Research on Application of Energy-saving Technology Based on Computer Theory in Green Building Engineering

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Abstract. Low-carbon life has always been a green lifestyle that our country often advocates. As a symbolic color for energy saving, green is also designed as a symbolic representative color for energy saving and emission reduction. For now, energy conservation and emission reduction have become the subject of our sustainable economic and social research. With the continuous expansion of the energy consumption of buildings in various cities in our society, our natural environment has become even worse. However, the current housing construction is the most important goal for the prosperity of urbanization proposed by our country. On this basis, scholars put forward the main topic of green building. Especially under the current situation, the combination of green building and computer-related energy-saving and emission-reduction theories may be the most in line with the energy-saving standards of the advanced era[1-2].

Keywords: Computer, Energy Saving, Green Building, Application

1. Introduction
Perhaps many people have heard of the phenomenon of global warming. Of course, there are certainly many people who do not care about this phenomenon. In fact, the phenomenon of global warming also reminds people to pay attention to the application of energy saving and emission reduction techniques in daily life and daily work. As far as today's construction industry is concerned, although many countries are advocating research on low-energy-consumption buildings, most of the buildings in the world are high-energy-consumption buildings[3]. Moreover, the upper limit of high energy consumption is constantly increasing. Due to the tremendous pressure on the environment caused by this status quo. Researchers put forward guidelines for the implementation of green buildings. Simply put, the main purpose of green buildings is to provide people with a comfortable and healthy living space while ensuring the rational use of natural resources and the friendliness of the environment[4].

It can be said that, in the face of the current theoretical conditions of sustainable development that my country has been emphasizing, the promotion of green buildings is constantly improving and implementing. In theory, the implementation of this architectural style can also greatly alleviate the current natural resource crisis in my country. However, its implementation will inevitably require some external technical assistance[5]. The energy-saving techniques supported by computer theory can maximize the value of natural resources to provide the most complete and environmentally-friendly
construction process. If we combine this technology with the theory of green buildings in virtual and reality, the author believes that this can greatly improve the energy-saving and environmentally friendly attributes of green buildings and promote the future prosperity and strength of green buildings.[6]

2. The application benefits of computer theory energy-saving technology in the theory of green building engineering

2.1. It can improve the effective utilization of today's natural resources
When I was a student, the Eight Honors and Eight Shames also stated that the waste of resources was shameful. However, in reality, not many people can uphold this purpose. According to the statistics of mathematical algorithms, the depletion of natural resources in my country today is operating in the form of exponential growth. As you can imagine, this is an explosive growth data. Well, it also reflects from the side that there are many waste of resources in today's construction industry. Putting computer theory energy-saving techniques in the theory of green buildings can effectively improve resource utilization.

![Figure 1. Conceptual drawing of green building.](image)

2.2. It can greatly reduce environmental pollution problems in engineering construction
When it comes to engineering construction, people may think of building construction first. This is because the process of construction has caused too much trouble to people. The frequency of noise, light pollution and some waste gas and wastewater transmitted to residential areas is very high. It will not only affect the normal life of the surrounding residents, it will also affect the deterioration of the city's environment and carbon emissions. Therefore, the author believes that the second benefit of the application of energy-saving technology in the theory of green building engineering is that it can reduce environmental pollution problems.

2.3. It can effectively alleviate the shortage of resources
In recent years, compared with other countries, the development of cities in our country has great advantages. However, everything has the nature of a double-edged sword. The rapid development will naturally lead to the tension of natural resources. You must know that the shortage of resources will not only affect the implementation of the construction industry, it will even affect all aspects of human life. The application of energy saving techniques in green buildings can greatly reduce the rate of waste of resources in the construction industry. Then, the remaining resources can naturally be supplemented to other areas of social production.
3. Application of energy-saving technology based on computer theory in resource materials of green building projects

3.1. Application of material selection for engineering construction
For green buildings, what we should pay most attention to is the comfort and stability of people's living and use. Secondly, we should consider the important indicators that can achieve energy saving and emission reduction. One of the indicators is the choice of materials. Computer technology can be used to calculate the purchase method of building materials and the calculation of the corresponding purchase volume based on specific investment conditions and practical adjustments. This can effectively avoid waste of construction costs and waste of resources.

3.2. Application of water resources recycling in engineering construction
For every kind of construction, there is a lot of waste of water resources. Large amounts of waste water will also be generated during construction. This waste water will be discharged into the surrounding lake or river water. Even profiteers will discharge it into groundwater. Using the theoretical energy-saving technology of the computer, we can use the technology of water circulation, of course, we can also use the self-filtering of seawater or the cleaning of rainwater under certain conditions. Although the treated water cannot be used directly, it can be used to clean the equipment.

