Application of environmental protection decoration materials in architectural design and urban planning and design

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Abstract. The planning and design of the city needs to refer to the future development goals of the city, and make overall plans for overall development, strengthen the design of the building, and ensure the coordination and unity of the urban planning and architectural design, which can provide a more ideal space for the development of the city. Aiming at the problems of high pollutants and harm to human health in the process of building decoration construction, the application and promotion of green decoration materials in building decoration projects are discussed. It focuses on the importance of the application of green decorative materials, and outlines the specific applications of green decorative materials such as doors, windows, walls, and lights.

1. Introduction
The ultimate goal of architectural design is to ensure the comfort of architectural space applications and meet the requirements of more aspects. In addition, the architectural form also needs to conform to the trend of the times and have a modern style. The purpose of urban planning and design is to ensure the sustainable development of the city. Therefore, it is necessary to analyze the relationship between urban planning and design and architectural design, which has very critical practical significance for the healthy development of the city. Environmental pollution has always been one of the key issues hindering the sustainable development of society. In the field of architectural decoration engineering, most traditional decoration materials are processed with highly polluting chemical materials, which will release a large amount of harmful substances such as formaldehyde and ammonia, which endanger the health of residents. Energy-saving and environmentally-friendly green decorative materials not only pay attention to ecological balance in the process of selecting materials, reduce the damage to the natural environment, but also take the beautification of the human living environment as the application goal, and promote the harmonious development of man, nature and society. Therefore, it is of great practical significance to study the application of energy-saving and environmentally-friendly green decorative materials in building decoration engineering.

2. The relationship between urban planning and architectural design
At present, for the planning and design of the interior of the city, it is necessary to conduct detailed analysis and exploration before urban construction and construction, effectively divide the urban space, use precious land resources rationally, and improve the effectiveness of internal space layout. In addition, in the process of designing and planning the interior of the city, the relevant personnel also
need to combine a series of principles to ensure that the interior of the city is more economical and comprehensive, so as to implement the overall deployment of the interior of the city to ensure the orderly, healthy growth. The core of the implementation of urban design and planning is the concept of sustainable development, and the effect of the urban planning plan should be maximized to improve the living environment of urban residents. Designers need to combine the historical development background of the area, use history to carry out scientific planning and reasonable design related work, to ensure a systematic distribution between buildings and improve the rationality of the overall layout. The most critical link in the architectural design process is to improve the rationality and scientificty of the design form, so as to make the architectural design more effective, show the beautiful effect of the building, and improve the practicality and economy of the building. It is proposed to the public Residence requirements are met. A reasonable architectural design style can reflect the development background of the city and can deeply tap the value of the building. Therefore, when designing a building, relevant personnel need to fully integrate the building with the surrounding environment, so that urban planning and architectural design can complement each other and promote each other.

2.1. Urban planning and design work covers architectural design
From the perspective of the development of the city and architecture, the city is the carrier of architecture, and the building is the main body of the city. When designing buildings, only by exploring the development characteristics of the city and comprehensively carrying out design work can the city be unique. In addition, when designing buildings, relevant personnel also need to constantly update the design concept and pay attention to the integration with urban planning. In ancient times, urban planning and design will incorporate hierarchical concepts; at present, urban planning and design will pay more attention to architectural design, and people have realized that the effective construction of urban planning needs to give full play to the value and role of architectural design work. Therefore, architectural design needs to fully consider the functions that buildings in different locations need to undertake, and under the premise of practical development, improve the aesthetics of the building, and consider whether it is consistent with the current urban development planning requirements.

2.2. Architectural design and urban planning and design are independent of each other
When designing a building, the staff must strictly abide by the industry's norms and requirements, and improve the aesthetics while showing the practicality of the building. For buildings, their practicability is mainly manifested in waterproof, earthquake resistance, and sound insulation to meet the residential requirements of residents; analysis from the aesthetic point of view, buildings need to have their own style. Combining the architectural contrasts at home and abroad, there are distinct styles of architecture abroad, including Gothic architecture and ancient Roman architecture; my country’s unique architectural styles include Beijing architecture and Anhui architecture in the form of blue tiles and white walls. The design and planning of the city need to analyze the principle of city integrity, to ensure that each part can be coordinated with each other, and also need to meet the safety and economic needs. Therefore, urban planning and architectural design have their own characteristics and are independent of each other.

