

A Brief Discussion on Environmental Protection and Green Building

Zhihua Zhao

Junan County Urban Planning and Design Institute, Linyi, Shandong 276600

Abstract: With the acceleration of national economic construction, the impact of building construction on the quality of life of residents is also increasing, to do a good job in the construction of environmental protection work. First of all, to strengthen the management of site construction, then the use of new construction equipment, and to improve the construction technology, only three-pronged, to effectively curb the construction of environmental pollution problems. In this paper, combined with my work experience over the years, the construction industry's environmental protection and green construction were studied, hoping to provide a reference for relevant practitioners.

Keywords: Construction industry; Environmental protection; Green building

Introduction

Contemporary scientific and technological progress and the rapid development of social productive forces have accelerated the process of human civilization. At the same time, human society is also facing a series of serious challenges of major environmental and development problems. The rapid increase in population, excessive consumption of resources, climate change, environmental pollution, and ecological destruction are threatening the survival and development of mankind. In the face of the severe reality, people have to re-examine and evaluate the urban development concept and value system that we are currently taking as our creed. Many people with insight are coming to realize that human beings are part of the natural system, which is closely related to the environment they support. In the process of urban development and construction, we must today give priority to ecological and environmental issues and place them on an equal footing with the economy and society; At the same time, we must be further forward-looking and take into account the rational use of limited resources in a holistic manner. This is the basic connotation of the idea of "Sustainable Development" put forward by the Rio Declaration of the United Nations Conference on Environment and Development in 1992. This new concept of development will inevitably lead to a new concept of architecture -- sustainable development concept of architecture, that is, to protect the ecology and create a sustainable development of the human living environment, is the basic task of architecture in the 21st century, green building and its research and practice is to achieve such goals and put forward.

1. Green building system

The green building system is based on the principle of benign circulation of the ecosystem, with a "green" economy as the basis, "green" society as the connotation, "green" technology as the support, "green" environment as the symbol of a new type of building system. The research, will nature, human, and artificial creation into a unified research vision, not only to study human life, production, and the form of artificial creation, but also to study the natural development law of human survival, study the relationship between human, nature, and architecture. The goal, it pursue the coordinated and balanced development of humans (production and life), architecture, and nature. In terms of method, it advocates "design follows nature". In technology, it advocates the application of building technologies that can promote a virtuous cycle of ecosystems, do not pollute the environment, and are efficient, energy and water-efficient. Green building is a building with high efficiency, a good environment, and sustainable development, which ADAPTS itself to the local ecology without damaging the local ecology. What it seeks is a sustainable building model. Green building is about giving life to buildings. It is an intelligent, adjustable system that actively interacts with its environment.

2. A new model: green building

Green building refers to a building that provides a safe, comfortable, and healthy space for people to do activities, work, and live while realizing the efficient use of resources and having a minimum impact on the environment. It is a building of "four sections and two environmental protection". The so-called "four sections" are material saving, water saving, land saving, and energy saving, "two envi-

ronmental protection". On the one hand, is to protect the external ecological environment, with the least interference with nature; On the other hand, it is to protect the indoor environment and make the residents healthier. Today, with the rapid development of the information and network era, the use of control, network, and information technology to make living more comfortable, healthy, and safe, so that the consumption of resources to the greatest extent to reduce the impact on the environment to the greatest extent. In the long run, green buildings can not only solve the problems of construction and the need for urban sustainable development but also improve, enrich, expand, and update the contents of traditional architectural disciplines. It has strong vitality and can effectively realize the leap-forward development of the construction industry.

Green building in the design, construction, and use of the process, the implementation of green building standards, the use of energy-saving technology, technology, materials and equipment, the use of light, temperature and other climatic conditions and renewable energy, improve the building's thermal insulation performance and energy use system efficiency, in the premise of ensuring the quality of the building's indoor thermal environment, can reduce building energy consumption.

The rational use of energy in green buildings is not only to simply suppress demand and reduce energy consumption but to reduce energy consumption as far as possible to meet the growing needs of people's health and comfort. Not using energy and saving energy are two completely different concepts. To save energy is to use energy as efficiently as possible. "Energy saving" is called the fifth energy source after coal, oil, natural gas, and nuclear energy. It should be said that green buildings are produced with the improvement of people's material living standards and put forward higher requirements for the quality of living, living, and working environment.

