

Research on green building design based on ecological concept

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Abstract: At present, the protection of the ecological environment and the promotion of green building has been recognized and widely promoted. With the rapid development of the construction industry, Architecture design will inevitably require the resentation of its unique form and charm to reflect the ecological concept and ecological culture, because of the unique nature of the art and the particularity of the environment. To establish the ecological concept of green building design and vigorously develop the green green building has a complementary role to alleviate the pressure on resources, and to speed up the eco city planning design, and to realize the sustainable development of the city, and to protect the urban ecological environmental.

Keyword: Ecological concept; Green building; Sustainable development

"Green building" as a concept is more and more introduced into the urban planning and design, with the continuous deepening of China's reform and opening up. The idea of sustainable development based on ecological concept is also more and more recognized. In order to better for urban construction and development, we must also change the traditional way of building design, the concept of ecological, green building and ecological city construction as a new force of development to make our city more allow full of vigor and vitality.

1 ESTABLISH THE ECOLOGICAL VIEW OF THE SIMPLE GREEN BUILDING DESIGN

Plain green ecological architecture design concept is refers to the harmonious status of the urban ecological environment, an embodiment of the harmonious coexistence of man and nature values, it to the subject of participation and on the nature of interdependence as the premise, and the organic whole concept of body and urban environment object into the concept of ecological system, simple green building ecological design concept is a in contemporary

ecological culture idea level grow out of and the concept of ecological city occurred resonance mode of thinking, reflecting the ecological culture of the city and green building design and the natural environment of symbiosis and mutual integration and sharing.

1.1 *Harmonious coexistence of green building and natural environment*

Green building should promote urban eco system, a virtuous circle angle as the starting point, fundamentally reduce resource and energy consumption, prevent and reduce waste and harmful substances on the urban environment pollution, realize the city sustainable development.

1.2 *Green building based on humanistic spirit*

Green building design as a kind of essence of life of art activities, not only can meet the aesthetic needs of urban people. It can guide the public culture, strengthen the green building and urban environment formed a sense of order, rhythm and rhyme, arouse people's life of beauty or ideal of life the beauty of feelings and yearning.

2 MANIFESTATION AND DESIGN METHOD OF GREEN BUILDING

Green building is defined on the basis for effective conservation of resources, to the best of our ability for people to provide a healthy living space, it is in the protection of the earth's ecological environment based on using renewable resources and environment construction of a building. In the sixties of the 20th century, the famous Italian architect Paul Soler Rui ever proposed the idea, with the people's attention to the environment, the idea has been recognized by the people and the implementation of, in the recent crisis in the earth environment, advocating and promoting the concept of green building has become an important topic of various countries, the mountain visible, green building is to maintain the ecological balance and the best choice for environmental protection. Green building is not just a green building, green building is actually in water, land, energy saving, material saving, environmental protection and other aspects, from design to operation are the implementation of more stringent energy efficiency targets, to obtain a high efficiency, low consumption, no waste, no pollution, ecological balance of the built environment, make people live more comfortable and healthy.

2.1 *Manifestation of green building*

Building energy saving. Green building must pay attention to "low carbon" benefits, should clean non polluting renewable energy more use to the building ventilation, lighting, heating and so on, in order to achieve energy saving and emission reduction. The construction of pollution prevention and control. The concept of pollution not only in production and daily life, but also in the city building construction to operation and maintenance process.

2.2 *Common design method of green building*

Make full use of natural conditions, such as climatic conditions, hydrological and geological conditions; The design of natural ventilation and natural lighting is adopted as far as possible; The use of renewable energy such as solar energy, wind energy and so on, in order to reduce building energy consumption; The importance of building materials and other resources recycling; And as much as possible the use of wood materials; To strengthen the building envelope insulation performance; The use of heat recovery design; The use of high performance glass design, lighting and shading system.

3 PRINCIPLES OF GREEN BUILDING DESIGN

3.1 *The principle of ecological protection*

Measure of the building is the primary criterion for green building is the on the ecological environment protection degree, whether to maximize the use of ecological resources, on the basis of this, follow the objective law of nature, and nature live in harmony. Such a building can get the masses of the masses, conform to the requirements of the development of the times.

