

Research on the Renovation and Design of Urban Waterfront Recreational Spaces: A Case Study of Qijiang Park in Zhongshan City

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Abstract:

With the arrival of the leisure era, people's leisure needs and aesthetics have also increased. Providing new places for recreation and walks, as well as meeting the needs of leisure activities, has become a focus of attention. As a continuous gathering area of urban information, waterfront areas, due to their unique location advantages and natural hydrophilic advantages, meet people's leisure needs for returning to nature, making waterfront recreational activities increasingly popular. This paper first analyzes the development history and current situation of urban waterfront recreational spaces from the perspective of domestic and foreign research, and summarizes the problems existing in current domestic urban waterfront recreational spaces. Secondly, based on principles such as ecological landscape, humanism, regionality, hydrophilicity, and ornamentality, this paper proposes strategies for the renovation and design of waterfront recreational spaces. Finally, the paper analyzes the current situation of the waterfront recreational space in Qijiang Park in Zhongshan City and proposes corresponding renovation strategies and measures in order to improve the quality and attractiveness of the leisure space.

Keywords:

Recreational Spaces, Urban Waterfront Areas, Renovation and Design

1. Urban Waterfront Recreational Spaces

1.1. Overview of Urban Waterfront Recreational Spaces

Urban waterfront recreational spaces refer to places in urban waterfront areas that provide leisure and entertainment for citizens. In the process of urbanization, the recreational spaces in urban waterfront areas have received increasing attention because these spaces not only satisfy citizens' leisure needs, but also promote social interaction and cultural exchange in the city.

The construction of recreational spaces needs to consider multiple factors, including space planning, facility construction, and environmental protection. In terms of space planning, it is necessary to consider citizens' leisure needs and provide various types of recreational spaces for citizens of different ages, genders, and cultural backgrounds, such as parks, swimming pools, and cafes. In terms of facility construction, it is necessary to provide sufficient facilities and services, such as toilets, trash cans, and benches. In terms of environmental protection, it is necessary to protect the water bodies and the surrounding ecological environment, while also considering the sustainability and environmental friendliness of the recreational spaces.

The construction of urban waterfront recreational spaces not only satisfies citizens' leisure needs but also enhances the city's cultural taste and social civility, promoting social harmony and stability in the city. Therefore, the construction of urban waterfront recreational spaces is a very important part of urban development.

1.2. The Importance of Waterfront Recreational Spaces

Waterfront leisure spaces are an essential part of urban areas. They provide not only a place for city residents to rest, play, and exercise, but also play important ecological, cultural, and economic roles.

Firstly, the importance of urban waterfront leisure spaces lies in their ecological function. These areas are usually the only natural ecosystems in the city, providing habitats for wildlife and supporting water resource protection and circulation. Secondly, urban waterfront leisure spaces also have significant cultural value. They often carry the history and cultural heritage of the city, such as rivers, lakes, and canals, which can become platforms for showcasing the city's history and culture. Therefore, the design and renewal of urban waterfront leisure spaces are crucial for sustainable development and the physical and mental health of residents. When designing and renewing these spaces, it is necessary to consider multiple factors such as ecology, culture, and economy to ensure that they can maximize their important roles.

2. Overview of Waterfront Leisure Spaces at Home and Abroad

2.1. Overview of Waterfront Leisure Spaces Abroad

The development of waterfront areas around the world began in the mid-twentieth century. Its rise was based on the decline of port areas and also in response to historical demands for urban beautification. The transformation of urban waterfront areas has gradually taken shape through early organic growth and long-term spontaneous evolution(e.g. "as pointed by Black [15]").In recent years, many foreign cities have started transforming their waterfront areas into leisure spaces to provide more outdoor recreational activities and social spaces for their citizens.

