

Discussion on Urban Residential Building Energy Efficiency Design

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ABSTRACT With the rapid development of the country's overall per capita consumption level has been greatly improved, so as the development of urbanization, the demand for urban housing construction has greatly increased, and people's living standards but also pay more attention to improve energy saving urban housing, in order to ensure the health of people living environment, green, green. Furthermore, urban residential building energy saving marks the development of urban modernization, strictly follow the principle of sustainable development in our country. With the development of society, resources and energy consumption of large quantities of now, we do not just want to ensure the quality of people's living standards and even possible to reduce energy and resource consumption, so that energy-saving design of urban residential buildings became heavy in the weight. Therefore, this article on some of the problems of urban residential building energy efficiency design of the existence of and the factors affecting these issues briefly analyze and find appropriate solutions to ensure that the urban residential buildings not only meet the needs of people's lives but also to achieve energy saving and environmental protection role.

KEYWORDS

Urban residential buildings
Energy-saving design
Program analysis

1. Introduction

With the rapid development of the country overall, China's construction industry has been rapid development, therefore, resulting in China's energy and resources to accelerate the consumption, in order to implement our strategic approach to sustainable development, we need to on energy and environmental conservation lot of thought. The construction industry is the fastest growing urban residential buildings, including the cooling and heating energy consumption is very serious, so the need to focus on its energy-efficient design in its design; because of energy saving building energy efficiency is an important work section, so the requirements of urban residential buildings should be designed in a very energy conscious design, as much as possible to reduce energy consumption. Therefore, this ar-

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2. Urban residential buildings energy-saving design of the problems in a brief analysis

Because China is still developing, so, in the country's total energy consumption in urban residential building energy consumption accounts for a sizeable proportion, but China's current technology is limited, so energy efficiency is relatively low, serious waste of resources, and there is no good solution. Therefore, we must be more emphasis on urban residential buildings, and from the beginning of the design should fully take into account the problem of saving a lot of energy to prevent the phenomenon, common problems generally have the following: (1) Urban Housing building energy-saving design is very simple, the lack of diversity, poor adaptability. In our current residential design, often considered not very comprehensive, always things simple, the design is simply carried out energy-saving design, have not been able to save energy. For example, simply in the peripheral housing insulation measures car-

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doi: 10.18686/wcj.v1i1.5

Received: October 18, 2012; Accepted: November 24, 2012; Published online: December 27, 2012

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ried out simply, means a single, lack of diversity. (2) Often in order to save energy while ignoring the construction cost, so the cost is greatly increased. While some designers design fully into account the energy-saving effect, but also the use of a very good means to carry out energy-saving, but because of ignoring the cost of construction, which led to increase the cost of housing; therefore, always leads due to cost without excessive energy-saving programs can be designed into the building. (3) Some residential buildings just to perfunctory customer or to reach the national energy saving associated with a number of standard and design process will impose on the construction of energy-saving design, resulting in so-called energy-saving design is just specious virtual table, but cannot real energy savings [1].

3. Solutions for urban residential building energy efficiency design problems exist

3.1. Natural resources in the residential building energy efficiency design of the application

At present, China's energy resources are very tight and therefore more national attention to the use of natural resources, so, now under development and the full use of solar energy to replace the use of oil, electricity and other resources, there is now a very significant effect [2]. So, if the solar energy into the energy-saving design of residential buildings, there will be good energy saving effect, and can reduce the cost of investment for the development of the country is a great benefit.

3.2. Green building in the residential building energy efficiency design of the application

In the residential building, interior comfort and stability mainly by the protective structure outside wall of the decision, but also reduce energy consumption can be very good, too. At present, China's energy-efficient design methods are in the periphery of the protective structure to add insulation layer thereby improving the insulation properties. Although this effect to the energy increase but a lot of the construction cost, and in construction also greatly consumes other energy, so that energy-saving design time cannot be just to simply consider the use of energy-efficient residential building, but full consideration. For example, the use of green building materials, not only can achieve the effect of reducing costs, but also resulted in farmers benefit, can be said to serve two purposes.

3.3. Residential buildings have on the roof of energy-saving design

After the design is good perimeter protection structure, but also on the insulation effect roof design, first of all, you should choose a small difference in thermal density of materials, to reduce the thickness and weight of the roof; then, to reduce water absorption, insulation, prevent the absorption of moisture too much so that the insulation effect is reduced. In the current building materials, the protective

layer is produced by the expanded perlite is the most suitable, it does not cause excessive pollution of the environment, and the cost is low, the construction is simple and convenient.

3.4. For residential buildings for energy efficiency in the design of doors and windows

Windows are houses used for ventilation, access tools, but in a residential building, if poorly designed doors and windows will seriously affect the energy-saving effect of the whole building. Therefore, during the energy-saving design to design great attention to windows and doors, to ensure the good lighting, ventilation under the circumstances, try to reduce the area of the doors and windows, and also possible to improve the air-tightness of windows and doors, its Specific practices are as follows: (1) First, is to a reasonable proportion of the area and residential building on the wall of the window area, designed in accordance with the strict regulations of the country. (2) The choice of building materials, doors and windows as much as possible selection of excellent airtightness and more new material, such as foam, plastic and other materials with good sealing. And they want to use sealing paste material gaps between doors and walls of block, and between fans and box fan with the fan should select the appropriate materials to be sealed to prevent the lower the insulation effect, increasing energy consumption. (3) Reaching safety in the design of doors and windows, after the energy-saving effect, should also use such materials like wool board fastening part of the door filling, in order to increase the insulation effect. And possible selection steel windows or plastic windows, etc. as windows, but do not choose a metal window, so to avoid cold bridge phenomenon occurs. (4) For energy-saving residential building wall warm interior design:

(i) We want to design the structure of the wall, while the main part of the so-called wall structure that is formed by a cast concrete façade, or that so-called pre-products and by the mix of brick and concrete brick.

(ii) To create an air barrier layer in residential buildings, this can be either air-conditioning or heat are able to cut off well, played a good effect of warmth, insulation.

(iii) Increase in residential construction in the protective layer, its role is to prevent the wall of the insulation layer is damaged, and can also hinder the volatilization chamber water vapor. So, thinking it should be possible to select the material for the protective layer A grade fireproof materials from the environmental, energy, health, green, safe point of view, be safe, environmentally friendly, energy-saving effect [3].

(iv) To local conditions, according to residential building in the place and its environment, the positive lessons of failure and success, would have put shock, heat, moisture and to practical use other functions of the residential building [4].

4. Conclusion

All in all, some of the issues on urban residential building energy efficiency design of the existence of and the factors affecting these issues briefly analyze and find appropriate solutions, thus making the city residential buildings to better meet the needs of people's lives and play the energy saving effect. I believe that with the development of the country, science and technology constantly updated and progress, a variety of energy-saving building materials would have appeared, and widely applied to the construction of buildings, and the design also due to lumber, combined with the actual construction site situation to better achieve the energy saving effect.

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