



GREEN BUILDING PROJECT”

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Abstract. Green building has an important impact on building design, so it should be emphasized. The application of green building design concept to housing design can better improve the design effect. But the use of green building design concept need to follow certain principles, in order to better serve the construction industry. According to the related concepts in the development of green building design, and combined with practice, this paper briefly analyzes the application of green building concept in housing design. It provides some reference for the development of construction industry.

1. Introduction

China has been advocating green environmental protection, and the architectural design industry is no exception. How to apply the concept of green architectural design to architectural design should be constantly combined with the actual situation of the building actual situation of the building. Selecting environmental protection materials in buildings and reducing energy consumption can better improve the effect of architectural design, and the harmonious development of sight buildings in the environment. This paper analyzes the concept of green building and the development direction of green building, studies the application of green building in housing construction, and discusses in detail some principles that green building design should follow. The normal role of green building design concept can make the construction industry achieve sustainable development, and also make people ' s lives more happy.

2. Concept of Green Building

The 'green' of 'green building' does not mean the general sense of vertical greening, roof garden. Instead, it represents a concept or symbol that refers to a building that is harmless to the environment. It can make full use of environmental natural resources, and is built without destroying the basic ecological balance of the environment. It can also be called sustainable development buildings, ecological buildings, natural buildings. Green building is a high-quality building in the whole life cycle, which saves resources, protects the environment, reduces pollution, provides people with healthy, applicable and efficient use of space, and maximizes the harmony between man and nature. (Figure 1.)

waste of various resources ;two contains the environment, emphasizing reducing environmental pollution, reducing carbon dioxide emissions ;three is to meet the requirements of people 's use, to provide people with applicable space of ' healthy, applicable and efficient '. 'Health ' represents to meet people 's needs ; ' Applicable ' means saving resources, not extravagant waste, but the pursuit of luxury ; 'High efficiency ' represents the rational use of resources and energy, while reducing carbon dioxide emissions and environmental pollution. The formation of green building must first make the design ' green '. Green building is related to the health of residents, operation cost and use function, and has a significant impact on the whole use cycle.



Figure 1. Green Building

3. Development of Green Building in China

The development of green buildings in China is divided into three stages : light green stage, deep green stage and flooding green stage.

3.1. Light green stage (2004-2008)

This stage of green building to pilot-based, there is a technical piling phenomenon, higher incremental costs. At this stage, due to the unbalanced economic development in various regions, the number of green buildings in coastal areas is large. By the end of 2008, only 10 green buildings in China were distributed in Jiangsu, Shanghai, Zhejiang, Guangdong, Hubei and Beijing, and the development of eastern and western regions was uneven. At the same time, because the domestic green building evaluation system has not been popularized, and the LEED evaluation system has been relatively mature, so the LEED evaluation system is widely used. By the end of 2008, there are 10 green standard projects and 23 LEED projects in China.

3.2. Deep green stage (2008 – 2010)

At this stage, the green concept has begun to go deep into the design process, the principle of adapting to local conditions has been widely used, and began to focus on operational effectiveness. For example, Chongqing Energy Conservation Demonstration Center, combined with the example of the architectural style of hanging-foot buildings in Chongqing, fully demonstrates the characteristics of local conditions. Some green buildings are the transformation of old workshops into green office buildings. Construction of ecological technology system in ordinary buildings. Technical system similarity is high, less passive technology. The green building in this stage is lack of characteristics, in addition to a small number of excellent projects, the similarity is very high, and the active energy saving technology is more used, and the passive energy saving technology is less used. The incremental cost of green building is declining. The types of green buildings are increasing. The types of buildings involved in green buildings expanded from early residential and office buildings to hospitals, commercial super high-rise buildings, science and technology museums, hotels, schools, parks and other types.