For example, Sydney, Australia's waterfront area is one of the city's important landmarks, loved by both citizens and tourists. Since 2010, the Sydney city government has been renovating and developing the waterfront area to provide more public leisure spaces. The government also constructed a new outdoor theater in Darling Harbour to host various cultural and art events, and built new parks and pedestrian paths in the surrounding areas(i.e., Figure 1). Similarly, Vancouver's Stanley Park Seawall is one of the longest seaside pedestrian and bicycle lane networks in the world and is also a well-known urban waterfront leisure area. The

park's design provides sustainable, multifunctional, and socially inclusive leisure spaces for residents and tourists.



Figure 1. Darling Harbor.

Source: <https://image.baidu.com/>

2.2. Overview of Domestic Waterfront Leisure Spaces

Current status of domestic waterfront leisure spaces.

There are still significant problems and challenges in the development of urban waterfront leisure spaces in China, including a lack of scientific planning and systematic construction. In recent years, as the process of urbanization has accelerated, the creation of a beautiful and harmonious living environment through the development of urban waterfront leisure spaces has become a prominent theme in urban construction. For example, many waterfront areas in Beijing's hutong districts, including Nanluoguxiang, Shichahai, and Houhai, have been re-planned and designed. These areas have created multifunctional waterfront leisure spaces by repairing and transforming the buildings, streets, and landscapes along the coast, providing rich cultural, leisure, and entertainment activities, and becoming popular destinations for urban residents and tourists. Similarly, Shanghai has created several unique waterfront leisure spaces, such as the Bund, Binjiang Avenue, and the Oriental Pearl Square, through the renewal and design of the Huangpu River waterfront area. These waterfront spaces integrate modern urban design concepts and sustainable development ideas.(e.g. “as pointed by Black [1,2]”)

(1) Issues with the development of waterfront leisure spaces in China.

a. “Imbalance between commercial and public leisure spaces.

“Currently, the construction of waterfront leisure spaces in China often focuses too much on short-term and direct economic benefits, with single land-use functions and a lack of comprehensive organization and utilization of various functional spaces, which cannot meet the diverse and complex needs of social activities.”(e.g. as pointed by Black [18])

b. Serious homogenization phenomenon.

There is a serious problem of plagiarism and imitation in design, and there is a lack of investigation, research, and demonstration of the internal and external conditions of the current situation, and a tendency to borrow so-called templates.

c. Insufficient depth of leisure content.

“In the transitional period of economic development, social demand far exceeds social supply, leading to the blind pursuit of quantity in urban construction.(e.g. as pointed by Black [14])”

3. Urban Waterfront Leisure Space Renewal Design

3.1. Principles of urban waterfront leisure space renewal

Based on the summary of the advantages and disadvantages above, as well as the regional differences in the design of urban waterfront leisure space renewal due to the influence of the geographical environment, historical culture, folk customs, etc. of the city, people's needs for the design principles of urban waterfront leisure space renewal are also different. Therefore, the design principles are also different.(e.g. “as pointed by Black [7,8]”)

3.1.1. Ecological design principles

Ecological design, also known as green design, is of great importance to urban waterfront landscape renewal design, which aims to build an ecological corridor. Therefore, ecological design principles include the following:

(1) Sustainability

Naturalness: By increasing natural elements such as vegetation, water, and soil, natural landscapes are created, and the use of hard pavement and artificial landscapes is reduced. At the same time, natural water treatment methods, such as wetland treatment, should be used to solve problems such as water pollution. Environmental protection: Green building materials and environmentally friendly processes should be used to reduce energy and resource waste, increase the stability of the ecosystem, protect the natural environment and human health. In addition, the design should consider how to minimize environmental pollution and noise and create a safe and healthy leisure space for urban residents; Ecosystem protection and restoration: attention should be paid to the protection and restoration of the ecosystem, and the sustainability of the ecosystem should be improved through reasonable planning and design.(e.g. “as pointed by Black [9,10]”)

(2) Ecological connectivity

Promote the continuity and integrity of the ecosystem. By setting up landscape corridors, ecological bridges, and other means, different ecological environments are connected to form a connected ecosystem, which improves biodiversity and ecological service functions.

