

Exploration on Interior Design under the Green and Environmental Protection Concept

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Abstract: In recent years, major changes have taken place in the way of human life, bringing convenience along with increasing consumption of resources and energy. This leads to serious environmental pollution and poses a serious threat to the sustainable development of human society. In this context, people have carried out collective reflection, exploration and experiment, and the concept of green environmental protection has gradually become the common pursuit of human society. The aim of this study was to explore the integration of green concepts into interior design practices, with a focus on promoting sustainability, health and well-being in interior Spaces. The methodology is analyzed from the following aspects: the redefinition of indoor space planning, the analysis of indoor physical environment design, the analysis of indoor physical environment design, the integration of green furnishings and the beautifying effect of plants. In addition, case studies of green interior design projects. The discussion will delve into all aspects of green interior design, including the selection and utilization of sustainable materials, the optimization of indoor environmental quality, and the importance of creating interior Spaces. The results of this study highlight the importance of adopting green interior design principles in mitigating environmental impact, improving occupant comfort and promoting overall sustainability. To sum up, the integration of green concepts into interior design is crucial to advancing the Sustainable Development Goals and promoting a harmonious relationship between people and the natural environment.

1. Introduction

In today's society, the pace of life is accelerating rapidly, and the pressure of daily life is increasing. In this context, the indoor living space becomes a rare refuge for individuals, a corner where they can escape the hustle and bustle and return to tranquility. The design of interior Spaces is no longer just a matter of layout and arrangement, but an art form that aims to create a positive physical and mental experience for residents. Such a design can stimulate the senses and encourage occupants to maintain mental and physical health in the interior space[1].

The rise of green design is precisely due to its ability to align with the current social environment and user application needs. This design concept will integrate the concept of green environmental

protection into the interior space, through the rational use of natural resources, to minimize energy waste, to achieve energy conservation and environmental protection. In addition, the green design emphasizes the health and safety of the user, chooses environmentally friendly materials, and reduces the release of toxic gases. The positive development of green design has transformed the interior space from a simple functional area to an ecosystem that resonates with nature, contributing to the overall construction of a better living environment.

2. Interior Space Planning Redefined

With the continuous advancement of urbanization, indoor space planning has become more and more important, which has a profound impact on the quality of life and health of residents. Interior space is not just the sum of all the areas within a building; It is also the background in which people live, work and play. Therefore, spatial planning needs to prioritise innovation, green elements and a people-centred approach. The following will elaborate the interior space planning, from the space division, landscape design, color coordination, material selection and other aspects of discussion.

2.1. Spatial Division

In the interior space planning, space division is a crucial step. Through thoughtful consideration and planning, the designers enhance the overall spatial environment, making it more vivid and three-dimensional, while also logically delineating different functional areas. This helps optimise the use of living Spaces, ensuring that ventilation and lighting are kept at their best. Especially in the continuous process of urbanization, living space is increasingly limited, designers need to skillfully use spatial planning technology, so that every inch of land is the most effective use.

For example, in order to solve the common problems of small homes, such as inadequate lighting and narrow space, designers can consider using glass partitions, supplemented by green decals. This not only increases the penetration of sunlight, but also introduces natural elements that enhance the overall living experience. In addition, strategically placed mirrors reflect light, which can effectively expand the illuminated area, create a brighter interior space, provide users with a more pleasant environment, facilitate daily work and study, and maintain a positive mood [2].

2.2. Landscape Design

With the continuous advancement of urbanization, the living environment is becoming more and more dense, and the appearance of buildings obstructs the sight of residents. This makes spatial planning particularly important. To solve this problem, designers need to think deeply, through clever layout and design, break the traditional space constraints, and create a more open living environment. For high-rise residential buildings, landscape design can be introduced to allow residents to enjoy the beauty of the city indoors and relieve the sense of pressure in urban life. The spatial planning should also take into account the external environment of the building, through the design of Windows, the layout of balconies, the introduction of greenery, to maximize the entry of natural light and create a vibrant living space that seamlessly integrates with nature.

2.3. Color Coordination

Color coordination is an important element that cannot be ignored in interior design. People of different ages, genders and personalities have different color preferences, so the characteristics of users must be considered in spatial planning. For example, older people tend to prefer stable colors such as brown or dark gray, creating an atmosphere of calm and majesty. Younger women may

gravitate toward pastel colors, such as blush and beige, to add a muted vibe to the space. Children's rooms can be combined with bright colors to create a fun and vibrant environment. Scientific and reasonable color coordination not only enhances the visual comfort of the space, but also affects the psychological and physiological functions of the users, creating a more pleasant life experience.

