Research on Planning and Design of Plant Landscape for Outdoor Exhibition of Modern Architecture

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Abstract: In order to increase the development and progress of greening environment, improve people's living environment, and promote urban construction and development in the design process of outdoor exhibition plant landscape in modern buildings. This paper takes a modern architecture outdoor exhibition plant landscape design as an example. First of all, this paper expounds the principles and characteristics of outdoor exhibition landscape design of modern architecture, and then analyzes the design of outdoor landscape of a modern architecture for reference of relevant personnel.

1. Introduction

As an effective means to promote the overall development of urban construction, culture and environment, building outdoor landscape design is very useful for optimizing the urban environment, improving the imperfect structure of urban green space and public space system, and promoting the development and renewal of new suburbs. China's landscape architecture industry has developed rapidly in the past decade, with a peak growth rate of 20%. It is expected that it will maintain a growth rate of 10% in the next 5-10 years. The share of urban greening is growing rapidly, from 56% in 2015 to 60% in 2020 and even 65% in 2025. Qian Zhiyang studied the basic requirements of light environment design in urban landscape design, analyzed the significance of light environment design in urban landscape design, and proposed that light environment design should be stated from the three aspects of comprehensive performance, artistic performance and economic performance of landscape, so as to improve the artistry of landscape design; Pan Lei studied the application of aesthetic theory in landscape design, through the use of common aesthetic theory, comparative analysis, to enhance the beauty of landscape design, in the process of landscape design, full application of aesthetic theory, enhance the exhibition value of landscape; Tang Yunyi studied the selection and matching of plants in the process of landscape design, to enhance the integrity and coordination of landscape, to create a good atmosphere for the garden, and to provide a theoretical basis for this study.

2. The characteristics and principles of modern architecture outdoor exhibition landscape design

2.1 Basic principles of plant landscape design

Plant landscape is an important landscape element. We must adhere to scientific principles in design and construction, and use them to reflect social needs, technological development and aesthetic concepts. Plant landscape has a great impact on bioenergy, which not only enriches people's spiritual life, but also enhances people's material life.
2.1.1 Scientific principles

Science is the basis of plant landscape design, and its core is consistent with the laws of nature. We advocate strengthening the application of Rural plants in greening design, because they are most suitable for the area. They not only maintain the integrity of the local natural ecological environment, but also reduce the cost of introducing alien plants and subsequent maintenance, and reflect the main elements of the characteristics of the region. For different design sites, the selection of appropriate plant species according to the local conditions is the basic guarantee for the smooth implementation of the plan, and also the primary principle to be considered in the outdoor plant landscape design of modern buildings.

2.1.2 Artistic principles

Painting and gardening art are the basic artistic principles that should be followed in the outdoor plant landscape design of modern architecture.

(1) The principle of unity. In the design of plant landscape, it is necessary to consider the differences of plant shape, plant color, texture of trunk and leaves, and composition ratio, so as to ensure diversity without losing the relevance of plant landscape. Only in this way can a unified style be embodied. Not only need to show the vividness of vegetation landscape, but also need to make the landscape not lose its harmonious beauty. In smaller areas, the vegetation landscape with too complex changes will appear messy and scattered, while the color with too complex changes will easily confuse people and make them unable to concentrate. But it should be monotonous, simple and orderly. Therefore, the premise of pursuing wealth change in the region is the unity of the whole. In the process of modern architecture outdoor garden design, the first thing to consider is the integrity of the landscape, which uses the central tree species to form the overall outline and set a unified tone for the landscape. Common tree species can make full use of creativity by increasing and decreasing species. Planting a variety of exotic plants can improve the landscape level and enrich the regional change.

(2) The principle of harmony, adjustment and contrast. The similarity of plant shape, color and texture can help fine tune the landscape. Instead, you can use the contrast between them to create a strong visual effect that brings excitement and enthusiasm. Therefore, the contrast method is very suitable to emphasize the theme of the landscape and attract the attention of the visitors, and is more used at the entrance of the community. In short, when designing plant landscape, we need to pay attention to the relationship and arrangement of plants, so that people can relax and enjoy the beauty of nature. In addition to the combination of plants and plants, the combination of plants and buildings, plants and grass often appear in the design, so we should pay attention to the proportion of volume and weight in the design. For example, in traditional Chinese landscape design, there is a courtyard with a small bridge in the South and a grand Royal Garden in the north. The plant combinations are very different, while the pavilions and limbs are soft and harmonious. They are integrated with exquisite bamboo and willow trees. Tall trees are planted in front of the Great Hall of the people to achieve harmony.

(3) The principle of balance. According to the principle of uniformity or balance, the plants with different sizes, shapes and textures can be grouped to make the landscape harmonious and stable. For example, plants with quiet and elegant colors, light texture, small size, sparse branches and leaves make people feel comfortable. On the contrary, plants with bright colors, rough and heavy texture, large volume and dense foliage make people feel comfortable. According to the needs of the environment, there should be a balance between law and nature in the design.

(4) Rhythm principle. Regular changes of plant landscape will produce a sense of rhythm. For example, regular seasonal changes of plants are a kind of rhythm. The buds in spring, the flowers in summer, the fallen leaves in autumn and the branches in winter are all beautiful natural notes. Designers are just like composers. Therefore, they need to combine these notes reasonably to create amazing works and ensure that people will always remember them.
2.1.3 Cultural principles
Culture has always been the soul of design. The lack of culture of plant landscape is mediocre, lack of vitality. Ancient Chinese used plants in gardening. Classical gardens were deeply influenced by Buddhism, Taoism, Confucianism and Chinese painting theories. The construction of horticultural plant landscape is based on the influence of "artistic concept, situation and painting concept". In other words, the audience resonates with the connotation, thoughts and emotions expressed by the plant landscape. This is mixed with the situation and the scene, sublimating the cultural sense of the scene.

