

Investigation and Analysis of Plant Configuration in University Campus--Taking Wuhan University as an Example

Wenjun Wang
City College of WUST
Wuhan, China
15827425957@163.com

Abstract—University is the cradle of training talents, has a set of education, scientific research, life, have a rest in the integration of special properties and construction material and spiritual distribution corresponds to the multiple functional requirement, the stand or fall of campus greening, directly or indirectly affect the formation of environmental awareness, and the campus plant configuration often can form the features of a university; From the perspective of campus ecology, strengthening the allocation of green plants in colleges and universities can also promote biological diversity and the coordination of campus ecosystem. Therefore, the campus greening planning should take "people-oriented, ecological environmental protection and higher artistic quality" as the principle, according to local conditions, suitable ground suitable trees, create a high grade, distinctive characteristics of the campus humanities environment.

Keywords—Campus, Plant Configuration, Plant Landscape

I. INTRODUCTION

The university campus green space carries the history and tradition of the campus, describes the culture and spirit of the school, and is the most vital and appealing part of the campus environment. The beautiful campus green space can create a suitable environment for students to learn, explore and grow. It is good for students to feel beauty, discover beauty, create beauty, and subtly cultivate beautiful behavior, beautiful language and beautiful personality in the beautiful environment. As Marx said: "Man creates the environment and the environment creates people."

Different colleges and universities have different geographical environment, campus context, school-running characteristics, etc. Campus greening should combine these elements to create a unique campus green landscape, and build a sustainable ecological campus and humanities campus where people and nature live in harmony. Due to its rich ornamental characteristics, flexible configuration, and unique environmental protection and improvement functions, plants have become the most important framing elements in university campus greening. Therefore, it is of great significance to study the plant landscape of university campus to improve the quality of campus greening and to create a better campus environment, so as to achieve the purpose of university environment education.

II. PLANT CONFIGURATION SURVEY AND ANALYSIS

Wuhan University is located in Luojia Mountain, Wuchang, and it has a subtropical humid monsoon climate. The campus is famous for its beautiful natural scenery and beautiful scenery. The campus covers an area of about 300 hectare, along the lakeshore line of more than 2km along the East Lake. There are more than a dozen large and small mountains, such as Luojia Mountain, Lion Rock, Side Boat Hill and Banbian Mountain, about 60 hectare". The East Lake surrounds the east and north of the campus, and the west side is Huhan. Together with the campus's excellent vegetation coverage and unique architecture, these constitute a naturally supported garden campus. She is like a splendid green gem set in the vast East Lake, not only an important part of the East Lake Scenic Area, but also a distinctive part of Wuhan's urban greening. It is an excellent example of studying the greening configuration of the university campus.

A. Investigation Method

Through on-the-spot investigations and related materials, surveys of representative areas of the campus are carried out in a combination of points, lines and surfaces. The points are representative of specific plant configurations, and the lines pass through the main secondary roads and the plants on both sides of the park path. The configuration is mainly reflected in the plant configuration of the library and scientific research building.

B. Campus Plant Configuration

The library area is characterized by regular pure lawns on the central axis and sparse forest lawns on both sides of the main building. The lawn can show open space and provide people with beautiful and comfortable landscape environment. At the same time, due to the dense stems and leaves of the lawn, the root system is developed, which plays an important role in maintaining water and soil, purifying the atmosphere, reducing noise and regulating the microclimate. Reasonable allocation of landscape plants, rocks, etc. in the lawn can beautify the artistic effect of the landscape.

On both sides of central axis with ginkgo, platane for trees, tree by manicured lobular boxwood, gold leaf privet, violet Ye Xiaoliang collocation of color hedge, rule type block pure lawn, is among the lawn have played an important role in expanding the space and guarantee from the door to the main building space appear a gender, between the main building is tall and majestic. At the end of the lawn, the background trees are used as the background. The trees are in a natural style on the terrain, mainly composed of pinus tabulaeus, during which white pines, ginkgo and chicken feet are decorated. A few half-buried rocks add a bit of garden and wild interest to the trees and attract visitors' interest. Lawn, background trees and surrounding plants soften the rigid lines of the building and enrich the artistic composition of the building.

