

# Analysis of green environmental protection concept in environmental engineering design

Yong Ding<sup>1</sup>, Xian Zhang<sup>2</sup>, Qiaohong Liu<sup>3</sup>, Ya Wang<sup>4</sup>, Yangci Shao<sup>5</sup>

<sup>1</sup> Hebei University of Science and Technology, Shijiazhuang, Hebei Province, 050000

<sup>2</sup> Hebei University of Science and Technology, Shijiazhuang, Hebei Province, 050000

<sup>3</sup> Chongqing Institute of Technology, Shijiazhuang, Hebei Province, 050000

<sup>4</sup> Hebei Institute of Architectural Engineering, Shijiazhuang, Hebei Province, 050000

<sup>5</sup> Hebei Institute of Architectural Engineering, Shijiazhuang, Hebei Province, 050000

---

**Abstract:** With the development of China's economy, people's living standards are increasing, and the requirements for the living environment are also increasing. In order to meet the requirements of people's living environment while meeting the use of function, the idea of green environmental protection should be paid attention to in the process of engineering design. This paper analyzes the importance of the concept of green environmental protection, and analyzes how to adhere to the concept of green environmental protection.

**Keywords:** Environmental protection engineering; design; green environmental concept

---

## Introduction

With the development of our economy and the improvement of people's living standard, the requirements for the ecological environment are also improving. In order to achieve the goal of sustainable development and promote the harmonious development of man and nature, we should apply the concept of green environmental protection. In order to provide a comfortable and safe building environment for people, in the process of engineering design, we should use the concept of green environmental protection, so that people can return to nature and feel the beauty of natural environment<sup>[1]</sup>.

## 1. The meaning of green building

Green building refers to the building throughout the life cycle, you can try to reduce the consumption of resources, reduce pollution, protect the ecological environment, to provide people with a comfortable and safe living environment of the building. The focus of green building is to provide people with a healthy and comfortable building environment, providing people with a comfortable living and working environment. With the economic development and the improvement of people's living standards, people pay more and more attention to the protection of the ecological environment. The concept of green environmental protection in the construction industry has been widely applied. The concept of green is to use building materials with low energy consumption and pollution as much as possible when building and using buildings, or to adopt scientific design methods to reduce the energy consumption of building materials so as to effectively enhance the utilization of resources rate<sup>[2]</sup>.

## 2. The concept of green environmental protection

### 2.1 The meaning of environmental protection project

---

Copyright © 2018 Yong Ding *et al.*

doi: 10.18063/scr.v2i1.425

This is an open-access article distributed under the terms of the Creative Commons Attribution Unported License

(<http://creativecommons.org/licenses/by-nc/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Environmental engineering refers to some organized activities carried out by environmental engineers according to existing advanced technology and professional knowledge for solving some problems in engineering. Environmental protection engineering means to solve some existing problems and provide a good project for the construction of ecological environment. The traditional environmental protection project mainly includes the engineering of prevention and control of air pollution and the prevention and treatment of water pollution.

## **2.2 Green environmental protection concept**

In recent years, with the rapid development of industrial enterprises and the accelerating process of urbanization, the level of industrialization in China has been increasing. In the industrial enterprises and the rapid development of the city and caused serious damage to the ecological environment, the community also increased the degree of attention to environmental pollution, with the development of economy, people's life level is rising, the living environment requirements are also increasing, so for the protection of the ecological environment is more and more attention. In general, the concept of green environmental protection is studied from a long-term perspective, and can not be realized in a short time. The main content of green environmental protection concept is to make rational and sustainable utilization of some natural resources, and integrate the idea of ecological balance and cleaner production. With the further development of green environmental protection concept, we can reduce environmental pollution and further promote the harmonious development of man and nature<sup>[3]</sup>.

At present, environmental pollution is mainly manifested in the over-exploitation of natural resources and the random discharge of pollutants resulting in the pollution of water bodies and air pollution, which will destroy the ecological environment. However, the natural environment is the basis for people's survival and development. Life safety has a negative impact, therefore, we should attach importance to the concept of green environmental protection in the application of environmental engineering design.