In the decoration process of walls, floors, ceilings and other Spaces, choosing the right materials is also crucial. Designers should give priority to the environmental performance of decorative materials. The problem of substandard quality and high levels of toxic ingredients can have a negative impact on the health of the population. For example, when choosing wallpaper, designers should fully understand the material composition and strive to choose environmentally friendly and non-toxic products. In addition, encouraging the use of renewable and environmentally friendly materials, such as cotton and cannabis, will not only help reduce environmental pollution, but also help create a healthy and green living environment [3].

3. Indoor Physical Environment Design Analysis

Physical environment plays a vital role in interior design, directly and profoundly affecting the psychological experience of occupants. Factors such as temperature, lighting, ventilation and sound transmission are intertwined to shape the comfort and quality of life of residents. Under the principles of green design, an accurate understanding and design of the physical environment is essential to create high-quality living Spaces.

3.1. Importance of Lighting and Design Optimization

Lighting is one of the key elements of interior design. It not only affects visual perception, but also directly affects the psychological and physical health of the user. Reasonable use of natural and artificial lighting can effectively improve the comfort of residents. In green design, it is essential to maximize the use of natural light resources.

3.1.1. Optimization of Natural Light Utilization

In modern living Spaces, the effective use of natural light is often challenged due to architectural structure and urbanization factors. Designers can optimize lighting by changing the size, location, and number of Windows. For example, in small homes, large Windows or floor-to-ceiling Windows can be designed to maximize the entry of natural light and improve overall brightness. In addition, the use of transparent glass partitions is a common technique to effectively transmit light while providing spatial transparency, creating a more open and pleasant living environment.

3.1.2. Rational Design of Artificial Lighting

In the case of insufficient natural light, artificial lighting has become an indispensable auxiliary means. However, under the principle of green environmental protection design, designers need to maintain soft and energy-saving lighting, avoid strong lighting that may bring discomfort to users, and pay attention to the comprehensive and reasonable use of energy. For example, designers can choose LED lighting products known for high energy efficiency, long life and adjustable brightness according to different scenarios and user needs. By designing artificial lighting through scientific and environmentally friendly methods, a comfortable and energy-efficient living environment can be created for residents.

3.2. Diverse Requirements for Acoustic Environments

Modern demands for acoustic environments are increasingly diverse. In entertainment areas such as living rooms or media rooms, people look for high-quality audio effects while watching TV or movies to experience the immersive feeling. In more private places like the bedroom, people prioritize peace and comfort and want to rest away from outside noise. Therefore, designers need to subtly balance the different sound requirements of different areas.

3.2.1. Application of Soundproofing Materials

The selection and application of sound insulation materials is very important to create a green and environmentally friendly sound environment. For example, in the design of sound insulation wall, the transmission of sound can be effectively reduced by adding sound insulation wall, installing wooden keel, pasting sound insulation board, filling sound absorbing cotton and other methods. These sound insulation materials not only have high sound insulation performance, but also have anti-corrosion, moisture-proof, wear-resistant, pressure resistant, fire insulation and other characteristics. In the design of floor sound insulation, the choice of materials is essential. In places where noise transmission needs to be reduced, such as bedrooms or study rooms, soft flooring materials such as carpet or cork flooring can be selected. These materials help absorb shocks and footsteps on the floor, effectively slowing down the speed of sound and creating a more peaceful atmosphere. In the design, the layout and structure of the ceiling can also be scientifically arranged to slow down the transmission of sound [4].

4. Application of Native Materials in Interior Design

In the process of interior design, the choice of materials plays a crucial role in environmental construction. At present, common building materials on the market, such as stone, wood, ceramics, plastics and so on are widely used. However, some inferior materials pose a potential threat to human health due to high formaldehyde content. The primary materials are mainly derived from nature and have significant advantages such as low pollution, renewable and environmental protection.

In the interior design of an eco-hotel in Uganda, the designer has made clever use of local wood. A large number of wooden strips are placed on the roof of an open-air balcony overlooking lush grasslands and vibrant trees. Such a design not only provides users with a strong visual impact, but also allows people to maintain a sense of serenity in this environment. The use of native materials makes residents feel as if they are one with nature, achieving the design goal of adapting to local conditions and advocating green environmental protection. This design scheme provides users with a comfortable and peaceful living experience and fully demonstrates the potential of native materials in creating unique indoor environments [5].

