

# Application Analysis of Green Protection and Energy Saving Concept in Interior Design

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## Abstract

In recent years, China's rapid economic and social development, the people's material and spiritual improvement, people's requirements for the living environment is increasingly strict. Especially driven by our country's environmental protection ideology, people's demand for quality of life is increasing. Home environment is closely related to human life, therefore, when decorating the home, the interior design requirements are increasingly high, but also pay more and more attention to its health and environmental protection.

## Keywords

Interior Design; Environmental Protection; Environment.

## 1. Introduction

Interior design should strive to make the interior space as comfortable, safe and reasonable as possible, so that the relationship between people and the environment is more harmonious and practical. Indoor environment is the most frequent and closest environment for people to contact. In modern society, at least 80% of people spend time indoors and have far more contact time with indoor air pollutants than outdoors. Therefore, indoor air quality can be directly related to the health of each person. So it is very important to be green and energy-saving in the interior design.

## 2. Analysis of the Main Pollutants

### 2.1. Pollution by Chemical Substances

As most of the decoration building materials are processed by chemical means, so there will inevitably be some chemical substances in the decoration. In the specific design and construction of the project, the presence of friction, heating, cutting and other factors can lead to biological contamination.

In general, the problem of biological pollution is not limited to interior decoration and decorations, but can arise in our daily life. The comparison with other types of pollution, unlike light, noise, air pollution and other pollution methods, has a greater impact on human health. In the human body, biological contamination is transmitted through various routes such as fungi and bacteria. As many bacteria are extremely harmful to the human body, living in such an environment for a long time, bacteria not only multiplied, but also easy to cause a variety of diseases.

### 2.2. Formaldehyde

Building materials often contain toxic formaldehyde is an odorless organism, which is a substance that is difficult to distinguish. However, it is only at room temperature that it slowly evaporates and spreads in the atmosphere. If you unconsciously inhale large amounts of formaldehyde, there is a high risk of cancer-related complications. In the domestic decoration industry, the formaldehyde content in indoor decoration and control is the main task of

decoration enterprises, and the formaldehyde content in indoor air is included in a major indicator of indoor environmental monitoring.

### **2.3. Benzene**

Benzene is the most hazardous type of gas. It is also known as an aromatic compound because of its weak aroma. Aromatics are a compound commonly found in adhesives, paints, wall paints and other building materials.

### **2.4. Radon Gas**

Radon gas is a rare inert gas, which is a colorless and odorless substance, mainly found in stones used for construction and large building materials. Despite being inert, it is rarely seen in interior decoration. However, we should know that when radon gas is exposed in the air for a long time, it will definitely have an irritating effect on the body. Long-term exposure can damage the lungs, respiratory mucosa, etc., all of which can cause respiratory and tumor.

### **2.5. Ammonia Gas**

Ammonia is a common building material, which not only produces a strong pungent smell, but also brings great harm to humans. The materials used for common house decoration include glue, additives or antifreeze. Since ammonia dissolves rapidly in water, it is likely that ammonia will be generated in water when the amount of ammonia exceeds a certain ratio. Ammonia has a strong irritating effect on the respiratory mucosa and breathing wall, and when the level of ammonia exceeds a certain level, it can paralyze the respiratory apparatus of a person.

## **3. The Application Analysis of the Concept of Green Environmental Protection and Energy Saving in Interior Design**

### **3.1. Use of Non-polluting Materials**

In the interior decoration, walls and ceilings account for a large proportion. To ensure that children can grow up healthy, indoor wall and ceiling decoration is best to choose natural materials or minerals (such as potassium silicate) made of water-based natural paint, and observe whether there is an environmental inspection report when buying. Children's room is best to use paper-based wallpaper, it is made of paper, breathable, environmental performance.

### **3.2. Strengthen the Awareness of Indoor Environmental Protection**

When designing, designers need to have a thorough understanding of the interior. If many customers choose environmentally friendly materials when decorating, it will still cause problems with the indoor air environment after the decorating project is completed. Therefore, indoor air pollution is currently the biggest problem. The above design focuses on the general arrangement of the building interior and materials, such as flooring materials, wall construction, furniture materials, etc. However, in the renovation design, no matter how to choose, it is necessary to consider the amount of reservation, the amount of use and use, the degree of ventilation and other aspects of a comprehensive consideration.

