

# Visual Reconstruction Data Point Modeling of Spatial Art in Garden Landscape

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**Abstract**—This paper studies the current urban landscape gardens that can allow people to have close contact with nature through design, and meet people's needs for being close to nature. At this stage, the greening work of landscape gardens can also fully improve the existing ecological environment of the city, which is convenient for my country to build an eco-friendly society. In the process of landscape garden design, space art plays an important role. It is mainly based on space art to model the visual reconstruction data points in the garden landscape. The content of space art design mainly includes the overall topography of the garden, vegetation and planting conditions, and various activity areas. The coordinated design of the garden landscape makes the overall design of the garden landscape more scientific and visually expressive, an increase of 4.6%.

**Keywords**—Visual Reconstruction, Data Point Modeling, Spatial Art, Garden Landscape

## I. INTRODUCTION

The coastal areas of European and American cities have a long history of development. They have experienced a process of prosperity and decline, and are now in the stage of redevelopment. In China, the development boom of the coastal area of modern cities began in the 1990s. With the government's emphasis on the construction of the coastal area and the increase in people's demand for coastal recreation, the landscape and functions of the urban coastal area developed in the early days can no longer satisfy people. The urban coastal areas urgently need further transformation or redevelopment; some newly developed urban coastal areas also need overall planning, development and construction [1-6].

The urban coastal area has a pleasant environment and rich landscape levels, which to a certain extent shows the urban style and features of coastal cities and represents the image of coastal cities. However, the construction of the coastal area of domestic cities lacks the connection with the overall urban planning, resulting in the urban coastal landscape like a piece of "lace rag", the coastal landscape belt has a pleasant scenery, but it cannot be integrated with the internal urban landscape. The concept of public space art first emerged in the United States in the 1950s, and it emerged in China around the century. With the development of economy, public space art is also constantly developing. The biggest feature that distinguishes it from other art is "publicity", which appeals to the interaction between the public space artwork and the public environment, the interaction between the public and the public space artwork, and the public space art the interactivity is the driving force for the development of public space art. Cultural inheritance is not to inherit traditional culture intact. It should take its essence and discard its dross. It means to carry forward the positive and social requirements. Those

backward and decadent things must be transformed or eliminated. Therefore, cultural inheritance is innovative. The so-called "innovation and innovation" refers to the critical inheritance of old things and old culture, removing dross, taking its essence, and creating new ones [7-14].

We can't talk about innovation in vain, we should combine the spirit of the times and pursue cultural innovation. The goal of computer vision is to use two-dimensional images to realize the perception of external things and the objective three-dimensional world. The method and technology are three-dimensional vision functions that the system uses computer and other related auxiliary equipment to achieve. The three-dimensional information we are talking about includes many, among which posture, position, shape, movement, etc. are the focus of our research. At the same time, three-dimensional objects must be stored, described, recognized and understood. Due to the increased requirements for detection methods and the booming visual detection technology, the development of image visual detection technology has been promoted. Visual inspection technology is a modern inspection technology that uses image information as a detection method, cooperates with related knowledge such as optics, and uses computer knowledge to solve the problem of detection. Computer vision systems have many advantages, such as: rapidity, information richness, easy integration, etc., and the designed computer inspection equipment has many advantages. Chinese garden landscape plant design art takes Confucian cultural thought as its core concept, and Confucian aesthetic thought and characteristics as its constituent factors [15-19].

With its unique ideological and spiritual cultural connotations, Chinese garden landscape highlights the important role of Confucian cultural aesthetics in the art of garden landscape plant design. Harmony and unity are an important manifestation of Confucian aesthetics for the aesthetic form of garden landscape plant design. The art of Chinese garden landscape plant design has a profound imprint of Confucian aesthetics and has a unified style of beauty and goodness. Confucianism advocates benevolence as the foundation and happiness as the influence, and it pays more attention to the tempering of personality and the cultivation of character. Chinese garden landscape plant design art pays more attention to not only the beauty of form, but also realizes the pursuit of Confucian cultural thoughts of beauty and kindness through the unity of shape and color, form and content. The Chinese people have unique ingenuity in the design and use of plants in the garden landscape, creating distinctive national characteristics and unique cultural interest. In the process of shaping the traditional garden landscape plant culture, it will naturally be carved with the imprint of the

times, such as Spring and Autumn Orchid Culture, Tang Dynasty Peony Culture, Song Dynasty Plum Culture, etc. These imprints constitute the history of the growth of Chinese garden landscape plant culture. In the Western Jin Dynasty, Tao Han wrote "The Plants and Trees in the South", the later Wei Jia Sixie wrote "Qi Min Yao Shu", Tang Wang Fangqing wrote "The Garden and Trees and Trees", Song Ouyang wrote "Luoyang Flowers and Trees", Ming Wang Xiangjin wrote "Two Ru Pavilion Group Fang Pu" [20-24].

