Study on the design of landscape wall of Wuhan Garden Expo

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Abstract. The investigation on the landscape wall of Wuhan Garden Expo shows that the landscape wall of Wuhan Garden Expo is widely used. There are four types of landscape wall, cultural wall, retaining wall and logo wall. There are 42 landscape walls in 34 Urban gardens. Their forms and themes of expression are different in Wuhan Garden Expo. Most of the landscape walls in Wuhan Garden and Expo Garden are made of marble materials, which show the characteristics of multi-color collocation in color. The size of the landscape walls is often determined by the content of the expression. The composition of the landscape walls is usually designed with plants.

1 Introduction

1.1 Introduction of Wuhan Garden Expo

The park was built in 2012 after three years of construction, and was opened on the opening day of the 10th World's Fair in 2015. The Garden and Expo Park in Wuhan has taken on a new look, from being barren before, to now being a wonderland of birds, flowers, green water, green mountains and beautiful scenery, it has also become a popular destination for Wuhan residents and tourists alike[1].

1.2 Introduction of landscape wall

As a carrier of culture transmission and color rendering in modern garden construction, the expression meaning of landscape wall is not limited to bricks and tiles, but more as a medium of spiritual culture transmission[2]. The landscape wall covers a wide area, besides the concrete form of the wall, fence, sculpture, steps and so on also belong to the composition of the landscape wall. The size of the wall can be large or small, color structure, the contents of the various engraved, can be regular, can also be irregular; can be plane, can also be three-dimensional; can be a variety of color, can also be a solid color. As an essential element of urban landscape, the landscape wall is a combination of history, culture, scale and art, and has gradually become an important part of urban landscape construction[3].

1.3 Research Methods

In the research on the design of the landscape wall of Wuhan Garden and Expo Park, the author first uses the method of literature to understand the relevant content in advance, and inputted the key words "landscape wall" , "Garden and Expo Park" in many literature databases to consult the data; On the basis of the previous information, this paper makes a field investigation on the design of the landscape wall of Wuhan Garden Expo Park by means of the field investigation method, and obtains the landscape wall data of Wuhan Garden Expo Park, in this paper, the data of landscape wall of Wuhan Garden Expo are classified by mathematical statistics, and the characteristics and design types of landscape wall of Wuhan Garden Expo Are Presented.

2 Results and analysis

2.1 Investigation results of landscape wall

The entire exhibition park of Wuhan Garden Expo Park is divided into seven sections: Urban Garden Exhibition Park, International Garden Exhibition Park, Master Garden Exhibition Park, Creative Park Exhibition Park, Theme Park Exhibition Park, Enterprise Park Exhibition Park and Zhongle Garden, there are 117 pavilions. The landscape walls of Wuhan Garden and Expo Park are mainly distributed in the Urban Garden Exhibition Park and a few international garden exhibition parks, master Park Exhibition Park, Creative Park Exhibition Park, Theme Park Exhibition Park, Enterprise Park Exhibition Park, Zhongle Garden, these five areas have no walls. In many urban parks, there are 37 urban parks with landscape walls, through the landscape wall landscape, landscape wall composition, landscape wall data, landscape wall decoration and landscape wall function of these 5 aspects were recorded in detail, this paper sums up the design scheme table of the landscape wall of Wuhan Garden. Wuhan Garden Expo Park has a total of 42 walls, part of the city park has multiple walls, different walls in different aspects of the design has some differences.

2.2 Analysis of landscape disposition elements of landscape wall

According to the data of landscape elements, 42 landscape walls in Wuhan Garden Expo Park have various landscape configurations. Among them, 42.86% were plants, and 23.81% were skippers. Plants have a good degree of integration with the surrounding environment, the use of plants in the landscape wall can be a good embodiment of the principle of integrity, as one of our country's long history of culture, with a refined and far-reaching characteristics, it has strong artistic quality and can improve the artistic feeling of the landscape wall, which is widely used in the landscape wall of Wuhan Garden Expo. In the landscape arrangement of Wuhan Garden, there are two kinds of landscape wall which are composed of two kinds of configuration elements. For example, Suizhou garden combines two kinds of elements of paving and building, and Huangshi Garden combines two kinds of configuration elements of topography and plants, this kind of combination of multiple configuration elements can express many kinds of themes with strong function, can improve the connotation of the wall, and supplement the deficiency of the single element configuration.

