

The extension and application of ecological technology in green architecture

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Abstract

The constructor of the building provides the public with a safe, comfortable and healthy building environment in life, which is more suitable for people's daily social activities and various living. The application of ecological technology is to carry out construction under the conditions of basic balance without damaging the surrounding environment. Therefore, green buildings could also be called energy-saving and green building structures, which are in harmony with nature. Adapting to each other can achieve the goal of sustainable development.

Keywords

Green building; ecological technology; sustainable; application.

1. Introduction

At present, in the development process of the construction industry all over the world, including our country's construction industry. Green building has become an important trend, and it is significant to promote the progress of the construction field in the direction of energy saving and loss reduction. Under this circumstance, it is of certain value to actively use ecological technology to carry out relevant green building design and construction work, especially in the case of the application of recyclable, green and environmentally friendly materials, design and construction according to the principles of ecological technology. It saves a lot of resources for human beings in construction. Therefore, we should strengthen the exploration of ecological technology in green buildings and continue to improve them, which could greatly reduce the pressure people face in the ecological environment where they live.

2. Development Trend of Green Building

The principle of green building design is the concept of sustainable development, and it can reflect the green design concept, provide certain protection for the environment, and achieve a good sustainable development purpose to some extent. The environment presents a state of mutual balance, and in the process of interaction with each other, there are benign characteristics, and the interior, exterior and greening effects of the building are very good. With the support of advanced concepts, in the future development process, materials that can be regenerated and recycled will be used in related engineering fields, and the engineering structure and the environment will be integrated with each other. Benefit, so that the investment personnel can get the corresponding return after the investment and construction of the project, especially

In terms of resources and energy, in the case of recycling and reducing consumption, the cost can be maintained within a relatively good range. In this way, the investment enthusiasm of investors can be enhanced while the benefits are enhanced, and the national green building will be promoted.

3. Application of Ecological Technology in Green Building

With the acceleration of Chinese urbanization process and the pursuit of economic growth, people have ignored the protection of the natural environment habitually. In China, the industrial and agricultural production or the public lives are generally in a pattern of high energy consumption and low utilization rate. Especially in first-tier cities, the unrestricted demand for energy resources and a large amount of waste water and waste gas have caused enormous pressure on the natural environment. Therefore, how to use the ecological technology to make the city have a sustainable development is imminent.

Architecture is regarded as one of the main users of materials and energy in the world. If the government and planners research ecological technology in depth for sustainable applications of materials and energy, it will not only save energy, but also protect the environment. Thus, developing green architecture and building is important. In general, green architecture refers to applying sustainable ecological techniques in the planning and construction of buildings, and it also has a profound impact on the relationship between human beings and nature. From the perspective of architectural design, combining ecological technology with high-quality design can create a sustainable spatial environment with low-pollution and low-cost. What is more, making full use of ecological techniques can also greatly reduce the energy consumption of construction. Because of these reasons, it is an essential responsibility for designers and governments to develop a technological innovation for the development of green buildings continually. In this section, the solar energy, sustainable materials and insulation of buildings will be introduced.

Solar energy is a kind of new alternative energy resource which is inexhaustible, non-pollution and safe. Because of the sharp growth of the population, there is a reduction in the number of non-renewable fossil fuels, such as coals, oil and gas. So, the application solar energy makes a huge contribution to sustainable development in the resource-starved world. Converting solar energy into electricity, light energy and heat energy can be used in people's daily life. For example, the solar energy is converted into electricity by solar panels, the sunlight can be used to light the room by optical fibers instead of artificial lighting, what is more, solar collectors can convert solar energy into heat, which can provide hot water or heat for people's lives (ibid). The using of solar energy not only protects the environment, but also saves non-renewable energy. For instance, the roofs and facades of many buildings are equipped with solar panels and solar collectors that generate electricity and heat every day. The government installed output meters for every house to collect excess electricity, which generated by solar energy for using in cities. This method can significantly decrease the dependence on non-renewable sources and reduce the overall energy consumption of first-tier cities. Nevertheless, this approach has a few limitations. One major drawback is that the cost is too expensive, because first-tier cities generally have a high density of buildings, the government will take a great deal of work to install the related equipment. Besides, this complex project will cause much time consuming, which may disrupt the normal life of the public (ibid).

Another method is using sustainable materials. The pace of modern life is getting faster than before, which leads to the massive production of waste materials and makes the speed of natural decomposition far behind the speed of accumulation. The emergence of huge garbage mountain not only wastes a lot of material resources, but also occupies the limited land. What is worse, it pollutes natural resources, such as air, soil and groundwater. Thus, it is necessary for architects to explore non-pollution and durable materials in building. An example of this kind of material is "cob", which is made by mixing soil and straw or some mixed fiber materials, so there is almost no pollution to the environment. In addition, it is incredibly strong, because the cottages that were built by this material are still excellent without damage after several

hundred years. However, there is no evidence that it can be used in high-rise buildings for a long time.

Finally, the insulation of buildings is a significant ecological technology. The thermal insulation of most buildings not only has a noticeable influence on the decrease of thermal energy consumption, but also makes a positive impact on the environmental protection. It is a fact that a large amount of energy will be consumed when people adjust the indoor temperature by using air conditioner whether in winter or in summer. This phenomenon has caused seasonal electricity shortage in many areas, especially in first-tier cities. Thus, it is necessary to promote the insulation technology for sustainable urban planning.

There are two specific actions for improving the thermal insulation of architectures. The first one is achieved by using the building shell which has high insulation, and sealing all the external opening carefully, such as doors, windows and ventilation shafts. Although this method is effective on thermal insulation, it also has a disadvantage. For example, the government should have regular inspections for the enclosure system of each house. Another action is the simplest and the most direct way, planting green vegetation on the roof or using roofing materials which are light colored, because it can decrease the amount of heat absorbed by the sun (ibid). However, in first-tier cities, green vegetation may affect architectural style of tall buildings. So how to balance the ecological technology and the building appearance is a challenge for designers.

4. Conclusion

In the concept design of green design, human beings should always maintain the basic concept of mutual balance between human and nature in the development of architecture. Keeping the concepts and principles of sustainable development in architecture to carry out design work, in terms of design and concepts of green buildings, there are many factors and contents that need to be comprehensively considered, and the scope is also very wide. Therefore, architects should fully combine ecological science and technology in traditional and modern architecture, and design and create sustainable, green and healthy development for human beings and nature. to a beneficial mode.

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