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**STUDY OF CONTEMPORARY URBAN THEORIES AND ANCIENT  
ARCHITECTURE IN SUSTAINABLE DEVELOPMENT**

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**ABSTRACT**

From the beginning of creation, mankind has always considered his safety and security depended on safe shelter that is fit for his primitive needs. Caves were first shelters and they make this point very clear. It was different in the context of biodiversity; this means that in mountainous areas and forests, deserts and coastal areas, the shelter was unique, in fact the ecological and geomorphological conditions of region was significantly important. The evolution and deployment of sedentary and ultimately the creation of ancient civilizations suggests that the physical environment is very important and plays key role in the development of civilization and completely logical look over this parameter shows this fact, and we can see examples of this fact in ancient cities like the city Parse (Persepolis). Due to the growing trend of Science and

Technology, several theories have been raised about urban development that each of these theories will be analyzed and with a glimpse we review its compliance with ancient architecture and urbanism. The method of this research is descriptive analysis based on objective, function and nature. The purpose of this study is describing theory of modern urban planning and architecture of ancient times in line with sustainable development that according to the past examples of architecture and deep interest of city makers of the period, we discuss the effect of geo-morphological and physical factors of natural geography because the lack of attention to geographic factors in the promotion of sustainable development goals can create deep contradictions. From findings of this study we can realize stuff like: the role of geography in shaping cities and the creation of civilization that this matter is in line with sustainable development and ultimately the land preparation.

**Keywords: Ancient architecture, urbanism, land preparation, sustainable development.**

## **INTRODUCTION**

Architecture in its macro and micro dimension, initial studies should be conducted. One of the key chapters is studies related to the geographical location of the area but despite the decisiveness of this chapter attention to it was very brief and short, like (Understanding the Different Types wind movement and the angle of the sun), this is a small part of geographical studies. In old time architecture focus on this matter was very important and made needs of residents of that area clear. Architecture in different sizes, small and large, reasonably considers all the effecting parameters. In this study we are trying to analyze the different theories of contemporary architecture so we can reach to a logical answer. We hope this

study can take a step towards sustainable development and ultimately land preparation and emerge its mission in a worthy way.

### **Problem statement**

The necessity of attention to geographical parameters (including topography, climate, faults, etc.) in different fields and multiple applications, it is inevitable; by taking Geographical Studies lightly irreparable damage will occur in the configuration of each user type. For example, in discussion of location and localization industry if we don't pay attention to wind direction, the environmental pollutants will affect urban areas; in discussing Architectural designing, to establish length of streets, the physical growth of the city these matters should be

taken into account. For example, if the area is geographically steeped and the annual rainfall is above normal limit, definitely various issues will emerge there that if necessary decisions won't be made in discussion of passive defense, city and urban infrastructure will be in crisis. According to a brief explanation of the necessity of geography and multiple theories about modern urbanism, several questions will appear in persons mind that these questions will be mentioned in research questions.

### **Research questions**

According to issue statement, the following questions will be raised;

- 1- Whether in ancient architecture and urban planning, architects and urban planner's special attention to geography was toward improving sustainable development?
- 2- Was necessary attention paid to various parameters of geography in theory of modern urban planning and architecture?
- 3- To what extent key factors such as geography, topography, faults, climate, etc., can be decisive in modern architecture?

### **Hypotheses**

Some hypotheses will be made and after process of research and analysis of studies and theoretical principles, hypotheses will be rejected or approved.

**First hypothesis:** it seems like architecture and urban planning in ancient time's paid special attention to the science of geography in early studies was in line with sustainable architecture.

**Second hypothesis:** there is a significant relationship between theory of modern urban planning & architecture and diverse geographic parameters.

**Third hypothesis:** Key factors such as geography, topography, faults and climate can be determining in modern architecture.

### **Objectives and importance of research**

All human activity are done on a Geographic zone which is in different length and width and according to it, climate, fault, etc. have specific geomorphological diversity of the region. A glimpse into this matter and its vital role in the creation of urban spaces and architecture is needed because lack of attention to each of geographic conventional parameters can confuse residents of that area. As an example Tehran can be mentioned that lack of attention to climate studies in discussion of localization and positioning made one of industrial Estates in suburbs in the direction of wind and every day environmental pollutants endanger the city and lack of attention to different areas of active faults and earthquake recurrence in

new cities or new towns and satellite cities are other items that should always be considered in discussion of initial studies. The purpose of this research is different view on modern urban planning theory and familiarity of architectural group on the basis of logical principles in the study of Geographic Sciences, because lack of attention to each Geographic parameter takes us out of the path of sustainable development and will have irreparable consequences.

### **Research methodology**

Variety of methods was used to collect the data of this study. Library Studies (internal and external), related sites and field studies can be noted.

### **Information analysis tools**

In this study, according to the "new topic" comparative analysis method was used.

