The field of environment and development and reporting are the principles of sustainable development. The report, titled *Gazrach Brandland*, named after the Norwegian president, includes a set of proposals and legal principles for achieving sustainable development for developing countries, and defines sustainable development as follows: "Meet the needs of the present generation without "Weakening the capabilities of future generations to meet their needs (Pakzad, 2010).

This simple definition is also the basis of the agenda of landscape and urban planners, as a sustainable development work plan for the 21st century. According to Brondland's report and its definition of sustainable development, some of the key specifications and goals of sustainable development that are often expressed in the literature of the subject and the documents are:

- Equality between generations
- Equality within generations (including social and geographical equality)
- Protection of the natural environment (living within the framework of its bearing capacity)
- Use at least non-renewable resources
- Economic survival and diversity
- Self-sufficient society
- Individual well-being and meeting the basic needs of people in the community (Rapoport, 1977).

In general, it seems that in the path of sustainable development, it is necessary to pay attention to the following points:

- Efforts to focus on economic growth as a means of eradicating poverty or environmental sustainability.
- Identifying and determining the inconsistencies and theoretical and practical shortcomings of neoclassical economics, especially those dealing with environmental and distribution issues and cases, as well as in economic analysis, it is better to move towards examining the effects of different sustainable policies. Be economical on different systems.
- Accepting the existence of cultural, structural, and technological causes: environmental poverty and destruction, developing methods to estimate the relative importance of reactions between these causes under special conditions and discovering fundamental and educational solutions, political and so on.
- Understanding the multiple dimensions of sustainability and trying to develop characteristics and features for them.
- Achieving what patterns and levels of resource demand and use (Bahraini, 2004).

### **Theoretical classification of urban development perspectives**

#### **Disturbing and annoying view**

In sustainable development in this view, natural resources are seen as an asset and the maximum use of them is desired. Multinational industrial companies with huge capital use it without the slightest attention to valuable environmental resources, and even if the pollution from such industrial activities breaks the ozone layer, they continue to maximize their capital investment.

Some groups believe that if we give the field to human intelligence and talent, and especially express this intelligence and talent through technology, this human power and talent can solve any environmental problem. According to this theory, there is no limit to the capacity of human comprehension. And this human power can influence any environmental system. In this view, the natural environment is evaluated based on its usefulness in the economic system, and on the other hand, sustainable development is considered only the meaning of sustainable growth. Where development in its pure raw form is measured only by the gross domestic product of GNP. Official views on accounting remain unchanged. In such formal views, the product focuses on a series of narrow variables such as income, investment, profits, and exports. In the troubled and annoying point of view of development, the investment tool continuously maximizes the product of its growth. The limitation of this view in the text of sustainable development is that this view has a centralized view of the economic activity system in terms of money. The environmental consequences of this kind are completely obvious to me at the moment. In the view of formal growth in the implementation of urban projects such as urban roads and the regulation of urban land use and how energy is used, the environmental impact of such projects is completely overlooked and any problems in the environment are left unaddressed. There is no responsibility for this in third world countries, for example, the results of industrial development in Iranian cities, especially Tehran, air pollution that almost no authority other than the environment is responsible for, and unfortunately the environment. Several sides were closed and could do virtually nothing. Nowadays, in the big cities of Iran, such as Tehran, Tabriz, Isfahan, etc., the embankments are facing problems. For example, in Tehran, single towers built in the city, especially in the north of Tehran, have problems with the facilities around them. The water pipes of different neighborhoods are calculated based on the normal consumption of the population. When applied to a significant point of consumption on this system, others are in trouble. The above is a clear point of view of the disturbing and annoying view of sustainable development. However, disturbing and annoying development is a method of development in which capital must be increased and maximized at all costs. The same is true of large-scale or small-scale production, and in the Third World, urban problems relate to this view (Ashton, 1992).

### **Sustainable development with poor performance**

In this view, the goal is pursued with value, and that is to "combine capitalist growth with environmental affairs." To this end, it is argued that neoclassical economic principles can be used to solve environmental problems. The goal of policy-making in the field of sustainable development is to weaken economic growth, but it also takes into account environmental costs. And for this purpose, a certain account is determined. This is possible because the environment is considered a measurable resource here. In this view, environmental resources are considered as fixed assets, while the economy is allowed to pursue any ideal social goal. The following are two main dimensions of sustainability:

- Sustainable development means Sustainable growth according to the per capita real income over time and according to the goals of official economic growth without emptying the reserves of the national capital.
- This point pays attention to the sustainable use of resources and the environment, provided that the environmental capital is not completely depleted. Weak sustainable development has had an increasing impact on international agencies, including the United Nations World Bank, and has been seen as almost synonymous with environmental management. In this regard, nature is assumed to be the producer of environmental materials and factors, both of which are related to

social goals. And even worse, in this view, nature is a factor full of wealth that should be given to a human.

