

# Research on Office Space Design Based on Green Interior Design Concept

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**Abstract:** In recent years, with the rapid development of science and technology and industrial civilization, a series of environmental problems have followed. Because of the emergence of environmental problems, people began to seek new ways of development, so to meet the needs of the times, sustainable development, green design began to enter people's vision. Nowadays, ecological environment and sustainable development are getting more and more attention, and various fields are discussing the concept of green design development. In this environment, the green office space design is the inevitable trend of modern office space design development. This article mainly studies the interior design of modern green office buildings. Therefore, we can better understand the development process of green office space design, put forward reasonable guiding opinions on its design principles, and combine relevant elements of green office building research. Guide the design of green office space.

## 1. Introduction

After entering the 21st century, our society has gradually presented new characteristics and forms. The rapid development of office buildings and places is due to the profound social changes behind it. This situation also poses unprecedented challenges to the interior design of office space. The rapid development of society not only makes the living place around us and even the world have changed greatly. People will have more time indoors in the future and blindly pursue economic benefits for enterprise development, which makes industrial production promote more and more chemical synthetic materials, a large number of energy is destroyed and abused, toxic decorative materials are widely used in indoor space, which endangers people's health. In recent years, the decline of air quality, the scarcity of natural resources, urban ecology, green development, green buildings, low-carbon life and so on have gradually become the focus of social development research. At the same time, the improvement of living standards makes people pursue a healthy and green lifestyle besides meeting the basic material life, and people have higher and higher requirements for the working and living environment [3]. Under the influence of new materials, new technologies and the renewal of modern design concepts, the environmental design of office space begins to develop towards green and healthy [4]. This article analyzes the design of office space based on the concept of green interior design. Green interior design refers to providing people with environmentally friendly, energy-saving, safe, healthy, convenient and comfortable interior space design, such as interior layout, spatial scale, decorative materials, lighting conditions, color configuration, etc., to meet the physiological, psychological, and sanitary conditions of the occupants And other requirements, and can make full use of various energy sources to reduce environmental pollution. Applying the concept of green interior design in modern office space design is not only a technical consideration, but more importantly, a conceptual update [5].

## 2. Green Interior Design and Office Design

At the same time, science and technology and economic development have caused great damage to the environment. Especially after the industrial revolution, the exploitation and utilization of natural resources have led to a series of problems due to the uncontrolled and reckless production and development. Energy crisis and environmental pollution increasingly restrict the continuous development of economy. People realize that to develop the economy healthily and orderly, we

must change the production mode. The green design concept emerges and spreads rapidly. The concept of green design is accepted by the people and permeated into various industries. After decades of development, the concept of green design is becoming more and more perfect and mature. It has been applied in all walks of life, and people pay more and more attention to ecological and environmental issues. The concept of green design is reflected in more and more places in life, which plays an important role in the sustainable development and healthy life of human beings. At the end of the 19th century, the office model was dominated by corridor-style enclosed single rooms. The interior furnishings and decorations were still not divorced from the imitation of the living room and study environment, thus expressing a comfortable and elegant family atmosphere. As shown in Figure 1.



Fig.1 Medieval Monk's Office

Meanwhile, the closed single room pattern created a completely independent and quiet working environment, which met the requirements of the new social dignitaries for their rights, wealth and status, and thus became the basic form of traditional office. Since then, the layout of office space with corridor type double-sided small and medium-sized rooms still exists in office buildings, especially in China, which is still very common.

Table 1 Comparison of Green Interior Design Concepts and Traditional Interior Design Concepts

	Comparison factor	Green design concept	Traditional design concept
1	Design Basis	The designer is required to consider the design based on the environmental benefits and ecological environment indicators, the interior design part of the Green Building Evaluation System (LEED), and the cost requirements.	The designer is required to design according to the user's requirements for the indoor performance, quality and cost.
2	Design thinking	The designer is required to consider reducing energy consumption, reusing resources and protecting the ecological environment.	Designers have little or no consideration of energy saving, resource reuse and impact on the ecological environment.
3	Aim of design	Let designers design for the needs of people and the environment. The ultimate goal is to create a natural, comfortable and harmonious office environment to meet the requirements of sustainable development.	Let the designer take people's needs as the main design goal to achieve the pleasure and comfort of the office space itself.
4	Attitude towards the environment	Human beings are part of the universe, like anything on earth	Like living things, they integrate themselves into nature (environment).