3.3. Utilization of solar energy resources in project construction
For now, solar energy can no longer be regarded as a type of energy that people cannot touch. Fortunately, solar energy is a green resource that people have been looking forward to. Using the energy-saving technology of computers, we can effectively use solar energy in the heating or cooling functions of green buildings. Of course, designers can also use the idea of energy conversion to convert solar energy into other energy sources. In this way, we can effectively alleviate the energy shortage.

Table 1. Resource application and design application of computer theory energy saving technology in green building engineering.

| Resource application                  | Design application          |
|--------------------------------------|------------------------------|
| Selection of construction materials  | Project planning             |
| Water recycling                      | Enclosure structure selection|
| Use of clean energy                  | Building comfort             |

4. Application of energy-saving technology based on computer theory in the design of green building projects

4.1. Application of engineering planning and design
We must carry out appropriate engineering planning when selecting the site of the building. Today's computers have very powerful humanized technology, including the grasp of the weather conditions in a certain area and the choice of terrain. So for the layout of green buildings, we can use computer-assisted technology to construct models in advance. Of course, for the surrounding environment of green buildings, we must also consider the selection of plant species that can be greened in the process of computer engineering planning.

4.2. Selection of the corresponding maintenance structure
The climate differences in different regions of our country are quite large. And the application of our commonly used building envelope structure should be integrated with the surrounding environment of the building. For example, when we are building an envelope structure in the northern region, we need to consider the insulation performance of the envelope structure. Therefore, in this case, wrapping a layer of material with good thermal insulation performance on the outside of the wall is an important measure.
4.3. Requirements for ventilation and daylighting of buildings
People's comfort level in the building mainly depends on the ventilation performance and lighting performance of the building. Using computer-assisted technology, we can connect indoor and outdoor environments with special structures to ensure good ventilation. In addition, the choice of the region of the building can also ensure the quality of daylighting to maximize energy conservation and environmental protection.

5. The practical significance of the application of theoretical energy-saving technology in green building engineering

5.1. Effectively alleviate the negative impact caused by construction
According to the statistics of the People's Daily, when buildings are used in our daily lives, air pollution and other pollution problems caused by buildings occur frequently. Moreover, according to the statistics of scholars in my country's resource research, in the construction industry, our energy consumption has accounted for one-third of the energy consumption of the whole society. Therefore, whether it is pollution or energy consumption, it is a negative impact of construction. The application of energy-saving techniques can greatly reduce these negative effects to improve the rationality of the existence of building construction.

5.2. Conducive to enriching the concept of energy conservation in my country
Energy conservation is not just a topic of talk, it should be an action and innovation. In the construction industry, the relationship between energy conservation and emission reduction and green buildings should be in direct proportion. The application of energy-saving technology in buildings can reduce my country's energy consumption and increase the utilization rate of clean energy. This may be a trivial matter compared to some environmentally friendly industries. However, the author believes that the ideas on this topic are completely conducive to the implementation of the concept of energy conservation and emission reduction in my country.

5.3. This can greatly reduce the cost output of the construction industry
From the perspective of economics, energy conservation and emission reduction are not only concepts proposed for environmental friendliness. It can also be a strategy proposed for the economic management of a company's profits and costs. Simply put, energy conservation and emission reduction can not only reduce environmental pollution, it can also reduce the cost of the construction industry and increase its profit margins. It will provide a huge impetus for the future sustainable progress of the construction industry and the entire society in which we live.

6. The practicality of the application of energy-saving technology in the design of green building engineering

6.1. It is a symbol of progress in the construction industry
In each era, different types of industries that symbolize the era appear. Although the obsolete construction industry has provided a relatively large profit to our country, we cannot do things behind closed doors. It has also caused a great impact on our country's natural environment. Symbolic energy saving and emission reduction cannot be just a description, we should take it as an action.

6.2. It can improve people's thinking about energy saving and emission reduction
In recent years, the improvement of people's comprehensive quality has introduced people into the green planning of construction projects. However, there are still many people who discharge waste gas and chemical water into the natural environment. This has caused a great negative impact on the natural environment. The use of energy-saving technology in the construction industry can improve people's thinking about energy-saving and emission reduction.
6.3. *It can accelerate the advancement of green buildings*
So far, the implementation of green buildings only exists in a small part of the domestic construction industry. People did not apply them all to the construction of buildings. This also shows from the side that the implementation of green buildings in my country is very slow. Then, the author believes that the application of energy-saving technology in engineering design can speed up the implementation of domestic green buildings.

7. Conclusion
For now, people's high standards of life have made the field of green buildings flourish. Since we need green and environmentally friendly buildings, the use of computer-related auxiliary energy-saving concepts is naturally also a great wheel of ideas that can realize and promote energy-saving and emission reduction.

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