Soft Multimedia Assisted New Energy Productive Landscape Design Based on Environmental Analysis and Edge-Driven Artificial Intelligence

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Abstract

New energy landscape architecture is a new energy building integrated with aesthetics and art design, which can meet people's dual needs of low energy consumption and architectural aesthetics. In recent years, the development speed of new energy landscape architecture is increasing, and the design and research of new energy landscape architecture has become a hot spot. In the era of media and information, the thinking mode, aesthetic concept and living space demand of the public and landscape architects are changing. The new values, aesthetics, technology and design concepts will always stimulate and promote the urban landscape design to constantly enrich itself. Therefore, it is a new exploration direction to shape new urban landscape design through multimedia technology. Multimedia technology uses computer to process text, graphics, images, sound, animation, video and other information to establish logical relationship and human-computer interaction. The virtual reality technology in multimedia integrates the latest development achievements of computer graphics, multimedia, artificial intelligence, multi-sensor, network, parallel processing and other technologies. Multimedia technology makes the color of the landscape form the most visual impact factors, it is easy to leave a deep impression on people, to achieve the visual effect of the landscape. Therefore, this paper studies the multimedia assisted landscape design of new energy production based on environmental analysis and artificial intelligence.

1. Introduction

As the energy supply facilities and energy storage facilities of urban buildings, new energy landscape architecture can provide energy for the operation of the city. Secondly, new energy landscape architecture uses new energy as the main energy supply, replacing the use of part of non renewable energy and reducing environmental pollution. In addition, the aesthetic characteristics of new energy landscape architecture have become the city's scenic spots and even an integral part of the city [1–3]. In addition, the development of new energy buildings in cities all over the world has been favored and supported by policies, especially in the 13th five year plan of energy development in China, it is clearly stated that we should promote the construction of new energy industry and vigorously carry out regional demonstration projects of energy transformation, which provides good support for the development of new energy buildings. The integration of architecture and new energy technology has become a development trend, which has played a great role in promoting the development of new energy landscape architecture [4].

Since 1980, multimedia technology has become the focus of attention. Multimedia technology is a rapid development of comprehensive electronic information technology, it has a revolutionary impact on the traditional computer system, video and audio equipment, which has a huge change on the mass media. Multimedia technology will accelerate the entry of computers into all aspects of the family and society, and bring profound changes to people's life, work and entertainment. Nowadays, the development of economic globalization is caused by the development of digital technology, network technology and other comprehensive technology. Information technology across national boundaries, across the nation, so that all corners of the world because of the development of information networks and closely linked. In the

information age, different market and enterprise models have been formed. The digital technology of multimedia makes the economy develop rapidly, which improves people's living standard. The rapid economic development has led to the development of urban landscape and architecture, which has created a good economic development foundation for urban landscape design. At present, the research on urban landscape is mainly from the aspects of ecology, regional culture, place spirit, art, etc., but the theory of urban landscape from the perspective of multimedia is relatively less. At present, the research on multimedia and architectural design is more in-depth and mature at home and abroad, so the research of this topic can absorb the research results and experience of multimedia technology and Architecture [5–7]. The way of information expression and the form of media infiltrate into the field of landscape, they incarnate into high-tech multimedia technology. Multimedia technology is implanted into the landscape space by designers, which makes the landscape dynamic, free and rich [8].

