

Application of 3D Design Software in Graphic Design

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ABSTRACT

The development of graphic design is inseparable from two important factors: the first is the development of digital technology, resulting in diversified design techniques and communication methods; the second is the changes of aesthetic taste of graphic design viewers. If the development of digital technology is the material basis for the development of graphic design, then the changes in the viewers' aesthetic taste are the spiritual power of its development, and the two complement each other. The vigorous development of 3D design software and its more and more powerful functions have led many graphic designers to apply it in design. This can not only improve the designer's work efficiency, but also greatly enrich the expression of visual language, so that the viewers can get an immersive feeling. In this way, it can improve the brand recognition and serve a good brand promotion purpose.

Keywords: 3D software, graphic design, application technology

I. INTRODUCTION

Graphic design is to pass relevant visual information content to viewers and serve a specific purpose of communication. Graphic design is a design for people to see, it is a design for information. It includes: the design of newspapers, magazines, posters, books and other printed materials; the visual design of communication media such as movies, TV, and electronic billboards; the design of corporate brand recognition systems; the design of product packaging, etc. These are all for the purpose of improving recognition, establishing a brand image and building consumer awareness.

Throughout the ages, humans have never stopped exploring the display of three-dimensional effects on the print media. With the continuous development of 3D design software, the operation is more and more convenient, and the effect is more real. It can express the real effects and super-sensory experience that can not be achieved by two-dimensional design software. In recent years, more and more designers have applied 3D design software to visual communication design, which has brought viewers an excellent visual experience, left a deep impression, and established a high degree of brand recognition, serving a very good publicity purpose. 3D design software can also help designers to complete designs more efficiently and intuitively, such as product packaging design and VIS (Visual Identity System) design. This helps the brand to make reasonable decisions more intuitively, efficiently and accurately, reduce the risk of decision-making, reduce the communication costs of decision makers and

designers, and achieve the common goal of seeking common ground while reserving differences.

The following will discuss the application of 3D design software in graphic design from three areas:

II. THE APPLICATION OF 3D DESIGN SOFTWARE IN VIS (VISUAL IDENTITY SYSTEM) DESIGN

The basic elements of visual identity system VIS (Visual Identity System) mainly include: company name, company logo, standard characters, standard colors, symbol patterns, spoken language, marketing report, etc.; application content mainly includes: office supplies, production equipment, building environment, product packaging, advertising media, transportation, uniforms, flags, signboards, signage, windows, displays, etc.

It can be seen from the content of the application of the VIS that it includes not only applications in the plane, such as flags, signboards, signs, etc., but also applications in three-dimensional objects, such as: office supplies, transportation, uniforms, etc. The traditional method of pasting 2D graphics onto 3D objects is to find suitable image materials for 3D objects, and use 2D software to paste information such as corporate logos onto the objects. This method can meet the basic design requirements, but since the 3D objects are only the image materials searched through the Internet, it takes a lot of time to find the appropriate picture, and it may not necessarily meet the design requirements, which does not well represent the real effect of the 3D objects and the placed environment.

With the continuous improvement of design requirements, designers have been unable to be satisfied with the traditional design methods. Adobe Dimensions can well meet the needs of designers to map on 3D objects. Adobe Dimensions is a 3D drawing software developed by Adobe and matched with Photoshop and Illustrator. It does not require people to be proficient in 3D. As long as they master the 2D drawing mode, they can complete the 3D stereo image production with the assistance of Adobe Dimensions. Adobe Dimensions comes with commonly used 3D models, materials, background images and lighting. It does not require designers to master complicated 3D design skills to quickly complete modeling, lighting adjustment, material replacement and mapping. After completion, they can also directly export the PSD format file in layers to facilitate designers to make further adjustments in Photoshop. Photoshop and Illustrator are the most popular image and graphics software in the field of graphic design. They are produced by Adobe together with Adobe Dimensions, so as to ensure the highest compatibility between the software and reduce errors during the operation.