The interior design can be cleverly decorated with local materials and can also be effectively divided into Spaces. In the restaurant design of Harbin Nature Hotel, the designer used straw, a very common material, as a space divider. This design allows diners to instantly immerse themselves in the rich and beautiful natural scenery of Northeast China, as if they were in the rich North Cang. The use of local materials not only realizes the innovative division of the interior space, but also conveys the unique regional cultural atmosphere through natural elements. This design method makes full use of native materials, which not only realizes the personalized interior environment, but also conforms to the principle of green environmental protection.

5. Green Furnishings and the Beautification Role of Plants Integration

In modern society, people have little chance to contact nature in their daily life and often shuttle through the noisy urban environment. Therefore, the integration of green furniture and plants into the interior design is not only a means to beautify the space, but also to let individuals feel the existence of nature indoors and enjoy the pleasant experience of harmonious coexistence. Interior furniture includes a wide variety of items, including functional furniture and lighting, as well as decorative everyday items and crafts.

5.1. Introduction of Green Plants

Green plants play a vital role in interior design. Designers can cleverly incorporate various types of greenery, such as creating green backdrops in office areas. This not only provides fresh air and maintains a vibrant office space, but also allows the occupants to feel the visual impact of greenery in their home, adding a sense of harmony and livability to the overall atmosphere. Green plants also help regulate indoor temperature and humidity, bringing practical positive effects to interior design.

5.2. Diversification of Green Furnishings

Green furniture goes beyond plants and cleverly incorporates other green elements. By choosing green furniture, decor and other elements, designers can break up the monotony and create a more vibrant and vibrant living space. Green furniture creates a fresh and serene feeling visually and complements the greenery to create an indoor environment close to nature.

5.3. New Concept of Green Furniture

With the rise of environmental awareness, green furniture has become a new concept in interior design. The furniture focuses on reducing the use of materials, promoting reuse, and facilitating disassembly and assembly. Choosing furniture like solid wood and rattan furniture has become fashionable, not only environmentally friendly, but also does not contain toxic substances harmful to human health. Today, with the continuous advancement of science and technology, the use of green furniture has become the first choice for modern life, seamlessly integrating environmental sustainability into all aspects of life.

5.4. Comprehensive Effect of Green Furnishings and Plant Beautification

The combined effect of green furnishings and plant beautification shows a unique charm in interior design. Through the vibrancy and energy of green, coupled with green furniture and furnishings, the interior Spaces not only display a distinct personality, but also provide tranquility and relaxation amid the hustle and bustle of daily life. This harmonious design not only satisfies people's yearning for a better living environment, but also injects a new concept of green ecological elements into modern interior design.

The integration of green furnishings and plant beautification not only brings a new aesthetic experience to interior design, but also plays a positive role in the pursuit of harmonious and natural life concept. By creating Spaces full of green plants, designers provide individuals with a living place close to nature, so that residents in urban life can experience the beauty of nature and the happiness of harmonious coexistence [6].

6. Conclusion

Contemporary designers constantly examine the close connection between green environment and humanity, and constantly explore the direction and application of interior green design. The expectation of modern society for indoor environment is no longer only concerned with practicality and economy; Pay more attention to creating a healthy and comfortable living atmosphere to achieve a harmonious integration with nature. This is no longer the responsibility of the individual or limited to the designer; This is the goal of the common efforts of all mankind, committed to the protection of the earth's environmental resources, to achieve sustainable common development of mankind and the earth.

The emergence of green design principles marked a fundamental shift in people's expectations of the interior environment. Designers have come to realize that interior space is not just a place to live and work, but a key factor affecting the physical and mental health of individuals and harmonious interaction with nature. In this context, green interior design has embarked on an unprecedented development path. The core concept of green interior design is to create a living environment that seamlessly integrates with nature and is conducive to physical and mental health. The designers are committed to creating a more environmentally friendly, comfortable and people-oriented interior space by fully considering the selection of materials, spatial planning, physical environment and the use of decorative plants. From the use of environmentally friendly materials, the rational use of natural light, the consideration of sound insulation, to the introduction of green plants and green furniture concepts, green interior design continues to innovate and actively respond to people's pursuit of a healthy lifestyle. In this process, the designer's clever use of native materials gives the interior space more environmental protection and natural characteristics, allowing users to have a closer connection with nature in their life experience.

To sum up, green interior design is not only a trend, but also a positive response to sustainable development. Designers should constantly acquire new knowledge, draw inspiration from successful cases, and promote the healthy development of green design principles. This is not only to meet modern people's expectations for a high quality of life, but also to ensure the environmental sustainability of the planet so that our future thrives in a green and healthy living environment. Therefore, protecting the earth's environmental resources and realizing the sustainable development of mankind and the earth has become the common goal of all mankind in the future. Let us work together and make unremitting efforts for a better tomorrow.

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