The concept of landscape has not been clearly defined, and different majors have different interpretations. From the perspective of art, it is a scenery with aesthetic value. From the perspective of spiritual culture, landscape is the scenery that can affect or regulate human mental state. From the ecological point of view, landscape is a landscape that can coordinate the ecological balance between human and nature. Landscape is the nature that people yearn for, is the habitat of human beings, is an artificial handicraft, and is also a material system that needs scientific analysis to be understood. Urban landscape includes three aspects: historical landscape, natural landscape and artificial landscape. These three aspects infiltrate and integrate with each other, forming the basic skeleton of urban landscape. With the development of society, new technologies and materials in the landscape are also changing, and in this part of the landscape wall, fresh blood has been injected. Different materials, such as steel, glass, etc., are used to form the water scenery wall and hollow landscape wall. Now we apply the multimedia technology used in architecture and other design to the landscape wall in order to better render the atmosphere, convey the regional culture, and enhance the interaction between people and scenery [9–11]. New energy landscape architecture adds new aesthetic elements on the basis of traditional architecture, which affects people's aesthetic with its novel appearance. The architecture itself has become the infrastructure in the city and a part of ecological civilization. The city is no longer a pleasant home. New energy landscape architecture itself has become a symbol of the times, which is in line with the development trend of today's society and has a bright future [12].

Artificial intelligence technology has an extraordinary impact on people's design behavior and design objects, and it is particularly important for human-computer interaction design. Whether it is the future of intelligent building design, or smart home design, all reflect the designer's application of artificial intelligence technology. In the design of intelligent building, the designer carries out preliminary investigation on the needs of users, and then optimizes the design for the structure, management and service of the building. In the face of the sudden situation in the building, it can also carry out comprehensive analysis and then take treatment measures. Intelligent building is also known as weak current system engineering, that is, building, communication, office, security automation. Artificial intelligence in the automation intelligent control technology is taken as the foundation technology. It is worth mentioning that the establishment of intelligent building can not be carried out after the completion

of the building, but the man-machine interaction in the functional use should be considered in the preliminary planning and design. Therefore, when linking with building information model (BIM), it is necessary to think about the data storage of construction in the design, so as to promote the integrated management in the future.

With the continuous progress of new energy technology, the form and application of new energy landscape have been well developed, and new new energy landscape buildings emerge in endlessly. In theory, the research of all kinds of new energy landscape architecture has achieved rich results, which has become the theoretical basis for the design and construction of new energy landscape architecture. The design of new energy landscape architecture needs to make use of site conditions, geographical location and the characteristics of various new energy sources in space modeling. Through the modeling design of new energy facilities, it brings different freshness to the building. To achieve the diversification of building shape, and make full use of new energy facilities to shape the landscape. In the aspect of color design, the function and appearance of new energy landscape architecture are complementary. Pay attention to the coordination of colors and the matching of color systems to make the building more beautiful. In addition, the design of new energy landscape architecture should pay attention to and reflect the texture, innovation and other design points. The new energy landscape architecture and the surrounding landscape as well as the local history and culture are organically integrated to achieve the best landscape effect of the new energy building. Based on the above analysis, this paper uses environmental analysis technology and artificial intelligence application to build a multimedia assisted new energy production landscape design system.

2. Environmental Analysis And Application Of Artificial Intelligence

2.1. Analysis of the Auxiliary Role of Artificial Intelligence in Landscape Design and Construction

Artificial intelligence aided design and construction is the process of project completion or product output. The main step in this process is the design and construction of landscape architecture, or the design and production of industrial products. At the beginning of the design process, the perceptual factors in the design such as the concept and creativity of the design can not be simulated by the existing or future artificial intelligence technology, so it needs to rely on human decision-making. The concept of design integrates the internal and external factors such as human logic, consciousness, culture and environment, and is influenced by the complex mechanism of subjective and objective factors. Therefore, artificial intelligence needs to truly understand and imitate the definition of "soul" in art design creation. In this way, artificial intelligence can imitate the human creative thinking mechanism to carry out design and creation activities. So the difficulty exists, and it takes a long time to explore and realize.

The trend of artificial intelligence entering the field of art and design is on the horizon, and the achievements made in this field are undeniable. For example, in the field of art creation, the application of

artificial intelligence in fractal image. At first, the mathematicians tried to use mathematical methods to simulate the various phenomena that appear to be irregular in nature and scientific research.

