

The Exploration of Popularization and Implementation of Green Architecture Technology

AN WANG^{1, a *}, QIANFEI SHI^{2, b}

¹College of Architecture and Civil Engineering, Taiyuan University of Technology, Taiyuan, Shanxi, 030024, China

²College of Architecture and Civil Engineering, Taiyuan University of Technology, Taiyuan, Shanxi, 030024, China

^A 603432098@qq.com, ^b shiqianfei@163.com

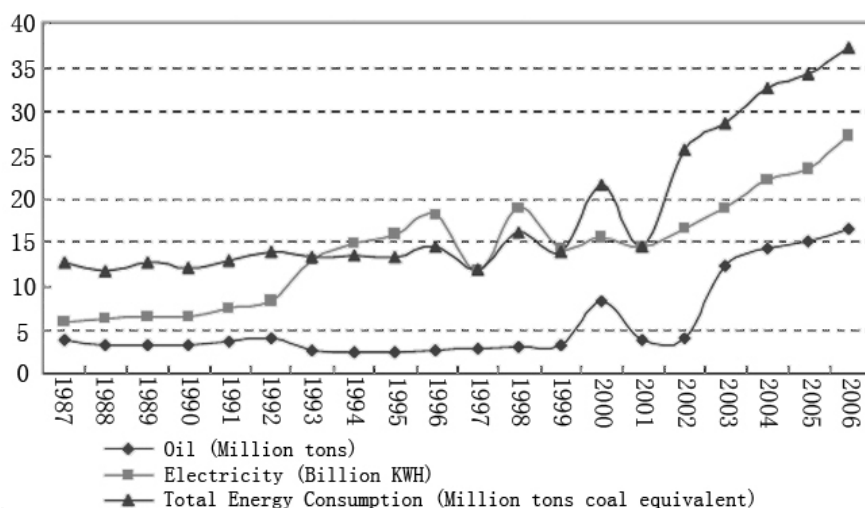
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Abstract. In recent years, the national energy issues for the community sounded the alarm. In China, green building as an emerging industry is still in the initial stage. To promote the application of green technology in the market, we should analyze the obstacles of the development of green building at present. Two main aspect of the obstacles is that high technical cost and people's awareness of energy saving. Through the analysis of the status of the industry, try to find different solutions and more feasibility for the development of green building.

In the rapid development of the sustained economic growth and urbanization in recent decades, the huge energy and resource consumption bring about the problems of the country. The growing construction industry, in terms of energy consumption is also showing a rising trend. The rising energy consumption of buildings has brought tremendous pressure on domestic resource consumption. To break the existing situation, the application of green building technology has become the development trend. However, the development of green building is still in its starting stage, how to realize the construction industry and green energy saving organic combination becomes the important link which need to be solved in the present development of green building.

Background of World Green Architecture . In the seventy's of the last century, owing to the energy crisis in the environment, the world began to build the construction industry oriented green energy saving. Various of forward-looking technology came into being, for the construction industry to introduce new design concept. [1] Along with the energy crisis desalination, the development of the green building did not withdraw from people's view, building design towards reducing carbon dioxide

Table 1. Energy Consumption of Building Sector in China. .



emissions and sustainable development goals. With the development of different projects, different countries have different projects to promote the development of green architecture, and the production of various evaluation system has become the catalyst for the development of green architecture. In the course of the forty years of development, many countries have encountered obstacles, and the problem that the West has faced may be the difficulty of developing green building in China.

Obstacles to Developing Green Building in China

The Use of Energy-saving Measures to Increase the Construction Costs. At present, China is in the initial stage of developing green building, we need to overcome many obstacles to develop green building. The life cycle of a building is decades or so, and the benefits of the green building are long-term. According to the statistics of China's annual new buildings accounted for more than half of the world, the entire market presents a high-speed development of the scene. In such a market premise, both from the perspective of developers and consumers want to pursue the lower initial costs. For now, the energy-saving measures to increase construction costs should not be underestimated, on the one hand, reduce the competitiveness of developers, on the other hand increased the burden on consumers. House owners may be more concerned about the short-term cost of building, they tend not to consider long-term energy savings and other social benefits. To this end, although energy-saving equipment to the long-term interests of the individual or society, the short term can not be accepted by the public.