The planting arrangement in the central axis turf area has a rich seasonal landscape. In spring, there are young leaves and spring flowers. The color of the lawn will change constantly throughout the year, from spring to autumn, from shallow to deep, spring and summer can plant some seasons in the flower garden. Sexual grass flowers, Peach will also open in the spring, the hedges on both sides will show different seasonal changes, enjoy the thick green in summer, rich landscapes of colorful leaf trees such as ginkgo, chicken and claws in autumn, and evergreen trees in winter. Pine and cypress, in addition to some species of white pine can be seen, so that the seasonal landscape is not monotonous.

C. Road Plant Landscape

As an important part of urban space, roads are not only a passage for transportation, but also an important place for people to live outdoors. Road greening is an important part of the road landscape, while greenland plants play a rich and unified street facade in the road landscape; segmentation and organization of road space; organization of traffic; shade effect; concealment; protection, the role of natural regulators. When making road landscape plant configuration, it should be rationally selected according to plant ecological habits, considering seasonal changes, color matching and biodiversity, insisting on the combination of function and scenery, combining science and art. Generally speaking, the curves of the garden roads are required to be natural and smooth, and the plants and small items on both sides should be naturally changeable and eclectic. Visitors walk on it, and the distant and beautiful scenery can form a continuous dynamic picture with the effect of walking in different directions

D. Main and Secondary Trunk Plant Landscape

The main and secondary roads on the campus are the landscapes that show the school's appearance. Therefore, while considering the functions of each area, it is also necessary to highlight the characteristics of each road. The planting form of the shrubs on both sides of the roads of Wuhan University adopts the conventional determinant planting. The main and secondary trunk plants are equipped with a large number of native plants, which not only suits the trees, but also represents the vegetation culture and regional customs of the Beijing area. On the east and west trunk roads, there are Populus tomentosa, French phoenix, Ginkgo biloba, Eucommia ulmoides, and Pinus tabulaeformis. They all choose trees with higher branching points. The lower layers are not equipped with other shrubs. They are only used as ground cover. On the two sides of the road, different landscapes are arranged along with the extension of the road. People walking on the road can see the scenery on both sides through the street trees. Different road sections are used according to different characteristics of the surrounding roads, which avoids the monotony of the road landscape. It is also well integrated with the surrounding landscape. The other main and secondary roads are harmoniously matched with the surrounding landscape. For example, the main road on the west side of the lotus pond in the near spring garden is equipped with weeping willows, which complements the water surface of the lotus pond.

E. Garden Road Plant Landscape

The campus roads have both regular plant configurations and natural country road configurations. Different terrains are used to create different artistic conceptions. Nearly Chunyuan Lianqiao leads to the population of Tushan and woods lawns. The population is equipped with dragons and cypresses, and the white poles are planted in the spring. It gives people a feeling of being more closed, but afterwards, they suddenly use their own desires. Techniques; the plants on the side of the road are equipped with a combination of arbor and irrigation, high and low, scattered and dense, with rich color matching, giving a beautiful visual enjoyment; the natural path under the bamboo bush has a bamboo path and a quiet feeling; The trail gives a quiet, cool feeling in the summer.

F. Memorial Landscape Plant Configuration

The commemorative landscape of a university campus refers to a regional complex that can inherit historical culture or evoke objects, such as events, behaviors, and lifestyles. Such landscapes often remind people of a university culture, have a sense of history, and emphasize the long-standing spirit of the campus spirit. It fosters the personality of college students, establishes lofty ideals, inherits fine traditions from generation to generation, and plays an invisible role.