Zhou Haizhong, a famous Chinese scholar, believes that fractal geometry not only shows the beauty of mathematics, but also reveals the essence of the world, and changes the way people understand the mystery of nature. It can be said that fractal geometry is the real geometry to describe the nature, and the research on it has greatly expanded the scope of human cognition. The world is nonlinear and fractal is everywhere. Fractal geometry makes people realize the integration of science and art, the unity of mathematics and art aesthetics, and has its profound scientific methodological significance.

A set of expert system can be used in various design fields, especially in the field of production and manufacturing. It can optimize the design scheme and assist decision-making. Design objects in the real environment of virtual reality for testing, relying on Pang

Large database for plant configuration, climate and geographical environment analysis to provide and calculate the results and optimal parameters. Therefore, the auxiliary function and development potential of expert system are huge [13–15].

To establish a complete set of expert system for landscape architecture design and construction, we need to consider the system structure, database, knowledge base and human-computer interaction. This kind of expert system needs to aim at the characteristics of the contemporary network era, so that the system structure designed and developed is more intelligent, integrated and collaborative. The database system should be established based on all kinds of relevant data of landscape architecture, such as flower, tree, landscape, pavilion, road, electrical, planning, hydrological conditions, structure, materials, project operation and maintenance management. The knowledge base system can realize the engineering development mode and overall control system supporting and cooperating the design environment, and then use the corresponding expression mode to establish a complete knowledge base from the beginning of engineering development to the whole control process. The interactive system includes general executive control program and man-machine interface. It combines collaborative users with multi database system including knowledge base system, model base system and database system, process control unit of collaborative design, process management of collaborative design, etc. Through the research of visual management mode, the dynamic tracking of engineering design and development process and the visualization of project node content and progress are realized. In this way, the overall designer of the project can provide auxiliary decision-making information. Decision makers and collaborative users can operate and control the multi database system and other functional components through the visual multi-dimensional information interaction interface, so as to realize the management of collaborative design process through the application of artificial intelligence technology [16].

2.2. Collaborative Development of Artificial Intelligence and Design

The coming of artificial intelligence era will have a profound impact on the future design. While artificial intelligence gradually participates in the design work and provides more convenience for designers, design also drives the development of artificial intelligence. Michael I. Jordan, an expert in artificial intelligence, points out that artificial intelligence will take the lead in making breakthroughs in the field of human-computer dialogue, which can then help handle people's daily affairs and decision-making. In human-computer dialogue and human-computer interaction design, the improvement of interaction design and interaction efficiency promotes the development of related artificial intelligence technology.

Accenture mentioned in "technology vision" in 2017: artificial intelligence is the new user interface. In this paper, the user-friendly and intelligent tool will be transformed into a more convenient and intelligent tool. Human computer interaction design will be the key to realize the role transformation of artificial intelligence. At present, the human-computer interaction mode of graphical user interface still faces the problems of insufficient interaction bandwidth and unnatural interaction mode. Therefore, artificial intelligence needs to make greater breakthroughs in the fields of context perception, intention understanding, voice and vision. These requirements from human-computer interaction design are also driving the development and progress of artificial intelligence. Artificial intelligence and design will promote each other and drive each other towards the future of collaborative progress.

Based on the current technology and algorithm ability, the design results generated by artificial intelligence are still very elementary compared with the works of human designers. This just shows that design needs a higher ability of originality, and human designers can not be replaced by artificial intelligence. But in this era of integration and collaboration, artificial intelligence can assist designers to complete a part of simple and repetitive work, greatly improving the efficiency of human designers. Therefore, designers also need to learn some artificial intelligence technology and use it as a powerful design tool. Professor Winston believes that "artificial intelligence is the study of how to make computers do intelligent work that only human beings could do in the past." In the past, art and design were the unique skills of human beings with creativity and emotion. Today, artificial intelligence technology also attempts to assist human beings to complete art design. The progress of society and science has improved the design ability of human designers, and at the same time, it has provided opportunities for artificial intelligence to learn human design and aided design.