Developers Lack of Investment Motivation. The ultimate beneficiaries of the use of energy-saving measures is building owners or users, there is no incentives to guide builder is difficult to have power to invest in energy-saving measures. [2] At present China has introduced corresponding policy, to the new building and the green technology have a mandatory requirement, which can reflect our country has begun to pay attention to the problem of building energy consumption in the industrial, but whether the implementation of the mandatory policy effective is to be verified. One is that developers and consumers to pay for the green technology, which is contrary to the principles of the market economy; Two is to consider whether the housing construction of the technical ability to meet the green building design standards. From the development experience of the developed countries, only when social economic and technological strength reached a certain level, can rely on social forces to promote the development of green building. So simply relying on the policy promulgated to improve the popularization of the green building is unrealistic.

The Construction Industry Participants are Dispersed. The construction industry participants are dispersed from government departments to developers, to the designer and building materials suppliers, as well as the final part of the consumer. Currently, the awareness of green building in these sectors is still in primary stage, in addition to the architectural design team to understand the the necessity of using energy saving measures, other departments are in their respective fields sticking to conventions. How to stimulate interest in building energy saving and cultivate a number construction company with R & D capabilities, is the key to fill in the gap of China's green energy saving technology market. In addition, China's market system may also hinder the implementation of green building. China is in the stage of rapid development, the industry contact closely but their goals which will lead to differences appear. In the field of building energy efficiency, the demand for summer cooling and winter heating is reduced by adopting new energy saving measures, this will greatly affect the benefit of coal industry in our country. At this time, the national macro-control is particularly important.

Low Energy Prices. The social costs in the process of energy use in the process are not included in the energy price. In reality, the exploitation and use of energy will have Certain influence on the ecological environment, the state's governance and improvement of the environment has not shown in the form of energy prices. However, there is the social cost of carbon dioxide emissions, greenhouse effect and other energy consumption can not be measured as the energy consumption and produce. Low energy prices in the purchase or operating costs for a drop in the bucket, but also lead to

excessive energy use or even abuse. Even if some users take energy saving measures to bring about cleaner air or smaller carbon dioxide emissions for society, these benefits are shared by the whole society, which is quite weak relative to the energy saving equipment paid by the user. All of these factors lead to the low interest of energy saving equipment.

Energy Saving Technology is not accepted by the Market. China's green building technology is in its infancy, most of the energy saving measures are still being tested, and the application of these technologies is unknown. While some of the technology has been relatively mature, due to the high cost of running, low sales profit, there is no market acceptance in the short term. [3] In addition to consumers, they rarely recognize the energy saving information. Even if they understand the cost of purchasing energy-efficient appliances, and do not understand how much energy saving an energy saving appliances long-term operation can save. Under such imperfect market information, it is hard for consumers to choose energy-saving facilities.

Application Case of Energy Saving Technology in China

Heating System in the First Tier Cities. To sum up, how to promote the implementation of energy saving technology in the construction industry has become an urgent issue. The traditional architectural pattern can not meet the development needs, the road of the former development is bound to bring serious consequences for the national energy and environment. In order to protect the environment and save resources, we should strengthen the research and development, and actively promote energy-saving technological knowledge, let the people know and willing to adopt energy-saving technology, fully promote the initiative of the people to ensure the implementation of the policy. In addition, in the promotion process also need to learn from the experience of European countries, to mature technology to guide the development of China's green construction industry, reduce the risk of detours. At present, China has already tried heating system in the first tier cities, heat meter table to calculate heat quantity is arranged in the house, according to different heat needs of measurement charges. From the original intention of the program, this is indeed a fair and effective energy saving policy, households increase or reduce the heat dissipation of heat by using their own needs, a large number of unoccupied rooms to reduce the consumption of energy. But in the concrete implementation process I found that the general public do not interest in this program. The biggest confusion is not about how to use the meter or the distrust of the new device, this is one of the main factors that can not be promoted successfully. At the same time, many residential property departments do not choose to use new equipment, even if every household installed this equipment, but the property sector remains in accordance with the old charging standard charge heating costs, this makes the meter useless. This shows that a new technology to develop and implement a new technology, is the need to participate in all aspects of the joint.

