Influence of Computer Intelligence on Landscape Design

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Abstract. In contemporary society, with the continuous development of modern culture, landscape design methods are gradually enriched. With the continuous growth of social economy and science and technology level, people also put forward higher requirements in landscape design to study the impact of computer intelligence era on landscape design. It can effectively improve the quality of intelligent landscape design. Therefore, this paper studies the impact of computer intelligence on landscape design. This paper first analyzes the application of computer intelligent technology in landscape design, and studies the impact of computer intelligence on all aspects of landscape design. In order to further study the impact of computer intelligence on landscape design, we applied computer intelligence to landscape design, designed a contrast experiment, respectively used traditional methods for landscape design and computer intelligence for landscape design, and analyzed the application effect. The results show that the effect of intelligent landscape design is far greater than that of traditional methods. The score of intelligent landscape design in landscape architecture design is 83 points, in landscape waterscape design is 93 points, in landscape visual design is 86 points, in landscape pavement design is 79 points, in landscape construction score is 88 points. It can be seen that computer intelligence has a great impact on landscape design, which greatly promotes the development of landscape design.

Keywords: Computer Intelligence, Landscape Design, Application Effect, Control Experiment

1. Introduction
In the 21st century, the environment on which human beings depend for survival is affected by the bad ecological crisis, and the environmental pollution problem is always endangering people's health [1-2]. People's awareness of environmental protection is also constantly strengthened. Ecological and healthy urban environment is people's aspiration. Urban landscape is closely related to people's living space, which is related to the quality of people's living environment. Modern garden landscape has become an important aspect affecting the image of the city [3-4]. With the continuous advancement of urbanization, it is a good opportunity for landscape development to make full use of the local favorable climate environment, natural characteristics and regional characteristics to design landscape with local characteristics. The construction of modern excellent forest garden can enrich people's life, carry forward the national cultural tradition, create excellent gardens with unique charm, so as to
produce the best ecological benefits of urban landscape, and build landscape with the characteristics of the times and regional characteristics to meet people's needs [5-6].

Modern landscape design needs to meet the emotional and rational thinking. However, in real life, traditional landscape design has many problems [7-8]. First of all, the concept of design is relatively backward, landscape design is mostly in the stage of imitation and reference, it is difficult to have innovation, and the traces of plagiarism are obvious. Secondly, backward technology is also an important problem in modern landscape design. The wide range of knowledge covered by landscape in the design process, architecture, soil science, biology, computer science and so on are important reference factors in the design [9-10]. Nowadays, the wide application of computer intelligent technology has brought new opportunities to the development of landscape design. It is of great significance for the development of landscape design to study the impact of computer intelligence on landscape design.

In this paper, first of all, the related basic concepts are described, on this basis, the application of computer intelligent technology in landscape design is analyzed, and the impact of computer intelligence on various aspects of landscape design is studied. In order to further study the impact of computer intelligence on landscape design, we apply computer intelligence to landscape design. By comparing with the traditional landscape design methods, we evaluate the landscape architecture design, landscape waterscape design, landscape visual design, landscape pavement design and landscape architecture construction, so as to highlight the impact of computer intelligence on landscape design influence.

2. Review of Related Theories

2.1. Modern Landscape Design
Chinese modern gardens draw lessons from traditional gardens, respect the nature of traditional gardens, take nature as the main body, carry out artificial processing according to the laws of nature, and build a dynamic and natural activity space. Natural design is the ideological pursuit of modern landscape design. Modern landscape design should conform to the natural law. Modern landscape design should focus on the environment and nature, conform to the society and nature, and take the priority of environment and nature as the purpose.

The process of modern landscape design is the process of re understanding the nature, so as to restore, protect and display the regional landscape. Modern landscape design should use scientific classification method, objectively and truly evaluate natural conditions, and use modern new materials and construction technology to design natural environment. International garden design is based on natural culture and ecological concept. Only by integrating into international gardens and developing regional natural landscape attributes and traditional cultural characteristics, can modern gardens keep pace with the times and play a Chinese role in world gardens.

2.2. Connection between Landscape Design and Computer Intelligence
With the continuous improvement of science and technology, the development and application of computer intelligence technology has been greatly promoted. In landscape design, the application of computer intelligent technology can effectively solve many problems in the past landscape design.

The application of computer intelligent technology in the process of landscape design can provide favorable conditions for the integration of human and environment. For example, intelligent lighting technology in computer intelligent technology is applied to landscape design, which not only helps to avoid light pollution, but also provides opportunities for people and nature to live in harmony, and can relieve psychological pressure. In addition, landscape design is mainly aimed at green plants and public facilities. Based on this, the application of computer intelligent technology can realize artificial intelligent landscape, promote resource sharing, and provide favorable conditions for the complementary of landscape design and local culture, so as to maximize the actual benefits of landscape.
3. Ideas and Experimental Setup

(1) Research ideas

This paper first uses the method of literature analysis, through the collection and analysis of relevant data, to understand the application of computer intelligent technology in landscape design, which provides a theoretical basis for the further study of this paper. In addition, this paper studies the impact of computer intelligence on all aspects of landscape design. In order to further study the impact of computer intelligence on landscape design, we apply computer intelligent technology to landscape design, and study the application effect.