3.2 *The principle of economy*

Green building construction projects, whether it is design, construction or use should follow the principle of economy, should pay attention to the price, in pay attention to efficiency and quality at the same time also should pay attention to the economic benefits, reasonable cost control is very important.

3.3 *The principle of healthy*

The quality of construction can bring good experience to living in households, more humanized design is conducive to the physical and mental health of residents. In the design of better new energy investment, reduce air pollution, making green construction, bring the inhabitant quality and healthy living environment.

3.4 *The principle of modernization*

Green building, as a new type of building, constantly adapt to social changes, the trend of social development is very necessary. Design should be in the appearance and performance, followed by the pace of modernization, designers should continue to improve their own aesthetic standards on the premise of independent innovation, to bring new vitality to the green building.

4 ECOLOGICAL DESIGN CONCEPT OF GREEN BUILDING

4.1 *Construction features*

In the process of green building, the location of the building site conditions have higher requirements, small and medium can be harmful to the health of the human body, such as toxic and hazardous substances, and to the ground temperature is suitable, groundwater to national verification standards. Secondly, the use of green building materials in

the process must pass the relevant department for inspection, to ensure that no harm to human and ecological environment be put into use.

4.2 *Saving energy*

In the implementation of green building process, according to the climate conditions in the construction of "Bu and situation and layout, through natural ventilation design principle of air cooling system, the building to the effective use of the dominant wind direction in the summer, but also by building terrain conditions of the regeneration resources for the design of a solar heating facilities, power generation device and, in this way, we can effectively save energy and little on human health hazards.

4.3 *Saving water*

In architectural design, construction and building materials selection, introduces the theory considering the use and disposal of resources, reduce the use of resources on the basis, and strive to renewable resources. Secondly, through the investigation of water resources construction, making the referral of utilization of water resources, saving water resources effectively.

4.4 *Saving material*

Node dielectric construction characteristics of the climate and resources, and vigorously promote the use of energy-saving, safety, convenience of green building materials, as far as possible in the vicinity of the building from raw materials, in order to reduce the transport process on the environment caused by pollution and resource consumption.

5 GREEN BUILDING AND ECOLOGICAL ENVIRONMENT

5.1 *Green building is the need to maintain the ecological environment*

Ecological environment is good or not were since then affects the human physical and mental health, abide by the laws of nature, with the purpose of healthy, harmonious and sustainable development in short, to improve people's awareness of environmental and ecological, effective control of energy over consumption, encourage innovation and research and development of new technologies, so as to effectively use renewable resources, in the construction of the urban environment full of science for the people to solve and the environmental crisis problem

5.2 *Promote the significance of green building*

Ecological environment and each of us have Xiaoke segmentation, promote the effective implementation of the green building is countries to improve environmental measures, is the great project of human welfare. So, to promote green building, so that people in the concern of its process, to understand the effects of housing construction and consumption of material resources, as well as indoor air to the human body and environment, and in order to form the market demand for green building. With the gradual expansion of market demand, green building can be more widely used.

5.3 *The embodiment of ecological energy saving design in green building*

With the development of social economy, people's outlook on life, world outlook and values will change, they on green building standards will be changed. However, its basic principle is always the same. Is mainly reflected in the following aspects: as far as possible to reduce energy consumption, in order to maintain the ecological balance; try to according to the requirements of households make corresponding adjustment, to ensure the dominant position of the households in the architectural design; try to make human and nature as a whole.

6 GREEN BUILDING AND ECOLOGICAL CITY PLANNING

Green building and ecological city planning and design for the sustainable development of China's economy and the development of China's economy has a vital role in the development of. National planning and design of green building and ecological city has taken a high degree of attention. In the development requirement indicates we should promote green building and urban ecological planning and design work, in the later work more considering the quality of economic development, taking into account the relationship between economic development and ecological environment.

For the construction and urban planning supervision and regulation to be more stringent, the construction of the project is to reflect the concept of green building. In order to better conform to the times development to promote the development of their own ability, we have to do the planning and design of green building and ecological city, in the engineering of the overall design and concrete implementation process should strive to precision, as far as possible reduce carbon emissions and the environmental harmful emissions of ignorance.