During the "eleventh Five-Year Plan" period, all energy-saving tasks in our country, building energy conservation 41% of energy-saving tasks, so to achieve the national energy-saving emission reduction goals, we must innovate the green building model, and vigorously promote the new model of green building. It is more suitable to apply green buildings in areas with distinct climate conditions in four seasons, innovative and public buildings.

3. The energy-saving potential of green building

China is in a prosperous period of the development of the construction industry, the construction, and completion of the floor area in the past 10 years, the average annual growth rate has always maintained a high level of about 15%. Since 2000, China's new building area to nearly 2 billion square meters per year rapid growth, the annual new building is the sum of Canada's national building, compared with similar climate conditions in developed countries, the current unit building area of our country heating and air conditioning energy consumption, the exterior window is about 1.5 ~ 2.2 times, the roof is 2.5 ~ 5.5 times, The external wall is 4 ~ 5 times of them, and the permeability of doors and Windows is 3 ~ 6 times. The general situation is that China's unit building area heating and air conditioning load is about 2 ~ 3 times that of countries with similar latitudes and climates. In the next 20 years, the effective implementation of relevant building energy efficiency policies will save the primary energy demand of 4.3 billion tons of standard coal, equivalent to more than three times the total national energy consumption in 2000.

4. Aspects of Green building conducive to environmental protection

4.1 Green building helps reduce energy consumption and protect the environment.

China is a large energy consumer, with the total annual energy consumption ranking second in the world. From now on, in strict accordance with the new building energy-saving design standards, and vigorously promote the new model of green building, by 2020, China's building energy consumption can be reduced by 350 million tons of standard coal, the peak load of air conditioning can be reduced by about 80 million kilowatts (about the same as the full load output of 4.5 Three Gorges power station, and the investment in power construction can be reduced by about 600 billion yuan). Therefore, the energy shortage situation will inevitably be greatly alleviated.

4.2 Green buildings are conducive to protecting the atmospheric environment.

Because the main energy structure in our country is coal, a large number of direct combustion of coal has led to more and more serious urban air pollution. Building heating is one of the main sources of urban air pollution. To fundamentally change the serious situation of air pollution in the period of urban heating, it is necessary to reduce the energy consumption of building heating from the source.

4.3 Green buildings are conducive to the protection of cultivated land resources and the ecological environment.

By the end of 2009, China's per capita cultivated land was only 1.2 mu, accounting for only 35% of the world's per capita cultivated land. At present, China's annual firing of clay bricks consumes about 1.43 billion cubic meters of clay, which is equal to the destruction of arable land 500,000 mu. In addition, China must burn more than 60 million tons of standard coal every year, accounting for 55% of the total energy consumption in building materials production. The annual heating energy consumption in northern China and the production energy consumption of bricks account for more than 15% of the annual energy consumption in China.

4.4 Green building can play a great role in promoting the innovation of wall materials within the scope of building materials in China, and can also play a role in protecting the ecological environment and cultivated land.

4.5 Green building is conducive to improving the indoor environment.

A comfortable building thermal environment has become a need in people's lives. Green buildings can reduce building energy consumption, and significantly improve the thermal comfort of the indoor environment, achieve warm winters and cool summers, and improve people's health level and quality of life level.

5. Conclusion

Green construction in China's construction industry and environmental protection complement each other, the realization of green construction is in line with the national sustainable development strategy and plays an important role in promoting the sustainable development of buildings. The future construction industry must adhere to people-oriented, comprehensive utilization of resources and energy, pay close attention to ecological environment health and enhance environmental protection awareness, fully implement green construction, and promote the steady development of the building industry.

References

- [1] BAI Jiangyun. A Brief discussion on comprehensive environmental protection technology of Building construction [J]. Dagan Weekly, 2012 (32): 108.
- [2] Zheng Yanhua. Comprehensive organization, planning, and environmental protection of group pit construction in the comprehensive Reconstruction project of the Bund Passage in Shanghai [J]. Building Construction, 2010,32 (12): 1185-1186.
- [3] Li Bo. Discussion on building energy conservation and Environmental protection [J]. Science and Technology Research, 2014 (11): 378.
- [4] WANG Sheng. Evaluation and rational distribution of urban environmental noise [J]. China Science and Technology Expo, 2010 (32): 146.
- [5] FENG Yanhua. Discussion on the on-site implementation and dynamic management of Green Construction Technology in Building engineering [J]. Building Safety, 2012 (11).