

Preliminary study on the priority of plant landscape configuration evaluation in landscape design projects

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Abstract: At present, The comprehensive effect evaluation of plant landscape configuration is mainly carried out after the completion of the project, it is rare to put the evaluation before the implementation of the project. This paper focuses on landscape projects that have been designed but not yet constructed, the possible landscape effects of plant landscape are investigated and comprehensively evaluated in advance, and the advantages and disadvantages of green space plant configuration plan are summarized and continuously optimized, so as to better instruct the construction and achieve the maximum comprehensive benefits. The significance of this study is to discuss the priority of plant landscape configuration evaluation, better list the problems that should be paid attention to in plant configuration and continuously optimize its configuration, so as to make the optimal plant configuration scheme.

Keywords: Plant landscape; Configuration evaluation; Priority.

1. INTRODUCTION

In recent years, Chinese scholars have done a lot of work in the evaluation of plant landscape, from the initial simple descriptive evaluation of plant ornamental characteristics and comprehensive ecological benefit evaluation to the systematic evaluation of comprehensive greening benefit of plants and landscape configuration of garden plants with various evaluation theories and methods^[1-4]. The landscape evaluation of plants in the academic community is mainly focused on the landscape projects that have been completed, while the landscape evaluation of the projects that have not been built is rare. Zhang Shuo^[5] constructed a green environment evaluation system for green ecological residential area based on fuzzy mathematics, and quantitatively analyzed the comprehensive benefits of "riverside impression" green space in chengdu. Nin Huijuan et al.^[6] selected a number of representative quantitative indicators, established an overall index system, and constructed a comprehensive evaluation model of garden plant landscape by using the hierarchy analytic process (AHP). Based on the improved AHP method, Zhou Shuming evaluated the plant landscape of chengdu city road. Tang Dongqin^[7] discussed the optimal plant allocation of residential areas and parks in Guangzhou city respectively by using SBE and LCJ evaluation methods. Similarly, Shi Jingwen^[8] studied the landscape preference of residential green space with SBE method. Yang Rui^[9]

use 10 representative Spaces and 24 kinds of plants to compose the landscape respectively, and use the semantic evaluation method to analyze the spatial feeling under different plant combinations. Li Yan^[10] Tingcheng also evaluated the grassland landscape in Japan by means of semantic evaluation. Aiming at the landscape projects that have not been constructed yet, this study investigated and studied the possible landscape effects of green space plant landscape, made a comprehensive evaluation of the plant landscape, studied the features of plant landscape, summarized the advantages and disadvantages of the green space plant configuration model with landscape characteristics, and provided professional suggestions for the builder. The significance of this study lies in the study of plant landscape configuration, the summary of the problems that should be paid attention to in the configuration of plant communities, the discovery of plant communities with higher comprehensive benefits for analysis and optimization, so as to build a plant configuration scheme with multiple benefits.

2. PRINCIPLES OF PLANT LANDSCAPE CONFIGURATION[11-15]

Scientific. The site conditions should be matched with the ecological habits of the selected plants, so as to "adapt plants to local conditions" and conform to the natural law of plant growth.

Artistic. The collocation of the form, color and posture of the selected plants should conform to the aesthetic habits of the public and be able to achieve a beautiful plant image, color coordination and good overall effect of the landscape.

Economy. Seedling specifications and corresponding prices should be consistent with the actual needs, large demand plants can use relatively low prices of seedlings, some small demand symbolic plants can use more expensive seedlings. The number of seedlings to be accurate statistics, as far as possible to do "less money, good effect".

Practicality. The selected plants should be of guaranteed origin, preferably sourced locally; Choose plants that can adapt to the local climate so that the design is easy to implement.

Harmony. Plant configuration should also be considered comprehensively and meet the following basic requirements.(1) Evergreen trees should pair with deciduous trees;(2) The fast-growing trees should pair with the slow-growing trees; (3) Trees, shrubs, flowers, lawns, and lianas shine together; (4) Ground, metope, trellis, balcony, housetop afforest should unify each other.