However, in this eighteenth-century process, they have inevitably accepted the use of tools such as evaluating the results of environmental decision-making, cost-benefit analysis, and the creation and pricing of environmental shadow, and so on. Opponents of this view have conflicting arguments. Some see it as a barrier to economic growth. And another group sees it as destructive of the environmental structure. Therefore, environmental protection has been identified as a key factor in targeting and policymaking. In this regard, its irregular urban development is becoming an important issue. Therefore, all urban laws should be reconsidered and high-level policymakers should pay enough attention to rare environmental values in setting their policies (Aicher, 1998).

### **Sustainable development with a strong performance**

Proponents of this view argue that environmental protection is a prerequisite for any economic development. They have advised high-level politicians in European countries to combine environmental protection with their policies, in other words, any economic development should be done in such a way that the environment is not harmed and if environmental wealth is used, costs will be incurred. It should be determined so that, in particular, renewable economic resources are not completely depleted, and that the wastewater and smoke industries do not leave the environment without complete treatment. For some time now, such policies have been implemented in virtually all European countries, and certain European countries have tried to treat all wastewater and then dump it into rivers such as the Times, Rhine, and Danube. Now the water of these rivers is completely clear and there are places for people to explore. Also, most UK cars use smoke filters. As a result, despite the London Underground and measures such as the London Air Force, it is no longer polluted. In general, during the above view, any economic policy with full attention to environmental capital, whether renewable or depleted, is considered and approved. In this view, little attention is paid to the quantitative perspective, but in any case, qualitative growth is more important, while the goals of economic growth are still of interest to sustainable development policymakers. However, this view sometimes tends to theories and policies of the weak sustainable development perspective and sometimes goes back to the strong sustainable development perspective. However, the use of policy tools is important in this view. Examples include legal, economic, legal, land use planning, financial incentives, and economic instruments such as green space and contaminant fines, tradable resources, types of incentives, deposit repayment plans, incentives to change behavior, and compliance with laws. Informing, educating, and persuading the public. In this regard, the change in behavior in the use of goods with the aim of saving is the view of strong sustainable development. In a strong sustainable development model, legal and economic planning tools are focused on resource management. In this regard, a wide range of social issues is also considered, which is also focused on the Sustainable Development Index (Aicher, 1998).

### **Ideal model**

The development of the ideal model of sustainable development is a profound and broad idea that aims to change the structure of society, the economy, and politics. In general, the components of this system are arranged in such a way as to correct human behavior towards the environment and nature. For this reason, this view has also been called the ecological view, which has been accepted by extremist ecologists. This model considers pure sustainable development. Where everything in nature or sitting in it is the same amount, there is no form of general growth in the quantitative language, because the man himself is supposed to live in this ecosystem, instead of the desired

growth. Quality is measured by the quality of life, not by living standards. The ideal model of sustainable development does not only think about human life but also considers all living and non-living factors as highly valuable except human beings. Because intrinsic values and the principle of such factors are very useful for human life. On the other hand, this model is looking for equal criteria for various forms of life. In this regard, the ideal model of sustainable development uses a kind of holistic model that focuses on the interrelationships, interactions, and interactions of the elements of life. And finally, in this model, "value" lies in the natural process and groups, and not in the single existence of individuals. Thus, in this model, the social dimensions of sustainable development are considered more and more and the existing measurement criteria in the field of quality of life are not sufficient and it is suggested that more indicators be provided in the field of measuring the quality of life. Proponents of this view argue that so far a lot of research has been done on this model, which is outside the economic and social systems. For example, private non-profit organizations in Europe have done significant-quality work that helps to define and identify non-monetary wealth. If this model of sustainable development ideals is developed, it can combine such activities with former economic accounting systems. Opponents of the theory have argued that its policies should be implemented, but at the same time that "the use of land resources should be moderated and what is left should be preserved. What is non-renewable should not be wasted and discarded." "We must not pollute the environment and keep the consequences of destroying life itself." Environmentalists believe in providing certain restrictions on economic activity. For this reason, this theory has not been widely accepted, as some industrialized nations in the world have adopted minimal political changes in terms of sustainable development terms accepting the concepts of sustainable development. They believe that economic constraints will lead to economic-physical underdevelopment and political power. In this way, the four types of sustainable development perspectives are each sewn in some direction from the development perspective. It is in all four perspectives that these economic and industrial activities create a problem. On the one hand, the development of countries is based on economic development, and on the other hand, this economic development, which is followed by industrial development, is itself the cause of environmental problems. Therefore, the necessity of human life, which is now endangered, necessitates sustainable development (Nader, Sallounm, Karam, 2008).