3.1.2. Humanism principle

“Planning and design are designed for people, that is, to meet the physical and psychological needs, material and spiritual needs of people. The emergence of humanized design is the essential requirement of design, because without the reflection and satisfaction of human self-care needs, design deviates from the right track. Therefore, humanized design has become an unchanging criterion for evaluating the quality of design.”(e.g. as pointed by Black [185])

(1) Participation

Leisure spaces should provide urban residents with a place for participation and interaction to promote community cohesion and vitality. Designers should encourage

public participation in the renewal process, listen to their feedback and suggestions, and consider their needs and preferences.

(2) Multi-functionality

Urban waterfront leisure spaces should have multiple functions to meet the needs of different groups of people. For example, various activities such as outdoor sports, cultural activities, social gatherings, and rest can be arranged in these spaces to ensure that everyone can enjoy these spaces. In addition, green transportation facilities such as pedestrian paths and bike lanes can be added to provide more convenient ways of travel for citizens.(e.g. “as pointed by Black [11,12]”)

(3) Accessibility

Designers should ensure that leisure spaces can accommodate everyone, including the elderly, disabled, children, and families. This may require adding slopes, installing accessibility facilities, and providing appropriate children's toys, etc. Attention should be paid to the elderly, vulnerable, and special groups.

3.1.3. Regional principle

Regional design refers to a method of design based on regional environment and cultural characteristics. It not only considers the practicality and aesthetics of buildings, but also integrates local culture and traditions, as well as environmental and climatic factors, to make buildings coexist harmoniously with the surrounding environment.

(1) Local Culture and History

The history and culture of the urban waterfront area are crucial for renewal design. In the renewal design, local culture should be preserved and promoted as much as possible, such as incorporating local traditional cultural elements into leisure space design. The humanistic environment of the urban waterfront area is also essential for the renewal design of leisure spaces. In the renewal design, the needs and cultural backgrounds of residents should be considered, and comfortable, safe, and culturally rich leisure spaces should be provided.(e.g. “as pointed by Black [13]”)

(2) Focus on Natural Factors

The design of the urban waterfront area must consider natural environmental factors, such as different climates, hydrogeography, tides, etc. At the same time, in the design process, it is necessary to respect the natural environment and ensure that it does not have adverse effects on the ecosystem. For example, the hydrological environment of the urban waterfront area is an important factor in the design of leisure spaces. In the renewal design, water level changes, water flow velocity, and other hydrological conditions need to be considered and appropriate design methods should be used.

(3) Preserve Local Characteristics

Each city's waterfront area has its unique features and charm. Therefore, in the renewal design, local characteristics should be preserved as much as possible, such as local architectural styles, landscape features, etc., while creating a unique and beautiful space.

3.1.4. Proximity to Water Principle

The Proximity to Water Principle refers to creating a water-related friendly environment in urban planning and landscape design to attract people to approach and enjoy the beautiful experience and interaction brought by water. The following are several key points of the Proximity to Water Principle:

(1) Accessibility to Water: The Proximity to Water Principle requires that the design of leisure spaces in the urban waterfront area should make it easy for people to access and enter the water. This can be achieved by setting up walkways, bike paths, bridges, boardwalks, etc., so that residents and tourists can easily interact with the water, enjoy the scenery, and engage in water activities.(e.g. “as pointed by Black [16]”)

(2) Utilization of Water: The Proximity to Water Principle requires that the design of leisure spaces in the urban waterfront area should fully consider the utilization of water. This can include setting up water facilities for people's entertainment and sports, such as swimming areas, boating areas, fishing areas, etc., to meet people's needs for water activities and promote interaction and integration between people and water.

(3) Safety of Water: The Proximity to Water Principle emphasizes that the design of leisure spaces in the urban waterfront area should ensure the safety of the water. This includes setting up safety fences, warning signs, rescue equipment, etc., to protect the safety of people's activities around the water and prevent drowning accidents.