In order to change the class nature of traditional office layout, modern office space creates a vibrant and dynamic environment with free layout, soft colors and lush plants. The new office space design is the concrete manifestation of modern information technology and humanized thought in office design. In addition to considering the communication and information transmission of the staff, the office also pays special attention to how to give full play to the enthusiasm of the staff, reflect the characteristics of people's behavior, consider the influence of environmental factors on

the creativity of the staff, and make the office an organic whole, thus improving the work efficiency. There are two main functions of natural elements in the office space design. First, the changing outlines and diverse and gorgeous colors can soften the rigid spatial lines, enrich the monotonous visual landscape, and reshape the pleasant scale. Second, use the continuous layout of indoor and outdoor greening to realize the echo and penetration of the internal and external spatial landscape, and strengthen the echo and transition between indoor and outdoor.

### 3. Office Space Design Based on Green Interior Design Concept

The application of green design concept in modern office space is not only based on the development of modern construction technology, but also an update of design concept. The layout design of office space has a great influence on the use function of space, the circulation of indoor air and indoor lighting, and a lot of energy is needed in the planning and layout of space. Reasonable planning and layout can maximize the use of natural light and save the cost of artificial lighting. Reasonable spatial planning and layout can also promote the circulation of indoor air and provide users with a healthy space environment. The planning and layout design of green office space should ensure that the space has perfect use functions, and integrate various elements such as communication, interaction, collaboration and so on into the design of office space, so that the office space can provide employees with a green, healthy, high-quality and efficient office space while meeting basic office needs. In the whole green ecological office space, the indoor location arrangement should also follow many aspects of nature. Should not be too close, such as flowers and plants in nature, will not overlap each other to snatch nutrients and water resources, which is also applicable to human society. Secondly, the space should not be too large. Too large space will cause problems in communication and other aspects, but it will be more troublesome. In the architectural environment, green plants have ecological, aesthetic, spatial and psychological functions, and are an important part of interior decoration. In the design of green office space, the main role of green plants is to show their ecological functions: plants have the functions of sterilizing and blocking dust and purifying the air. Some plants can also release special gases, which have a certain effect of refreshing and beautifying the environment. Green plants also have the effect of absorbing noise and reducing electron radiation. Plants also have the function of monitoring the surrounding environment. Plants play a role in regulating the microclimate in the office environment. As shown in table 2.

Table 2 Common Indoor Ornamental Plants and Their Functions

Plant	Features	Plant	Features
Wealthy Bamboo	Disinfect	Cactus	Absorb electromagnetic radiation, absorb toluene
Fortune tree	Fight against exhaust fumes from tobacco	Ivy	Absorb formaldehyde
Cycad	Absorb benzene	Rubber tree	Dust removal
Golden Hu	Block electromagnetic radiation	Asparagus	Disinfection and sterilization
Green dill	Absorb formaldehyde	Clivia	Absorb smoke
Agave	Absorb formaldehyde and benzene	Aloe	Clean air

Good office space layout can bring good comfort and efficient work efficiency to people's psychology and physiology, and it is also the basis of creating a green office environment. Reasonable space layout can not only make people's physical and mental health development, but also promote the improvement of office efficiency. For example, the open office space can eliminate the barrier of communication between people, with highly humanized and free furniture and space design, which can fully release the ideas and creativity of space users and maximize productivity. Careful arrangement of functional rooms in each part of the building in the design can effectively prevent the spread of noise. Do not place sound sensitive spaces, such as administrative offices and conference rooms, next to noise-generating areas. Noise-generating rooms include mechanical equipment rooms, fitness centers, kitchens, etc., while data centers, storerooms, mail

rooms and other less sensitive spaces are more suitable to be placed next to computer rooms. Generally speaking, a moderate space is more suitable for people's office life. Or, you can add some bold innovations on the ordinary basis, such as adding a multi-layer desk to add some fresh blood, so as to bring people closer and break the suspicion between people.

#### **4. Conclusions**

People's requirements for ecological office environment. The office workers in the city are hard to find the traces of green mountains and rivers and face the city of steel and cement forest. With the desire for nature, people's ecological consciousness has awakened. Modern office workers have higher requirements for health and environmental protection of indoor office space, cold and hot environment, air quality, ventilation, furnishings, lighting and decorative materials, and the demand drives production. Promote the community to create green office space has more attention. The development trend of office buildings is obvious. All high-tech means focus on the theme of green ecology and energy saving. The indoor form will be more diversified, the functional composition will be more abundant, and more emphasis will be placed on the creation of humanized and pleasant office environment. Although the concept of green design has not been developed for a long time in China, it has been widely accepted by all walks of life. Especially in today's serious environmental pollution and the gradual shortage of natural resources, the concept of green design points out the direction for future design. The introduction of green design concepts into office space design not only fills the gaps in office space design, but will also become a future development direction. Green design is the inevitable trend of design development today.

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