

# Low Carbon Integration and Indoor Environment Design Practice

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**Abstract:** With the advancement of society and the improvement of living standards, people become increasingly attentive to the environment in which they live, and low-carbon environmental protection has become the goal for the interior design and construction industry to strive for. Low-carbon and eco-friendly interior design can reduce the potential pollution and harm in the design process, providing peace of mind to the residents. Moreover, it is in accordance with the concept of green development, accelerating the progress towards achieving China's target of being a green, low-carbon and environmentally friendly country. This paper explores the importance of combining low-carbon integration with indoor environmental design, proposing strategies to facilitate such a combination, and providing references and assistance to related entities.

**Keywords:** Low-carbon integration; Interior environment design; Strategy

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## Introduction

Low carbon integration is closely related to indoor environmental design. On the one hand, it increases the efficiency of utilizing materials inside the environment, reducing expenditures on materials; on the other hand, it minimizes the risks of potential pollution and harm, promoting the safety and environmental sustainability of residential complexes. Furthermore, the integration of low-carbon elements in interior design reinforces the connection of the residences with the natural environment, allowing natural elements to be spotlighted in indoor design. This further contributes to the realization of energy conservation targets, as well as the prudent utilization of natural resources.

## 1. The Importance of Low Carbon Integration and Interior Environment Design

### 1.1 Improve construction efficiency and material utilization

It is very important and necessary to carry out low carbon integration and interior environment design. On the one hand, the combination of low carbon integration and interior environment design can improve construction efficiency, reduce unnecessary construction steps, and provide help for the early completion of interior environment design. On the other hand, low carbon integration and interior environment design can improve the utilization rate of materials, make the maximum use value of materials, effectively save construction costs, and provide cost support for the use of more new technologies. In addition, the application of low-carbon integration concept also makes more energy-saving materials "useful", creating more market space and value for low-carbon, energy-saving and environmentally friendly materials, and helping the long-term development of environmentally friendly materials.

### 1.2 Improve the unity of design engineering

The combination of low carbon integration and interior environment design can not only effectively improve the utilization rate of materials and construction efficiency, but also effectively solve the problem of inconsistent interior environment design. Because low-carbon integration means that the main body and core of the design project is low-carbon, there is no disagreement in the interior environment design carried out on this basis. Even though the design styles are different, they are all designed with low-carbon as the theme in essence. It can be seen that the proposal and promotion of the concept of low-carbon integration has a lot of positive

significance, and plays a guiding and helpful role in the development of interior environment design.

### **1.3 Reduce potential harms and build a healthy atmosphere**

For residents, low carbon integration and indoor environmental design are closely related to the health of their lives. Low carbon integration and indoor environmental design can reduce the potential damage and create a healthier, more environmentally friendly atmosphere so that residents can enjoy a better living environment. Low carbon integration and indoor environment design can also optimize the air circulation in the interior environment, reduce air pollution, and also reduce the dust and noise pollution caused by the outdoor environment so that the residents can live in a more comfortable and livable indoor environment.

### **1.4 Strengthen the connection between man and nature**

Low carbon integration and indoor environment design can also enhance the connection between human beings and the natural environment, allowing the natural elements to be embellished in the interior design, achieving the goal of energy conservation, environmental protection and economical use of natural resources. It can help to build an atmosphere of harmony between man and nature so that the residents can enjoy a closer relationship with nature and be in a more harmonious living environment. In summary, low carbon integration is an important way for indoor environmental design to improve the comfort, energy saving and environmental protection of the interior environment, and more importantly, it can create a closer connection between man and nature, to maximize the utilization value of material resources.

## **2. Strategies for low-carbon integration and indoor environment design**

### **2.1 Strengthen the application of natural elements**

To realize the concept of low carbon and environmental protection in the design theme, designers should focus on integrating natural elements – such as trees, greening, and lighting – into the internal environment. Doing so will significantly reduce the cost of designing the internal environment, and will ensure the comfort and safety of its living environment. In addition, be sure to consider how to connect natural elements with housing – incorporating the use of French windows and climbing frames will further merge the indoors and outdoors. In this way, more natural elements can be integrated into the interior environment, allowing for an optimized and cost-efficient design.

### **2.2 Attach importance to the application of green humanistic ideas**

One of the core purposes of the integration of low-carbon integration and indoor environmental design is to promote the green humanistic concept and encourage more people to adopt a low-carbon and environmentally conscious lifestyle. Designers should research and consider how to utilize scientific design methods for optimization – for example, the use of energy-saving lamps for lighting and an emphasis on natural light for wall design – as a means of protecting the ecological environment and reducing resource consumption. This is key for emphasizing the concept of low-carbon and environmental protection and achieving sustainable development goals.

### **2.3 Strengthen the combination of natural ecology and aesthetics**

In the process of low-carbon integration, it is paramount to strike a balance between achieving attractive aesthetics and promoting environmental protection. Designers should take a simple approach while making use of natural elements, to tap into the ecological beauty of the environment and improve the practicality and aesthetics of the interior design. For example, adjusting the size and orientation of the windows can create a pleasant Tindall effect, elevating the aesthetics of the interior design while still adhering to the concept of low-carbon integration.

### **2.4 Reasonably divide the space functions**

Dividing the interior is essential in interior environment design. A sensible division can significantly elevate the space utilization rate and make the limited space more functional. Thus, when abiding by their design concept of low-carbon and environmentally friendly, designers should investigate the adequate division of interior space, minimize the waste of resources and space through a wiser division, and create more conditions for the incorporation of natural elements. For instance, by allocating space for relaxation and entertainment in front of floor-to-ceiling windows, one can benefit from the indulgence of natural light and create a pleasurable and comfortable atmosphere. This then allows the residents to fully appreciate the beauty

of nature, unconsciously solidify their commitment to protecting the environment and in essence, lay the groundwork for the propagation of a healthy and low-carbon lifestyle; thereby letting low-carbon integration fulfil its purpose and roles in interior environment design.

### **2.5 Strengthen the application of energy-saving technology**

The realization of low-carbon and environmental protection goals requires both simplicities of design and energy-saving technology. By leveraging energy-saving technology to reduce resource consumption and carbon emissions, the concept of low-carbon living is effectively actualized. When designing the interior environment, designers should introduce progressive energy-saving technologies, such as solar collectors, solar generators and recycling methods, to assist in the implementation of the low-carbon lifestyle. Additionally, by utilizing green decorations such as plants and flowers in the indoor environment, it is possible to foster good indoor air quality, reduce the risk of harming human health, increase aesthetic beauty, and aid the development of “green residential” that combines low-carbon integration and interior environmental design.

## **3. Conclusion**

The combination of low-carbon integration and interior environmental design is no easy feat and requires constant dedication from designers. As such, more importance should be placed on the notion of green humanity, the inclusion of natural elements in the design, and the creation of a comfortable residential environment through energy-saving technology and reasonable space division to make the building truly a low-carbon, environmentally friendly and aesthetically pleasing green residential space.

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