2.3. Virtual Roaming Technology

In recent years, with the rapid development of virtual three-dimensional technology, there are many new branches of virtual reality technology, among which virtual roaming is an innovative development of virtual reality technology. Virtual roaming is often used to display the design results, so that people can be in a virtual three-dimensional environment. With dynamic and interactive methods, we can have a multi angle and all-round immersive survey of the future buildings. This is the traditional architectural renderings can not be compared and beyond. Virtual roaming technology shows the design results, taking into account the overall audience.

As an important branch of virtual reality technology, generally speaking, it has the following three characteristics. (1) Sink

Immersion: immersion in virtual roaming refers to the real feeling of participants in virtual environment. In the past, users could only observe the processing results of the computer outside the computer, while virtual roaming technology can let people immerse themselves in the virtual environment created by the computer through virtual reality. (2) Interactivity: Interactivity in virtual roaming refers to the operability of the participants to the objects in the virtual environment and the natural degree of real-time feedback from the virtual environment. For example, the participants can move the virtual objects in their hands while the virtual objects are not in the hands of the participants. (3) Conceivability: the conception in virtual roaming refers to the fact that virtual roaming technology should have a broad imaginable space, with the function of broadening the scope of human cognition. It can reproduce the real existing environment, and can also show the objective non-existent scene through conception.

For a long time, the communication between planners or architects and users is often limited to two-dimensional architectural drawings. This requires designers to be very familiar with architectural design symbols, and to be able to easily imagine three-dimensional scenes from two-dimensional perspective. Therefore, there is always a barrier between architectural designers and users. Planners or architects try to narrow the communication distance between users and allow users to participate in the design process. In order to meet the diverse needs of different users, the best way is to participate in the design. However, many users can not understand the design or the drawings. Due to the limitations of immature conditions, it is difficult for designers to grasp the real needs of users and design a satisfactory scheme.

In the field of construction industry, virtual roaming technology is widely used. Among them, virtual community roaming can be regarded as a successful model of virtual reality technology in the field of construction industry. Before the construction, the virtual building roaming system establishes a virtual model about the building and its community. Through this system, designers and users can control the movement of an imaginary observer in the building group model through computer technology interaction equipment. Output devices such as a computer monitor or head tracker display what the observer sees. Users can observe the indoor and outdoor space structure, lighting conditions, interior decoration and so on from any angle, and put forward suggestions. After the modification and improvement of the virtual building can be presented in front of users, until users are satisfied.

3. Multimedia Assisted Landscape Design For New Energy Production

3.1. Media, Multimedia and Landscape Design

With the development of the times and the rapid popularization of electronic and digital technology, the connotation and extension of media have also expanded greatly. In this paper, the concept of "media" related to landscape is adopted in a broader sense, which is not limited to the traditional media concept

mentioned above. Media has not only been used as a carrier to map the value and meaning of other things associated with it, but also includes the things themselves, that is, the technical means to participate in the design of works or the expression of ideas. Its research fields involve photography, film, computer, video, network, device, behavior, comprehensive media and a series of media closely related to the era of science and technology. Compared with the traditional single media such as books, magazines, TV and movies, multimedia pays more attention to a wide range of contents. It brings creative imagination with the times, information, network, human interaction, virtuality and connectivity. This greatly broadens the original limits and scope.

We can see several basic characteristics of media

- (1) Materiality. It is a substance, no matter what kind of physical state it appears;
- (2) Immateriality. Although it is a material, it is more important as a tool and means;
- (3) Liquidity. The premise of its existence is communication. Without communication, there will be no media;
- (4) Intermediate. It makes communication happen and goes on, but it doesn't belong to any party of communication.

With the development of digital multimedia technology, people have higher requirements for urban environmental design. Multimedia has created more opportunities for human technology to communicate with each other. When people communicate with each other through virtual platform, they often develop into real communication and communication. Therefore, multimedia technology has expanded rather than replaced face-to-face communication. Urban planning and landscape architecture design are facing new changes. People's life, study, entertainment and communication are more and more inseparable from the computer network. As Negroponte said, "computers will be an invisible part of our daily life that exist everywhere: we live in computers, wear computers, and even eat computers.". Digital multimedia technology makes the forms of communication and meeting more and more diverse in modern society. People communicate across time and space. The form of office learning has also changed due to the intervention of digital multimedia technology. Under the influence of digital multimedia technology, the human life in modern society is more and more different from the previous human life style.