National development plan clearly pointed out that the green building and eco city planning consistent strict

implementation of and in relation to the upper transfer, planning and use of stage strictly, only after the audit in order to make the project launched. After the end of the project to strict supervision and inspection, which requires parties and establish a sound strict inspection and supervision mechanism, ensure that there is no slip through the net. So for the requirements of an open business to be more stringent, check the test side cannot be relaxed. To promote the only way to green buildings and urban ecological planning and design of the real green environmental protection, rather than simple shouting slogans and pretend, really promote the plan implementation and scientific, systematic and rational, scale.

7 THE PROSPECT OF GREEN BUILDING

7.1 *Green building can be perceived by people*

At present, the development of green building in China has reached a bottleneck, the key is to popularize, let the people know what is the green building and green building, what are the benefits and so on. There are many popular innovative ways of green building:

First is to promote the development of people to cognition, monitoring and evaluation of mobile phone software, familiar with the green building, green building not only knowledge, but also to stimulate domestic demand and owner of such behavior.

Second is to promote the focus to the masses in the green building will bring the actual interests of party, such as energy saving economy. After calculation, the new green building will be able to recover the wood into 3-7 years, according to the calculation of life expectancy of 50 years of construction, the occupants and owners can enjoy 45 year average net profit period.

Third is the visual focus on the performance of green building in the design. With the development of IT technology, the visualization of green building design and comparable, imagine the future every day to open mobile phone, together with the bed or out of a green building energy saving, my water, rainwater, air quality is in the first of several similar buildings in the community to see a small screen, a what room for improvement. Research shows that the visibility is only due to saving energy and water saving, can enhance the degree of more than 15%.

Fourth is the property management of green building will become a huge emerging industry. This emerging industry focuses on the construction of renewable energy utilization and rainwater collection, water reuse, garbage reuse etc..

7.2 *Internet plus green building based on the integration of Internet and green building*

The first is the design of the internet. At present, China's building energy software introduction or the number of independent research and development complex, but the lack of the integration of cloud computing platform software. We should not only pay attention to integrate the use of cloud platform in the future, at the same time to Party and a large number of application data and network technology in the construction of new parts, green building materials, new materials, new technology and new management operation mode.

Second is new products, new parts, green building materials, new materials and new technology of internet. Through the Internet, new materials, new technology and new technology, designers can easily find a variety of climatic conditions in accordance with local or national standards, the new building materials has reached a new stage of the development of revolutionary. Almost every have emerged a variety of new building materials, many new building materials not only safety, corrosion resistance, heat insulation is very good, also can absorb harmful gases, even enough to release gas beneficial to people's health. These new materials can be quickly applied in the building through the internet.

Third is the Internet identity management. China city will be within two months after the launch of this session of the general assembly of green building assessment system identifies the network monitoring application consulting, and provide free software, realize identification application assessment management consulting supervision of online integration and convenient evaluation, can further reduce the cost of green building consulting.

Fourth is the construction of the internet. Agile production system similar to the invention of the Japanese Toyota Corporation (Just in time), the future construction of green building construction is like building a car that industrialization, the whole process is strictly regulated by the Internet, the components and parts manufacturers and logistics system, the construction site supervision, such as seamless connection, the whole system reaches zero inventory, low pollution, high quality and low cost, which is the green building construction must be the direction of development.

7.3 *Green building being more ecologically friendly, more humane*

Richard Smalley the Nobel prize winner made a list of the ten major challenges facing human in the next 50 years before his death, sorted according to the important degree, the first is energy, second water, third food, fourth is the environment, fifth is poor, sixth is terrorism, seventh war, eighth diseases, Ninth is education. The last is democracy

and population. If the green building be more humane and more environmental protection, create Aquapemic, circulation mode, can solve the above problems in whole or in part.

8 THE PROSPECT OF GREEN BUILDING

To sum up, with the increasing consumption of resources and energy, as an important cause of building energy consumption, green energy saving measures is imperative. Green building is the inevitable trend of the development of construction industry in our country, it takes Scientific Outlook on Development as a guide, adhere to the people-oriented strategy, the ecological concept of sustainable development and actively maintain ecological balance. Focus on the design of energy saving and environmental protection, in addition to the establishment of the quality of life and working environment for people at the same time, can effectively promote the development of green building.