## **3. Defects in traditional engineering design and green building design requirements**

### **3.1 The traditional engineering design defects**

#### **3.1.1 No innovations in the design**

Traditional engineering decoration design contains a number of traditional ideas, the older forms of construction, resulting in the lack of innovation throughout the project design. If you can not be in the spatial layout of innovation, the overall design is more backward, not only reflected in the use of construction materials is relatively backward, but also showed that the backward design style can not meet people's needs, therefore, this decoration design will certainly be eliminated, there is no development prospects.

#### **3.1.2 The impact on people's health**

The building materials used in traditional decoration design can not meet the requirements of green environmental protection concept. In these building materials, there are some chemical costs, and these chemicals may produce substances that affect people's health in certain environment. Therefore, the traditional decoration design will affect the health of the people. With the development of economy and technology, people's living standard is improving, for the health of the living environment more and more attention, related laws and regulations made by relevant departments to restrict construction materials, in order to avoid the adverse effects of excessive chemical composition on people's health<sup>[4]</sup>.

#### **3.1.3 Pollution to the environment**

Traditional building materials contain a lot of chemical components, which are not in line with the concept of green environmental protection. Therefore, the use of these construction materials in building decoration process will cause some pollution to the environment. Thus, the construction is very important for environmental damage. In

addition, traditional building materials can not be recycled, which can not meet the requirements of green environmental philosophy, but also will cause serious environmental impact. If we cannot deal with the decoration materials properly, it will also cause serious pollution to the ecological environment. Therefore, the traditional architecture can no longer meet the needs of social development, so we should apply the concept of green environmental protection to the design.

## **3.2 Design requirements for green environmental engineering**

### **3.2.1 Design theme**

Designers should constantly change their design concepts and design ideas, constantly improve their professional knowledge level, and integrate the concept of green environmental protection into design. In the process of designing spatial layout, we should not only pursue the beauty and rise of space, but also fully integrate the concept of green environmental protection, and ensure that space design is reasonable based on the concept of sustainable development and green environmental protection.

### **3.2.2 Reduce pollution**

During the design, designers should use the building materials scientifically and reasonably, try their best to use the building materials with lower energy consumption and less pollution, and try to use the simple decoration method so as not to waste construction materials, in order to avoid the production of harmful substances to people's health.

### **3.2.3 Adheres to the concept of people-oriented**

In the whole decoration design process, we should fully implement the people-oriented design concept, while meeting the functions of building, and satisfy people's need for engineering design to provide comfortable and safe living and working environment for people. At present, when the decoration design is carried out, people not only require engineering design to be simple but also beautiful, which is also the requirement of environmental engineering design<sup>[5]</sup>.

## **4. The importance of green environmental protection in environmental engineering design**

With the development of social economy and the improvement of people's living standard, people's demand for quality of life is also increasing, and more and more attention is paid to environmental problems. With the development of the construction industry, the investment in the construction industry is also increasing. When decorating, most of the companies use highly polluting construction materials, which will not only affect people's health, but also pollute the environment.

Therefore, we should take active measures to solve the pollution caused by the traditional engineering to the environment. The government departments are paying more and more attention to environmental problems, strengthening the promotion of environmental technology and strengthening the management of the construction industry. In addition, people also pay more and more attention to environmental problems and pay more attention to the quality of life. Therefore, green environmental forest is of great significance in environmental engineering design.

## **5. Application of green environmental protection concept in environmental engineering design**

### **5.1 The use of green environmental concept in space layout**

#### **5.1.1 Ensure the lighting rate**

In order to ensure that the spatial layout of the building is reasonable, the designers should pay attention to the temperature, ventilation and lighting problems of the space. First, in order to ensure the space lighting rate, if the space

lighting rate can be improved and the space light can be more gentle, building space will be more natural, so that the living environment of people can be more comfortable and safe, to ensure that people can be satisfied with their living environment. In ensuring the lighting rate of the building space, it can reduce the degree of dependence on the light. If too much light is used, it will affect people's eyesight. In order to improve the lighting rate of building space, the heat absorption and light transmittance of glass should be taken into consideration when selecting glass, thus improving the quality of construction engineering.

