

Virtual Reality Helps Revitalize Rural Architecture

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Abstract. Based on the current situation of rural architecture, regional culture, and analysis of existing problems, the article attempts to promote the optimization and upgrade of the red cultural tourism industry in rural areas through the effective integration of rural architecture and virtual reality technology, and promote the development of rural society and economy. It plays a reference role in the protective design and practice of rural buildings. This has positive practical significance for inheriting and promoting rural culture and revitalizing rural architecture, and it is also an inevitable trend brought by the development of science and technology.

Keywords: Rural architecture; virtual reality technology; red cultural tourism; trend.

1. Introduction

The characteristics of rural architecture and traditional local culture are the crystallization of the long-term development of the village, a treasure endowed by the times, a fusion of the feelings of the rural people, and the regional characteristics of the building. In the context of the active promotion and development of the red cultural tourism industry in the country, with the development of digital informatization, traditional information display and publicity can no longer meet people's needs, so the application of virtual reality technology to the inheritance and protection of red culture has become Inevitably, this technology can make people see, listen, and touch in a three-dimensional space environment, as if immersed, enrich the means of red tourism experience, which is of great significance to the heritage and protection of rural architecture and its red cultural heritage.

2. Development Status of Rural Buildings

2.1 Situation Analysis

With the improvement of the living standards of our residents and the acceleration of urbanization, the number of Chinese villages has been decreasing in recent years. The acceleration of the pace of urbanization has made the villages and towns more and more affected by the urban aesthetics, so that the traditional architectural style gradually disappears in the process of beautiful rural construction, and the beautiful rural landscape is uniform. With the impact of urban aesthetics on rural construction, the history and culture of rural areas gradually fade out of people's attention, and the landscape context of faults is also increasing. In many places, when building new rural houses, there is a lack of ecological landscape theory and technical guidance, and often a single fixed and identical construction model is applied, resulting in the loss of the original rural villages. Anxious to achieve success, there is no face and historical and cultural resources that every village should have, especially the protection of natural features, traditional culture and traditional houses.

Taking the villages in the southeast of Hubei as an example, the rural architecture remains rich, and has obvious characteristics in architectural form. The geographical location close to the surrounding provinces objectively provides convenient conditions for the integration and exchange of multiple cultures in the area. In addition, the topography, morphology and climatic conditions are similar to those in the surrounding areas, and their buildings have common features with the surrounding areas in terms of adaptability to the natural environment. feature. Due to the influence of the natural environment, the residential buildings in southeastern Hubei were mostly dry buildings. During the Eastern Han and Jin Dynasties, a large number of northerners moved south due to war disasters, thus spreading the Central Plains culture to the south. The building also spread

to the southeast of Hubei, gradually replacing the trunk-type building, becoming the main building form in the area, and then gradually forming a courtyard courtyard building. This kind of dwelling house is well adapted to the hilly terrain and hot and humid climate in the southeast of Hubei, and is the product of the fusion of northern courtyard buildings and the culture of southeast Hubei. And there are many historical revolutionary bases in the southeast of Hubei, and the historical imprint of red culture. As an old revolutionary area, the southeast of Hubei has made outstanding contributions to the revolutionary war and the peaceful liberation of our country. The red culture in the southeast of Hubei has developed with the development of history. The party-mass culture, uprising culture, military construction culture, and liberation culture formed during the revolutionary struggle and the war of liberation have gone through nearly a century of storms and baptisms.

2.2 Rise of Red Cultural Tourism

Red tourism is a new form of themed tourism that combines red human landscape and green natural landscape, and combines revolutionary traditional education with the promotion of tourism industry development. In the modern history of China, the Chinese people's opposition to foreign aggression, courageous struggle, self-improvement, and hard work that occurred on the land of China fully demonstrated the historical and cultural relics of major events, major activities, and deeds of great people that fully demonstrated the great national spirit. The scope of red tourism is conducive to inheriting the advanced culture and fine traditions of the Chinese nation. The red tourist routes and classic scenic spots created by it can not only enjoy sightseeing, but also understand the history of revolution, increase the knowledge of revolutionary struggle, learn the spirit of revolutionary struggle, cultivate the spirit of a new era, and make it a culture. The development and utilization of red cultural resources has also become a new growth point in the economy, and an indispensable part of socio-economic development. Since the reform and opening up, the "cultural fever" has been accompanied by the development of society, which also fully shows that when a country is in a period of social transformation, it will inevitably bring about changes in ideology and culture. In addition, the invasion and infiltration of various cultural thoughts in Western countries have made people's ideological concepts and value orientations more diversified. Red culture, as a revolutionary spirit and an advanced cultural carrier, can itself be integrated with spiritual civilization of different times. At the same time, the red culture is also the product of the combination of the basic principles of Marxism and the specific practice of the Chinese revolution. It is a revolutionary culture that has been tested by history and people. Red culture has an inestimable positive role in the development and construction of social culture.