### **New perspectives on sustainable urban development**

In most developing countries, there are infrastructure, technology, and industry-specific utilities in cities; Therefore, most of the economic and production activities along these cities have been formed and caused their rapid growth. On the other hand, the concentration of capital in large cities has led to economic dichotomy, and as Mr. John Friedman suggests, such cities, such as the powerful pump, attract efficient capital and manpower and evacuate them from other areas, especially deprived areas. They create an economic dichotomy in the region. One of the effects of special attention on the industrialization of societies and the concentration of capital alongside large cities is the rapid growth of urbanization. Most developers in developing countries believe that economic growth is directly related to urbanization.

Mathur in their studies in third world countries, it is concluded that the process of economic growth in developing countries and increasing natural population growth are the two main factors in urbanization and especially population concentration in large cities that cause urban primacy.

It is clear that the concentration of population in large cities has created problems for such cities, and most urban and regional planners believe that the slow growth of cities and large cities creates high costs for governments, including the following:

- Lack of proper use of fields with different uses

- Need for more transportation and increase costs
- Increasing the rate of underemployment and unemployment
- Leads to the creation of caper and urban marginalization
- Crowding and environmental degradation (Mathur, 1998).

Sustainable development must be considered for urban communities in the future so that in addition to solving the problems of large cities, it can prevent the lives of future generations from being endangered. Sustainable development must move in a direction that uses resources wisely and thoughtfully and does not endanger the lives of future generations.

### **Theory of growth poles**

Some planners see the growth of large cities as essential in the early stages of development and have focused on the development of capital and manpower. And they believe that the creation of industrial industries and investments, especially in large cities and areas with growth potential, will cause the wave to spread like wildfire to other parts of the world and reach the farthest reaches. This way of thinking has been widely criticized by planners.

### **Development of Acroprotein**

In the early 1980s, a centralized programming model called Agropoliten was developed by John Freudmann. The purpose of this program was to create solidarity between cities and villages, to acquaint local people and villages with urban life, and to contribute to the development and development of the regions. This theory emphasizes the expansion of small industries that do not require high expertise. It also relies on people's self-help. He raises two main problems in this regard:

- The political structure of most third world countries is not in line with this plan.
- This plan has forgotten the reality of progress and foreign communication. Some planners believe that such a plan is an idealistic concept and will be difficult to put into practice (Duhl, 1986).

### **Conclusion**

According to these documents and studies, the main principles and framework of regenerating the new urban format with stable elements can be stated in the following cases:

- Human personality
- Density
- Sustainability
- Variety
- Economic vitality
- Indigenous art
- Sense of time
- Unique character
- Originality
- Social Security

### **Human personality**

Human personality is a value because it is one of the criteria for providing comfort in the living environment and makes people more eager to live, shop, eat or create an environment that is more physically and mentally comfortable. In other words, the city is an environment created for the

people, and it must instill in its inhabitants the feeling that it is a place to make human life comfortable. Designers, developers, and engineers can change the physical nature of the city to achieve an ideal human habitat. Trees may all change to achieve the goal that urban areas should be designed for human use. This concept will create a sense of well-being in such a way that citizens feel well organized in the environment, designed to be understandable. This concept also facilitates the use of sidewalks and mixed streets with sidewalks, as well as increasing the level of participation and economic life of the city's central core.

### **Density**

Density is the focus of people, buildings, and activities. This density brings with it the effect of vitality. Density is important in that it accelerates social and commercial interactions by replacing large numbers of people in a compact space, and makes the happiness of this inevitable interaction tangible in all major cities around the world. Density should not be confused with overcrowding. According to Jane Jacobs, in *Death and Life in the Big Cities of America*, density is vital: "to create healthy and vibrant diversity on the streets and in urban areas." In short, it promotes the density of vitality and diversity. In the suburbs of the city, where there is no density and diversity, the definition of social character is important. Dense urban places are, of course, very diverse, and because of their diversity and excitement, they are popular and attract them to live in such cities.

### **Sustainability**

Sustainability is a value because it is a sustainable city, which maintains a reasonable and continuous balance between general resources and is better able to survive in the long run. Sustainability in New Cities is directly related to the availability of resources in these cities for the next generation as much as for the present generation. Sustainability requires more than a simple effort to minimize energy consumption, on green construction. Emphasizes and promotes the natural cycle. Sustainable development also includes the reuse of existing buildings, the creation of long-lasting buildings, and flexible construction for future applications. Sustainability is defined in three dimensions: social, economic, and environmental, and creating a balance between these three dimensions is the most desirable state of sustainability.