Compared with traditional art, multimedia art makes use of television, film, network, photography and other technologies

Become their own unique art form. The progress of modern science and technology has greatly promoted the development of multimedia art, which has its distinctive characteristics of the times and timeliness. Multimedia art is a kind of art form that can make people have many associations. It establishes a personal and intimate attitude towards art and technology environment. This means that we can see artists as mediators and explorers of the Internet. The framework of a multimedia system is shown in Fig. 1.

In this context, multimedia technology presents the character, culture and image of a city in another way. In the design of urban landscape, the use of multimedia technology has also changed people's previous audio-visual experience, thus shaping a new landscape style and style in modern urban landscape.

3.2. Application of Multimedia Interaction Technology

Multimedia interaction technology refers to the technology of realizing the dialogue between the computer and the user through the computer output and input device terminal in an effective way. It mainly includes the machine application input or output equipment to the outside world to convey relevant information and instructions. The main characteristics of this technology are interactivity, sense of presence and imagination. Interactivity mainly refers to that people can display more humanized and realistic experience through multimedia interaction technology, and obtain information or aesthetic feeling through active selection and scene interaction. At present, most of the computer games in people's daily life are realized in this way. On the other hand, the sense of presence is to show people a more real representation of the world based on the computer, and then produce a real virtual image through spatial projection technology. For example, the western realistic art is to create a three-dimensional space on a two-dimensional plane through the techniques of proportion and perspective. Conceivability refers to the use of virtual reality technology to create the imaginary space of the real world, which can be in the past or in the future. Multimedia interaction technology can help people better understand the world, and cultivate their advanced thinking in the process of understanding, which is of great significance to the cultivation of people's creativity.

Architectural landscape design display in the traditional display is mostly in the form of pictures, objects, videos and so on. All the design contents are fixed in the entity space according to the part, and the audience needs to recognize them in a certain order. Most of the contents of traditional display are some architectural design, and the key content of expression is focused on architectural modeling. In the display, there are even excessive pursuit of unique visual display, completely ignoring the display of architectural landscape information. Multimedia interactive technology display platform is different from the traditional mode, breaking the previous single way of display and communication, no longer a single interpretation of physical building modeling. With the help of computer generated virtual environment, visitors can understand the architectural landscape design information through a variety of sensor channels.

Virtual display situational display refers to the creation of virtual world with the help of computer function linking display environment, and non-material performance is created by digital and light. The situation performance on the multimedia interactive platform display can not only include the real performance of the actual environment, but also reflect the situation in the imagination of visitors. Through the output device, visitors can communicate and interact, providing a lot of inspiration for architectural landscape design.

Platform display is a kind of information dissemination activity with the aid of art processing. Therefore, modern display design needs to transfer information efficiently and fully reflect people's willingness to

communicate. Platform display is the information bridge between enterprise designers and visitors, and ensure that the enterprise information can be effectively transmitted to the hearts of visitors. As an information media. Multimedia interactive platform display has the advantages of high concentration, authenticity and professionalism.

The development of multimedia interaction technology has broken the traditional display fixed display mode, and the product it shows is no longer a single, fixed product. The way of information transmission is no longer limited to the visual expression, but involves the human body's vision, hearing and touch, so the information conveyed is more realistic.