### **5.1.2 Ensure the air circulation of the project**

To ensure that the air circulation of building engineering has an important influence on people's use. Under the condition of ensuring air circulation, we can adjust indoor air without air conditioning or air conditioning and purifying facilities. This can not only save power resources, but also effectively avoid people suffering from air conditioning.

## **5.2 Environmental performance of decoration materials**

### **5.2.1 Life of construction materials**

The reasonable prolongation of the service life of the construction material can ensure the environmental protection effect of the decoration project. If the service life of decoration materials is longer, it will directly reduce the frequency of replacement materials, and the waste of resources is relatively low, which is also beneficial for the recycling of resources. Therefore, we should take the advanced technology and idea to extend the service life of building materials, so as to ensure that the concept of green environmental protection can be fully utilized in environmental engineering design.

### **5.2.2 The difficulty of change and maintenance**

In the process of choosing and buying the decoration materials, we should try to reduce the difficulty of the replacement of the construction materials. In the process of replacing the decoration materials, it is necessary to use a large number of manpower and cost a lot of material and capital. If the decoration material is damaged, and must be replaced, we should use a variety of equipment to carry out maintenance work, however, If we can use the flow production mode, if the decoration materials have to be replaced, we can effectively save the time, manpower and capital needed to replace the decoration materials, so as to ensure the quality of the project. Moreover, it also highlights the concept of people oriented.

## **6. How to adhere to the concept of green environmental protection**

### **6.1 Save resources**

Natural resources are limited. If we are wasting natural resources, we will have no resources available to our descendants, which is unfavorable for human survival and development. Overexploitation of natural resources will not only waste a lot of natural resources, but will also adversely affect the ecological environment. While human beings are transforming the natural environment, human beings will also be affected by nature. For example, over-exploitation of land resources and over-cutting of trees by human beings have caused the flooding of farmland and villages, which is detrimental to the development of mankind. Therefore, mankind should attach importance to the protection of the environment, save natural resources and create a favorable living environment for people.

### **6.2 Strengthen the propaganda of green concept**

Protecting the environment is an important and long-term task that requires people to work together. Government departments or relevant departments should step up publicity on environmental protection and publicize some knowledge of environmental protection, and use advertising slogans and TV programs to raise people's emphasis on protecting the ecological environment and help people to establish a green environmental protection awareness. There's only one earth, in order to protect the ecological environment, to ensure the diversity of the ecosystem, to establish a

comfortable and environmentally friendly environment for people. Everyone should do his best to save resources in daily life, protect green plants, reduce emissions of pollutants, and protect the natural environment. We should adhere to the concept of "people-oriented", try to save resources and protect the ecological environment. Everyone should work hard to build an ecological civilization and build a green home.

## Conclusion

To sum up, we should correctly establish the concept of green environmental protection, set up awareness of environmental protection, and apply the concept of green environmental protection in the design of environmental engineering, which plays an important role in protecting the ecological environment and improving people's quality of life.

## References

- 
1. Feng Wang. The Idea of Green Environment Design for Hvac in Small and Medium-Sized Cities [J]. Science and Wealth 2015; 7 (12): 212-212.
  2. Yujun Chen. The Discuss of How to Integrate The Idea of Green Construction into The Construction Engineering. Technology and Design [J]. 2015; (26).
  3. Min Zhang. Research on The Application of Green Energy Conservation and Environmental Protection Concept of Architectural Structure Design [J]. Low Carbon Real Estate 2016; 2 (18).
  4. Junhua Zhao. The Application of Green Environmental Protection Concept in Environmental Engineering Design [J]. Industry 2016; (7): 00062-00062.
  5. Xuefeng Guo, Xiangzhi Shi. On The Concept of Environmental Protection in Environmental Protection Engineering Design Using [J]. Engineering Technology: Citation Edition 2016; (9): 00319-00320.