Table 1. Analysis of landscape elements of landscape wall.

Landscape configuration element	Quantity	Proportion%
Landscape sketch	10	23.81%
Paving	2	4.76%
Architecture	3	7.14%
Plants	18	42.86%
Topography	3	7.14%
Water, plants	1	2.38%
Paving, Architecture	1	2.38%
Topography, Plants	1	2.38%
Paving, Landscape sketch	2	4.76%
Architecture, Plants	1	2.38%
Total	42	100.00%

2.3 Analysis of the composition design of the landscape wall

In the study of the composition of Wuhan Garden and Expo Garden, 29% of the landscape walls used this method. At the same time, there are also many landscape walls that have not been designed using the composition method, accounting for up to, based on the landscape design table of Wuhan Garden and Expo Park, the author summarizes the design table of Wuhan Garden and Expo Park Landscape Wall composition method, composition design table, and other design tables. The landscape wall composition of Wuhan Garden and Expo Garden presents a variety of characteristics.

In the aspect of the design of the composition method of the scenery wall, Wuhan Garden and Expo Garden mainly adopts the symmetrical composition method, which accounts for 30.95% , and the rhythm and rhythm, which is widely used, accounts for 16.67% . Similar to the layout elements of the landscape wall, some of the landscape wall of Wuhan Garden is composed by the combination of multiple composition methods, such as Huangshi Garden repeated and unified two composition methods. The use of composition method has greatly enhanced the overall artistic sense of the landscape wall and increased the artistic quality of the landscape wall.

Table 2. Analysis of composition method of landscape wall.

Composition method	Quantity	Proportion%
Rhythm and rhythm	7	16.67%
Repeat	2	4.76%
Repeat and unity	3	7.14%
Symmetry	13	30.95%
Contrast and unity	5	11.90%
None	12	28.57%
Total	42	100.00%

In the aspect of the composition method of the landscape wall of Wuhan Garden and Museum, the line, the surface and the combination of these three elements are mainly used in the composition. Among them, the factor of plane composition is the most widely used, there are 32 landscape walls which adopt the factor of plane composition, accounting for 76.19% , the factor of line composition and the way of combination of line and plane composition are close to each other. The landscape wall itself is a plane communication building. The composition of the landscape wall according to the plane composition elements can grasp the integrity principle of the landscape wall, so that some of the contents in the landscape wall will not be too abrupt.

Table 3. Analysis of landscape wall composition elements.

Elements of composition	Quantity	Proportion%
Thread	7	16.67%
Face	32	76.19%
Line plane	5	11.90%
Total	42	100.00%

In other aspects of the composition design of Wuhan Garden and Expo Park, the research results show that the composition of the landscape wall of Wuhan Garden and Expo Park has taken many forms. Among the 42 landscape walls, 10 landscape walls have adopted the way of separating landscape, which accounts for 23.81% , the second is the method of seal cutting, 9 of them have adopted this method, accounting for 21.43% . The two methods of relief carving and framed scenery are used in the same situation, accounting for 14.29% and 16.67% respectively. There are also two ways to combine the expression of composition design, such as the Xianning Garden Wall seal cutting and the combination of scenery.

Table 4. Analysis of other aspects of landscape wall composition design.

Other aspects	Quantity	Proportion%
Seal cutting	9	21.43%
Embossment	6	14.29%
Framed view	7	16.67%
Seal cutting, scenery separation	2	4.76%
scenery separation	10	23.81%
Stacking	2	4.76%
Scenic spot	3	7.14%
Embossment, scenery separation	3	7.14%
Total	42	100.00%

In the selection of the color of the landscape wall of Wuhan Garden Expo Park, the color selection is very flexible. There are altogether 17 kinds of color matching methods of the landscape wall. Among them, the multi-color mixed use of the landscape wall is the main color matching design scheme of the landscape wall of Wuhan Garden Expo Park, white, Gray and gray are most widely used in color matching. In the pure color color color match color, white and gray uses most. Multi-color wall decoration can provide a better visual impact, can be a good way to enhance the art of the wall.

Table 5-1. Analysis of he color design of landscape wall composition design.