The projection technology of multimedia technology, in the square design, the use of multimedia technology and glass and other materials to make a modern landscape wall. The ground pavement around the landscape wall can also cooperate with the scene wall to inject multimedia technology. For example, the multi-media technology is added to the 6-grid plot in front of the landscape wall to form a control system. When people trample on it, different ground grids will have different effects, and ink like strokes will appear automatically on the wall with multimedia technology. There will be different pictures of different people passing by. In this way, modern technology is injected into the structure of the landscape, making it vivid and achieving the full interaction between human and landscape. At the same time, we can also install multi-media sound effects on the floor grid. Different positions on the floor grid will produce different musical instrument sound effects. When different pictures appear, there will be different music backgrounds. In this way, people trample on the grid to form a painting of ink and wash, and at the same time, there will be a beautiful music. This makes the landscape on the square more interesting and makes our mood more pleasant. The application scenario based on multimedia interaction technology is shown in Fig. 2.

3.3. Cultural Concept Design of Multimedia

New media brings new cultural concepts. "Multimedia" has become one of the key words of this era. Multimedia has brought new philosophy, thinking mode, life style and aesthetic taste. It is embodied in the following aspects:

(1) The cognitive mode of multimedia. Multimedia breaks through the limitation of single media using single sense, which means that people can use several kinds of senses at the same time, and can freely choose the way of perception according to their needs.

(2) Nonlinear network thinking. Network thinking is a non planar, three-dimensional, no center, no edge network mode and structure. As shown in Fig. 3:

(3) Beyond the three-dimensional space-time. The Internet makes the world smaller and smaller, like a "global village". It also means that the world will become bigger and bigger, and people can reach any area of the network.

(4) Hypertext radiation. Hypertext can express and process information more effectively, and people can directly find and turn to the information of interest.

(5) There is no ultimate flow of information. Digital information is often in a dynamic pattern, and there will be no ultimate form. The saying that works cannot be changed has become history.

(6) Interactive dialogue. The flow of multimedia information is two-way. People not only have free choice, but also can process and transform the information individually. This is conducive to strengthening people's subjective consciousness and making culture and art obtain diversified development.

(7) Virtual means of abstracting into reality. Virtual means is the medium and bridge connecting the reality and the future, and can become the simulation laboratory of people's ideal, prediction, imagination and other advanced consciousness. As shown in Fig. 4.

3.4. The Method of Digital Multimedia Technology used in Landscape Design

In the global information society, digital technology has expanded the design concepts of ecology, humanity, diversity and technology in landscape design. The design means of contemporary landscape design are constantly updated with its own distinctive characteristics.

(1) Intelligent design means. Modern landscape environment design, with the help of technology, adjusts the climate, temperature, humidity, light, air flow and other natural conditions to form a specific environmental landscape. In addition, the landscape architecture itself reacts to the surrounding environment through power devices, optical fiber sensors, computer programs, etc., so as to realize the intelligent environment.

(2) Interactive and participatory design means. The interactive design of environment landscape mainly includes interactive device and game art. This method is realized by computer hardware and software program platform, automation technology, computer input and output equipment and some performance comprehensive materials. The strong sense of experience, interest and aesthetic sense brought by interactive design is a prominent advantage of landscape design in the information age.

(3) Quantitative means. Landscape design can use digital technology to achieve the precision, batch and diversification of design to achieve the expected environmental goals.

(4) Cross means. In the information age, a large amount of information from different regions, nationalities and countries are gathered together. New materials, technologies and concepts are widely exchanged and communicated immediately. The form and connotation of landscape are also expanded with different styles and characteristics.

Digital multimedia technology is also applicable to the decision of landscape design site selection. With the intelligent digital characteristics of computers, researchers can automatically record the

environmental characteristics through preset statistical programs. Virtual space technology is used to simulate the real environment and stored in the database. In the process of site selection decision, the computer can reproduce the environmental conditions in specific time and space at any time, which will become an important basis for site selection design in the future.

The globalization of information has brought about the change of design content and process. Digital multimedia technology has set up a huge invisible network, which makes all parts of the world closely linked. Landscape design information, resources and so on flooded into every corner of the world. Under the background of digital technology, the design information collection is more detailed and accurate. Compared with the traditional process, the design operation process and information feedback process are more efficient, which are embodied in the following three aspects:

(1) The improvement of data accuracy and the increase of information. The design of modern urban landscape relies more on the technology of digital multimedia technology to solve the data collection in the early stage of design. Through the 3S and TM image technology of multimedia technology, the research process of the design is no longer as time-consuming as the traditional design, but through the efficient measurement of digital technology, the survey data is more accurate. Designers can use digital technology to track and shoot the designed site, so as to obtain a more direct feeling of the base.

