

# Study on Function and Form in Green Design under Visual Communication

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**Abstract:** With the development of social economy, the importance of green design is increasingly enhanced, and people's aesthetic ability is also increasing, the public no longer simply judge the quality of design with the strength of functionality. As the material life is increasingly rich, the function and formal beauty of green design are becoming more and more important. This paper discusses the two aspects of form and function in green design respectively, and puts forward the view that green design should pay attention to the organic combination of form and function.

**Keywords:** Green Design; Functional Form Research; Visual Communication; Product Design; Packaging Design

## 1. Green Design

Green design principle is also known as "3R" principle, namely Reduce: reduce the consumption of substances and energy and the emission of harmful substances; Reuse: design the product and its parts to be used after treatment; Recycle: design the recyclability of product materials. It is also called ecological design. After the industrial Revolution, the design has always centered on how to meet the needs of people, but ignored the protection of the natural environment. In order to solve these problems, the design industry has set up the design concept aimed at establishing the harmonious development of man and nature.

This idea by the American design theorist Victor Pakistan, he thinks should be in the design stage of environmental factors and pollution prevention measures into the product design, environmental benefit as the design of the product design goal and starting point, strive to minimize the impact of the product to the environment, it is not only a technical consideration, but also a kind of social responsibility and environmental protection consciousness.

## 2. Functional Studies of Green Design in Visual Communication

### 2.1 Auxiliary Product Functions

The functional green packaging design of auxiliary products is designed in accordance with the core idea of building an energy-saving society and an environment-friendly society. The design method is to follow the basic functions of protective products, convenient transportation and storage, and innovate the structure and form of packaging, so that it can prolong the service life of packaging and reduce the pollution caused by packaging waste to the environment. From the perspective of the structure of packaging itself, packaging can act as product accessories or auxiliary tools to increase the added value of packaging, so that the product and packaging have a certain interactive relationship.

Most modern design is based on the applicability of packaging and products, that is, functionality is the primary principle of design, and the practical function of packaging design lies in order to solve the structural problems of packaging. For example, South Korean industrial designer Sungrae Kim design light box (as shown in figure a) this is a use of solar power environmental lamps and lanterns, all parts packaged in a box of a box, corrugated carton body is the lamp lampshade, as long as according to the box above the nicks and folding line assembly, reuse paper and rope fixed, become luminous light light box.[1]

Through the obvious folding line of the corrugated packaging box, it is assembled into three different shapes: the placed projection lamp frame, the spiral chandelier hood, and a flashlight wrapped around the light source. The folding method also makes the product more flexible and easy to carry. It changes the inherent shape of packaging, and also makes use of the plasticity of cardboard to assemble a variety of purpose auxiliary lamp source

products, so that users can experience more interactive fun in the process of use. Through scientific and reasonable forms of expression, the auxiliary product packaging design can enable consumers to obtain the spiritual pleasure, experience the sense of gain of their

own production, enhance the interactive experience between consumers and packaging, avoid the behavior of when the packaging is used up, and achieve the goal of green environmental protection.



Figure 1. LightBox

## 2.2 Independent Use of Functions and Multifunctional Functions

The independent use function and multifunctional function transformation of green design products are divided into two stages. The first stage is the application of the product's own field. The second stage is the conversion of products into the auxiliary use functions of other products. In the first stage, green design products mainly play functions in their own field. This means that the design, production and use of the product focus on environmental protection and sustainability. At This stage, the main focus is to optimize the core functions of the product to meet the needs of users while minimizing the impact on the environment. In the second stage, green design products may no longer be used as primary use tools, but into auxiliary use functions of other products. For example, some discarded electronic products can be recycled and

processed to provide parts or raw materials for other products. This not only reduces the waste production, but also makes full use of the residual value of the original product. This phase mainly focuses on how to reuse or recycle the product after the end of its life cycle.[2]

## 2.3 Reuse Function

Packaging reuse innovative design is the most common way for the subsequent use of packaging design. Packaging reuse, as the name suggests, refers to the rectification or conversion of the existing packaging, so that it is rich in other functions and convenient to meet the living needs of consumers. This not only requires the innovative design and innovative thinking of designers, but also requires the positive innovation consciousness of users. Packaging design with the function of reuse refers to the function of secondary utilization of the packaging to be discarded

after the user uses the packaging. The purpose is to make users more reasonably use the packaging again, to extend the service life of the packaging. It not only meets some needs of users, but also is an effective way to alleviate environmental pollution.