## II. THE PROPOSED METHODOLOGY

### A. Chinese Garden Landscape

The art of Chinese garden landscape plant design embodies the aesthetic characteristics of typical Confucian cultural thinking. Chinese garden landscape plant design emphasizes that beauty and goodness are inseparable. Beauty and goodness can achieve the perfection of life from different angles. Goodness can make people symbiosis and beauty can be shared. The primary feature of the aesthetic psychology of Confucian cultural thought is beauty and kindness, and the highest state is perfection. In addition to the pursuit of beauty, the art form of Chinese garden landscape plant design expresses a strong demand for good. The material embodiment of the aesthetic appeal of Chinese garden landscape plant design is full of the working people's eager hope and unremitting pursuit for a better life, and reflects the unchanging national cultural psychology of Confucianism.

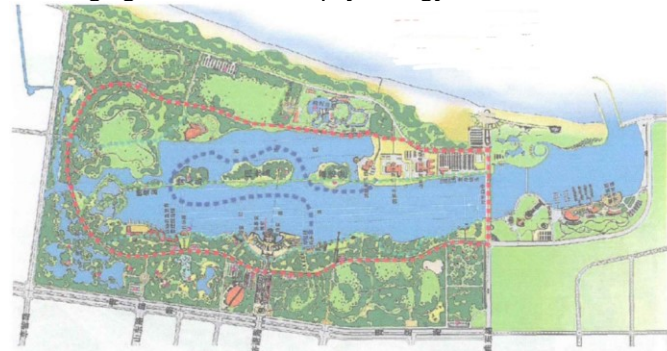


Fig. 1. Overlooking the garden landscape

In 19 years, Harp Socks used the concept of giving one free to the community in the ecological form in the design of the coastal farm residential area in the north of San Francisco in the United States; W combined with the environmental characteristics and environmental protection as the starting point for the design, retaining the wild landscape of coarse mines and the topography of natural cliffs. Pay attention to the protection of wild resources, and conduct in-depth research on local topography, landforms, vegetation and other aspects. In the 1960s, the United Kingdom established the "Marine Enterprise District" to study how to effectively control the development of the coastal zone. In the 1990s, the United States developed the coastal zone from a regional perspective, which promoted the economic development of the six counties running through the coastal road in Georgia. In 1998, the planning of the Cape Code Coastal Area in Massachusetts used GIS technology to conduct a conceptual regional analysis

of landscapes and recreational experiences, and established a corresponding database to facilitate subsequent development and management.

Since the 1960s, the redevelopment of coastal landscapes in foreign cities has mainly focused on the revival of abandoned piers. Successful cases include the Baltimore Inner Harbor in the United States and the Newport in Yokohama, Japan.

### B. Visual Reconstruction Data Point Modeling

Modern information technology has knocked on the door to the era of "reading pictures". The aesthetics of popular culture tends to be visualized, and people generally enjoy the cultural lifestyle of fingertips. The aesthetics of texts is gradually declining, and the ideographic space of texts is suppressed. The "eyeball effect" captures a lot of Fans are more marketable and can bring visual pleasure and intuitive perception to viewers. At present, my country's red culture communication mainly relies on traditional media such as material, language, management, and activities. Although there are also Internet media involved, the text annotations focused on the introduction of scenic spots and relevant news reports are a bit single and boring, but neglected. The visualized delivery of multimedia does not make full use of the "three micro-ends", namely, Weibo, WeChat, micro-video, and mobile clients for visual communication, and fails to capture the characteristics of contemporary audiences. The use of digital technology to collect information, restore and reproduce, optimize and reorganize, visually display the red cultural resources and the red spirit materialized in the red cultural resources is still lacking.

$$\sigma^2 = \frac{1}{n} \sum_{i=1}^n (Y_i - X_i^T B_n - Z_i^T \alpha(T_i))^2 \quad (1)$$

$$\min_{A,E} \text{rank}(A) + \lambda \|E\|_0 \quad (2)$$

The digital technology of transforming red culture into visual text needs to be improved, and the visual text of red culture urgently needs to be further enriched, and the intensity of creating a visual feast of digital dissemination of red culture needs to be strengthened. At the same time, attention should be paid to avoid the simplification and one-sidedness of red cultural vision, avoid blind pursuit of pleasure and neglect beauty, and prevent excessive visual dependence from replacing brain thinking. It is necessary to strengthen digital technology to spread the visual elements of red culture, display the deep connotation and ideological essence contained therein, and expand the influence of red culture. The origin and the red spirit materialized in the red cultural resources are still lacking. Watching makes it impossible to have a personal visual experience and visual discovery, and the creativity and individuality of visual art loses the prerequisite for obtaining it. The cultivation of these two most essential and critical abilities in the basic qualities of visual art becomes empty talk. Art exam-oriented education provides a large number of students with incomplete and distorted artistic

qualities in higher art colleges. In addition, formal technicalism as a mainstream teaching orientation in higher art academies has always occupied a leading position, which makes the existence of exam-oriented education. Dogma and malpractice can be continued and magnified at the stage of higher art education.