2.1.4 Practicality principle
The viability of vegetation landscape is mainly reflected in its ecological advantages, social and economic functions. The practical outdoor plant landscape design of modern architecture avoids colorful stacking and luxury investment, creates a complete, beautiful and generous plant landscape economically and ecologically, and increases the subsequent availability of the landscape.

2.2 Landscape characteristics of modern architecture outdoor exhibition

2.2.1 Demonstrable features
(1) Themes. The content of the exhibition in front of the garden varies with the theme. The existence of the theme will provide direction and strength for the exhibition. The content of the exhibition is rich but not chaotic, so it can better express the theme meaning of the exhibition. Various garden exhibitions held in early western countries mainly focused on new technologies and concepts, traditional festivals, historical anniversaries and traditional festivals. After World War II, the theme in front of the garden reflects the happy life in peace and the rapid development of science, technology, culture and art. With the development of modern society, the choice of garden display theme is more and more diversified. People begin to pay attention to the relationship between man and nature and the development trend of landscape in the future. The theme focuses on human management, future environment, technological progress, sustainable development and resource development, as well as global hot issues.

(2) Diversity. The diversity of outdoor exhibition garden is reflected in many aspects, including the theme, content, form and expression of the exhibition. The exhibition garden provides the public with garden and horticultural information, including knowledge of horticultural plants, new horticultural varieties, new horticultural techniques and local customs, within a specified period of time. Outdoor exhibition park is divided into permanent exhibition and permanent exhibition, or combined with permanent exhibition. The temporary part has little limitation on material technology, so there are many ways of expression.

(3) Art and Science. The creation of art and scientific concepts is a participatory work, which follows the basic principles of Art (vision, composition, aesthetics, etc.), and each exhibition circle condenses the wisdom of designers. The design of the exhibition garden emphasizes its own characteristics, inspires others and emphasizes artistry, so as to promote horticultural innovation. Science and technology promote development, science and technology exhibition is an important part of the exhibition landscape design. It may include new horticultural equipment, new methods of horticultural plants, display and promotion of new varieties, application and display of new technologies.

2.2.2 Time sensitive attribute
The exhibition activities of garden exhibition are held in a certain period of time. The general exhibition period of the Expo is six months. In a given time, it can reflect the seasonal changes and view the seasonal landscape. According to different countries and regions, the holding time of different levels of garden exhibition is also different. On the one hand, the characteristic of "timeliness" is that the design of outdoor exhibition park should fully consider the influence of season, such as the flowering time of flowers and the performance of various plants according to the seasonal
changes, so that the plant landscape can obtain the best display effect during the exhibition. On the other hand, the exhibition center will be used, so it is necessary to consider the development and utilization after the exhibition. The exhibition park is a completely temporary landscape, but some landscapes need to be preserved and used, so it is necessary to deal with it and the exhibition park separately. The design must fully consider the content used in the future. Regardless of the duration of the exhibition, exhibitors should ensure that the best exhibition effect can be obtained during the exhibition.

2.2.3 Restrictions
The design of exhibition circle is essentially the garden landscape design of specific space. During the preliminary planning period, the organizers made specific preparations for the distribution of exhibition circles, and clarified the scope and areas of each exhibition circle, which is the same as the conventional garden design within the red line. There is little difference in this place. Landscape design cannot exist independently of natural, economic, social and other systems. One of the characteristics of outdoor exhibition park is that the city and exhibition area where the exhibition park is located need not be the same or similar geographically, and there may be significant differences in climatic conditions.

2.2.4 Characteristics of participation
Horticulture and horticulture exhibition time is limited, extensive public participation is irreplaceable, because in the limited time, centralized exhibition, information transmission and reach the highest level of exhibition to attract attention from all walks of life. In the design, we need to make full use of the elements and language of many gardens to create an observable, audible and immersive living space, so that the participants can really participate in and mobilize and maximize their diverse senses, and feel the meaning expressed by the exhibition circle. To enable people to "stay" and "move" in the exhibition park is an important standard for the success of the exhibition park.

3. Case analysis
For example, the public projects connecting the exhibition gardens include public greening, landscape sketches and various service facilities. The public greening projects have built seven green path landscapes, six wetland landscapes and background forest gardens related to the theme of the Green Expo, with a total of 15000 trees, 10000 flowering shrubs, 194000 square meters of turf, 119000 square meters of grass and flowers. The trees, flowers and plants are also equipped with signboards Popularize greening knowledge. Built wooden trestle Road, wooden trestle, vein Gallery, green landscape wall, ring wall and other landscape pieces, highlighting the concept of green environmental protection. In terms of service facilities, the park has battery car path, bicycle path, pedestrian path and small train track to meet the needs of tourists; Three large parking lots and one spare parking lot can carry 12000 vehicles; There are 5 service centers, which can meet the catering and rest needs of tourists.
4. Conclusion
In short, garden exhibition, as an effective means to promote the comprehensive development of urban economy, culture and environment, is of great significance in optimizing the urban environment, improving the incomplete structure of urban green space and public space system, promoting the development of new suburban areas, renewing the old city and old industrial areas.

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