Trees are the most used landscape elements in the campus commemorative plant landscape, and their visual form diversity has special significance for shaping the atmosphere of the campus commemorative landscape. However, all the campuses with a long history can be seen in the ancient and famous trees. They have witnessed the vicissitudes of the campus. The ancient building of Wuhan University has left many ancient and famous trees in the centuries-old historical changes, such as the cypress of the library. Mao Populus, Ginkgo biloba, the impression is relatively deep when the ancient mulberry on the south side of the ancient construction area, although the trunk has been broken, but especially vigorous, there is a kind of dead wood in the mood of spring.

G. Architectural Plant Landscape

The landscaping effect next to the building depends to a large extent on the choice and configuration of the garden plants. The architectural style determines the way the plants are arranged, and the different configuration methods will produce different styles, and the two complement each other. The rich natural color, soft and varied lines, graceful posture and charm of the plant add to the aesthetics of the building, creating a lively and seasonally changing appeal, a dynamic balanced composition. It plays a prominent and emphasized role in the theme of garden architecture. Therefore, when planting plants along the building, we should proceed from the ornamental nature of different plants to achieve the contrast between garden plants and buildings, and create a garden landscape that reflects nature and is higher than nature.

Meiyuan, Yingyuan, Guiyuan and Fengyuan in the four college students' living areas of Wuhan University have their own characteristics. Plum, Japanese cherry, osmanthus, sweet gum and chicken claws are the backbones and characteristic trees of each park. It provides a good sense of place recognition and belonging to each student area. Meiyuan is an integrated community of Wuhan University that formed an integrated life and teaching. In the center of Meiyuan, a group of combined ornamental flower beds are arranged. The center of the flower beds is planted with a model of plum trees. The Luoia Mountain stone with the word "Mei" is echoed with the plum trees to form a visual focus. Under the background of the low-grade one-and-two-year-old grass flowers planted in the flower beds and around the flower beds, the main scenery plum blossoms are even more crying. The green space around the flower bed group is fully applied with the combination of Joe and shrub. The eucalyptus and metasequoia are planted along the road. The ground cover plants adopt the manicured red stepping wood, bone-building and golden-leaf niece. The big leaf boxwood ball and the bone ball play a role in guiding the line of sight. The green land is dotted with more plum blossoms and wax plums, and the "mei" word of Meiyuan is crying. Pebble path in the garden, set table and stool, newspaper column. The entire Meiyuan culture has a rich atmosphere and elegant and fresh landscape, making it one of the most popular spaces for students to study and interact outdoors.

III. SUGGESTIONS FOR IMPROVEMENT

A. Improve the Abundance of Lower and Middle Plants

Determinant under the trees, the terrain slope, and some trees in the jungle in the way of lower plants, middle can configure some shade-tolerance of plants, like the flower of the taiping embroider line arrested son, chrysanthemum, honeysuckle, horizontal branch can be configured for some jade, herba violae, lower order along the grass, big inebriate grass, classes, etc., on the forest edge line increase the application of perennial root flowers, rich the seasonal landscape, you can configure a sense, some perennial root flowers and plants, such as tulips, grass, and also can be appropriately increase some seasonal sucks configuration.

B. Increase Waterscape Plant Configuration Appropriately

The plant configuration at the water edge can not only decorate the water surface, but also realize the transition from the water surface to the embankment, which is widely used in the natural water landscape. In shallow water can be configured such as pueraria, scallion, reed and warbler tail. These plants are of high ornamental value and have a good decorative effect on the revetment. Water surface can appropriately increase the application of floating plants, but do not usurp the dominant position, in order to ensure that midsummer can create a "sky lotus leaves infinite green, reflect the sun lotus flowers are different red" spectacular landscape.

IV. SUMMARY

Campus greening construction is not just a landscaping of planting flowers and trees, but to create a natural, cultural, artistic, high-quality learning, work, living environment. With advanced concept of ecological planning of Wuhan university, plant configuration principles of scientific, artistic technique combines ecology and planning, landscape, plants and other multi-disciplinary mutual penetration applied to the construction of ecological campus, the campus plant configuration both in quantity and quality is a model of universities in the south of the plant configuration style and concept of construction of ecological campus can provide guidance and reference for the other campus.

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