### C. Application of Space Art in Garden Landscape

Public space art includes "public space" and "art" on the surface of the text, which means works of art placed in public places. Public places refer to open spaces, including squares, parks, railway stations, commercial plazas, schools, etc. Mr. Yuan Yunfu, a contemporary public space artist, believes: "Public space art is a relatively special large-scale art form created by artists in an artistic language that is consistent with the external form and style of the environment. It is designed for public buildings, environments and Popular art designed and completed for mass activity venues and facilities, including murals, sculptures, gardens, and comprehensive design of urban landscapes.

$$n_i = \sum_{j=1}^m (\|p - q\| < r) \quad (3)$$

$$y(w \bullet \quad (4)$$

The creative theme of Chinese garden landscape plant design art draws inspiration from the natural world, takes Confucian thought and culture as the creative foundation, grasps the natural consciousness and natural breath in the creative garden landscape plant design, so that people can enjoy the simplicity and tranquility of nature physically and mentally. Reasonable, eternal, and feel the beauty of life, let the Confucian cultural spirit give people the care of the soul. The aesthetic essence of Confucian cultural thoughts is based on rationality, ethics and morality as the foundation of the aesthetic activities of rationality, understanding of moral personality in the aesthetic experience of art and nature, and focusing on the tempering of personality and the cultivation of character. Confucius' natural aesthetics is "Bide", which attaches moral concepts such as benevolence, righteousness, courtesy, wisdom, and faith to natural scenery, and experiences moral values in natural landscapes. The gentleman is bide, this kind of aesthetic essence is actually an appreciation of personality, and it is also the core concept of Chinese garden landscape plant design art. Urban waterfront, riverside, and lakeside garden landscapes are all urban waterfront garden landscapes, and have the same characteristics of urban waterfront garden landscapes: they are located at the junction of land and water, with complex geographical conditions and fragile ecology; most of them are characteristics of urban garden landscapes And the focus, its space is mostly open space, and the design should pay attention to the hydrophilicity of the landscape.

We must distinguish the difference between the urban waterfront garden landscape and other urban waterfront landscapes. It should not be generalized as a general urban waterfront garden landscape. It is necessary to highlight the characteristics and characteristics of the urban waterfront garden landscape. The water body of the lake is the static

surface water enclosed in the ground. The lake surface area is clear, and a complete lake ecosystem can be formed.

## III. EXPERIMENT

The visual reconstruction technology in the garden landscape is shown in the figure.

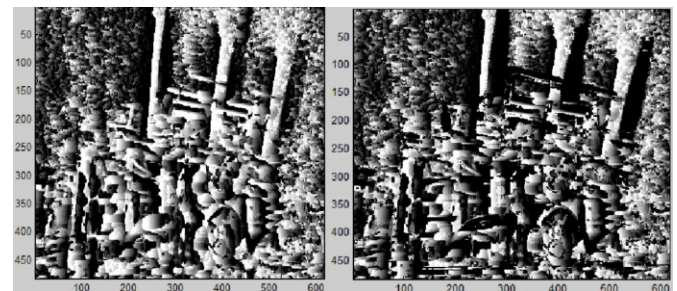


Fig. 2. Visual reconstruction technology in garden landscape

The application of space art in garden landscape is shown in the figure.

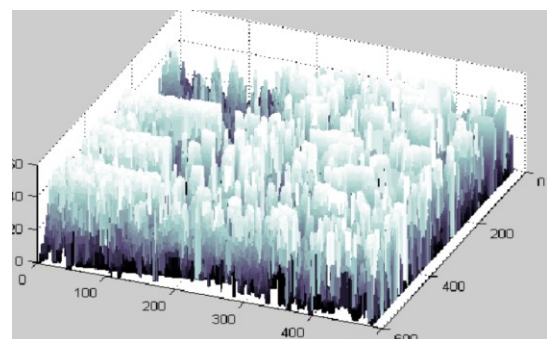


Fig. 3. Application of Space Art in Garden Landscape

The visual data point modeling of space art in the garden landscape is shown in the figure.

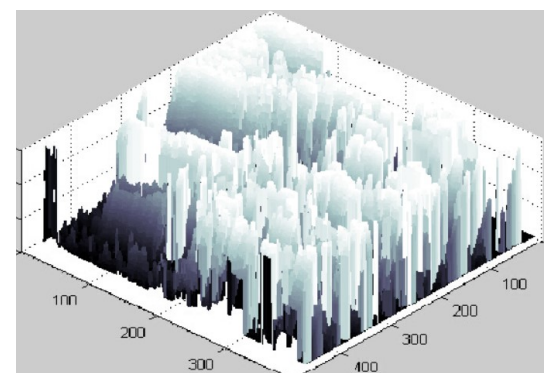


Fig. 4. Visual data point modeling of spatial art in garden landscape

## IV. CONCLUSION

In the current landscape garden design, it is necessary to emphasize the natural beauty, provide more living and development space for the public, and play an important role in the construction of the urban ecological environment. Integrating space art into the landscape garden design can effectively highlight the external display effect of the garden, better express the sense of hierarchy of the layout, and create a different garden environment. In the design process of this

paper, the visual reconstruction technology and the characteristics of landscape garden construction are set out, and on the basis of preserving the original landscape garden, the artistic expression can be better highlighted. Landscape garden design activities need to proceed from the perspective of the development of the times.

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