III. APPLICATION OF 3D DESIGN SOFTWARE IN PACKAGING DESIGN

Packaging design is a systematic project, which needs to find the most suitable balance between science and art. The packaging design should serve: the first is to improve the recognition, establish the brand image and establish consumer awareness; the second is that the structure and material design need to be reasonable to facilitate production and transportation; the third is that it can protect the product. Packaging design includes: packaging styling design, packaging structure design, and packaging pattern design.

A. Designing the 3D shape of the package

Studio 3D series software includes: Studio Toolkit, Studio designer, and Visualizer. It is 3D stereo packaging special effects software specially designed for packaging designers, pre-press production personnel and printing plants. It covers solutions for the entire packaging market: labels, paper jams, soft bags, shrink films, virtual supermarkets, special effects software after packaging, and packaging design software. Studio3D is integrated in Adobe Illustrator, easy to use and understand, because it can directly use the data for design work, turning Adobe Illustrator into 3D design software in an instant. It can create exciting 3D packaging models, observe the effect of the new design on the shelves next to competing products, and present the complete product display process in a 3D environment. People can also view and interact with the packaging in a virtual retail environment.

B. Packaging structure design

After the packaging design is completed, the packaging structure needs to be designed. Esko's ArtiosCAD can easily solve all problems in structural design work. Whether it is structural design, product development, virtual proofing or even manufacturing, it can be completed quickly. All ideas can be formed into design drawings, allowing designers to complete a packaging structure design in a short time.

C. Creating chartlet effect of the packaging

Many graphic designers have such a problem when designing packaging patterns, that is, what is the effect of the designed patterns on the packaging. The pattern design may be very beautiful, but when printed on the packaging, it will be misaligned or the effect is not satisfactory. Fantastic Fold developed by Adobe can solve the above problems well. Fantastic Fold allows the designer to preview the overall effect of the pattern on the 3D packaging model. They just need to place the designed pattern in the corresponding area. The software will automatically put the pattern in place, and can directly export the graphic design of the package, so that the designer can proof and check the design effect of the packaging pattern.

IV. APPLICATION OF 3D DESIGN SOFTWARE IN POSTER DESIGN

The purpose of the poster is to convey the brand's promotional information or the brand's value proposition, and it is an important way for consumers to understand the brand culture and obtain brand promotion activities in a timely manner. In order to attract the viewers' attention, designers will use a variety of design techniques, such as: strong color contrast, exaggerated modeling patterns and the use of 3D effects. The 3D effect of expressing patterns on graphic design is a common design technique used by designers to attract the attention of viewers.

Designers have never stopped expressing the 3D visual effects of text, objects and scenes on 2D planes. The traditional methods are using Photoshop's layer styles to create 3D effects, using Photoshop's brush tool to draw 3D effects, combining three-dimensional materials to create three-dimensional effects, using Illustrator's 3D function to create 3D effects, using Illustrator's perspective grid tools to create three-dimensional effects, etc. These are the principles of perspectiveology and light and shadow, so that the viewers can have the illusion of producing a 3D effect on a 2D plane, and they cannot perfectly represent the 3D real visual effect.

The material basis of the development of graphic design is digital technology, and the development and change of the viewer's aesthetic taste is the spiritual

power of the development of graphic design. With the development of 3D film and television, viewers have obtained a simulated image memory on the screen. This realistic 3D effect greatly increases the viewer's immersion and gives them a realistic feeling of immersion. This kind of visual memory changes the audience's aesthetic taste and makes them want to see a more realistic 3D effect. Therefore, more and more designers use 3D design software in graphic design to express the real 3D effect to achieve the purpose of attracting the attention of the audience.

CINEMA 4D developed by Maxon Computer in Germany is popular with designers because of its simple operation and powerful 3D design functions. The reason can be attributed to the following points:

First, CINEMA 4D has powerful modeling and rendering functions:

- **Modeling:** CINEMA 4D has a wealth of modeling methods — it can import the Illustrator path and can also create graphics independently, and then convert it into a 3D model. It can be modeled by wiring and topology, modeling by sculpting, or modeling by volume.
- **Rendering:** It has a built-in powerful layered material editing system, similar to the Photoshop principle commonly used by graphic designers, easy to understand and operate. CINEMA 4D has a rich preset library, which can add textures, lights and scenes to the model, greatly improving the designer's work efficiency. CINEMA 4D's built-in powerful physical renderer can realize real and rich scenes, and can also support mainstream Arnold, VRay, Octane and other renderers.