3. EVALUATION REPORT--TAKE THE LANDSCAPE DESIGN PROJECT OF C SECTION, PHASE- II OF QIANWEI PHOENIX COMMUNITY AS AN EXAMPLE

3.1 Scope definition

It only includes the plant landscape in the green area of C section of Phoenix community.

3.2 Case background

Entrusted by Qianwei Hengji real estate development co., LTD., we evaluated the plant landscape of the design project of phoenix community. Design requirements of the owner: landscape greening design should follow the principle of humanization and the concept of "people-oriented". According to the living habits and lifestyle of residents, it should design the diversity and comfort of the environment to reflect the humanistic effect.Show the principle of coordination, shape the environment of the individual residential area, and build a green environment with reasonable layout

and clear structure. Through the spatial organization of the whole community, the overall color of the community, green layout, etc., the construction of a comfortable residential atmosphere.

3.3 Landscape evaluation report

1) The selection of plant species were abundant, but the configuration of species and configuration scheme need to be improved.

The diversity of plant species is the premise to enrich the landscape of the community. Through their unique branches, leaves, shapes, flowers, fruits and other different characteristics, various plants constitute the seasonal and color changes of garden plants, so as to achieve rich landscape effects and make people happy.

The plants selected in the original design are rich in varieties, which are basically suitable for planting in this area. However, the overall canopy line of plant configuration has little fluctuation, and the spatial effect is not obvious due to the excessively smooth forest edge line. The overall landscape effect is not outstanding, and the lower layer of shrubs will grow poorly, perform poorly, lack of vitality or even die due to the shading effect of trees and shrubs in the later period, thus affecting the landscape viewing effect of the whole community (such phenomenon has been generated in the first phase of the project).

There are 48 species of original plants, all of which are common garden species. The choice of camphor tree, ginkgo, small leaf figs as the skeleton tree, the effect of the planting scheme is reasonable, but the plant collocation in the community needs to be improved. In spring, there are cherry blossoms and begonia; in summer, there are myrtle myrtle, hibiscus, red flowers, June snow, triangular plum; in autumn, there are osmanthus flowers, triangular plum; in winter, there are wintersweet, so there are flowers in all four seasons. However, the quantity of configuration and planting method are somewhat monotonous, which cannot form the rich landscape effect of flower clusters, so it needs to be further improved. There are abundant spherical plants, and the ground cover shrubs are mostly planted under trees in patches of color plates. The hue is obvious, but the height difference is too small to form scattered landscape features.

2) Most of the plants are arranged in cluster and point-like planting, which did not effectively create the effect of “much in little” landscape space.

Group planting is generally used in large-scale urban space (such as park landscape and road landscape design) to show the overall beauty of a variety of plant landscape combinations. Basic use this dot depended in design of the plant, although it is rich in plant species, but representative plant quantity is less, the buffer space is too little, appear to mean and messy, namely cannot show plant overall beauty, is not very good fusion show all kinds of plant individual beauty, but is the entire courtyard greening space is small and narrow.

3) The landscape effect at the entrance of the community was not good, the sight was too transparent, and the sense of plant space was not so obvious.

Symmetrical planting at the entrance forms a sense of ritual, and the selection of plant varieties will enhance the properties of the community. The original design used three silver algae on each side. Silver algae are vulnerable to freezing in areas where the temperature is below zero in winter, resulting in poor plant growth. At the same time, the selected silver seaweed is 3.5 meters high, which is not in harmony with the building itself. Compared with the high-rise elevator, the height and crown

have no obvious advantages. On the contrary, the people coming and going are more likely to pay attention to the height of the building itself, which makes people feel depressed.