(2) Experimental design

1) Experimental methods

In order to analyze the application effect of computer intelligence in landscape design, we conducted a comparative experiment. In the experiment, we use traditional methods to design landscape and computer intelligent landscape design, and evaluate the results. In order to ensure the reliability of the experimental results, in addition to the different methods used in the experiment, other conditions are the same, and all aspects of the design site used are basically similar.

2) Evaluation index

We know that the content of landscape design includes landscape architecture design, landscape waterscape design, landscape visual design, landscape pavement design and landscape architecture construction. Therefore, we take this as an evaluation index to evaluate the application effect of landscape design. In the five evaluation indicators, the score of each evaluation index is 100 points, the higher the score, the better the effect.

4. Application Effect of Computer Intelligence

4.1. Application Analysis of Computer Intelligent Technology in Landscape Design

In modern landscape design, the application of computer intelligent technology can help people integrate into the environment. This paper summarizes and analyzes the application of computer intelligent technology in landscape design, and the results are shown in Figure 1.

![Figure 1. Application of computer intelligent technology in landscape design](image)

As can be seen from Figure 1, the application of computer intelligent technology in landscape design mainly includes five aspects: intelligent lighting design, intelligent lighting design, intelligent sprinkler irrigation design, intelligent pavement design. In addition, there are some applications, such as intelligent music, intelligent garbage classification, etc.

(1) Intelligent lighting design (24.1%)
Functional lighting and atmosphere regulation are the main contents of lighting in landscape design in the past, and the corresponding interactivity, variability and humanization are relatively lacking. However, with the application of computer intelligent technology, it can bring people new visual experience, such as the application of intelligent sensing system in intelligent lighting, and the ability to perceive the environment, properly adjust the color and intensity of the light to achieve interactivity, variability and more humanized lighting design.

(2) Waterscape intelligent design (22.5%)
As an important part of landscape architecture, waterscape design is the core of the whole landscape ecosystem. In the era when artificial intelligence has not been popularized, the data and construction technology in waterscape landscape are lack of support, only relying on the main body of rockery and stagnant water, lacking innovation and vitality. However, with the development and popularization of artificial intelligence technology, designers gradually introduce the intelligent sensing system into the landscape design. The artificial intelligent waterscape landscape systems such as music fountain, water purification system and intelligent rainwater system begin to enter the people's attention, which complement each other and play a significant role in the current recyclable thinking.

(3) Intelligent sprinkler irrigation design (19.9%)
Sprinkler irrigation design is one of the important contents of landscape design, which is related to the play of the role of landscape. In the design of sprinkler irrigation, the application of computer intelligent technology can realize the intelligent control of sprinkler irrigation. The application of computer intelligent technology in sprinkler irrigation system mainly uses camera to take pictures of soil images at different times based on preset time interval, and to analyze soil water content and determine irrigation amount by computer software and technology.

(4) Intelligent pavement design (19.3%)
The floor laying operation needs both the functionality and aesthetics of the hardened surface. The traditional laying process only pays attention to the function of the ground, and pays less attention to the aesthetics, so it is difficult to have a greater improvement space. However, with the popularity of computer intelligent technology, landscape designers begin to combine color principle, according to different characteristics of natural light, and use projection technology to project vivid and dynamic images to meet the needs of users on the ground, and ultimately achieve the perfect integration of visual effect and functional effect.

(5) Other applications (14.2%)
The application of computer intelligent technology in modern landscape design is not limited to this. The combination of music and landscape is also an important direction of the development of computer intelligent technology. Music can clean the soul, enlighten life, combine people with music, and enhance the atmosphere of landscape. At the same time, garbage classification is also a popular content nowadays. Computer intelligent equipment can change the garbage can into intelligent garbage can, which is convenient for moving and processing garbage, and realizing the goal of recycling resources.

4.2. Impact Analysis of Computer Intelligence on Landscape Design
In the era of computer intelligence, the development of things has been affected to a certain extent, and the design methods and contents of landscape design have changed to some extent. In order to meet the requirements of people for landscape design in the current era, it is necessary to integrate computer intelligence into all aspects of landscape design, This paper analyzes the impact of computer intelligence on landscape design, and the results are shown in Table 1.
Table 1. The effect of computer intelligence on Landscape Design

| The influence of computer intelligence on Landscape Design | Effect |
|-----------------------------------------------------------|--------|
| Impact on Landscape Architecture Design                   | Provide diversified design resources to improve the quality of landscape architecture design |
| Influence on landscape waterscape design                   | The appreciation of waterscape strengthens the sense of hierarchy and dynamic in waterscape design |
| Impact on Landscape Visual Design                          | Improve the level and richness of landscape design, optimize the overall effect and quality of landscape design |
| Influence on landscape pavement design                     | The integration of color and form can show the diversity of color application in landscape design |
| Impact on the construction of Landscape Architecture      | Choose the right scheme to save manpower and time cost effectively |