3.3. Flooding green stage(from 2011)

Green building from single building to urban development, began to evaluate the green building in the whole life cycle, the community generally accepted the concept of green. Ecological cities promote the development of green buildings. At present, the number of cities that have proposed the goal of building an ecological city has exceeded 200, and the construction of ecological cities has also forced the development of green buildings to some extent. The green standard system continues to refine. For different types of functional buildings, green building evaluation criteria will be targeted changes. The real estate industry fully launched green buildings. Vanke Group plans to complete 2.2 million green building Samsung projects in 2011 and reach full green building Samsung in 2020. Greenland Group prepares to achieve more than 80 percent of new development projects meeting 65 percent of energy conservation standards or green building star certification in 2011.

4. Application of Green Building in Housing Design

We should correctly face the serious challenges posed by human survival and development and solve the increasingly acute contradiction between architecture and environment. At the same time, we should also reflect deeply and re-examine our own production and lifestyle. We should not consume resources without restraint and at the expense of the deteriorating ecological environment. Instead, we should vigorously promote the concept of green building in the construction field, propose measures to promote resource conservation and environmental protection, and apply various advanced and energy-saving technologies to buildings. We need to do everything possible to build ecological buildings in the 21st century that are energy-efficient and water-efficient, so that human beings can live in a comfortable environment for a long time.

4.1. Optimization of building layout

In terms of the integration and application of green building design concept, the most common application mode of this design concept is the plane layout design link applied to the whole house. For example, in the design process of housing layout, designers should also focus on the concept of green building design according to the characteristics of different regions set different housing orientation, it can be effectively applied to solar energy, reduce the waste in the process of improving the indoor temperature of the house. The design of vents will greatly affect the air quality inside the house, so as to ensure that people can provide more comfortable living environment experience in winter or summer according to different needs of people. The scientific design of ventilation can effectively speed up the circulation of indoor air. The effective use of wind and solar energy can reduce the application of HVAC system, reduce unnecessary waste, and enhance people ' s recognition of the application of green building concept in architectural design. Such as the slope in the building, we can plan according to the slope of the land, the slope is not very large site can be set to the parking lot, the slope of the larger site can be set to play for children, so not only retain the original land form, but also meet the needs of people ' s lives. On the basis of the concept of green building design, people have gained better life experience, and to a certain extent, they have ensured the harmony between man and nature.

4.2. Rational use of resources and energy

Making full use of nature is an important way of green building design concept. It is particularly important to use clean energy in architectural design. What clean and energy-saving materials need to be selected during construction, especially the selection and application of raw materials. Raw materials should pay more attention to the cleanliness and performance of materials, which can better protect people ' s health and help to manage the environment. In addition, we need to pay attention to the renewable function of materials. China has a large population and a small per capita share of energy sources, so we need to pay attention to renewable energy. Wind, solar, etc., are renewable sources of energy. (Figure2.)



Figure2. Ecological Villa in Korean

At present, with the rapid development of cities, more and more buildings have been renovated or rebuilt and demolished, resulting in a lot of construction waste, which will not only cause environmental pollution, but also waste resources, so it is necessary to reflect the reuse of waste resources in architectural design. New energy can be used in the construction of building walls, and aerated concrete can be used as the filler of the wall, which can play a role in keeping warm. Solar energy can also be installed on the roof of the building, so that solar power generation and heating can reduce the building heat consumption to the greatest extent.

4.3. Selection of green materials

To carry out green building design must pay attention to the use of building materials. Traditional housing construction will use a lot of materials with great pollution and great harm to the human body. While damaging the natural environment and personal safety, it also wastes natural resources to a great extent. The selection of construction materials with green environmental protection performance can reduce the loss of natural resources in the process of housing construction and achieve lowcarbon environmental protection. With the rapid development of the construction industry, a lot of green materials have emerged to create a healthy living environment. Plates used in the past in the decoration process will release a large amount of formaldehyde, adversely affect health, and even cause more serious consequences. Green environment-friendly building materials can not only reduce the presence of formaldehyde and other injuries to the human body, but also better regulate house humidity, temperature, stability and other effects to protect the lives and property of residents. In the development of construction industry, there will be many new materials, so we must adhere to the concept of keepingpace with the times, pay attention to market changes, and ensure the advanced nature of green design.