The various architectural monuments that have survived the baptism of the Chinese Revolutionary War have not only political significance, but also their cultural and historical values. Numerous commemorative places and landmarks in the red cultural resources make people relive the glorious years of the Chinese revolution, and at the same time feel the rapid development of the motherland in the new era.

3. Application of Virtual Reality Technology

3.1 Development Status of Virtual Reality Technology

In the early 1960s, Americans proposed virtual reality technology. Virtual reality technology, also called VR technology, is a computer graphics and image integration technology. It embodies the latest achievements in various fields such as multimedia technology, sensing technology, ergonomics, network technology, human-computer interaction technology, simulation technology, and stereoscopic display technology. It is also called spiritual realm technology. Virtual reality is the use of computers to create an environment effect that simulates reality. It simulates human corresponding sensory functions through human touch, vision and hearing, and relies on gestures, language and other behaviors to interact with it in real time to immerse people in In the virtual environment space, creating an immersive feeling is a brand-new human-computer interaction mode.

The introduction and research of virtual technology in China started in the late 1980s. VR is still in its immature stage. One of the earliest and most authoritative units for VR research in China is the State Key Laboratory of CAD & CG of Zhejiang University. VR technology has developed a set of real-time virtual building roaming system, which uses special software and hardware facilities to create a virtual roaming scene of human-computer interaction. In recent years, other domestic universities and research institutes have also made rapid progress in the application and promotion of virtual reality technology, and the domestic market is hot, which provides technical support and practical experience for the application and promotion of virtual technology in the red tourism industry.

3.2 Application of Rural Architecture and Virtual Reality Technology

The red cultural resources in the rural areas of southeast Hubei are very rich and contain rich historical information. At the same time, they also have important revolutionary historical buildings and their cultural values. They are very valuable non-renewable red cultural heritage. However, traditional methods of publicity and display often use text, pictures, videos, etc. for explanation. This method of communication can no longer meet the current cultural communication forms and needs. It has some limitations in the process of transmitting information to the public, so it needs to be displayed using advanced technology, that is, the use of virtual reality technology to satisfy people's hearing and feeling, so that people can learn more about China Traditional culture, when people are in a scene similar to the real, can be closer to history and increase the sense of intimacy, so as to mobilize people's desire to watch while achieving the purpose of protecting architecture and culture.

4. Significance of Virtual Reality Technology to Cultural Heritage and Protection of Rural Architecture

In recent years, with the enhancement of the protection of the red cultural heritage and the inheritance of the red cultural spirit, it is an inevitable trend for young students to approach the revolutionary sacred place for red education. By watching revolutionary films and video explanations in the virtual experience hall to deepen the youth's understanding of revolutionary history, scientifically reproduce and evolve the red cultural resources and historical buildings, so that the younger generation can feel the development of historical culture, which is conducive to the promotion of red culture. Strengthen their patriotism and improve red education more effectively. In addition, virtual reality technology has a strong sense of science and technology, which can significantly shorten the tour time and save costs, and is popular with young people and the general public.

Virtual reality technology can real-time reproduce historical relics and cultural heritages such as historical celebrities' former residences, revolutionary bases, and old sites. Therefore, to improve the protection and use of rural red cultural heritage, the help of virtual reality technology is needed to help red cultural resources and history The building is scientifically represented and displayed. In this way, through the three-dimensional virtual scene, the scientific and technological means of real scene can be very effective for the scientific protection and utilization of red culture and historical buildings. At the same time, the development of red cultural tourism can also promote the development of rural economy.

5. Summary

With its powerful functional attributes, virtual reality technology provides strong support for the digital protection of the historical sites of the Red Revolution. This has a positive and practical significance for the protection and inheritance of rural architecture and red culture. Therefore, in order to realize the scientific and continuity of the protection of local rural cultural heritage and historical buildings, the application of virtual reality technology to build a red cultural VR platform

is the general trend and an important requirement for rural development. In summary, in the development process of the information age, VR technology has increasingly appeared in real society. It is not only used in various fields such as tourism, military, education, construction, e-commerce, etc. Development brings a new technological change, promotes the rapid development of science and technology, and continuously integrates technology into our lives.

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