

# Enlightenment of Social System Research Method in Marxism on Sustainable Architectural Design

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## Abstract

Society as a complex and huge system, and architecture as an important part of society as well. Based on the present situation of sustainable architectural design in our country, this paper expounds and studies the present situation and future development prospects of sustainable architecture from five perspectives: productivity system, production relationship system, superstructure system, population system and natural environment system. Since the 19th National Congress of the CPC, China has proposed the policy of "speeding up the reform of the ecological civilization system and building a beautiful China", and we should continue to adhere to the guidance of Marxist social system research methods, continue to cultivate new growth points in the construction industry, promote the stable and healthy development of sustainable construction and better form new driving forces.

## Keywords

Marxism; Social Systems Research Methods; Sustainable Architecture.

## 1. Connotation and Significance of Sustainable Architecture

### 1.1. Sustainable Architecture

"Sustainable Building" refers to a type of building that is designed and constructed under the guidance of sustainable development theories and principles and that can be built in time or conducive to sustainable development. [1] Sustainable architecture is not an either-or topic. Sustainable architecture can be understood as a transitional phase, without the need to define the concept of fixed building divided into "yes" and "no" camps. When a building is classified as "sustainable", it first relates to whether the building is sufficiently "sustainable". The establishment of sustainable building value is the efficiency of supporting and realizing sustainable development as a whole.

### 1.2. Why Sustainable Architecture Exists

Sustainable architecture is not a new topic. Historically, sustainable architecture has been a form of existence for a long time. The concept of "sustainable architecture" has been changed from "green architecture" in the 1960s to "sustainable architecture". The concept of "sustainability" in architecture not only focuses on the problem of "environment-ecology-resources", but also emphasizes the advanced understanding of "social-economy-nature".

(1) Marxist social system research method is the philosophical methodology of sustainable architecture and has the scientific idea of carrying out social method research.

(2) In the face of the increasingly changing social environment, sustainable construction has become a necessary way of building development, which is increasingly becoming an urgent need to accelerate the transformation of the growth mode of the construction industry.

(3) Sustainable construction is an important means to effectively solve the problems existing in the construction industry, such as high pollution and low income, and to analyze different dimensions in various ways so as to achieve social development.

(4) Sustainable construction is an innovative means to realize the leading practice of Marxist social system research methods, combine theory with practice, promote the optimized allocation of resources in the construction industry, balance the supply and demand of rents, and realize the healthy and stable sustainable development of the construction industry.

In the construction industry, whether at home or abroad, the study of sustainable architecture is still more theoretical than practical. At the national level, attention to the importance of sustainable architecture is insufficient and there is insufficient awareness that the development of sustainable architecture is a national policy that addresses the growing environmental needs of people in the field of construction, that the mechanisms are inadequate, that there is a persistent lack of incentives and penalties, and that it does not constitute a good social environment for the development of sustainable architecture.

## **2. Guide the Development of Sustainable Architecture with Marxist Social System Research Method**

Based on the practice of social production, Marxism regards human society as a complex system consisting of population system, natural environment system, productive force system, production relation system and superstructure system [2].

### **2.1. Productivity System**

In the productive forces system, the laborer is the person who has certain production experience and labor skill. The means of labor is the material and material system that transmits the person's function to the object of labor. The object of labor is something processed in the process of labor. Productivity is the key factor of sustainable building development. In the field of construction, laborers mainly include the following categories: real estate, construction personnel, designers, construction industry operating market rules and operating environment, is the foundation of construction industry demand. In the construction industry, the design institute or design company has certain aesthetic ability, and it is the main way to maintain the continuous renewal of the construction industry.

Effect presentation and form construction are the main means of production in construction industry. Design companies promote projects through renderings and proposals; the building materials industry provides building materials and becomes an important component of built buildings; and the market-oriented sector needs to market through morphological characteristics and form sales through output to achieve closed-loop. The main object of construction industry is the real estate resources, for commercial grasp, different resource allocation, to achieve infrastructure and service construction, some integration, will be a building into buildings, to the crowd.

The innovation of science and technology brings new vitality to the construction industry. Using software to design in the social process accelerates the construction industry and accelerates the construction cycle. The upgrade of computer software and hardware improves the production quality and efficiency of construction industry, and the optimization of software technology improves the precision of designer's drawing.

### **2.2. System of Production Relations**

The elements of the system of production relations are interrelated and interdependent. Ownership of the means of production is the basis of the relations of production, which determines the nature and characteristics of the whole relations of production. The production relationship system of construction industry, in general, all the content resources of construction industry are "divided and governed", in the hands of different producers, control the means of production. As for designers and teams, their means of production is not entirely by the investor's restrictions, they can own production equipment, can also produce their own

content for reasonable and effective management. For sustainable buildings, the production materials in the production relationship can be reused in a sustainable way, even to achieve carbon balance. Sustainable architecture is a man-made nature that can adapt to the surrounding environment after fully utilizing and adapting to climatic conditions, which is different from general architectural characteristics.