2.3. Architectural design and urban planning and design need to cooperate and coordinate
When carrying out specific design work, architectural design and urban planning and design need to be unified and coordinated. In the process of designing buildings, relevant personnel not only need to fully consider the practicality and aesthetics, but also need to fully consider from the overall perspective of urban planning to ensure that the various needs of urban development can be met. Related personnel need to coordinate and unify the relationship between the two, otherwise it will have a certain impact and hinder the future development of the city. Analyzing from the perspective of the city, architectural design will have a greater impact on its image and will also affect future development and construction. Therefore, the coordination, coordination and unity between the two
must be highly valued. After meeting these design working conditions, the development of contemporary society still needs to follow the path of sustainable development. Therefore, the coordination of architectural design and urban planning and design is inseparable from the use of environmentally friendly decorative materials, which is a topic of practical significance.

3. The practical significance of applying environmental protection and green decoration materials in building decoration construction

3.1. Reduce environmental carrying capacity and solve the problem of resource

The rising economic level has become the main factor driving the development of the construction industry. However, at the same time, the problems of high energy consumption and high resource demand in the construction industry are still prominent, which makes the carrying capacity of the natural environment remain high and further exacerbates the problem of resource shortage. In architectural decoration engineering, the processing and production of decorative materials required for traditional construction consumes a lot of natural resources, and only has a basic beautification and decoration function, which runs counter to the new social development concept of low carbon and environmental protection. Energy-saving and environmentally-friendly green decorative materials, on the one hand, adopt low-energy, low-polluting production processes, using natural raw materials, new technology materials, and waste materials to be recycled and processed, which helps to alleviate the carrying capacity of the environment; It has realized the effective absorption and efficient conversion of light sources and heat sources, reduced building energy consumption by 20% to 30%, and solved the social development problem of resource shortage.

3.2. Promote the harmonious development of man and nature

Behind the prosperity and development of human civilization is the unreserved demand for resources from nature. The serious “imbalance between supply and demand” between the two has been going on for nearly a thousand years, seriously deteriorating the harmonious relationship between man and nature. Energy-saving and environmentally-friendly green decoration materials, breaking through the concept of traditional simple chemical processing decoration materials, using high-tech, innovative methods and standardized and generalized processing technology, not only meet the indoor decoration modeling effect, but also reduce the energy, Resource consumption promotes the harmonious and balanced development of man and nature. For example, in an office building in a city, oak bark is used to make the cork floor of the office area. On the one hand, the material itself will not affect the normal growth of the tree after being stripped from the oak tree. The completion of resource acquisition does not destroy the ecological balance of the natural environment; On the other hand, the decoration materials have the functions of heat preservation and noise reduction and will not release harmful chemical pollution, which reflects the energy saving, environmental protection and low carbon properties of decoration.

4. Specific application of environmental protection decoration materials in architectural design

4.1. Aesthetic application of native natural materials

Most of the original natural materials are derived from the surrounding areas of building decoration projects, such as bamboo, clay, and shells. Under the influence of regional culture, relatively simple and concise decoration design is adopted to complete the decoration construction of the building. The method of taking materials on site reduces the damage to nature and can also create a passive building with more artistic beauty. For example, red sandstone is exclusively produced in the Lingnan region of my country. The material itself has high strength, high durability, high heat dissipation efficiency, and strong heat insulation ability. Many buildings in Lingnan area use red sandstone as the main material in the decoration stage. The decoration materials show the local geography style while also conforming to the energy-saving design of Lingnan's hot and humid climate.
4.2. Application of energy-saving and environmentally friendly green decorative materials for doors and windows

As architectural glasses, the aesthetics and design of exterior windows are developing in terms of wideness and brightness, but exterior windows are also an important loss area of building energy consumption. In the decoration stage, the choice of energy-saving and environmentally-friendly materials for doors and windows is equally important.