### **3.3. Reasonable Building Space Carrying Capacity**

At present, more than 90% of domestic building materials have some kind of toxic gas adsorption problem. Therefore, in the interior design, how to space for proper planning? Take the children's bedroom, a children's bed, a closet, a table can be, but then one more thing, it seems a little too much.

### **3.4. Matching the Ratio of Raw Materials**

Try not to choose and select the material of the ground. In interior decoration, due to a large number of flooring materials, the use of a building material, is bound to cause the indoor

concentration of certain specific gases is too high. In interior decoration, a large amount of flooring materials can lead to high concentration of gases in the room.

### **3.5. Keep the Ventilation of the Room**

At present, the domestic indoor environmental quality standard requires that the ventilation capacity inside the building should be 30 m<sup>3</sup>/hour, so the problems affecting the internal ventilation should be minimized. Secondly, in order to better meet the needs of users, centralized HVAC fans can be set up in the homes of users in large areas or with certain financial means to effectively improve air circulation.

## **4. The Scientific and Reasonable Selection of Internal Decoration Materials**

### **4.1. The Choice of Materials Used for Decoration**

In the selection of building materials, both to ensure the use of green building materials, but also to promote consumers to buy Non-polluting, green, energy-saving and environmentally friendly building materials. For example, fiber-free gypsum board, benzene-free wall paint, formaldehyde additives, etc. This is critical to improving the environmental quality of the room. In the selection of raw materials, resources, energy and reusable raw materials should be used. For example, solid wood flooring can be used to replace solid wood. Choose recyclable materials such as glass, aluminum plate, iron parts, etc. Other materials can also be used for some less energy-consuming building materials, such as: MDF, pipe, stone, logs, etc.

### **4.2. The Use of Environmentally Friendly Decoration Materials**

Environmentally Friendly Building Materials are a New Type of Decoration Building Materials that are environmentally friendly, non-toxic and Non-polluting. The manufacturing of green decoration materials are in accordance with the relevant national regulations. We also test and monitor a batch of products and inform the users in the form of charts. China Environmental Labeling Association is currently the only domestic organization that recognizes environmental substances and publishes environmental labels. Improving and optimizing the internal environment and solving the problem of pollution in the air affects not only the quality of people's existence, but also the comfort of our existence and living. Especially in the advent of modern science and technology and the information society, human work and work on the change has increasingly become an important part of the home environment. Therefore, it is very necessary to ensure that the indoor ambient air quality indicators meet the standards.

### **4.3. Humanized Design**

China is a people-oriented country, so in the process of designing the house must reflect the humanized design, and this humanized design is mainly reflected in the user's needs, in the design process, by combining with the actual needs of the user, and then reflect the strong personalized and humanized characteristics. After the design is completed, we need to communicate with the owner in detail to determine the final design template, and before the construction, we also need to make a technical briefing with the person in charge to adjust according to the actual construction process and design plan. As people's material and spiritual needs continue to rise, the actual needs of customers have a very important impact on interior design, which has led to the gradual development of interior design in the direction of humanization. In addition, there is a wide range of furniture and appliances on the market, but for consumers, there is no need to pay high prices for products with complex designs. Choosing products with qualified quality and environmentally friendly design is of utmost importance. Ortni integrates the concept of green home into its products, allowing residents to feel green life in three aspects: physical, physiological and psychological.

## 5. Summary

Over the years with the progress of science and technology and the development of the times, China's interior design industry has made great progress, but also caused a certain degree of damage to the environment, coupled with the improvement of people's living standards, so that people's needs for living environment is also rising, based on this situation, in the process of designing houses to highlight the concept of green environmental protection, in the process of design, try to choose environmentally friendly materials for decoration. In terms of decoration can choose no formaldehyde, benzene and other harmful substances and has a high fire resistance and high temperature materials. For the cold areas in the north, in the process of construction, you can choose materials with good insulation effect to improve the quality of indoor air, but also can play a role in reducing energy consumption. Decoration designers should always uphold the concept of green in the process of design, in as much as possible to save or reduce construction costs at the same time as possible to achieve the purpose of green.

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