

Study on the Application and Advantages of Virtual Reality Technology in Public Art Design

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Abstract. Public space design is a combination of art and technology. In the traditional design process, designers constantly modify the drawings to meet the individual needs of customers. The final design plan is determined by repeatedly revising the drawings. The performance of public space design is also Great changes have taken place, from the initial hand-painting, to the computer-aided design computer rendering and roaming animation, and now to the use of computer virtual reality technology to create a highly simulated virtual environment and real-time human-computer interaction design performance. As one of the most intuitive technical means of design performance, virtual reality technology has become a better platform for designers, customers to design, display and evaluate. Compared with traditional design performance methods, the communication time of design solutions is greatly shortened and better to meet customer requirements and other characteristics. Virtual reality technology will also become the best way to express public space design.

Keywords: Virtual reality; Public space; Art design; Digital technology.

1. Introduction

Virtual reality technology is a high-tech technology that developed rapidly in the late 1980s and early 1990s, and is also a very active technical research field in recent years. It uses the computer's hardware and software resources to generate a real-time three-dimensional virtual reality world. In this world, people's visual, auditory, and even tactile feelings seem to be in a real environment. Immerse yourself in this environment and interact with the virtual environment in real time. This technology can imitate:

(1)the real world environment. This real environment may already exist, or it may have been designed but not yet built, or it may have existed but has now changed, disappeared or destroyed. By realistically building geometric models and physical models, so as to realistically mimic the environment in the real world.

(2)The environment of human subjective structure. The environment can be fictitious.

(3)Imitate the invisible environment of human in the real world. This real environment exists objectively, but human vision and hearing cannot be felt.

Virtual reality technology will give participants a real sense of immersion: computer users can blend into the virtual world given by computers. Computer users can also realize human interaction with the virtual environment through the virtual interaction interface. The manipulation of the virtual environment may also inspire more inspiration.

With the rapid development of China's economy, people's living standards have been greatly improved. While people have a rich material life, they also bring about spiritual pursuits. Among them, people 's living environment is more obvious. The design of public spaces is no longer just to satisfy the use of functions, but to pursue more. Enjoyment of aesthetic taste and higher quality living environment. Public space design is a combination of art and technology. In the traditional design process, designers constantly modify the drawings to meet the individual needs of customers. The final design plan is determined by repeatedly revising the drawings. The performance of public space design is also Great changes have taken place, from the initial hand-painting, to the computer-aided design computer rendering and roaming animation, and now to the use of computer virtual reality technology to create a highly simulated virtual environment and real-time human-computer interaction design performance. As one of the most intuitive technical means of design performance, virtual reality technology has become a better platform for designers,

customers to design, display and evaluate. Compared with traditional design performance methods, the communication time of design solutions is greatly shortened and better To meet customer requirements and other characteristics. Virtual reality technology will also become the best way to express public space design.

Virtual reality technology is to make full use of the current 3D modeling and visualization technology to realize the rapid establishment of the city's current situation and planning 3D scenes, provide intuitive and feasible visual aids for urban planning design and management, and the basic design ideas for the construction of 3D virtual scenes For: the whole scheme can be carried out on a computer platform; it can make full use of the existing 2D, aerial remote sensing image and other data to establish a 3D scene; it can be completed in a short time.

Public space design has always been one of the most pressing areas for new visualization technology. Virtual reality technology can be widely used in all aspects of public space design and bring tangible and considerable benefits: show the immersion of the planning scheme virtual reality system Sense and interactivity can not only bring a strong and realistic sensory impact to the user, to get an immersive experience, but also can obtain project data at any time through the data interface in a real-time virtual environment Roaming, human-computer interaction, so many imperceptible design defects can be easily found, reducing irreparable losses and regrets caused by inadequate planning in advance, greatly improving the quality of project evaluation. Accelerate the design speed Using the virtual reality system, we can easily modify at will, change the height of the building, change the material and color of the building facade, change the green density, as long as you modify the parameters in the system. This greatly speeds up the speed and quality of scheme design, improves the efficiency of scheme design and modification, and also saves a lot of funds, providing a cooperation platform. The most important thing is to break the communication barrier between professionals and non-professionals, so that various departments can communicate through a unified simulation environment, can find problems faster, reach consensus and solve some design defects.