Thermal insulation and energy-saving materials: The heat transfer of doors and windows is mainly affected by the temperature difference between indoor and outdoor buildings. Compared with walls, the thermal resistance of doors and windows is much lower than that of exterior walls, and the heat loss is the largest. In the process of interior decoration, it is possible to reduce the heat transfer coefficient and increase the thermal resistance of doors and windows by improving the thermal performance and sealing of the door and window materials, so as to achieve energy saving of doors and windows. Common energy-saving materials include aluminum alloy thermal insulation profiles, aluminum-wood composite profiles, UPVC plastic profiles, etc.

Low-emissivity coated glass: Different from traditional glass, the coating layer contained in it retains the effective indoor illumination and also realizes the isolated emission of mid- and far-infrared rays. Therefore, it can effectively isolate the outside temperature during actual application. The impact on the indoor environment effectively reduces the energy consumption of building air conditioning, heating and lighting, and has the advantages of energy saving and environmental protection. Especially in areas with hot summer and cold winter, low-emissivity coated glass can use radiation to complete heat conduction, slowing down the heat dissipation rate, and achieving temperature isolation inside and outside the building, achieving the effects of heat preservation in winter and heat insulation in summer. At the same time, it can effectively reflect ultraviolet, mid- and far-infrared rays, avoiding the release of harmful gases and surface fading caused by long-term light exposure to indoor furniture.

Photocatalyst decoration material: As a kind of photo-semiconductor material, the photocatalyst decoration material is the crystallization of human science and technology development. It uses nano-scale titanium dioxide as the main component and smears it on the building decoration materials. It can not only complete photosynthesis such as catalysis and degradation, And it can also have the functions of deodorizing, anti-bacterial, etc., solving the problems of traditional decoration materials releasing large amounts of harmful gases and polluting the environment, and effectively purifying the indoor environment of the building.

4.3. Application of green wall decoration materials

Diatomaceous earth: Diatomaceous earth is a kind of siliceous rock, which is the product of long-term accumulation after the death of diatom plants. Due to the existence of certain pores between adjacent diatom bacteria walls, it can effectively adsorb particles and liquids in the air. It can be used in building decoration materials, which can beautify the indoor environment and complete the adsorption of indoor air pollutants., Has the advantages of anti-flammability, deodorization, and dehumidification.

New type of stone: New type of stone is a kind of synthetic stone, which reprocesses construction waste, ore, metal minerals, etc. in a recyclable way. It has the characteristics of high economy and strong durability. The new type of stone contains more metal minerals, which solves the problem that traditional stone is easy to weather and rain. From an artistic point of view, the stone itself has a variety of textures and unique aesthetic value, which meets the requirements of green building decoration construction.

Soft film ceiling: As the first choice for energy-saving ceiling materials, soft film ceilings have multiple advantages such as fire prevention, sterilization, waterproofing, high durability, and noise reduction. The characteristics of high density enable the soft film ceiling to effectively reduce the heat loss, and the soft film ceiling after special treatment is not suitable for growth of microorganisms. It is currently a widely used energy-saving and environmentally-friendly decorative material. At the same time, the surface and the inside of the soft film ceiling are as bright as a mirror, and are not prone to
discoloration and deformation. Whether in the choice of color or the design of imaging, it can meet the aesthetic design requirements of modern interior decoration.

5. Conclusion
The relationship between urban planning and architectural design is very close. When carrying out specific work, it is necessary to ensure the coordination and unity between the two to make the urban development planning more detailed and complete. From the perspective of the city, the building is the display of its image. The quality of the design work will directly affect the image of the city. Therefore, when the specific work is carried out, the architectural design plan needs to be strictly reviewed, not only paying attention to the building itself, but also checking whether it is consistent with the urban development goals and needs, so that it can be effectively unified with the urban environment. The rapid expansion of the city has driven the rapid development of the construction industry, but the problems of high energy consumption and high pollution in the construction field still plague the sustainable development of the industry. In the construction of building decoration, we make full use of innovative technology to complete the application of energy-saving and environmentally friendly materials, which not only creates a comfortable and healthy living space for residents, but also promotes the harmonious development of man and nature, and enhances the core competitiveness of the building decoration industry. A win-win situation between industry development and ecological balance has been achieved.

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