

A study of high saturation color in public street green spaces in cold areas in the context of urban renewal ---- Take Xiangfang District, Harbin City as an Example

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-----ABSTRACT-----

From the perspective of visual perception, 87% of human consciousness is obtained by visual senses, and color is an important way to provide spatial recognition consciousness. Cold cities have different geographic locations and climate conditions from other cities, and under the multiple influences of nature and humanities. The color of cold cities have distinctive features, with mainly gray color in overall architecture. Low saturation color dominated by natural color fill the winter season. The choice of color is crucial in the process of updating public street green spaces. In addition to considering the color itself, the surrounding regional environment should also be taken into account. Northeast China, nowadays, the artificial application of high saturation color has been widely recognized. High saturation color has the characteristics of strong attraction and visual impact, which can increase the attractiveness of the green space and enhance the experience of the masses. The article summarizes the research on the application of high saturation color in the public street green space of the cold land, understands the method of application of the color, clarifies the importance of the color, and provides a reference thinking for the application of the color design of the urban landscape construction in the cold land of China. It also provides a reference for the application of color design in urban landscape construction in cold areas of China.

KEYWORDS; urban renewal, color application, cold cities, landscape enhancement, public green space

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I. INTRODUCTION

Research background

With the development trend of landscape garden cities, the public's demand for human-centred places is elevated, and there is a need for spaces that can dialogue with nature and organically integrate the landscape with the environment [1]. The renewal of public street green space has become an important part of urban development. Compared with temperate regions, the cold regions has a fragile ecological environment, segregated ecological space and poorly living conditions. In addition, the public street green space landscape in the cold land also has problems such as color incongruity, disappearance of landscape color dialogue, and monotonous color forms [2]. Residents within the scope of cold land need landscape enhancement more urgently. Therefore, this paper hopes to find an appropriate color strategy to enhance the landscape quality and aesthetics of public street green space in Xiangfang District, Harbin City as an example.

Investigation method

Based on the location of green spaces, different green spaces in the study area are classified, and typical green spaces attached to buildings, including but not limited to green spaces around major commercial buildings and important government buildings, are selected for research and analysis. The research methods mainly include literature review, field research, and data analysis. The study collected and analyzed relevant literature and conducted field visits to select areas to analyze the current color of public street green space landscapes in Xiangfang District.

II. EXISTING PROBLEMS PUBLIC STREET GREEN SPACE

The current public street green space landscape effect is generally poor. The winter landscape color almost disappears, and the overall color in summer is mainly green, lacking other color embellishment. Although

there are bright colors in some areas, the colors are not integrated with the site, and the overall effect is blunt. The landscape color design planning of roadside space should be based on the full compliance with the requirements of urban road traffic functions, and based on the urban road location, geographical and cultural characteristics, distribution of functional groups, and many other factors, comprehensively considering the relationship between the road, environment, pedestrians, etc., so as to construct a landscape road system and roadside space that conforms to the concept of eco-friendly cities [3]. Currently, the problem of using people is not considered in the color planning of public street green space. For example, the green space landscape design effect at the nodes of the provincial government gate, Songmu Street and Jinxiang Street subway entrance, and the intersection of Civil Aviation Road and Hangshan Road is lacking, and the overall color use effect is generally poor (Figure 1).



Figure 1 Site before landscape enhancement

III. HIGH SATURATION color IN THE APPLICATION OF PUBLIC STREET GREEN SPACE

For the current Harbin Xiangfang District, the overall green landscape effect is not remarkable, the public street green landscape, 'scenery but colorless,' the problem has been carried out the public street green landscape enhancement plan, the implementation of urban greening and color transformation and upgrading of the project construction. After updating and reconstruction, the current research node has a new look, in the process of upgrading also focuses on the application of high saturation color.

color matching and application

Compared with low saturation color, high saturation color can create a lively and enthusiastic atmosphere. Vibrant and bright color can quickly attract the attention of pedestrians and make people feel happy, relaxed and excited. Plant landscapes with high saturation color are also more popular with the public [4].

In the application of color in public street green space landscape, it is necessary to pay attention to the degree of harmony between the color. A variety of color can be used in a range of ways, such as adjacent color matching, contrasting color adjustment, complementary color neutralization, etc., so that the color is rich and harmonious [5]. The color matching should also determine the main color, in the main color harmony and unity of the premise, the rest of the color embellishment will be more lively and interesting (Figure 2). The over-pursuit of high saturation should not lead to an imbalance in color matching, and landscape planners need to prevent visual fatigue while attracting the public's attention and achieving visual impact. To ensure that the significant color characteristics of the street scape can bring a better emotional perception of tourists at the same time achieve a high degree of color complexity, color coordination is medium, it can bring tourists lower boredom, depressing emotional perception and higher beautiful, lively, safe, rich emotional perception [6].

