

The Visualized Application of Computer Graphic Stills in the Packaging of Pencils

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Abstract. The intermiscibility between product and customer and the subjective impression customer have to the products are related to the quality of product packaging. This thesis talked about the student pencils packaging; Designed the packaging box of student pencils with cartoon image according to the hobbies and interests and the psychological features of pupils; Simply analyzed and studied the manufacturing process of pencil packaging box; Briefly introduced the software we used and the problem we encountered during the design process of packaging and analyzed and summarized the production.

1. Introduction

Packaging design includes packaging decoration design, printing and post-press finishing. Advantaged packaging boxes need production line and packaging bags processing product line; choosing the paper, OPP, POF and thin film as raw material with high quality and famous brand to produce high quality packaging production; integrating the product packaging of customers and solving all kinds of packaging problems in the processes of packaging material selection, design, manufacture, storage and delivery.

Packaging, the accessory of goods, is a very important method to realize the value of commodity and their use. High-quality packaging not only can protect products, easy to be carried and sold, but also can improve the additional value of product and arouse customers' buying inclination. At the same time, packaging is form of art, no matter how good the product is, if the product doesn't have a good packaging, it may be unmarketable because the bad packaging influences the sale of the product.

2. The Market Position and Design Philosophy of 2B and HB Student Pencil

2.1. The Market Position of 2B and HB Student Pencil

The most important function of packaging is protect products and offer convenient circulation. The second function of packaging is making the products more beautiful and conveying the product information. The most direct purpose of packaging design is to arouse customers' buying inclination, so market research and the planning programming of product packaging according to the market research must be made before we started to design the packaging. The customers should be promoted to have a good impression to the brand, product and manufacturer even though they will not buy the product.

For the packaging design of 2B and HB student pencils, the main customers of the product are the children and students above 3 years old, they can be sold both domestic and overseas. So, bright colors, cute and interesting cartoon patterns such as students' favorite cartoon pictures should be selected to highlight the features of products according to the psychological hobbies and features of children while designing the packaging boxes. We should strive to be creative to design more convenient and practical packaging of student pencils.

2.2 Design Philosophy

The cultural connotation of packaging design is to prove the additional value of products. Making the packaging design with rich cultural connotation and prevailing custom of the age is an important

reflection of products' cultural value. As the assistant manifestation of product culture, bearing the cultural spirits of the product and enterprise.

Packaging is not only confined to the design of appearance, but also highlight the peculiarity and particularity of products. The features and the soft function(such as enterprise culture and brand image) should be highlighted in the design of product packaging. As the different types of pencils in the same brand, the same subject is used as the design element on the design of packaging boxes of 2B and HB pencils

3. The Design Scheme and Production of 2B and HB Student Pencils

3.1 The Design Scheme of 2B and HB Student Pencils

To design the packaging with rich image-text and outstanding product feature on the basis of the existing packaging design according to the existing problems of the packaging of 2B and HB and the customers' requests. The design should also satisfy the customers' buying inclination. The overall design scheme should be cleared out according to market survey, design orientation, product analysis and comprehensive analysis of the existing packaging.

CAD, Photoshop and AI software are used in the design of 2B and HB student pencil packaging. I can master the overall design process of packing and use the paint software to do the decoration design expertly and solve the problems I encountered in the process of design and production independently.

3.2 Design Thinking

1) The Logo of the Brand.

Logo, corporate image of a enterprise, bearing the cultural connotation of the enterprise, should be highlighted in design. The logo "Flying Swan" is regarded as the design element. We should strive to make the logo concise, generous and novelty to make deep impression for people and maintain the favorable property transition.

2)Color

Red and blue are utilized respectively in the color of 2B and HB pencil packaging of "Flying Swan" series. Red, with strong symbolism, means the sun, fire, blood and life, it also means the initial rise sun that full of youthful spirit, influences, enthusiasm and optimism. Blue, a pure color, is as naive as children.

3) Pictures

Cartoon images come from the combination of real life and imagination, it is also the most important elements of students' stationery. Nature-closed, cute and exaggerate methods are always used in the design of cartoon zoomorphism. To combine the most popular game-Angry Bird(The pupils' most favorable game), regard the bird as a shooter. To strengthen the main characteristic of the bird on the basis of the simplification of the bird's body. Different kinds of shooting postures are used to highlight the purport that the bird is a shooter to make the cartoon image more vivid. The cartoon pattern effect picture is showed in Diagram 1.



Diagram 1 The Effect Picture of Cartoon Pattern

Shading design: according to the cartoon diagram -- the bird is a shooter, we selected some polygons and crosses that used in shooting games to foil the cartoon pattern on the packaging.

3.3 The Structure of Packaging Boxes and its Dimension Design

1) The Confirmation of Size of Pencils.

According to the sample of pencils offered by the customers, the pencil of 2B and HB are both in the shape of triangle pole with an eraser at the end. The lengths are 19cm, the diameters of pens are 7mm, the picture of pencil is showed in Diagram 2.



