

Application of Green Design Concept in Daily Ceramic Products

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Abstract

This paper intends to point out the importance of green design concept in product design, especially the application of this design concept in daily ceramic products through the exposition of the connotation of green design. After all, it fully reflects the essential characteristics of design and the benign trend of social development.

Keywords

Green design; Daily ceramic; Product design.

1. The Connotation of Green Design

Designer Viktor Pannaake, in his book "Design for the Real World", explained the concept of green design for the first time in 1971. He emphasized the "theory of limited resources", which provided a theoretical basis for the progress and rise of green design. The author believed that resources were limited, and the focus of industrial design was to communicate the relationship between human society and nature. We should first examine the use and protection of natural resources in the design so as not to waste resources [1]. this view was controversial at that time. The change of green design has also changed with the passage of time. The US Congressional Technical Assessment Office defines green design as follows: "Green design refers to the fact that environmental factors are regarded as design goals or opportunities rather than constraints in the design process. The key point is to minimize the loss of product performance, service life and function while combining environmental problems. The two basic goals are waste prevention and material management [2]. Green design is defined in "green design". Green design, also known as ecological design, design for environment, environment conscious design, refers to the recycling and maintainability of all aspects of the product during the whole life cycle of the product from design to scrap. In addition, green design takes it as the design goal to meet the requirements of environmental objectives at the same time. It can not damage the function, quality and service life of the product. Green design is required to take the concept of environmental protection as the starting point of the product. In addition, it strives to minimize the impact on the environment on the premise that the function, quality and other physical properties remain unchanged. [3] In other words, designing a kind of green product with both practicality and function to meet the needs of people.

The core of green design is the "3R" principle commonly used in the world in the field of industrial design, that is, Reduce, Recycle, Reuse, also called the principle of reduction, recycling and regeneration. We should not only reduce the consumption of raw materials and energy, reduce the emission of harmful substances, but also make the products easier to recover and recycle in production. Green product design includes: green material selection; green manufacturing process design; product recyclability design; product detachability design; green packaging design; green logistics design; green service design; product modular design; product functional design; green recycling design and so on. The degree of utilization of resources and the damage index to the environment should be considered from the selection of product materials, the determination of production and processing process, the selection of

product packaging materials, to transportation and so on in green design. It is necessary to seek a more reasonable design method and procedure, design products that are more practical, more environmentally friendly, and more able to lead the continuous development of the industry. In addition, we should adhere to the sustainable development model based on the concept of green design.

2. Development Status and Trend of Daily Ceramics at Home and Abroad

Daily ceramic products are closely related to our lives, no matter in tableware, tea sets, or coffee sets. China, a country with a large population, has a considerable demand for daily ceramics. The total output of daily ceramic products ranks first in the world, which is a big country in the production and export of daily ceramic products. However, the overall trend is large but not strong. The technical level is not high and the efficiency is low, lack of innovation consciousness and brand awareness. In the meanwhile, the development model has also changed to a certain extent under the influence of the national environmental protection policy. For example, it is from the past "quantitative growth" to the current "introduction of high-quality increment, better and stronger stock". People have a higher demand for daily ceramics throughout the daily and foreign daily ceramic design. Consumers' requirements for daily ceramic products are no longer as simple and economical and practical as before because people pay more and more attention to safety, health, health, environmental protection and other issues. Ceramic products with high quality, beautiful shape, unique design, high environmental performance and good thermal stability have become a universal standard for consumers to choose. As a consequence, the market demand for high-quality household ceramics will be further enhanced in the future. As an ancient industry in China, daily ceramic industry can be traced back to more than 8,000 years ago. As early as the Tang and Song dynasties, China's ceramic industry has been quite developed and small-scale. The five famous kilns of Ding Ru Guan GE Jun had their own characteristics and were famous all over the world in the Song Dynasty. China's porcelain began to be sold abroad, and the Ming and Qing dynasties were the heyday of China's porcelain industry. It shows that in the ceramic industry, our country led the trend of the times with advanced technology and advanced ideas. Western porcelain industry is developed later. At the same time, the introduction of Chinese ceramics in the West makes Chinese ceramics have more regional characteristics in the West.

The production scale of daily ceramic industry is generally very small due to the influence of economic benefits and high-tech ceramics in some western developed countries. However, the degree of automation and the grade of products in the production process are constantly improving. Ceramic raw materials have realized "three modernizations", that is, specialization, standardization and commercialization in Japan and some major ceramic producing countries in Europe and the United States. [4] The daily ceramic industry abroad has developed unprecedentedly rapidly with the professional selection and processing of ceramic raw materials, advanced equipment, mature technology, high level of automation and extensive application of some high and new technologies.

