Analysis of Computer Aided Landscape Architecture Planning and Design Strategy

Shengyan Xue
1 Jingdezhen Ceramic Institute
2 College of Technology and Art, Jingdezhen Ceramic Institute

Abstract: In recent years, the social and economic development is getting faster and faster, which also promotes the further improvement of modern information technology. Various economic fields have begun to use modern information technology to improve their work quality and work efficiency. In landscape planning, computer is an important auxiliary means. In traditional landscape planning, designers often carry out various design work on drawings, but in actual construction, there will be deviations from design drawings, resulting in rework. If modern information technology is used, a virtual and three-dimensional landscape engineering structure can be constructed by using three-dimensional technology to test the scientificity of design drawings, which can greatly reduce accidents during construction, grasp construction details, improve construction quality and efficiency, and reduce cost investment.

1.Introduction:
At present, China pays more and more attention to environmental protection. Therefore, in the development process of cities, we should not blindly pursue economic benefits, but also do a good job in urban environmental protection construction to provide a healthier living environment for urban residents and improve their quality of life. All these can be realized by building landscape engineering in cities. Landscape engineering can not only beautify the city, but also regulate the city's climate and stabilize the city's ecosystem. At present, China has entered a new era of development, and the landscape planning work should be constantly adjusted according to the development of the times, constantly innovating design means and improving the scientificness of design activities. Computer is a very important aided design tool. On the one hand, it has a powerful communication and sharing function, and can communicate with other workers online in time; On the other hand, the computer has the ability of data conversion and the function of three-dimensional construction, which can concretize and visualize the design drawings. By building three-dimensional models, designers and builders can study the details and examine the implementation of the design scheme. Based on this, this paper first analyzes the main advantages of computer aided in landscape design and planning activities, and then discusses the specific application of computer in landscape planning and design.

2. The main advantages of computer in landscape planning and design

2.1 Computers can further enrich the forms of expression of landscape planning and design
The landscape design of many cities lacks characteristics, and often draws lessons from the design contents of other cities or follows the previous design concepts, so the designed landscape is relatively simple, which can not meet the aesthetic needs of contemporary people, or can not reflect the connotation of this city. However, through computer technology, we can make the design form more...
diversified and richer. Because there are many softwares in the computer, these softwares are rich in functions, which can make sectional drawings, color drawings or plane line drawings, and can also virtualize some landscapes and make some animations.

2.2 Computer can further improve the scientificalness of landscape planning and design
When the computer assists the landscape planning and design, it is not aimless, but according to the standards and requirements of landscape design, we can give full play to some software tools in the computer to make the landscape size design more scientific, such as drawing tools and image conversion tools. Secondly, you can also use some modeling software in the computer to transform the design pattern into 3D form, and more intuitively see the images after the landscape construction. After intuitive observation, the designer can find the deficiencies in the design activities, and constantly improve and reasonably match the colors in the landscape. At the same time, it can also arouse designers' new design concepts and inspire design inspiration.

2.3 Computer can further improve the design efficiency of landscape designers
In traditional landscape planning and design activities, designers mainly design and plan the landscape on design drawings, but the biggest drawback of design drawings is that they can't be modified quickly when there are errors, and they can't check the implementability of design schemes. However, with the computer as an auxiliary means, such activities can be transferred to the computer, and various engineering drawing software can be used for accurate design, which further improves the accuracy of design data, facilitates drawing modification in the design process, facilitates communication with other staff, and greatly improves the design efficiency of designers.

3. Specific application of computer in landscape planning and design activities

3.1 Analysis and discussion from the perspective of highly intersected landscape architecture design activities
Computer aided design is widely used in the design of highly intersected landscape architecture. In the design activities, the designer can accurately calculate some design data by using computer software to realize the deep integration of the two. Because in design activities, planning activities such as computer and landscape belong to two different types, but they can also establish a contact mechanism to jointly improve the efficiency of planning and design. Art and architecture are of the times. After entering the new era, landscape planning and design activities should also deeply analyze the connotation of the times, seize the opportunities and challenges of the times, and make full use of computer technology to make landscape planning and design more scientific and more distinctive. At the same time, in the process of application, we should learn from it purposefully, not blindly relying on intelligent technology, which still requires manual operation by staff, especially in the design cost, the computer itself has no creative thinking, and its operation is completely maintained by machinery and electricity, which does not have any design inspiration. Therefore, in the landscape planning and design activities, the computer can only act as an auxiliary means, and can only cross the landscape planning and design activities as a part to assist the whole.

