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Analysis of Urban Road Landscape Configuration in Tianjin Binhai New Area

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ABSTRACT: The road is the most vivid and intuitive window of an urban landscape design, and it is the symbol of the city carrying culture and modern civilization. In recent years, Binhai New Area has focused on industrial production, vigorously introduced high-tech industries, and actively improved the ecological environment, which has played a role that cannot be underestimated in the process of Beijing-Tianjin-Hebei integration. This paper takes Tianjin Binhai New District, a representative city in the north, as an example to analyze the landscape configuration of its main roads, namely Central Avenue, Taida Street and Linhai Road. This paper firstly expounds the development status of urban road landscape, and consults related conceptual issues to lay a theoretical foundation for subsequent research. Secondly, the analysis of the geography of the Binhai New Area and the actual landscape configuration of the surveyed roads revealed that the landscape in some areas lacked unity, the vertical utilization rate was low, and the plant species were conservative and monotonous. According to the problems found, reasonable countermeasures are put forward, and finally the road greening is advocated to be scientific, humanistic, diverse and balanced, in order to realize the further development of urban road landscape construction.

KEY WORDS: urban road landscape configuration

I. INTRODUCTION

1.1 The development status of urban landscape roads

Since the beginning of the 20th century, my country's urbanization process has gradually accelerated, the economy has developed rapidly, and the transportation network extends in all directions, which has accelerated the expansion of urban traffic and increased the degree of complexity. With the gradual improvement of roads in the city, road greening has become an essential focus of urban traffic. In the past, our country only relied on the simple greening form of planting trees on both sides of the road, but now it has developed into a greening model of "road green space". In the current urban road greening, our country has developed into road repairs that are carried out simultaneously with roads and greening. In terms of the form and function of road green space, the existing road green space includes street gardens and square green spaces, roadside green belts, three-dimensional intersection green belts and road separation green belts, etc., and plants are selected and matched according to local conditions. It not only pays attention to greening, but also puts forward higher requirements in terms of color matching, plant layer combination, and ornamental characteristics of flowers, leaves and fruits, so as to maximize the ecological and beautifying benefits of green spaces. The landscape layout of the green space has gradually evolved from a single rule to a variety of composite forms of natural and mixed.

The research direction of this paper is the road landscape configuration of northern cities represented by Tianjin. The city represents the economic and political center of a region, and embodies local characteristics and folk culture. In the process of urban development, the functional positioning is different, but the significance of street landscape is to show the charm of the city to the outside world, and then create the image of the city. Tianjin is currently proposing the "Twin Cities" strategy. Binhai New Area, as an important port in the north and another prosperous area of Tianjin, has attracted the attention of all parties. The purpose of this study is to put forward feasible suggestions for road greening in Binhai New Area according to the road landscape characteristics of Tianjin Binhai New Area. At the same time, because Tianjin is on the verge of Tangshan, Hebei, the city's air quality has repeatedly exceeded the standard, which is the main source of human respiratory diseases. As a modern new city, Binhai New Area has lost the essence of road greening in some places where greening is for the sake of greening and innovation for the sake of innovation. Therefore, the significance of this study is to base itself on urban road greening construction,

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advocate green travel and ecological environmental protection concepts, and add modern elements to the new city, so that people and nature can live in harmony to find answers.

II. URBAN ROAD LANDSCAPE THEORY

2.1 Basic concepts

Urban roads are the biggest basis for supporting the urban landscape system. Urban roads maintain the image of the city. At the same time, they also play an important role in coordinating people, vehicles, roads and natural landscapes, effectively guiding the city into a virtuous cycle system, maximizing The development of urban ecological landscape value. Urban road landscape can be divided into narrow sense and broad sense. In the narrow sense, road landscape mainly includes the entity and space system of the road. It mainly uses the interaction between natural landscape and artificial landscape to realize the effective transformation between objects. The broad sense of road landscape is more powerful in terms of visual impact than the narrow sense of landscape, which can reflect the linear style of urban roads and increase the harmony between citizens and ecology. Therefore, in terms of the specific concept of road landscape, there is basically a consensus in the academic circles.

2.2 Landscape elements

2.2.1 Natural landscape elements

The natural landscape of the area where the city is located is not easy to change. Therefore, the unique natural conditions of different cities are also the most basic characteristics that distinguish them from other areas. During the construction of urban roads, we must make full use of the local natural landscape conditions in order to conform to the original aesthetic characteristics of the local people. The roads in plain areas are limited by visual impact, and the road space does not have a strong aesthetic feeling. The landscape in mountainous areas has been changing rapidly, and the ups and downs are also the characteristics of road landscapes in mountainous cities. For example, Chongqing is famous all over the country for its layered and three-dimensional roads.