At present, China's daily ceramic industry is mainly in a low-and medium-grade products due to the economic level. It can not enter the international ranks of high-grade household ceramics. What we should do is to recognize the status quo, face the reality and seek change. First of all, the quality of daily ceramics must be recognized by the people of the world. In addition, high-quality brands should take the lead in the market, which should be the key to make Chinese daily ceramics gain a firm foothold. The specific actions are as follows: organize R & D and producing high-and middle-grade daily-use ceramics recognized by the world market to seize the extremely important international market and increase market share of Japan, Britain,

Germany, Nordic and other countries and regions. In addition, middle-grade daily-use ceramics face the third world, and producing popular and inexpensive daily-use ceramics suitable for countries and regions in the Middle East and Africa at the same time, constantly expanding market share. In the meanwhile, we should pay special attention to the daily daily ceramic market, block the expansion of foreign daily ceramics with high-grade daily ceramics, and meet the needs of many daily customers with mid-grade daily ceramics. [5]

3. Green Design Is the Choice of the Times and Conforms to the Law of Historical Development

Green design is a kind of design consciousness with environmental protection consciousness and advanced thinking. People first think of trees, grass and other natural plants when it comes to green. After all, green can remind people of clean, hopeful, full of vitality. Of course, green design also makes the design green, making the design more human, more vivid and more vibrant. Daily ceramic products are closely related to our daily life. Eating, drinking water, washing and so on are all things we must do every day. As a consequence, the green design of daily ceramics can not only facilitate our daily life, but also bring a good feeling in the soul. The purpose of green design is to design a kind of product design which is both beautiful and practical on the premise of protecting the environment. The design of daily ceramics under this concept can be in an invincible position in the future development.

In recent years, environmental protection has increasingly become a common concern of human beings with the increase of global temperature, melting of glaciers and aggravation of pollution. There are many problems such as high energy consumption, low grade, low quality, low process level and low design level from the perspective of the overall development of China's ceramic industry. As a consequence, we need to improve the design ideas and methods of products, improve the quality of products, and develop new technologies as the support of product design. Apple removed the original charger head and launched a wireless charger in the release of Apple 12, which is a kind of technological innovation and an embodiment of environmental protection. At the same time, it shows that green design is the choice of human beings and is the inevitable trend of historical development.

4. The Design of Daily Ceramic Products under the Concept of Green Design

The integration of technological innovation and the combination of green ideas and diversified innovative methods is an effective way to realize the development of daily ceramic design industry in the design process of daily ceramic products. In the meanwhile, it is also an important way and strategy to promote the development of the whole ceramic industry. Green daily ceramic products fully implement pollution prevention and efficient use of energy in all aspects of production raw materials, product design, technology, production and processing and energy consumption. In addition, producing innovative daily ceramic products with reasonable design structure, exquisite craftsmanship under the conditions of non-toxic, harmless and low energy consumption is beneficial to human beings and ecological environment, and practical and beautiful. The daily ceramic products designed under the green concept are not only good for health and ecology, but also in line with the concept of sustainable development. In addition, it will not be out of date and will not be abandoned by the times at present and even in the coming decades and hundreds of years.

4.1. Comprehensive Consideration of Social and Environmental Factors

In fact, the so-called social environment refers to a series of background factors, such as economy, culture, nationality, times and so on. These factors will have a direct impact on people's consumption choices. In addition, they are also the external forces for the formation of people's aesthetic concepts and appreciation ability [6]. As a consequence, we should fully consider social factors in the design of daily ceramics, and pay attention to regional cultural differences and differences in the use of scenes.

4.2. Green Design in Terms of Function

The function should meet the needs of consumers. After all, the function without demand is meaningless and is a waste of resources. As a consequence, useless functions should be subtracted from the design of daily ceramic products.

4.3. Green Design in Modeling

Product modeling comes from a certain design concept. At the same time, the daily ceramics under the concept of green design should consider the harm to the environment caused by the production process while pursuing the beauty of modeling, abandoning those modeling designs that do great damage to the environment as far as possible.

4.4. Green Design in Decoration

Decoration is a kind of modification and embellishment of products. For example, daily ceramic products become unique and ornamental under the modification of color, pattern and structure. Green design is not simple to use green color, but not extravagant and wasteful in the use of color. It selects materials that are beneficial to the environment and ecology, and pay attention to the safety in the process. It is unsuitable to choose over-glaze colors as daily ceramic products decoration when choosing decorative pigments. The fading of Over-glaze colors as tableware and tea sets and long-term use of pigments may endanger human health. At the same time, it is necessary to ensure that the pigments do not contain lead and other heavy metal substances to ensure the basic safety of users.

5. Conclusion

In recent years, the problem of environmental protection is quite serious with the continuous development of economy. In the meanwhile, people's consumption concept has also changed, and the public demand for high-quality green daily ceramic products is increasing. As a consequence, designers should pay more attention to user experience, and delete too many useless decorations and functions. Besides, it is necessary to reduce energy consumption and waste of materials, make the design more convenient and solve problems more directly. Moreover, designers should keep pace with the times, pay attention to sustainable development, design practical, functional, aesthetic and environmentally friendly green ceramic products, leading the public to enhance their sense of social responsibility and green consciousness. Finally attention should be paid to create a way of life that is more conducive to human and social development.

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