The main entrance of the community is too transparent, the sense of spatial hierarchy is not obvious, causing the whole courtyard to take in everything in a glance, so that people do not have the desire to explore, thus losing life. The landscape effect needs to be covered and guided by plants to achieve twists and turns, small in the big appeal effect. Especially in the case that the courtyard space formed by surrounding tall buildings is not large, it is more necessary to deliberately and effectively block and properly guide, so as to achieve the possibility of infinite reveries in the limited space. At the same time, through the appropriate design of plant height difference, the relationship between the building and the trees, between the trees and the pedestrians can be better harmonized, the hard and cold image of the building can be softened, and the scale of the landscape effect can be achieved from the Angle of ergonomics. These aspects were not fully reflected in the original design.

4) The original design lacked elements of a modern theme and the overall tone was grey.

With the development of society, people's artistic aesthetic ability is constantly improved, and people are eager to see colorful and vivid sketch architecture, which is conducive to increasing the landmark of courtyard landscape and enhancing people's sense of belonging. The original design mostly used common street greening plants, ignoring the subjectivity and era of landscape design. For example, ornamental grass and perennial root flowers were almost not involved in the original design, while these ornamental flowers are relatively popular modern elements in the high-quality real estate, which is conducive to improving the landscape of the whole community. In the original design, except for the long flowering period of tripod plum, other flowering periods are relatively short. If some perennial root flowers are added to the ground cover plants, the seasonal phase and hue change period can be prolonged to achieve a richer visual effect of landscape layers and natural wild interest.

5) People's seasonal sensory needs were not fully considered.

A quality residential area should fully consider the seasonal needs of the people living there. The design needs to consider the seasonal demands of spring flowers, summer shade, autumn color and winter shade. The original design too emphasized the evergreen season and the group landscape effect, which could not reach the growing aesthetic taste of residents. Especially in summer, all the roads are almost in the insolation scene and need to be improved. People not only like visual enjoyment, but also hope to bring a multi-dimensional sense of hearing and smell of the landscape. In the original design, in addition to plum blossom (let's assume it is wintersweet), the effect of scentscape needs should to be further strengthened.

6) The improved design idea.

The early evaluation has gained a large space for the optimization of the later plan. The main ideas of landscape design in the later scheme are as follows: to ensure the reasonable landing of plants to the maximum extent, and to add some modern landscape elements by adjusting the way of plant configuration, so as to form a unique environment to achieve a small, medium and large, colorful, distinct, comfortable and livable courtyard landscape effect.

4. CONCLUSION

Landscape design, as a discipline, has a history of 100 years in the world and only 20 years in China. Mountains and rivers bear the immortal, while culture is everyday touchable. All the recognized

excellent landscape design is narrating the history, reflecting the culture, expressing the thought, revealing the objective law and enlightening the soul[16]. The plant research of future landscape design mainly lies in the following aspects:(1) Landscape application, protection and development of native plants. Further explore the characteristics and value of native plants, put forward the protection and development strategy of rural landscape, and clarify the importance of protecting and applying native tree species. (2) Deepen the study of plant color. Color is an important part of landscape design, it relates to the overall aesthetic sense of landscape design. Different plant colors should be studied to integrate plants with the surrounding environment and analyze the expression and application of different plant colors in landscape design. (3) Classify the common plants in landscape design. The specific selection of landscape plants in residential areas, the humanized treatment of garden landscape plants, the configuration of vegetative state in park landscape, the adaptability of plants in roof garden, the visual collocation and so on are all the concrete expressions of plants in a certain type of landscape. (4) Reflect the function of ecological restoration. Different combinations of plant species and plants of different densities have different purification effects on water and air, so it is necessary to find out a plant collocation scheme with both ecological restoration function and good ornamental effect. (5) Plant collocation should reflect ecological functions. As an important factor that affects the ecological benefit, social benefit and economic benefit of landscape design, plant configuration is an important subject of ecological landscape design at present and in a long period of time in the future. This study only analyzes the landscape effect of plant configuration in a residential area in leshan, and the evaluation results may not be suitable for landscape configuration in other areas. However, generally, to give priority to the evaluation of the effect of landscape design can provide a sufficient basis for the subsequent optimization of the scheme, and at the same time can better guide the construction. In this sense, such an idea should be attached importance to by the industry, which is exactly what the author hopes to see.

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