It can be seen from Table 1 that computer intelligence has a certain impact on all aspects of landscape design. The specific analysis is as follows:

(1) Impact on Landscape Architecture Design

In the process of landscape design, architecture has an important impact on the overall effect of landscape design. In the process of architectural design, the integration of computer intelligent technology can strengthen the effect of landscape architecture design, organically integrate various colors and symbols, so as to achieve the goal of improving the quality of landscape architecture design. In the landscape architecture design, the effective use of computer intelligence technology, can be integrated into contemporary design ideas, design concepts, for people to present a sense of the times of landscape architecture.

(2) Influence on landscape waterscape design

In the era of computer intelligence, waterscape design is also changing. During the construction of waterfalls, there is no inherent phenomenon in the design of waterfalls. However, with the development of computer intelligence technology, the transformation and richness of waterscape can be increased by building fountains. In addition, the organic integration of fountain transformation and music melody, to a certain extent, greatly improves the water view's ornamental value, and strengthens the level and dynamic sense of waterscape design.

(3) Impact on Landscape Visual Design

In landscape design, landscape vision directly affects the overall quality of landscape design. In the era of computer intelligence, landscape has changed in visual design. By improving the interactive performance of the space in the design, the audience can actively participate in the image setting when watching, and form an immersive feeling. In the process of landscape design, virtual space, sound, image and other elements are combined to form a virtual sensory environment. The audience can get a new aesthetic feeling in such a landscape.

(4) Influence on landscape pavement design

Landscape pavement mainly plays the role of strengthening the effect of landscape design. In practical application, it can further enhance the functionality and artistry of landscape. The application of computer intelligent technology in landscape pavement design can realize the mutual integration of color and form, and highlight the diversity of color application in landscape design.

(5) Impact on the construction of Landscape Architecture

In the actual landscape architecture construction, the staff can simulate the real design scene with the help of three-dimensional image of computer intelligent technology. The deviation between the 3D simulation scene and the actual situation is small, and the relevant staff can better combine the actual
terrain, temperature, humidity and other natural geographical conditions to choose a better landscape design method, which can effectively save manpower and time cost.

In order to analyze the application effect of computer intelligence in landscape design, comparative experiments were carried out. Landscape design was carried out by traditional methods and landscape design with computer intelligence, and the results were evaluated. The results are shown in Table 2 and Figure 2.

Table 2. The impact of computer intelligence on Landscape Design

| Landscape design | Landscape architecture design | Landscape waterscape design | Landscape visual design | Landscape pavement design | Landscape architecture construction |
|------------------|-------------------------------|----------------------------|-------------------------|--------------------------|-----------------------------------|
| Traditional landscape design | 65 | 71 | 67 | 53 | 63 |
| Intelligent landscape design | 83 | 93 | 89 | 79 | 88 |

Figure 2. The impact of computer intelligence on Landscape Design

According to Table 2 and Figure 2, the score of traditional landscape design in landscape architecture design is 65 points, in landscape waterscape design is 71 points, in landscape visual design score is 67 points, in landscape pavement design score is 53 points, in landscape garden construction score is 63 points, using intelligent landscape design in Landscape Architecture design score is 83 points, in landscape architecture design score is 83 points The score of waterscape design is 93 points, the score of landscape visual design is 86 points, the score of landscape pavement design is 79 points, and the score of landscape architecture construction is 88 points. From the evaluation results, it can be seen that the effect of using intelligent technology for landscape design is better. For landscape architecture design, it can provide diversified design resources and improve the quality of landscape architecture design. For landscape waterscape design, it can improve the appreciation of waterscape, In terms of landscape visual design, it improves the level and richness of landscape design, optimizes the overall effect and quality of landscape design, and realizes the mutual integration of color and form for landscape pavement design, It can show the diversity of color application in landscape design. For the construction of landscape architecture, it can quickly select the appropriate scheme and effectively save manpower and time cost.

5. Conclusions

With the development of science and technology, the application of computer intelligence technology is more and more widely, which has brought great influence to people's life. This paper studies the influence of computer intelligence on landscape design. In the research, we first analyzed the
application of computer intelligent technology in landscape design, and studied the impact of computer intelligence on all aspects of landscape design. In this paper, the application of computer intelligent technology in landscape design can effectively solve many problems in the past landscape design. The application of computer intelligent technology in landscape design process can provide favorable conditions for the integration of human and environment, promote resource sharing, and provide favorable conditions for the complementary of landscape design and local culture, so as to maximize the actual benefits of landscape.

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