Second, CINEMA 4D also has a powerful and rich plug-in, which can quickly create complex three-dimensional text and scene effects, such as cloth effects, smoke effects and lawns, etc., which can realize the designer's imagination and satisfy the viewers' demands of visual aesthetics.

Third, CINEMA 4D can save a variety of commonly used graphic design software formats, and can also save multi-channel layers, which is convenient for designers to further modify the image in Photoshop.

V. THE INFLUENCE OF 3D DESIGN SOFTWARE ON GRAPHIC DESIGN

The reason why 3D design software can be applied in the field of graphic design is first of all because of the continuous development of 3D design software, so that they have powerful functions that meet the graphic designers' requirements in VIS (Visual Identity System), packaging design, and posters in the design.

3D design software can improve the designer's work effect, reduce the communication cost in the design process, and enrich the design expression. The 3D design software breaks through the limitations of graphic design and can express the effect of simulation, bringing a real visual experience to the viewers and leaving a deep impression. It also improves brand recognition and builds strong consumer awareness.

A. 3D design software improves the work efficiency of graphic design

Graphic design is to pass the relevant visual information content to the viewers and serve a specific purpose of communication. Therefore, when the design performance and scheme discussion are carried out, the image is used as the medium. Designers need to display a large number of renderings when communicating with decision makers. 3D design software can quickly create and modify 3D products and packaging models; It can solve structural problems in packaging design, such as proofing and manufacturing; It can quickly paste brand information such as logos, product descriptions and promotional patterns on the surface of the 3D model to check the design effect and adjust the design plan in a targeted manner; 3D design software can also show the real scenes in life, and place the product or packaging in it, show its real application scenarios, and check the design effect from the overall environment. These not only greatly improve the efficiency of the designer, but also facilitate communication with the team and decision makers during the design process.

B. 3D design software enriches the expression form of graphic design

The changes in the viewers' aesthetic taste are the spiritual motive force for the development of graphic design. In recent years, due to the continuous development of digital technology, viewers increasingly like to watch the simulated image effect on the screen. This realistic three-dimensional effect greatly increases the immersion of viewers, allowing them to have an immersive super-sensory experience. This makes viewers more easily attracted by the 3D visual effect, so more and more graphic designers use 3D design software in the design to express the real visual effect. The powerful modeling and rendering technology of 3D design software can stimulate the designer's imagination and creativity to the greatest extent, and give the design work a visual impact beyond the plane. It can leave a deep impression to the viewers, give a rich visual experience, and make them feel great spiritual satisfaction. According to statistics, vision is the most important way for humans to obtain information, so the superior visual experience can make viewers empathize with the brand recognition, thinking that the brand they see also has good taste and value

quality, which can greatly improve brand recognition and serve a good publicity purpose.

VI. CONCLUSION

The two important driving forces for the development of graphic design come from digital technology and the change and improvement of the viewer's aesthetic taste. As viewers are affected by the simulated three-dimensional images, they increasingly accept and even like the real three-dimensional visual effects. This makes graphic designers have to use 3D design software to express more realistic and colorful visual effects, in order to achieve the purpose of attracting viewers. In addition to greatly enriching the visual expression of graphic design, 3D design software can also improve the efficiency of designers in VIS (Visual Identity System) and packaging design, simplify the design process, and reduce the cost of communication and proofing. Because of its powerful functions, 3D design software has changed the methods, processes and expressions of graphic design, greatly filling the deficiencies of 2D design software. The two complement each other and both are powerful tools for designers. It is believed that with the continuous development of 3D design software, it will be applied to graphic design in more, more efficient and various ways.

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