### **Research background**

1- Mahsa Afzali et al, 1393 reached following conclusions by looking into sustainable development in the Iran's traditional architecture and pattern of contemporary architecture. Traditional architecture of Iran has been formed on climatic and environmental conditions that by changing attitudes about modern technology we can reach a sustainable

architecture and compatible with the environment.[3]

2- In the field of climate and architecture or in other words use of climate and land in urban and rural construction according to the special position of Iran and its diverse climate, many researches were done on different climate areas of Iran that showed the important of this issue, at the global level the importance of the potential climate is clearly discussed. For this purpose the first time in 1965, a commission was formed to urgently investigate the climatology of a building in Geneva that consisted of meteorologists, environmental and health professionals, architects, engineers and urban planners in order to be aware of the effects of urban weather and take the right decision in choosing best results of urban climatology. These reviews, along with two others were studied in symposium of 1968, a Symposium in Brussels in the name of urban climate and climatology of building [7].

3- Majid Golzar et al 1393 in their paper about study of passive defense in the creative approach to sustainable urban development realized that durability and consistency of a city or country, is planning and should be considered as a principle. This paper shows that planning, urban rural should always be

accurate and systematic because it can improve the quality of human life. [14]

4- Behnia *et al* 1393 1393 in their paper about urban architecture design in order to achieve the objectives of passive defense realized that Structure and constituent elements of the city can give comfort or it will cause confusion in times of crisis, and they reached the general conclusion that: city and urban design is successful and sustainable when achieve the optimal solution with regard to human performance and aesthetics.

5- Parsi pour (1392:87)in his paper about reviews of locating housing and its effects on urban development patterns case study: Mehr housing Bojnoord, after studying on debates on debates locating Mehr housing and its impact on the development of urban endogenous and exogenous about Golestan settlements in Bojnord reached this conclusion that the criteria of locating was the ownership of land and natural indicators and less attention has been paid to the socio-economic indicators.

### **Definitions and theoretical foundations**

#### **Sustainable Development**

Sustainable development is a process that consists of two basic parts:

#### **1- Protection:**

The limited nature of human action in terms of sustainable capacity of the region and its natural resources

#### **2- Development:**

Urban, rural and industrial development and socioeconomic planning in order to meet the needs of man and providing healthy, long and fruitful social life. Sustainable development is a complex process of environmental, economic and social matters but to develop a flexible application that brings us closer to goals. [2]

#### **Stability**

The ability to do something durable (Oxford Dictionary, 2000) this concept was raised since the publication of common future of the World Commission on Environment and Development in 1987. [2]

Theories of positioning and locating a settlement are location and setting up of ground-level and positioning, choosing the most suitable place for the new establishment according to the conditions and characteristics of public land. [8] Locating is an activity that analyzes capabilities of an area of land sufficient in terms of its relationship with other landand facilities to choose an appropriate location for a particular application.[11] Theories of Locating was shown by economy issues in

planning the literature. The oldest model of Locating was raised by Pier Dormer (1600).

### **Land preparation**

Preparation in Moin Dictionary means: mix-decoration-decorate-providing [15]. In the Larousse dictionary, Preparation has been defined as: the geographical distribution of economic activity due to natural and human resources [15]. Term Preparation is equivalent to English word (PREPARATION) and means land using.

### **Effects on improvement of environmental and Town and Country Planning functions**

- The minimum and optimum use of non-renewable resources using technology
- The optimal use of renewable natural resources and their production [15]
- Capacity to absorb pollutants and waste in the environment
- Respond to humanitarian needs (various applications) in all areas of housing, agriculture, industry and mining-related facilities and supplying human being towards the environment and all vital systems [1]

### **Climatic factors**

Factors that affect the climate of a region or place are called the climatic factors. Factors affecting the Earth's climate, such as:

Intensity of solar radiation at ground level, tilt the Earth's axis, the air flow and geographic location (In terms of topography and altitude) determines the type and quality in each area of the Earth's climate. [10]

On a smaller scale of climate factors, include "The temperature (temperature), humidity, solar radiation, air movement (wind) in each area". Other factors affecting the quality of atmospheric or local weather can be geographical location of ups and downs, land cover type and physical location of the type and construction of buildings.

### **Solar radiation**

Earth takes its natural energy from sun directly or indirectly, this can be done by different means. Radiant energy is a wide range of wavelengths which are known as the solar spectrum. In this wide range the highest waves (radio waves) are 1021 times bigger than short waves of (gamma). But the maximum energy and a lot of radiant energy are in a narrow range of visible light. In the process of global warming factors such as (terrestrial radiation, transport chaos, latent heat, and the greenhouse effect) play an important role.

### **The temperature**

The temperature or heat is measuring the heat that is in soil and weather and all organisms

directly affected by the temperature the study of energy balance shows that the temperature changes when radiation changes.

### **Humidity**

By humidity we mean the water that is in air in shape of vapor. Water vapor goes to the air through evaporation from the oceans and seas and wet surfaces such as plants and by the air and the wind will be transferred to other locations. The warmer air holds more water vapor in itself. We can measure the amount of water vapor in different ways like: absolute humidity, specific humidity, vapor pressure, relative humidity.

