Research on the Design of Art Landscape Sculpture based on Computer Aided

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Abstract. The traditional sculptures are all from the artist's careful carving, which is also the artistic presentation. With the rapid development of computer technology, digital technology has been applied to art landscape sculpture. Through RPM technology and 3D printing technology, we can rapidly shape and mass produce art landscape sculpture. Through computer aided technology, RPM technology and 3D printing technology, we can save the labor cost and mold opening cost of traditional sculpture, which shortens the production cycle and improves the precision and structure of sculpture. At the same time, we can also develop personalized sculpture, which has seriously impacted the traditional sculpture industry. Computer aided design is in line with the digital age of new technical concepts, which has become the main means of landscape sculpture creation. Through computer software, designers can complete the virtual sculpture design intention and intention. Through the generation of VR, manufacturers can better communicate with customers, which makes up for the shortcomings of traditional sculpture in construction. Firstly, this paper analyzes the related concepts. Then, this paper puts forward the necessity of applying computer aided technology to modern landscape sculpture. Finally, some applications are proposed.

Keywords: Big Data, Chinese Martial Arts, Communication Characteristics, Transmission Channels

1. Introduction

This is also an important reason for the high cost of traditional sculpture. The process of small draft design and production is complex, which is completely made by hand and is not easy to modify. Through computer-aided software, landscape sculpture design will be more efficient, convenient and easy to modify. Through flexible and multi perspective design, designers can provide a virtual environment beyond real life, which will be more convenient to deal with landscape coordination and planning. Landscape sculpture art not only affects the artist's spiritual world, but also reflects the artist's ideal, will and aesthetic taste. Landscape sculpture is the main medium to spread urban culture, which is the oath of urban culture and belief. Through the computer, the design environment of landscape sculpture has changed greatly, which has changed to the aspects of easy reproduction,
dynamic, sound and light. Through the convenient and fast operation mode, computer aided technology has opened up a new way for the development of landscape sculpture. In the modern era, computer aided design has become an important tool for landscape sculpture, which is also the ability that every designer must have.

2. Related concepts

2.1. Sculpture concept
Sculpture is the use of various plastic materials or carved, engraved hard materials to create a certain space of visual, touchable art image. Through sculpture, artists can reflect the social life, aesthetic feeling, emotion and ideal works of art, which is a form of artistic creation by adding plastic material. The audience is moved by the space of 3D. Through rigorous structure, accurate proportion and beautiful momentum, sculpture can convey emotion and life appeal to the audience. The outline of the sculpture determines the overall style and atmosphere of the work, such as tall, heavy, happy, sad, etc., which is due to the ups and downs of the work. Through the expression of sculpture, the works make the body more expressive and persuasive, which expresses the aesthetic ideal and subjective consciousness. Through the sense of quantity of sculpture, materials and space can carry the expression of artistic ideas, which will give the audience different sense of quantity. At the same time, the amount of sculpture will directly affect the accuracy of theme expression and viewing effect.

2.2. Classification of sculpture
With the historical inheritance of sculpture, sculpture has formed a variety of classifications, as shown in Figure 1.

![Classification of sculpture](image)

**Figure 1.** Classification of sculpture.

2.3. Classification of sculpture materials
The material of sculpture has evolved for thousands of years, which has formed the relationship between material and technology, material and art. The value of materials in sculpture art occupies a significant position, which can be hard materials and soft materials. With the change of sculpture concept, sculpture almost involves various materials of social life, as shown in Figure 2.
2.4. Application of computer aided software in art landscape sculpture

Landscape sculptors directly show the application value of computer aided technology in modern landscape sculpture design. Under the computer-aided technology, the design method of modern landscape sculpture is not limited to traditional hand-painted, graphic design and other two-dimensional space display. Modern landscape sculpture design method has used a lot of computer elements. Through field measurement, designers can determine the location and scale of landscape sculpture, which can be scaled and adjusted by CAD. Through SketchUp or ZBrush, we can draft the draft and convert it into 3D graphics. Through 3DMAX software, we can rotate and render the image 360°. Through Photoshop software, we can draw and edit images and deal with details. Finally, after the modeling is completed, the designer can make the design scheme into PPT, which will directly show the design effect. The application of computer aided software in art landscape sculpture is shown in Figure 3.

3. The necessity of applying computer aided technology to sculpture

3.1. Promote the popularity of modern landscape sculpture

Computer aided technology integrates a wealth of information. Information carriers are becoming more and more diversified, which has produced the carriers of text, image, sound and animation that can be perceived by disk, optical disk and magneto-optical disk media. Computer aided technology can process and synthesize a large number of information media, which indicates that the creation of modern sculpture art will be greatly enriched. The expression form of modern landscape sculpture can be integrated into a new art form through computer-aided technology. Research shows that different information media bring different understanding and acceptance to human beings, among which vision accounts for 84%, hearing accounts for 12%, and touch accounts for 3%. Multimedia integration can
change the singleness of information media, which has broken through the traditional expression of modern landscape sculpture. Therefore, modern landscape sculpture is more easily accepted by people, which accelerates the popularization and promotion of modern landscape sculpture.

3.2. Enhance the interest of modern landscape sculpture
The interactivity of computer-aided technology enables participants to edit, control and transmit media information, which has changed the passive acceptance of sculpture art in the past. From single reception to two-way audio-visual, people's active choice and control of information are gradually strengthened, which has realized the communication between people and art works. Sculpture art is no longer an ornament or logo, which is no longer exclusive to artists. By sharing videos and clicking the mouse, the audience can experience the fun of modern landscape sculpture.

4. Expression method of computer aided landscape sculpture design

4.1. Representation method of computer aided sculpture static effect drawing
Computer aided landscape sculpture design is a comprehensive art. It not only needs the landscape sculpture designer to have a certain theoretical connotation and cultural cultivation of landscape sculpture design, but also can master the three-dimensional modeling software. Landscape sculpture renderings can be divided into the following steps: analyzing drawings, creating models, adjusting materials and colors, setting up cameras and lights, rendering output, post-processing, etc. In the processing software, we can adjust the color contrast of sculpture. By adding shapes, we can get better results. Finally, the designer can add the placement environment, which will increase the level and scale of the environment, as shown in Figure 4.

![Landscape sculpture of Xiliu Lake in Zhengzhou](image1)
![Square landscape sculpture](image2)
![Campus landscape sculpture](image3)
![Anti Japanese War landscape sculpture](image4)

**Figure 4.** Representation method of computer aided sculpture static effect drawing.
4.2. Computer aided roaming animation technology of landscape sculpture

Using the concept and technology of architectural roaming animation for reference, designers can provide all-round and multi perspective viewing and feeling, which can create a sense of reality and scene. Through better display and promotion of sculpture objects, we can promote the spirit of animation. Through computer-aided technology, we can use the virtual model to build a sense of space to express the theme form. By simulating the point, line and surface of natural and artificial light, we can combine dynamic and static to show animation themes, such as virtual animation of bird's nest and water cube. Computer aided landscape sculpture roaming animation technology is shown in Figure 5.

![Pudong solar power generation project](image1)
![Changchun sculpture love](image2)

**Figure 5.** Computer aided landscape sculpture roaming animation technology.

5. Conclusion

For landscape sculpture design, computer-aided technology occupies a great advantage, which can show all design dimensions from multiple angles. Through computer-aided technology, landscape sculpture can participate in drawing design, 3D conversion, rendering, layer, etc., which can provide a space for modification and display at any time.

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