Sustainable building builders should maintain ecology and make rational use of environmental resources, and at the same time, the building itself plays the role of environmental filter and regulator. From the perspective of sustainable architectural design, it can be used as a basic method of green building. If the decisive and passive factors in sustainable construction are the relationship between management and being managed, then social environmental requirements and construction industry requirements form a benign partnership. The social environment requires the sustainable transformation of the building industry and the transformation of practical content into output. Instead, sustainable architecture, as an emerging concept, caters to policy needs and is quickly supported by policies to ensure that the content it builds is supported at the social level.

### 2.3. Superstructure System

If sustainable architecture is to survive in China's social system, it must follow the political and ideological superstructure. First of all, the construction and renovation of sustainable buildings must comply with national laws and regulations, to obtain government policy support. Secondly, the construction of sustainable buildings should be in line with social ideology and conform to the basic status quo of people in terms of cognition, ethics, religion, etc., especially the value concept of "green water and green mountains are golden mountains" put forward by Secretary Xi Jinping. In the case of the Shanghai Tower, the 632-meter-tall building was awarded the Oscar for LEED platinum and the highest three-star rating for green buildings in China.

Shanghai Center Mansion has adopted a number of green building technologies according to local conditions, focusing on "land-saving, energy-saving, water-saving, material-saving, indoor environmental quality and operation management". For example, the building collects rainwater and hotel reclaimed water for use in office flushing, waterscape recharge, greening watering, road and garage washing, and uses water-saving appliances to reduce the single use of toilet equipment and faucets. Building water saving rate of 52.9%.

For sustainable architects or teams, if they want to survive in the public opinion of the modern society, they should not only abide by the general framework of national laws and regulations, but also accept the guidance and restrictions of the construction industry. For example, in recent years, there have been frequent safety problems in the use of some buildings, major domestic design institutes have carried out the lifelong responsibility system for architects, and the government has launched a strong reform. Designers and teams will consciously tilt in the direction of political correctness in order to gain greater policy support.

### 2.4. Population System

The stability and soundness of population system is the premise to ensure the normal operation and development of sustainable buildings. Without a certain quantity and quality of population, sustainable buildings have different constraints under the influence of social development level. The increasing rate of population, the proportion of sex, the degree of education of residents and the proportion of the aged population all play an important role in social development.

The first is the use of building groups, this group of people is necessary to promote sustainable construction, there will be demand for output. With the arrival of the new era, the demand of the users for buildings has changed from simple places to the combination of beauty and practicality. This creates demand in the construction industry and spawns "sustainable architecture."

Secondly, as the construction crowd, as the basic decision-makers and operators of the construction industry, can be collectively referred to as internal staff. They are fundamental to the construction industry. These people are mainly responsible for the maintenance and operation of the industry security, is the community, industry and users of the bridge.

## 2.5. Natural Environmental Systems

Sustainable architecture is actually a reflection on global environmental problems. We should actively guide people's attitude towards nature. Adhere to Marxism to guide practice, re-examine the harmonious relationship between man and nature, establish a correct view of nature. In addition, the natural environmental system in the Marxist social system research method mainly manifests in the solution to the environmental crisis, so the root of the solution lies in the support of architectural science and technical theory, not in the architectural technology itself. [3] It will be difficult for the construction industry to embark on a path of sustainable development without abandoning the old methods of construction.

In practical planning, considering the specific design, sustainable buildings cannot exist independently in the ecological system without regard to the environmental regionalism. In particular, the climate, resources, culture and other factors of the place where the building is located shall be given priority consideration, and the relationship between the building itself and the greening distribution levels and styles shall be fully reflected to make it an important part of the environment. Therefore, we must return to nature, tend to nature.

Builders should realize that the building itself plays the role of environmental filter and regulator, and creates a healthy and comfortable living environment through planning, design and other architectural techniques. While transforming in nature, green buildings should pay special attention to the relationship between climate and architecture in order to avoid negative impact on people. From the perspective of green building design, the relationship between climate and surrounding environment can be regarded as a basic method of green building.

## 3. Summary and Enlightenment

Productivity system, production relation system, superstructure system, population system and natural environment system are all subsystems of this large system, and each subsystem contains many elements. Systems and systems, elements and elements, elements and the system between the development and interaction. The development of sustainable buildings needs to be supported by the synergy of every system and factor. As the main body of labor, human beings should fully coordinate the relationship between each system and elements to make it run steadily and develop coordinately.

In recent years, traditional buildings, such as abandoned factory buildings and relocated industrial parks, have been transformed by the government into places suitable for young people, and are likely to become part of sustainable buildings in the near future. With the development of science and technology and the progress of human civilization, the road of sustainable construction will usher in new opportunities and unknown challenges.

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