The reuse of functional packaging innovative design is conducive to the implementation of low carbon and energy saving, which is the inevitable trend of the development of packaging design, and also a new field of modern packaging design. It not only changes the inherent form of packaging, but also uses the material of the packaging bag itself, using it as a variety of other ways, so that users can experience more interactive fun in the process of use. On the premise of respecting people's personalized behavior habits and life concepts, people's enthusiasm is fully mobilized in the process of packaging design, so that the follow-up function of packaging can continue to serve people's life. Refunctional packaging innovative design is a sustainable design concept, which aims to reduce waste and reduce environmental burden, while improving

people's quality of life and use experience.[3][4]

#### 2.4 Affective and Sexual Function

Green product design covers emotional functions, which can enable the product to meet the highest level of needs of users, establish positive emotional communication between the product and users, bring good experience to users, establish loyalty, and make the product stand out, greatly enhancing the core competitiveness of the product. Emotional design is a people-oriented design method. Through the design, the product can bring a positive and good experience to users, realize emotional communication and resonance with users, and enhance the value of the product. If we compare Maslow's hierarchy of needs and draw the product trait pyramid, we will find that products have different levels of characteristics — functionality, dependency, usability and pleasure, while emotional design is in the upper level of "pleasure".



**Figure 2. REBORN of the Chair**

For example, REBORN chair (Figure 2), the core idea of this work is to make the discarded clothes into a new product, making the unused clothes or sheets into the cushion and back of the chair. Outdated clothes that are no longer popular, cloth with special significance, small but still good quality coats can all become part of this chair, leaving these special clothes in a different form and continue to serve as an indispensable part of the home. Because the design cushion and back of the chair are removable and replaceable, different clothes can be replaced to make the chair have more different shapes. Cutting and combining the random patterns created by the clothes can add fun and beauty to the chair.[5][6]

The cloth is the material carrier of the chair, rough or smooth, soft or hard, which is the intuitive feeling that the buyer's target audience can feel through the touch. For a chair, choosing different materials will convey different feelings of use, such as leather material brings a high-grade feeling; the softness of the fabric, often brings affinity; metal hard, there is a sense of power. In addition to the emotional feelings caused by the material, color will also give people different feelings. The reasonable collocation of color in the design will play a different psychological comfort role in people's emotions and meet people's psychological needs. Reasonable and correct use of materials

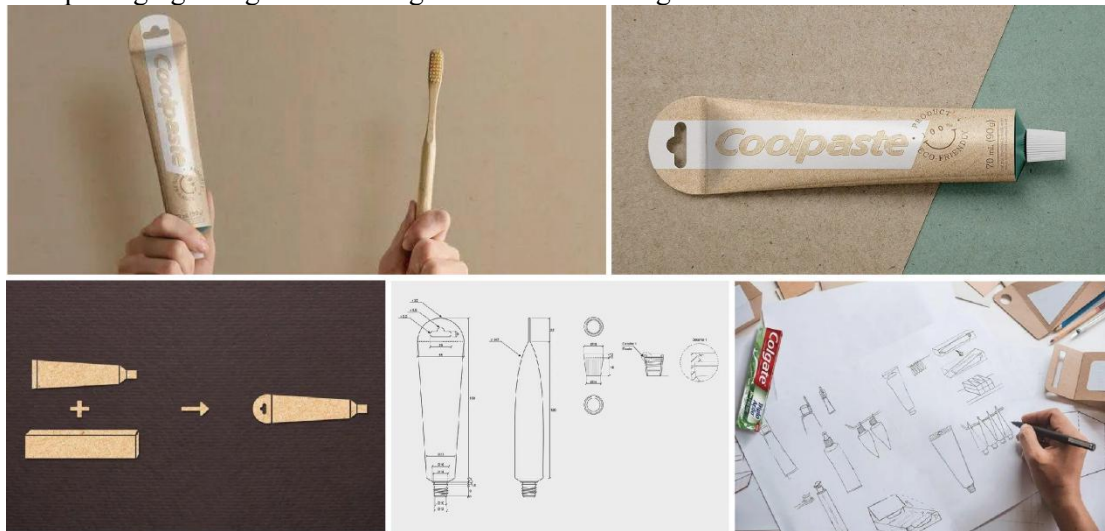
will give extra points to the product, reduce the emotional distance between people and the product, and constantly reflect the emotional principles of safety, environmental protection and serving the people in the design.

### 3. Forstudy in Green Design in Visual Communication

#### 3.1 The Embodiment of the Modeling in the Design

The influence of green design in commodity packaging is gradually expanding. Nowadays, with the progress of science and technology and the development of online shopping, the physical packaging design of online goods is

becoming increasingly simple. Its design purpose is mainly reflected in protecting the goods to avoid the damage caused by vibration, light and other reasons in the express delivery process. The functional packaging design weakens the artistic charm of packaging, but it is the return of packaging design from sensibility to rationality. The green and low-carbon packaging materials, or the intelligent reduction of packaging design process and structure, makes the physical packaging remove the novel appearance, beautiful colors and exquisite patterns, and the physical packaging without halo bloom with different beauty and creativity in the green design.