Seasonal matching

Harbin is located in the south-central part of Heilongjiang Province, located in the plains, with four distinct seasons. Correspondingly, there should be obvious seasonal changes in the plant landscape.

Special geographic location in the winter landscape ornamental weak, monotonous color, the case, visitors' visual perception will feel depressed, in the application of color need to consider the seasonal changes, in winter there is also a view can be viewed. Selection of some spring foliage species, autumn foliage species, fruit species, flower species, and evergreen species. Suitable species include birch (*Betula platyphylla* Sukaczew), chicken maple (*Acer palmatum* Thunb. in Murray), elm (*Prunus triloba* Lindl.), lilac (*Syringa oblata* Lindl.), purple-leaf plum (*Prunus cerasifera* 'Prunus cerasifera'), and purple-leaf plum (*Prunus cerasifera* 'Prunus cerasifera'). *Prunus cerasifera* 'Atropurpurea', black-barked greasewood (*Pinus tabuliformis* var. *Mukdensis*), and paving cypress (*Juniperus procumbens* Sargent). In the choice of flowers try to choose hardy plants with long flowering periods, such as 2012 flowers: bunch of red (*Salvia splendens* Ker Gawl.), peacock grass (*Tagetes patula* L.), etc., and hosta flowers marigold (*Tagetes erecta* L.), New Guinea bromeliad (*Impatiens hawkeri* W. bull), etc. (Figure 3).



Figure 2



Figure 3

Figure 2 Intersection of He Ping Road and Bao Jian Road

Figure 3 Green space in front of the provincial government

Regional specificity

Selecting the regional geographic location is different, viewing needs are not the same, while the location of the main service objects around different, for the street green landscape color needs, are also different. For the provincial government in front of the green space, such as the large flow of people in the landscape nodes, the viewing mode is mostly for close viewing, in the application of color should be considered unique, so that visitors to the place can produce a deep impression of the site and the environment is easier to remember and associated (Figure 4). For some of the nodes located in the vicinity of the main traffic arteries, the viewing mode also includes long-distance viewing, which needs to pay attention to its attractiveness and the degree of collocation with the surrounding environment, which can be added to the signage landscape sketches, etc. [7] (Figure 5).



Figure 4



Figure 5

Figure 4 In front of the Swan Hotel of the Provincial People's Political Consultative Conference

Figure 5 Node at the underground entrance of Songmu Street and Jinxiang Street

IV. Results and analyses

Effectiveness of high saturation color

In cold landscapes, high saturation color has important application value. In terms of visual effect improvement, high saturation color can bring vitality to the public street green space, high saturation color can attract visitors to stay around the green space to watch and participate in the interaction and improve the utilization rate of public space. It can also break the scene of almost white and brown bare tree trunks in winter, shaping the city's unique appearance, forming a unique urban style, and getting rid of the dilemma of "scenery without color". In the creation of a healing space, high saturation color can create a lively and relaxing space, and stimulate the pleasure and relaxation of visitors, when the saturation in the appropriate range, can produce a strong healing of people.

Limitations of high saturation color

In the landscape design of public street green space, the excessive use of high saturation may produce visual fatigue and other problems, resulting in visitors quickly losing interest, and because of the wide range of people using public street green space, different groups of people with different preferences for color, even if the audience of high saturation color crowd range can not be ignored there is a small portion of the crowd preferring soft tones.

Suggestions for improvement

According to the above results, in the future application of high saturation color, it is recommended that researchers further explore the role of high saturation color in regulating the mood of visitors, and combine the surrounding environment and functional needs in the application of color to maximize the possibility of meeting

the needs of visitors. While creating a high-saturation color landscape, it is necessary to combine other landscape elements to create a colorful and harmonious public street green space.

V. Conclusion

In conclusion, the application of high saturation color is an effective way to enhance the street green space landscape, and the reasonable collocation of color can inject vitality to the site. In this paper, the study of high saturation color for public street green space in cold areas is based on the existing problems in Harbin City, exploring the application method of high saturation color through color, seasonal phase, and region, considering the effectiveness and limitations of high saturation color, showing the importance of color in landscape enhancement, and mentioning that tourists' aesthetic fatigue can be prevented by high color complexity and medium color coordination. It also mentions the solution of preventing tourists' aesthetic fatigue through high color complexity and medium color coordination, hoping to provide a reference for the application of color design in the construction of urban landscapes in cold regions of China.

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