3.2. Strategies for Updating the Waterfront Leisure Spaces Design

3.2.1. Waterfront Green Landscape Design

Waterfront green landscape design refers to the creation of attractive, comfortable, ecological, and sustainable landscape spaces around water bodies such as rivers, lakes, and coastlines through reasonable planning and design, utilizing natural elements such as plants, terrain, and water.

(1) Waterfront vegetation design: suitable plant species are selected and planted according to the characteristics and requirements of the waterfront environment. For example, plants adapted to humid environments, such as reeds and cattails, can be chosen.

(2) Waterfront hard landscape design: the planning and design of hard facilities such as piers, walkways, and observation platforms are integrated with the natural environment while maintaining the convenience of human activities.

(3) Waterfront landscape art design: sculpture, murals, and other artistic techniques are utilized to enrich the cultural connotation and artistic value of the waterfront landscape.

(4) Lighting landscape design: by designing and arranging lighting, the nighttime effect of the waterfront landscape is enhanced to create a romantic night scene atmosphere.

Waterfront green landscape design requires personalized design based on specific environmental characteristics and usage requirements, fully leveraging the advantages of nature and humanity to create unique and aesthetically pleasing waterfront landscapes.

3.2.2. Public Facilities and Landscape Features Design

Public facilities in urban waterfront leisure spaces include resting seats, pavilions, public toilets, playground equipment, fitness equipment, bicycle parking, walkways, observation platforms, etc. The placement of these facilities should be scientifically planned and reasonably laid out according to the different functional needs of the landscape space and the different needs of the users, while also paying attention to environmental protection and sustainability.

The feature design of landscape elements is utilized to enhance the artistry and fun of the landscape space through artistic treatment. For example, art sculptures, landscape lighting, fountains, musical fountains, water curtain movies, rainbow bridges, etc. can be set up to allow people to appreciate the beautiful scenery while experiencing the artistic atmosphere and cultural connotation. In addition, feature design can also utilize natural elements such as terrain and plants to create unique landscape effects, such as using water reflection to create a “water and sky as one” visual effect or setting up sculptures of famous cultural figures within the scenic area.

3.2.3. Hydrophilic Design

Hydrophilic design of urban waterfront leisure spaces refers to designing spaces that allow people to be closer to, touch, and enjoy water bodies in waterfront areas. This enhances the interaction and affinity between city residents and the natural environment. This type of design generally includes the following aspects:

(1) Designing reasonable water edges: By designing different forms of water edges such as gentle shorelines, gentle slopes, and terraced green spaces, people can easily and safely enter the water or rest and enjoy the scenery by the water's edge.

(2) Creating a pleasant water environment: By means of water quality treatment, selection of aquatic plants, and other methods, the water environment can be improved, making people more willing to approach and get closer to the water.

(3) Incorporating local cultural features: By designing and arranging hydrophilic landscape elements that fit the local cultural characteristics, such as characteristic buildings, landscape sculptures, cultural walls, docks, etc., the uniqueness and attractiveness of urban waterfront areas can be enhanced.

(4) Building pedestrian bridges and floating bridges: In the design of the renewal of urban waterfront leisure spaces, some pedestrian bridges and floating bridges can be built to facilitate citizens' travel between different rivers and water areas, further enhancing hydrophilicity.

Through the above hydrophilic design methods, the hydrophilicity of urban waterfront leisure spaces can be increased, the participation and experience of city residents can be increased, and the sustainable development of urban waterfront areas can be promoted.