4.4. Greening design according to local conditions

China 's vast territory, different regions affected by the local natural environment and geographical location, must choose different architectural methods, design different houses for construction. In architectural design, it is necessary to comprehensively investigate the surrounding environment and the longitude and latitude of the region where the house is built, analyze its advantages and disadvantages, actively reflect the advantages of the surrounding environment of the house in the design scheme, try to make up for the deficiencies, and actively use the local climate environment. To a certain extent, it can integrate into the design concept of green building, effectively regulate the humidity and temperature of the house, and provide people with a more suitable living environment. In addition, in the greening design, it is necessary to strengthen the regulation of environmental temperature and humidity, and combine the design of landscape sketches to achieve the functions of purifying air, beautifying the environment, reducing the heat island effect, creating a better natural environment, and realizing the harmonious development of buildings, environment and human beings. For example, the residential interior architectural landscape design, we need to understand and analyze the local natural situation, according to the nature of the community, the nature of the road to choose the green way, For the narrow road, the purpose is for people to walk, it can be planted tall trees to shade. For those motor vehicle roads, some trees with high crown can be planted, so as not to block the driving route. The group green space next to the building can be planned according to the greening standards. The most important thing is to create a harmonious and unified environment between man and nature, so that people can live in a comfortable environment.

4.5. Improvement of construction technology

In modern construction technology, green construction technology can effectively save construction resources and greatly reduce construction costs. The specific application of green construction technology in resource conservation is manifested in the following two aspects : One is the production mode of water saving and electricity saving. Two is to improve resource utilization. We should formulate a sound resource plan, reasonably arrange resources and use resources, arrange reasonable resource allocation. In the design process of specific housing buildings, we must constantly discover and explore new construction technology, actively learn from foreign advanced experience, and on this basis, introduce more advanced construction technology, constantly optimize and enrich the shortcomings and contents of the current construction process, to meet the requirements of the current development of green building design. For some common construction processes, we should pay attention to the simplification of the process. Through the simplification of this process, the current construction time can be greatly shortened to a certain extent, and the construction efficiency can be greatly improved. Under the conditions permitted, some outstanding problems existing in the current housing design process can be compensated and optimized.

4.6. The optimization of structure

In the current housing design process, there are mainly two forms, one is single-layer, and the other is multi-layer. For these two forms, through the effective integration of green building design concepts, any form of building can be sublimated and improved in the process of structural design. The actual performance of the current building and the upgrading of the entire structure can be greatly improved. In the process of building design of its housing structure, the corresponding designers must combine the actual needs of the housing construction, so as to make full use of the entire space. At the same time, it is necessary to further ensure that the height of the current floor is reasonably and effectively controlled, which to a certain extent can greatly meet the comfort of the current user. On

the other hand, it can also ensure that the new demand for the new demand for the the new demand of the residence itself. For example, the lighting design of high-rise civil buildings is mainly determined by the direction of building windows and building spacing. Designers can integrate green building design standards into lighting design, adopt some scientific calculations, and improve the internal light rate of the building as much as possible under the condition of reasonable structure. In addition, scientific air circulation system should be designed to further reduce the use of indoor air conditioning and heating, and save resources under sufficient sunlight.

5. Conclusion

The real implementation of the green concept in the construction industry is a social problem, at least a systematic industry problem. Without the support of national policies and the systematic promotion measures of the government, it is extremely difficult to achieve the green goal of the construction industry, especially for the realization of the green construction process. Only through joint efforts, from the laws and regulations, policies, management, standards, supervision and technical research and other ways, all-round cooperation, can achieve good green effect.

In summary, now we face the country's circular economy, low carbon economy, green building and green construction requirements. The construction industry, especially the construction enterprises, should be responsible for the state, society and future generations, adhere to overcoming difficulties, take the realization of green construction as a pursuit and responsibility, spare no effort to carry out green management system exploration and technology research, and make due contributions to reduce pollution, save resources and achieve efficient construction.

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