Color design	Quantity	Proportion%
Gray	10	28.57%
White, gray, black	1	2.86%
Black, gray	4	11.43%
Gray, red	1	2.86%
Yellow	1	2.86%
White, Gray	2	5.71%
Red, white	1	2.86%
Gray, yellow	1	2.86%
Brown	1	2.86%
White	5	14.29%
Yellow, white	1	2.86%
Green, yellow, black	1	2.86%
Red	2	5.71%
Black	1	2.86%
White, black	2	5.71%
White, blue	1	2.86%
Total	42	100.00%

Table 5-2. Analysis of he color design of landscape wall composition design.

Color	Performance effect	Picture
White	Dignified, saintly	
Gray	Quiet, steady	
Multicolour	Youth, vigor	

It is found that the landscape wall of Wuhan Garden has four functions: Culture Wall, Landscape Wall, retaining wall and marking wall. Among them, landscape wall is the most widely used in urban landscape wall, 20 landscape walls are landscape walls, accounting for 47.62% , nearly half, followed by cultural walls, 11 landscape walls using cultural walls, accounting for 26.19% . The use of the sign wall is less, the cumulative number of 9 landscape walls is the sign wall, accounting for 21.43% , the least is the retaining wall, the retaining wall as the most functional foundation of the landscape wall, the ornamental is relatively poor, compared with other types of landscape wall is indeed much weaker, so there are few applications.

Table 6. Analysis of he Wall function of landscape wall composition design.

Wall function	Quantity	Proportion%
Cultural Wall	11	26.19%
Landscape Wall	20	47.62%
Retaining Wall	2	4.76%
Marking Wall	9	21.43%
Total	42	100.00%

3 Conclusion and discussion

3.1 The influence of Landscape Wall Design on Wuhan Garden Expo

As a kind of modern city garden decoration, the landscape wall plays an important role in the urban cultural dissemination and the shaping of the overall image of the city[4]. In the Garden Expo Garden, many new creative ideas have been adopted, and many urban gardens have been constructed. The landscape wall also exists in many urban gardens. Generally speaking, the garden has more landscape walls and more types of element combinations, which cater to the taste of different audiences. Landscape Wall is the most widely used in the park is the landscape wall, which is consistent with the original positioning of the park, the landscape wall to enhance the park's aesthetic value; Different landscape walls in the expo park use different elements, different composition methods, and different materials, from marble to glass and then to metal. These factors make different display effects of different landscape walls, more of the wall to take a hybrid use of elements of the creative, good highlights the wall's functionality and artistry.

The urban landscape wall of the garden and Expo Park in Wuhan has greatly enhanced the overall artistic sense of the garden and Expo Park, full of creativity, the beautifying function of the landscape wall, the propagandistic function of the cultural landscape wall, the prompting function of the marking landscape wall, and the practical maintenance function of the retaining landscape wall, together, they make the design of Wuhan Garden and Expo Garden full of sense, powerful function, in different designs can reflect the integrity of the garden and Expo Garden[5].

3.2 Application trend of landscape wall

The landscape wall design feeling is full, is one kind of landscape garden expression form, can display its unique effect in the very small occupation area, the present application is very widespread. As a kind of landscape architecture with strong plasticity, the landscape wall can

cater to different audience and achieve different communication effects under the combination of different ideas, and its function is very strong. In the landscape design with the role of space separation, played a series of space, space separation and other effects. Creative High Wall can not only enhance the city's artistic sense, but also become the city's calling card, and enhance the city's visibility. In the future, the application of the wall will be more and more widely, its expression form will be more and more, the expression effect will be more and more excellent on the existing basis.

3.3 Recommendations of the Wall design

Through the research on the design of the landscape wall of Wuhan Garden, according to the characteristics of the landscape wall of Wuhan Garden, some suggestions are given. A. In the aspect of the overall design of the landscape wall, the phenomenon of strong integrity and different forms of expression will add luster to the urban landscape wall design, the theme of the Landscape Wall expression should be profound and creative, not too superficial. B. In the aspect of the composition of the scenery wall, it is necessary to express the theme clearly and pay attention to the match with the surrounding environment and the harmony of the whole situation. C. On the basis of studying the design style and concept of other landscape wall, it is flexible to change and refer to, copy the existing design scheme and related creativity, and must cater to the local folk custom characteristics and the surrounding architectural style. D. We can combine the scene wall with modern technology, enhance the scene wall feeling, make the scene wall theme can be more prominently displayed, at the same time, we also need to do a good job of regular maintenance and inspection measures to ensure the expression and dissemination of the scene wall function.

Acknowledgments

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