(2) The efficiency of design process operation is high. Computer technology has brought convenient and fast design software, now it has been widely used in the field of design. Compared with the traditional manual drawing, the design software drawing is more accurate and fast, and easy to modify, which greatly improves the efficiency and quality of the design process.

(3) The feedback process of design is timely and sufficient. On the one hand, the feedback process of design includes the feedback of design change from Party A to Party B, and the suggestions from Party B to Party A. On the other hand, designers can establish virtual space through digital technology to test users' reaction, so that they can make timely changes to the scheme design.

4. Experiment And Analysis

4.1. Experimental Data Analysis

Digital multimedia technology not only brings technical support to urban landscape design, but also reflects its value in appearance, color and other aspects. Its intelligent control system often brings a visual blow to people,

It often makes people experience the new and dreamlike landscape effect. In this paper, through the model construction to show the multimedia assisted new energy production landscape design scheme.

With the emergence of computer-controlled music fountain, sound is integrated into landscape design, as shown in Fig. 5.

Philips color dynamics icolor flex SLX system is used in the digital facade of Pula multimedia laboratory in Madrid, which is composed of a series of rectangular panels fixed on the external wall of the building facade. The digital facade is 14.5 meters wide and 9.4 meters high. The icolor flex SLX system can demonstrate additional colors of 64 million pixels (36 bit) and change the intensity continuously. The landscape effect is shown in Fig. 6.

In the "Green Ray" project, green laser and mirror are used in the design to create a unique visual landscape, providing a place for guests to have both intense physical sensory experience and artistic experience. The multimedia device consists of two kinds of light devices: the green laser perforation of the building and a huge outdoor light tapestry that can change shape according to the movement of guests. As shown in Fig. 8.

Conclusion

Digital multimedia technology has brought great influence on landscape design, including design procedures and methods. The design theory, concept and works of landscape design have influenced and changed. With the advent of globalization, landscape information resources have been integrated. More and more attention has been paid to the application of multimedia technology in architecture and art. The development of multimedia architecture is in full swing. Some architects and critics predict that multimedia architecture is the future development direction of architecture. At present, the application of multimedia in the landscape has been paid more and more attention. The most obvious is that the LED display screen in many square spaces directly becomes a part of the landscape. Due to the needs of the public and the diversity of social stratification, contemporary landscape is also diversified. Although the future landscape is not necessarily to the direction of multimedia development, but the future landscape will be more and more multimedia technology, which represents one of the development directions of the future landscape. With the participation of multimedia, architects turn the closed landscape environment into a display platform. The electronic information expressed by these multimedia devices has become an important element of landscape design, which carries the integration of different cultures and technologies in a new form.

Declarations

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Author Contributions

All the authors contributed equally to this research paper.

Conflict of interest

The authors declare that they have no conflict of interest.

Human and animal ethical standards

This article does not contain any studies with human participants or animals performed by any of the authors.

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Figures

- Video display with high clarity and big picture
- Display text, pictures, objects, and film information

Figure 1

The framework of a multimedia system

- Integrate audio system video system, digital conference system, lighting, air conditioning and other equipment;
- Realizing the functions of lighting adjustment, air conditioning control, volume regulation, video playback, projection control and so on
- Visual control touch screen operation;

Figure 2

Application scenarios based on multimedia interaction technology

Figure 3

Nonlinear network thinking

Figure 4

The virtual means of transforming abstraction into reality

Figure 5

Landscape design of music fountain

Image not available with this version

Figure 6

Figure not available in this version

(a)

(b)

Figure 7

Digital facade landscape design

Figure 8

“Green Ray” project using multimedia technology