2. The Advantages of Virtual Reality Technology Contributes to Public Art Design

Virtual reality technology is conceivable, interactive and multi-perceptive. Designers use these features of virtual reality technology to communicate and communicate with participants through presentations in virtual environments. This kind of virtual environment with three-dimensional spatial sense can act on people's cognitive ability and perception ability, stimulate people to think deeply, and then make people feel immersive and experience the powerful advantages of virtual reality technology.

By virtualizing the building model, the designer can have a more intuitive discussion and communication with the construction personnel. Both can put forward more reasonable opinions and suggestions from their own professional perspectives, thereby promoting the implementation of the plan and improving the quality of the specific construction. And efficiency.

In addition, virtual reality technology can also allow customers who lack professional knowledge to intuitively feel the designer's design concept, allowing customers to more intuitively see the effect of the designer's design, which is also convenient for designers and customers to carry out Deeper communication. At present, virtual reality technology is more mature, and its application in public art design is very common.

3. The Application of Virtual Reality Technology Advantage in Public Art Design

First of all, the continuous development of social economy has provided a broader space for public space art design. People's pursuit of quality of life has promoted the rapid development and progress of public space art design. Public space art design can not only provide people with a good

material living environment, but also create a good cultural atmosphere. The public space art design is embodied by the design of the external space, which involves many contents, such as space design, display, sculpture, greening, road, etc. Public space art design is a systematic project. It is different from other art designs. It mainly plans and designs on the basis of the real environment, improves the real environment with the help of art and science, and then satisfies people for leisure, work and life. Need.

The application of virtual reality technology in public space art design is to display art design works in a more intuitive and vivid way through scientific means. Since the reform and opening up, China's urbanization level has been continuously improved, the real estate development industry has developed rapidly, and public environmental spatial planning and design have emerged. In this process, designers from the original hand-drawn drawings to the use of computers to display renderings, and then to the use of computer animation means to demonstrate the design concept, continue to explore new ways to express the design concept as intuitively as possible. Virtual reality technology is produced in this continuous exploration. It has a very powerful advantage. By creating a more realistic virtual environment, customers can receive information more comprehensively and understand the entire display content more intuitively. At the same time, in terms of the construction budget of the entire design, virtual reality technology can budget the materials and other materials needed for the entire design more accurately, which facilitates the control of future construction costs.

4. The Application Prospect of Virtual Reality Technology in Public Space Art Design

Designers can use virtual reality technology to combine hardware and software technologies to comprehensively express the entire design work, which not only reduces errors caused by different understandings in information transmission, but also reduces some wrong budgets of two-dimensional rulers. Objectively speaking, the application of virtual reality technology in environmental art design makes the entire design process smoother, whether it is the communication between the designer and the client, or the communication between the designer and the construction party, it becomes easier and more convenient.

Virtual reality technology has a very clear development direction, that is, more rapid, efficient and high-quality processing capabilities. With the continuous improvement and update of virtual reality technology, its application in environmental art design is also more extensive, which in turn promotes the development and progress of environmental art design, allowing designers to maximize the expression of design concepts and gain more understanding and stand by.

While we see the unique advantages of virtual reality technology, we should also pay attention to some of its shortcomings. When applying virtual reality technology in public space art design, the designer should follow the people-oriented design concept, more consider the customer's spiritual pursuit and environmental requirements, and put the customer's feelings first. With the continuous development of information technology, the integration of virtual reality technology and other information technologies will bring more convenience to the art design of public spaces.

Virtual reality is a three-information space composed of multiple media. The development of virtual reality technology provides a broad range for the simulation training system. Its development will inevitably have a far-reaching impact on various fields. With the rapid development of social economy, the construction of urban public space is getting better and better, but the design of public art has gradually deviated from the original art. The main reason is the deviation caused in the design and construction. The graphic design used to show different effects in the eyes of different construction workers. Therefore, from the current actual situation, the construction of public space in the future city needs to be built on "culture" and "art", then the best way to fully reflect these two contents is virtual reality . Virtual reality can more intuitively see the design and the expected effect, saving time and money, and providing high-quality, immersive display space for public space design and designers at more levels. With the rapid development of material civilization in today's

society, people's lives are increasingly inseparable from art, and public life will inevitably gradually become artistic. This social environment has brought favorable conditions for the development of virtual reality technology. It can be said that the future development prospects of virtual reality technology are bright.

All in all, the existence of public art plays an important role in the construction and development of cities, and virtual reality technology is an indispensable and important part of urban public art. This must be emphasized, developed and applied reasonably. Give full play to its maximum value to make it better serve the society and benefit mankind.

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