

Based on 3D Virtual Reconstruction of Modern City Landscape Sculpture Planning Design

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Abstract

INTRODUCTION: with the continuous advancement of urbanization, urban landscape sculpture plays an increasingly important role in modern urban planning. Traditional planning and design methods make it challenging to demonstrate the three-dimensional sense and artistry of sculpture fully; therefore, this study explores a new method of planning and designing modern urban landscape sculpture based on three-dimensional virtual reconstruction.

OBJECTIVES: This study aims to enhance the three-dimensional sense and artistry of urban landscape sculpture planning and design through three-dimensional virtual reconstruction technology to meet the needs of modern urban development better. By using advanced technical means, the planning and design can be made more intuitive and specific and provide urban residents with a more artistic public space.

METHODS: The study adopts advanced three-dimensional virtual reconstruction technology, combined with urban planning and design theory, to plan and design modern urban landscape sculpture. Firstly, relevant literature on urban planning and sculpture design is collected to understand the existing design concepts and technical means. Secondly, a detailed virtual reconstruction of the sculpture is carried out by using three-dimensional modeling software to show the three-dimensional effect of the sculpture. Finally, the design scheme is optimized and improved through fieldwork and expert review.

RESULTS: Through three-dimensional virtual reconstruction technology, this study successfully shows the whole picture of modern urban landscape sculpture. The design scheme not only has a three-dimensional sense but it has also been improved in artistry. The results of fieldwork and expert evaluation show that the new design scheme is more in line with the needs of urban development and adds a unique artistic atmosphere to the urban space.

CONCLUSION: This study has achieved positive results in the field of modern urban landscape sculpture planning and design through 3D virtual reconstruction technology. The new design method not only provides a more specific tool for urban planners but also creates a more creative and artistic public space for urban residents. In the future, the application of this method in different urban contexts can be further explored and expanded to inject more innovation and vitality into urban planning and sculpture design.

Keywords: three-dimensional virtual, virtual reconstruction, modern city, landscape sculpture

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1. Introduction

The diversity of three-dimensional materials is one of the most essential characteristics of sculpture. In a variety of historical contexts, increasing technology and efficiency have led to changes in materials and techniques, from clay to marble to metal, from the production process of hand

metalworking, and finally to modern 3D printing technology (Larue et al., 2023). The different social characteristics indicate the different sculptural forms that have witnessed these changes over the centuries. The emergence of digital technology is an inevitable part of the evolution of the times, and sculpture has changed over time (Madrid et al., 2023). The quality of a digital sculpture is closely related to the choice of tools used by the artist to