3.2 Analysis and discussion from the perspective of GIS technology in landscape architecture planning and design
The application range of GIS technology is very wide, and landscape design also needs to use this technology to improve the scientificalness of design activities. In landscape planning and design activities, it is necessary to investigate the surrounding natural environment and social environment, to understand the geological data in the planning site, to combine the specific terrain, to carry out targeted design, and to adhere to the design principle of specific analysis of specific problems. All these need to use this technology to locate and analyze the design site and collect data, which can be used as the basic data of design planning activities to form a scientific design scheme (as shown in
3.3 Analysis and discussion from the perspective of ecological aided design

Ecological aided design also occupies an important position in landscape planning and design. The design content is mainly divided into five aspects, namely meteorological data, thermal environment, wind environment, water environment and light environment. First, the analysis of meteorological data. Meteorological data mainly refers to a climate characteristic of the region, such as annual precipitation and average temperature, which are essential in landscape design and determine the planting type of plants in the landscape. Therefore, when designing, designers need to fully consider the climate of the region. At the same time, the climate will also determine the types of buildings in the landscape. For example, it is rainy all year round and the temperature is hot and humid in southern China, so it is necessary to choose some waterproof and damp-proof building materials to prolong the service life of the landscape.

Second, the thermal environment. Thermal environment is mainly aimed at indoor temperature design in landscape design, because not all landscapes are exposed to the natural environment, some facilities are located indoors, and indoor temperature control is important, especially in summer. Because the outside weather is very hot in summer, visitors need to provide rest places when visiting landscapes, and these rest places must ensure the comfort of temperature, and air conditioners can effectively adjust the temperature. However, the damage of air conditioners to the natural environment is relatively large, so it is necessary to use the ecological auxiliary function to reduce the energy consumption of air conditioners during operation, or adopt some natural cooling means, such as setting up the rest room in a relatively low-lying area, or doing a good job of ventilation inside the building.

Third, the wind environment. The wind environment is mainly aimed at the ventilation in landscape design and planning activities, and the ventilation situation of landscapes is determined by the position and specification of windows in landscape buildings. This requires designers to know the wind direction of the landscape construction site, such as which wind prevails in a certain season, for example, the southeast wind prevails in the south of China in summer, and the window opening position should be located in the southeast direction at this time, so as to ensure the indoor air circulation.

Fourth, water environment. Water environment is the most important factor in landscape design activities, and the whole landscape ecosystem can be connected by water. Through the computer
ecological aided system, the normal operation of water circulation can be realized, and the water circulation can be better adapted to the landscape environment. During the design process, the staff can use TOSS landscape design system, enter the relevant landscape data in the operation window of this software, and then build a resource library through BMPL gallery, and transform the whole landscape design drawing into 3D mode. In this mode, the data of roads, water bodies, plants, etc. in the landscape should be reviewed to see if the design parameters meet the relevant national standards. In addition, you can also use the remote control system in the computer to install a processor in the landscape water environment, and timely feedback relevant data, such as water flow speed, water flow, growth of aquatic organisms, and so on.

Fifth, the simulation of light environment. Although most landscapes are in the open air, lighting design is still needed to provide convenience for tourists visiting at night. At the same time, the feeling of visiting at night is different from that of visiting during the day. Therefore, we can make full use of Photoshop when designing landscapes, which can process some images and animations of landscapes, such as scaling, editing or brightness adjustment, so as to provide visitors with more comfortable visual enjoyment.

3.4 Analysis from the perspective of model building
After the completion of landscape architecture design, the designer must communicate effectively with the developers and builders before starting construction. At this time, the designer needs to use the computer to build a complete landscape model and explain it to the developers and builders. In the activity of model building (as shown in Figure 2), the designer must do some basic work, show the design scheme of landscape planning on the network platform, outline the general situation of the landscape through the computer, and tell his own design concept. If the developer or builder has any opinions, the designer can change the design drawings quickly and modify them in time. It not only improves the quality and efficiency of landscape design, but also reduces the rework rate in later construction and greatly reduces the cost input.

![Figure 2 Model building activity](image)

4. Concluding remarks
To sum up, at present, China has entered the era of big data, and computer is not a new tool. Therefore, in landscape planning and design activities, computer technology should be actively introduced to improve the scientificness of landscape design activities and enrich the creative forms and contents of landscape. At the same time, designers should constantly improve their design literacy, fully realize the importance of computers, and operate various softwares skillfully to complete the landscape planning and design activities.

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