### **Variety**

Protecting diversity (distinguishing features, qualities, or elements) is a social ability and one of the main principles in urban design. Variety promotes collective ownership in private, public, and urban privacy. Variety in the construction environment is reflected in its performance, culture, style, and application. Multifunctional or diverse development in other ways can make the city a rich and vibrant place to live, work and have fun, and support economic growth.

### **Economic vitality**

Economic vitality describes a situation in which all parts of the economic system work well together. It is a lasting return to a tool for all standards of urban life. Without energy and economic ability, the revitalization of the city center is impossible. The powerful design of a new city center as a descriptive and unique city can lead to the economic prosperity of the city. Successful private projects will create more asset values.

### **Indigenous art**

For every city, art defines its public realm and highlights the city's fascinating sights. The prominence of indigenous art makes the inhabitants of the world aware of the belief of the people of



the city in the expression of collective identity and culture. The expression of this identity examines the unique elements of society, the daily changes, the valuable and respectable past, as much as it respects the expression of the future aspirations of the society. Indigenous art encourages indigenous life. Indigenous art, initiated by the city or private sector, brings economic development, cultural tourism, and the revitalization of the neighborhood and downtown unit to the city with international fame and advanced quality of life. Indigenous art brings people back to places; Indigenous art makes visitors, like residents, seek to discover creativity and innovation in the city. A work of art or architecture is an important line of communication between the past of the city and today that future manufacturers learn from the concepts and methods of their predecessors. New work can help people understand current and past ideas and change their surroundings as the process continues.

### **Sense of time**

A sense of time and history is important to protect the valuable and sustainable resources of society. The rapid growth of the population can lead to the destruction of resources, a value that is often misunderstood after resources are destroyed. Much of the development that will take place in the future will include the opportunity to protect and show the history and story of a place in meeting today's needs of the city will be more valuable to citizens when they can feel the continuity of past, present, and future.

### **Unique character**

While most of the world's cities have become a monotonous combination of buildings and highways that reflect similar lifestyles, traditional and old-fashioned cities with stunning views and different peoples have created a unique character, which is unique and precious. When cultural excellence is accepted as the most successful way to do great things like selling goods and promoting services, buildings, jobs, food, clothing, and entertainment. Traditional cities include a collection that is very valuable globally, such as the natural environment, sacred places, parks, special places, building species, styles, architectural details. This set of activities is valuable because it gives citizens a sense of superiority over identity in a world where the character is rapidly disappearing.

### **Originality**

Until modern times, cities have created a physical story of life in it and the people who live there, and the important thing is that the people who have shaped the cities of Iran have done so with a sense of originality. This concept is valuable because the city that is formed with this concept will be better able to create a sense of citizenship and localism. More precisely, a city shows itself with what is valid about itself and with the real life of the people who live there. A stronger connection between people can lead to their identity, the history of their place, and their physical environment. When originality plays a role in creating a city, buildings and spaces will naturally accumulate meaning and significance.

### **Social Security**

Although it is difficult to create a healthy and safe urban location, it is one of the important goals of urban planning. Exhausted urban areas can be full of strangers, crowds, and crowds. A sense of security is paramount to attracting people. Because it frees people from their preferred electoral activities, it provides security for the city center. Creating a sense of security in people among strangers and amid countless activities, can provide the basis for the daily programs of the people of the city. Designing streets, sidewalks, and buildings by lighting and defining areas of public streets and other open spaces can directly promote the city's intuitive security mechanism for urban issues.

The proper design provides comprehensive security by legalizing spaces, creating identities, and safe, secure, and defensible locations in all parts of the city.

## References

1. Aicher, J. (1998). *Designing healthy cities: prescriptions, principles, and practice*. Krieger Publishing Company.
2. Ashton, J. (1992). *Healthy cities*. Oxford University Press.
3. Ashuri, D (1997). *We and modernity*. Sarat Cultural Institute, Tehran.
4. Bahraini, H., (1997), Urban Development and Sustainable Development, Rahyaft Magazine, No. 17.
5. Bahraini, H., (2004), Sustainable Development, Civil Dialectics, Cheshmeh Publications, Tehran.
6. Bertolini, L. (2005). Sustainable urban mobility, an evolutionary approach. *European Spatial Research and Policy*, 12(1), 109.
7. Duhl, L. J. (1986). The healthy city: Its function and its future. *Health Promotion International*, 1(1), 55-60.
8. Mathur, B.P. (1998). Good Governance and Public Audit, *Indian Journal of Public Administration*, 44(3): 557-563.
9. Nader, M.R., Sallounm, B.A., & Karam, N. (2008), Environment and sustainable.
10. Pakzad, Sh., (2010), The course of ideas in urban planning, Shahid Beheshti university press, Tehran, Iran.
11. Rapoport, A. (1977). *Human Aspects of Urban Form*. Oxford: Pergamon Press.