“Green Building Action Plan”. In 2013 the state promulgated the "green building action plan" proposed: To complete the new green building one billion square meter during the “Twelfth Five Year Plan”; by the end of 2015, 20% of the new urban construction should reach the standard of green building. This document shows the determination and strength of the promotion of green building in China, a large number of green buildings emerged in the past two years. But the design unit in most second tier cities, there are still many questions about the implementation of the green design scheme. The present can become the design basis "green building evaluation standard", the guidance to design work is relatively

limited. Only the evaluation system of green building is given in the standard., there is no

Figure 1. Heat Meter Table



system of energy saving technology, which lead to the design of the blind spot in the technology application. The promotion of energy saving technology is mainly dependent on the communication between R & D company and designer, and this way of promotion makes the architect of the understanding of green technology is often too one-sided. Therefore, we should also continue to promote energy saving technology development and promotion.

The Solution to the Obstacle

National Incentive Policies to Promote the Development of the Industry. In the current situation of our country, relying solely on the market economy to drive the development of green building industry is not enough. Green buildings development process throughout the United States and Europe's development, has an irreplaceable dominant meaning of guidance and promotion of the government. Therefore, we should also deal with the macro control of the construction industry in China: Set up the reform program, popularization and application of new technology, so that people accept and willing to adopt energy-saving measures. As green building social benefits is long, in the initial stage to house builders or users accept the green building and pay for it is not easy, which requires national incentive policies to promote the development of the industry. For example, to tax relief for real estate developers who use energy-saving technology, subsidies the buyers for the purchase of green buildings, all of these will promote the practice of green building applications. The government has funded the green building in the United States to help those who have no financial capacity to update the housing population. Replacing the energy saving equipment of the housing for low-income groups save a lot of energy expenses, such a promotion mode is very conducive to people accept green energy technology. Our country can also set up a pilot in some provinces and cities, let people experience the benefits of energy saving technology, people's recognition of the green building will improve the community effect, which is important for the promotion of green building in the future. [4] Moreover, the state should adjust the energy and taxation aspects. In the past few decades, the level of household income in China has risen, which makes the monthly energy expenses of the majority of households less than the proportion of monthly income, this cause the weakness of people energy awareness. Enhance the energy tax is one way to solve this problem, energy prices is reflected not only energy extraction cost, should be the environmental governance cost counted in. Only by improving the awareness of energy saving and the technology of green building, can we realize the green environment in the real sense.

National Macroeconomic Regulation and Control. At present, building energy saving technology is at the starting level, there are many new energy-saving technology is not accepted by the public, or a technology has matured but can not be put into practice. In such a market, the relevant departments of the state can be carefully divided into green building areas, energy saving technology classification more standardized definition, which helps the industry in the implementation of the relevant laws and regulations. Under the guidance of the technical standards, designers can better design the energy efficiency regulations, at the same time to avoid a technical application to perfection in one's studies, while other good energy-saving technology has been gradually buried. After the formation of the existing energy saving technology, the birth of the new technology can be passed to the relevant organizations of the state for inclusion in the energy saving technology standards. Similar to the patent application in this system, will accelerate the research of green building to encourage more industry companies, can promote the development speed of green building in China to a certain extent. In addition, the energy consumption of the building is mainly reflected in the energy consumption of home appliances, and now the home appliances in our market will be divided into energy consumption. But most buyers do not understand the meaning of energy consumption identification, or some buyers turn a blind eye to the energy consumption of home appliances. In order to highlight the advantages of low energy consumption, the state can subsidize the high level of energy-saving appliances, so that high energy saving grade appliances into the people's sight and get enough attention. In home appliance manufacturers, the state should improve the production

requirements, the appliances do not meet the requirements of energy efficiency appliances do not allow access to the market, and gradually eliminate the use of old technology, strengthen energy saving appliances in the market dominance. The relevant units can also set up a community or public interest groups to carry out universal energy saving education for the masses, and help people understand the specific significance of energy saving appliances and energy efficiency labeling, so that all of the community to understand energy saving and willing to save energy. Only by improving the awareness of the people, can the development of the energy industry be driven fundamentally.

Conclusion. In the rapidly developing of the construction industry, the energy saving and reducing pollution should be the target of every construction participant. The old times building pattern need to advance with the development of the times, people's attention should not just stay on the price. The theme of the new era will focus on the green low-carbon environment, people will change their ideas in order to get a better living environment. Believe that in the next decade, China's green construction industry will surpass the real estate industry as the mainstream of the new era, bring the city to a new chapter in the construction of a page.

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