The water body is also a part of the road landscape. Natural rivers can bring people physical and mental enjoyment and give people vitality. Water landscapes include those formed naturally and those developed artificially. The former mainly refers to natural landscapes with huge water surfaces such as rivers, lakes and seas. In terms of road construction adjacent to natural water bodies, the original ecological color should be fully utilized to build coastal squares, coastal plank roads and recreational facilities. Amusement Park etc. Artificial water road landscapes include artificial fountains, pools, etc. These generally rely on the design of squares or parks, and use the sound of gurgling water to render the roads, increasing the enjoyment of space and the fun of walking.

2.2.2 Artificial landscape elements

The elements that constitute the artificial road landscape include road network, cross-section, buildings, greening, road paving, traffic facilities and street sketches, etc. Among them, the artificial shaping of buildings should be combined with local cultural characteristics. For example, the buildings along the streets of some tourist attractions reflect the historical and cultural characteristics of the scenic spot. The greening should increase the sense of hierarchy, and the colors should be matched effectively to achieve visual enjoyment. Road paving should also have color matching, taking into account the convenience of citizens' travel, and paving roads for different needs. Street sketches should also meet the basic requirements of citizens for rest.

2.2.3 Dynamic elements constituting urban road landscape

Road landscape is a dynamic three-dimensional space landscape, including high-speed traffic flow and colorful human activities. The road connects different landscape activities, forming a visual corridor with a sense of continuity, rhythm, flow, and beauty. It moves and changes at any time, bringing infinite vitality to the urban road landscape.

III. ANALYSIS OF GREEN SPACE LANDSCAPE IN TIANJIN BINHAI NEW AREA

Tianjin Binhai New Area is located in the northern part of the North China Plain , at the junction of the Shandong Peninsula and the Liaodong Peninsula, the lower reaches of the Haihe River Basin , the east of the downtown area of Tianjin , the top of the Bohai Bay, and bordering on the Bohai Sea. It is bounded by Huanghua City, Hebei Province, and its geographical coordinates are located at latitude 38°40' to 39°00' north and longitude 117°20' to 118°00' east.

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Fig. 1 Urban landscape sketch

Fig. 2 Urban landscape sketch

Due to its special geographical location, Binhai New Area belongs to the continental monsoon climate and has the characteristics of marine climate: cold in winter and little snow; The annual average temperature is 13.0°C, the extreme high temperature is 40.9°C, and the extreme low temperature is -18.3°C. The annual average precipitation is 566.0 mm, and the precipitation varies significantly with the seasons, less in winter and spring, and more concentrated in summer. There are many days with strong winds throughout the year, and the number of days with strong winds above level 8 is 57 days. It is foggy in winter, and storm surge disasters are prone to occur in August-September in summer. The main meteorological disasters are: strong wind, heavy fog, rainstorm, storm surge, sandstorm and so on.

IV. PROBLEMS AND SUGGESTIONS ON URBAN ROAD LANDSCAPE CONFIGURATION IN BINHAI NEW AREA

4.1 Existing problems

4.1.1 Landscape unity needs to be improved

In recent years, China's urbanization process has accelerated, and urban road construction and green space construction often fail to meet the synchronization requirements. Fifth Avenue, Sixth Avenue to Tenth Avenue in Binhai New Area are all representatives of development in recent years. However, the species of plants planted on different roads are different, and the types of plants in different sections of the same road are also different. Therefore, there is a lack of uniformity in the planting structure, and the selection of plants is relatively random.

Fig. 3 Hedgerow shrubs

Fig. 4 Drawing of hedgerow bushes as flowerbeds

4.1.2 Configuration fails to reflect cultural characteristics

The construction of many modern roads lacks the integration of urban culture, and simply cares about the external landscape effect, making the same greening a model for all roads, ignoring the cultural connotation, and lacking regionality and representativeness. The park landscape, parking lots and road squares set up next to the road have no obvious visual effect, and various trees and shrubs are randomly matched, which makes the inherent characteristics of human history lost. Although there is not much damage to the city image, it cannot give tourists Visual impact and spiritual shock.

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Fig. 5 The palm trees

Fig. 6 Combination of trees and shrubs

4.1.3 The vertical space utilization rate is low

Urban land resources are relatively scarce. Tianjin, as the second largest city in the north, has limited land resources, which also puts forward higher requirements for road landscape settings. In order to further enrich the road landscape and improve the existing ecological environment of the city, vertical planting is widely accepted and boldly tried to use. Three-dimensional greening is the main trend of urban roads and greening in public places. For example, the expressway from Tianjin to Beihai New District is an important passage connecting the two cities. There is no landscape setting between the guardrails. Between the viaducts, the pure cement concrete steel structure has a very low ground greening rate and lacks vegetation decoration. In the case of limited space, the vertical planting method cannot be fully utilized to realize the reconstruction of the green landscape.