### **Wind**

Precipitation occurs when moist air and pushing factors both exist in the area. Moist air must climb to a certain height adiabatic cooling due to reach saturation point and then created a cloud. Lack of each of these factors will stop rains from falling. In creating the rain, mechanisms like volatility, convection, convection, thermal convection, and uneven included are effective. [17]

### **Thermal conductivity**

The physical properties of objects, which reflects the heat conductivity by molecular motions. [12]

### **Evolution of civilization**

Finding the trails of our ancestors will be done by finding the tools they made and the oldest tool they found was for 40000 years before birth of Christ. [6]

We can find first hand made work of art of humans in late Paleolithic era 20000 years ago that the amazing part is that this stuff has delicacy and strength and it's far from newbie stuff. [13]

To prove the above statement we should mention Cave of Altamira in Spain and Lascaux in France.

Paleolithic period in Europe coincided with the retreat of glaciers and the extinction of mammoths. During this period, man domesticated the dog [6] in this era man took a great step in mastering their environment and he started farming and he domesticated some wild animals. In this era human was separated from nature and started building and changed his environment. [6]

Creating a home or hut from branches, was the first man-made object that had round shape. Choose a circular form for house roof has been due to problems of technique, some say they inspire this shape from nature and the things that they admired like sun and the moon. [6]

### **Theories of Urban Development (The theory of Ernest Burgess)**

In the theory of concentric circles (Ernest Burgess) that had ecological basis, cities form expand in concentric circles according to this theory the most active center of Cities is located on the first circle and leads to formation of the central section, core business places will be established in this area banking, commerce, financial institutions, etc. can be found in there and they will be used in perfect way and skyscrapers are placed in there. [9]

### **1. Theory of linear Cities**

**(Arturo Soria Mata / Spain)**

In 1882 he gave the idea that linear cities should be built around Madrid. He believed that the backbone of the city is a street with the width of at least forty meters that around it rectangular building blocks are built (Ziyari, 1387).

### **2. The theory of the Garden City**

**(Ebenezer Howard / England)**

He raised this theory in 1898 in London. He imagined the city in the form of several concentric circles. The proposed city has an area of about 2,400 hectares; one sixth of it was allocated to housing and rest of it for green spaces, forests, agriculture and more (Shia, 1381) in Garden City for every 20 people about an acre of green space was allocated.

(Ostrovsky 1387). Howard explains this city as an independent and self-sufficient city garden in a rural area with homes for about 32,000 rural housing styles, always with enough land to garden and plantation, shopping centers, cultural institutions and Crystal Palace far from Central Park that is social and cultural center (Demania Lamponiani, 1381).

### **3. The theory of the industrial city**

**(Tony Garnier / France)**

In his industrial city three main elements are there: Administrative services and community halls, exhibitions, drama and sports and recreational facilities (Saeedi, Rezvani, 1380).

In the neighborhoods of the area considered by Garnier, majority of the tens of two-storey houses, rectangular and flat roofs, separated from each other and surrounded by gardens without Bush. Therefore the whole city is like a garden without fence. These characteristics remind us of ancient classic cities. By placing gardens Garnier over passed Le Corbusier in the idea of (green plants). (Curtis, 1382)

### **4. Shining city Theory**

**(Le Corbusier / France)**

In the vertical development of Le Corbusier, the central part of city is considered

responsible for the city's traffic congestion. He had a modernist view over cities. In his view city is an industrial center which must play a role and its functions in the dense atmosphere. In his plan train rails are considered for the city's central station. (Shia, 1381)

### **5. Future urban theory (Wright / America)**

In this project, the city center was widespread in the area and consists of a 50-storey office building, a park, sports fields, zoo and aquarium. (Said, Rezvani, 1380)

Wright's goal is to support the individual character that to achieve it a city should be built in this cage (Ostrovsky 1387). In fact, Wright sought to secure the sovereignty and independence and liberate people from bad practices of urban life and getting rid of capitalist domination and symbol rent (Curtis, 1382).

### **Analysis of the studies**

Despite determines of geographical and climatic factors and general geomorphological parameters, unfortunately, it has not been mentioned, this can be important In the future theories derived from other previous comments, architects and urban planners are more misled and its

mission is away from the sustainable architecture.

### **CONCLUSION**

Geography should be used in conjunction with other sciences such as engineering, architecture and urbanism because by understanding more geographic parameters according to each of them because it can lead us to peace and security for the residents of the area or urban space. Moreover, given the current state of global climate change and reduction of energy sources, geography can be helpful in minimizing energy consumption. Reasonable and rational use from all capacities available between several of the different areas and geographical spaces and planning, if that apart from any personal biases and preferences or policies are wrong, it can be said that the creation of architecture emerged with more identity which is in line with sustainable development and ultimately land.

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*"Majid Golzar, Eng"*

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