**Figure 3. Coolpaste, Packaging Design of Sustainable Toothpaste**

For example, the packaging design of this toothpaste (as shown in Figure 3) is a green and sustainable packaging design of toothpaste. In the shape, further reduce the volume of the toothpaste, save the transportation and storage space. The recyclable and degradable plant fiber material is used to avoid the possible pollution after the use, and the choice of material does not affect the durability of the paste in the logistics transportation. After buying a new toothpaste, consumers often first remove the packaging of the outer box and discard it casually. After use, they throw the tube tube of the toothpaste into the trash can. Therefore, the internal and outer packaging of toothpaste is not of great significance to consumers, but it consumes a lot of resources and produces a lot of unnecessary pollution. The product design removes the outer packaging box and uses the paper tube to replace the traditional plastic pipe. Because the

designer omitted the outer packaging design, the traditional stacking form is no longer the best way to display the product, and the free top makes the toothpaste into hanging display. This display mode is also more neat and beautiful, so that the product is fully displayed, easy to arrange, clean and clean.[7][8]

#### 3.2 Reflection of Materials in the Design

Traditional packaging design uses some non-degradable plastic, metal and other materials, these materials will be discarded at will after people use, which not only causes a waste of resources, increases the cost of waste treatment, but also brings serious pollution to the environment. The traditional packaging design is more complex, which adds more production process to the production process, but also improves the production cost of the enterprise, and brings some difficulties to the recycling. In addition, the lack of

environmental protection awareness and sustainable development consideration, is not conducive to resource conservation and environmental protection, which runs counter to the current green environmental protection concept we advocate, also does not conform to the concept of green packaging design. The application of green materials in packaging design is particularly important. In order to better protect the environment in which we live and live, more environmentally friendly materials should be used in packaging design. In this way, we can avoid using traditional plastics and materials that are hard to break down, while also making the environment more beautiful, safe and healthy. In addition, we can also make the environment we live better and provide more choices for our future.

#### **4. The Unity of Function and form in Green Design Under Visual Communication**

The commodities are both a deception to consumers and a waste of social resources; and commodities without formal beauty is a crude commodity and a visual waste. The beauty of function and form in packaging design should keep pace with The Times and have the characteristics of The Times, so as to integrate into the market and even lead the development of the market. Whether a packaging work is full of beauty depends largely on the beauty of form in the design, and whether a packaging work is full of value depends on the functional beauty in the design. In the practice of packaging design, functional beauty and formal beauty are interconnected and complement each other. Excessive packaging not only increases the economic costs for consumers, but also causes a burden on the environment. Nowadays, the use of greener and more environmentally friendly packaging materials is an inevitable trend of future development. Towards the simple and fresh direction, it not only takes into account the beauty of the product packaging, but also contributes to the green environmental protection, which is the newly proposed green packaging function.

Therefore, both functional beauty and formal beauty are an indispensable part of commodity packaging design. Functional beauty makes the packaging has practical and convenient, to meet the basic needs of consumers. Form beauty attracts consumers through visual

elements and design styles and increases the artistic value of goods. Packaging design should emphasize the organic combination of form and function, consider the mutual coordination of appearance and aesthetic and internal function as a whole, and pursue the integrity and coordination of packaging design in form and function.

#### **5. Sum Up**

In the green design under visual communication, functionality is the primary consideration. The design shall meet the basic use requirements of the product while ensuring the quality and safety of the product. Function is the most direct connection between a product and consumers, which determines the value and significance of the product. In green design, the characteristics and technical means of materials should be taken full advantage of, so that the product can reduce the shadow impact on the environment. Sustainability is the core of green design. In the design process, considering the environmental impact, environmentally friendly materials and processes are selected to reduce the environmental load of products. At the same time, attention should also be paid to the recycling and reuse of products to realize the recycling of resources. Through sustainable design, promote the sustainable development of society and create a better living environment. At the same time, the design process fully considers people's needs and habits, so that the product is more convenient, comfortable and safe, pay attention to the ease of use of the product, so that consumers can easily master the function and operation methods of the product in the process of use. Humanized design can make the product better serve people and improve people's quality of life.

In the history of packaging design development, whether the original packaging, such as bark, bark, skins, early packaging, or a variety of organic materials, composite materials, modern packaging, semi-mechanical, semi-manual packaging, or modern packaging, the basic purpose and function of early human packaging design still exist today. To sum up, the unification of function and form in green design needs to consider multiple aspects comprehensively. Only by ensuring the perfection of product functions, environmental

protection and efficiency, and while paying attention to the development of aesthetic performance, humanized design and sustainability, can we realize the real green design in the true sense.

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