4.3 Countermeasures and suggestions

4.3.1 Utilize local resources to enrich plant varieties

In the process of road greening in Tianjin Binhai New Area, the application of zonal native organic varieties should be increased, especially the application of wild plants that grow naturally. On the traffic roads outside the city, in order to reduce costs and reduce follow-up investment, local varieties should be the mainstay. As an important city in the north, Tianjin is adjacent to the Taihang Mountains, and the local species are rich. After artificial cultivation, the incidence of diseases and insect pests can be reduced, beautification and greening the goal of. In the process of road construction, there are generally three ways to increase the types of ornamental plants. One is to choose exotic species. The advantage of this is that the introduction is fast, but the cost increases and the success rate of research and development is relatively low, which is not in line with economical and applicable development. idea. The second is to develop and utilize existing varieties, but for now, the street greening varieties in Tianjin are relatively single, especially the roads around the coastal area, which lack color and layer matching. The third is to use native species, domesticate them into tree species with good ecological benefits and high ornamental value, and use them on urban roads. This will not only adapt to the local environment, but also reduce economic costs, and solve the problem of road greening to a large extent. In terms of screening local tree species, it is necessary to strengthen the selection of main tree species, look for trees with strong resistance, and take into account the sense of spatial hierarchy, strive to arrange the height of plants in the upper, middle and lower layers, and pay attention to reasonable matching of colors. For the cold resistance of trees and shrubs, etc., the temperature in northern cities is low in winter, and cold-resistant plants are used to avoid frostbite. Colored-leaf plants are indispensable in road landscape construction. Strengthening the application of colored-leaf plants can fully demonstrate the three-dimensional sense and visual impact of road landscapes. Colored-leaf plants can enrich road styles and form gorgeous patterns, reflecting the local expression Characteristic connotation.

Fig. 7 Rhythm and rhythm in road greening

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Fig. 8 Rhythm and rhythm in road greening combined with arbors and shrubs

4.3.2 Urban roads should reflect urban characteristics

In the process of road construction, the road landscape construction of major cities should be combined with the local history and culture, highlighting the unique style of Binhai New Area as a new city and bearing the profound cultural heritage of Tianjin. It is necessary to take advantage of the unique modern cultural elements of Binhai New Area, the specific location and coastal climate characteristics, rely on the traditional road landscape design, add modern elements, and form a unique urban and cultural landscape. Different cities have different characteristics. In addition to the influence of regions and natural landscapes, with the development of urban planning and landscape architecture, road landscape greening will also reflect the characteristics and individuality of cities. There are differences in road landscape greening configuration, characteristic tree species and spatial forms among different cities. Every city has its own city flowers. In the process of road beautification, we should make full use of the unique advantages of city flowers, but we should not stick to the cultivation of a single variety. More attention should be paid to the introduction of characteristic varieties and the rational use of local varieties. Only when the unity of history and modernity, the collocation of level and space, and the reasonable selection of varieties are achieved, can it be distinguished from external cities and reflect humanistic characteristics.

4.3.3 Establish a long-term road landscape maintenance mechanism

Urban road construction is a long-term project. It not only needs to invest manpower, material and financial resources in the construction process, but also needs to be paid attention to in the subsequent maintenance process. This period includes the introduction of seedlings, effective construction, road maintenance and other design concepts . Whether the landscape setting of road plants is good or not, designers need to design according to local conditions in the early stage, and road management staff need to maintain them carefully in the later stage. In the long run, maintenance is the most important thing. When starting road greening construction, it is necessary to start with the quality of seedlings, strictly select suitable varieties, and plan planting reasonably without affecting the construction progress to ensure that the design concept is applied to practice. The competent department should formulate a targeted road greening maintenance system, regularly arrange personnel for maintenance and pruning, and evaluate the effect after maintenance. Road greening is a long-term systematic comprehensive project, which should be randomly adjusted according to the changes of specific conditions to ensure the maximization of landscape benefits. In addition to the new road plant landscape construction task in the Binhai New Area road plant landscape, there is also a part of the work that cannot be ignored - the improvement and perfection of the original road landscape quality. Only when this part of the work keeps up with the requirements of the times, can the urban road plant landscape be improved to a higher level as a whole. In addition to the corresponding technology, the implementation of this work requires the attention of leaders at all levels, the coordination and communication of relevant departments, and human and material resources. Practical support is particularly important.

V. CONCLUSION

This paper mainly takes Binhai New Area, a representative city in the north, as an example to study how to create a scientific and reasonable local road landscape under the background of rapid development of urban construction and tourism industry and increasing demand, and form an artistic and ornamental landscape that conforms to local cultural characteristics. recommendations and methods.

The urban road landscape is closely related to the development of the city. As a new city, Binhai New Area bears the rich cultural atmosphere of Tianjin, and also incorporates modern multiple elements. The road landscape construction shows uneven appearance due to different regions. This paper combines the road landscape greening characteristics of Taida Avenue, Central Avenue and Binhai Avenue in Binhai New Area, analyzes its shortcomings, and puts forward immature suggestions and improvement measures. At present, I think that in the process of building road greening in

Binhai New Area and local cities across the country, it is necessary to comprehensively consider the four directions of humanity, science, diversity, and balance in order to build a unique local road landscape.

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