Diagram 2 The Picture of Pencil

2) The Basic Structure Design of Packaging Boxes

The pencil packaging boxes are designed for children, so in order to offer the convenience for children to get the pencil from the packaging, immobile the pencils in the packaging, make the display in the market more convenient and reply the customers' requests, the simplest structural of packaging box is selected.

3) The Dimension Design of Packaging boxes.

2B and HB pencils are both in two rows with 12 pencils (6 pencils in each row). The packaging dimension of 2B and HB is calculated according to the pencil and the pencil dimension offered by customers:

The dimension of pencil: length 19mm; Diameter 0.7cm

Calculate the dimension of packaging:

Width $0.7\text{mm} \times 6 + 0.6$ (The permissible error includes the interspace between each pencil, the diameter of aluminum cover and the thickness of paper) = 4.8cm;

Length $19\text{ cm} + 0.2$ (The permissible error includes the length between leather head and the sharpened point) = 19.2cm;

Height $0.7\text{mm} \times 2 + 0.1$ (The permissible error includes the interspace between the pencils and the thickness of paper) = 1.5cm.

The dimension of the two packaging should be $4.8\text{cm} \times 19.2\text{cm} \times 1.5\text{cm}$. According to the related standard offered by the company and experience, the dimension of the packaging cover should be 2.5cm/3.0cm; The dimension of the hole on the cover should be $1.5\text{cm} \times 0.5\text{cm}$. The unfolding dimension of the packaging is showed in Diagram 3.

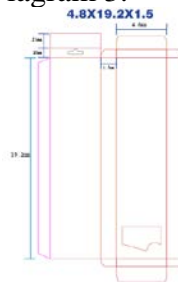


Diagram 3 The unfolding structure dimension diagram of the packaging

4) The Selection of Material

The packaging boxes are designed as straight leg toothpaste box, the paperboard should be relatively strong, and the cost cannot be high, so we select 300g ivory board with film covered on it. We select the unstratified and powderless Asia ivory board with good folding strength and deflection. The film covered board can not only protect the presswork from wearing, make the presswork more brilliant, but also strengthen the presswork and prolong the its preservation time and improve the level of the product.

3.4 Design and Production

3.4.1 The Packaging Box Design of 2B Student Pencil

The consumer group of this packaging are pupils, they pursue relative brilliant and lively visual effect, so the space leftover in the packaging can be decorated by some small items to enrich the

content of the picture. Import the CAD drawing of the packaging structural picture we drew into a new build working area, then import cartoon effect picture we made with PS into the structure chart of this AI work place and build a shearing template. The cartoon effect picture is showed in Diagram 4.



Diagram 4 Cartoon Effect Picture



Diagram 5 Word art picture

Change the inclination of the frame to make it lively and fill each frame with "ADVANCED" and "PENCIL", make "Students' Pencil" work art effect picture with the method of radial direction gradually change. The word art picture is showed in Diagram 5.

The packaging can be put into the market only if it meets all the relevant standards, so, corresponding icons should be added on the backside of the packaging to make the customers to use the product trustingly. Some information such as the name of the company, website, and telephone number should also be added on the backside. The backside effect picture is showed in Diagram 6.



Diagram 6 The Effect Picture of the backside

Diagram 7 The Overall Effect Picture of the backside



Diagram 8 The Design Drawing of side face



Diagram 9 The overall Effect Picture

For the packaging box of students' pencil, too many words on this side will make pupils feel boring, so cartoon pictures are added to enrich the content of this side. The effect picture of backside is showed in Diagram 7.

For the design of side faces and bottom, we added the sample of the pencils inside, product name, information and the brand on the sides of side faces and bottom, but not a single color. Therefore, the striking brand will play a role to draw on customers. The design of side face is showed in Diagram 8.

3.4.2 The Design Effect Picture of HB Student Pencil Packaging.

The design effect of packaging is the direct method to attract customers. The pencil packaging we designed used the design effect is concise, and product highlighting orientation to make the customers get the information of the product as soon as they see the packaging. The relative bright colors are used as the main color is accord with the children's psychology. Bright colors make the packaging fresh, clean and lively. The overall effect pictures are showed in Diagram 9, 10, and 11.



Diagram 10 The effect picture of 2B pencil packaging boxes



Diagram 11 The effect picture of 2B pencil packaging boxes

4. Closing

Through the above-mentioned conception and design process, we know that we should consider the cost of the packaging, the convenience of the customers and the protective for the products sufficiently to design the packaging from the view of humanized. Packaging mainly attracts customers' buying inclination through the interestingness of the cartoon patterns and the safety of the production. The structure of the packaging box is easy, it not only very convenient for kids to get the pencils from it, but also easy to be made through mass production. Bright colors are used to catch the psychology of the customers in the design of layout and picture composition to make the packaging bright and clean. The packaging has the features of strong visual impact, concise and the production is highlighted. But on the aspect of picture composition, there are not many breakthrough points and the pictures are also not very creative. All in all, the packaging match idea of green packing, satisfy the purpose of packaging and make the pencils stable and well protected.

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