4. Zhongshan Qijiang Park

4.1. Overview of Qijiang Park

“Qijiang Park is located in the urban area of Zhongshan City, Guangdong Province, covering a total area of 10.3 hectares. The park is situated on the former site of the Central Guangdong Shipyard. In the park's planning, the designers emphasized the beauty of the local culture and wild vegetation. The park has a water area of 3.6 hectares, which is connected to the Qijiang River. As the Qijiang River is influenced

by tides, the daily water level change can reach up to 1.1 meters. Therefore, it is necessary to fully consider hydrological environmental factors in the park's design.”[4]

“The main idea of the park is to make full use of the existing vegetation of the shipyard and reuse the urban land to create an open public leisure place that reflects the cultural characteristics of the industrial era.”[3]The landscape planning of the park aims to preserve the original vegetation and site form as much as possible to maintain the natural appearance of the park. At the same time, some elements of the industrial era, such as the old shipyard and wharf, are integrated into the park to reflect the historical and cultural characteristics of the area. In addition, the park also has many green belts and walking paths for various leisure activities such as walking, jogging, and cycling. In summary, Qijiang Park, as an open public leisure place in the urban area of Zhongshan, has successfully reused urban land and fully considered factors such as natural environment and historical culture in its design, providing citizens with a beautiful and pleasant leisure place.

4.2. The current situation of Qijiang Park

4.2.1. The overall design of Qijiang Park

As an old shipyard transformation project, the overall design of Qijiang Park can be summarized as follows:

(1)“The preservation of natural systems and elements. The water body and some revetments are basically preserved in their original form, and all ancient trees are preserved on the site. In order to preserve more than ten old banyan trees along the riverbank and meet the requirements of hydraulic flood control for the cross-sectional area, a branch channel was opened to form the banyan tree island (i.e., Figure 2).”(e.g. as pointed by Black [15])

(2) The preservation of structures. Two steel structure and cement frame docks, which reflect different eras, were preserved in situ. One red brick chimney and two water towers (i.e., Figure 3) were also preserved on site and integrated into the site design.

(3) The preservation of machinery: Large gantry cranes and transformers (i.e., Figure 4) and many other machines are integrated into the site design, becoming important landscape elements that enrich the experience of the site." (e.g. as pointed by Black [15])

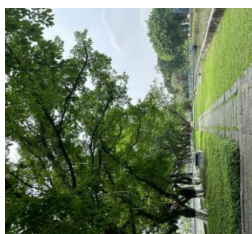


Figure 2. Ficus Island.



Figure 3. Red Chimney.

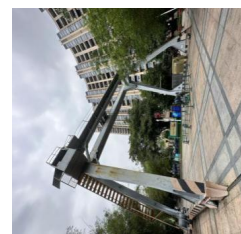


Figure 4. Large Gantry Crane.

4.2.2. Landscape Node Design of Qijiang Park

Qijiang Park is divided into nine functional zones, and several key landscape features, installations, and buildings within the park include the Amber Water Tower, Skeleton Water Tower, Red Memory, and Zhongshan Art Museum.



Figure 5. Amber Water Tower.



Figure 6. Skeleton Water Tower Current Status.



Figure 7. Red Memory.

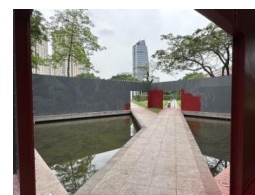


Figure 8. Current Status of Red Memory.

Source: Photograph taken by the author

(1) Amber Water Tower

The Amber Water Tower is located on Rongshu Island by the Qijiang River. It is an abandoned water tower from over fifty years ago that is covered with a layer of glass. The designers believed that this water tower looked like an ancient insect frozen in amber, so they named it the Amber Water Tower. It absorbs sunlight and emits light at night. It is not only a scenic spot in Qijiang but also part of the navigation system(i.e., Figure 5).

(2) Skeleton Water Tower

“The Skeleton Water Tower is another water tower located in the center of the park. The original design was to strip off the cement from an old water tower and leave the steel bars in place. The designer believed that this was like how people in the world, regardless of gender or status, would eventually become nothing but bones (i.e., Figure 6).”(e.g. as pointed by Black [17])

(3) Red Memory

“Red Memory is an installation artwork that is surrounded by a red open iron box with a pool of clear water inside (i.e., Figure 7, Figure 8). One entrance of the box faces the park entrance, while the other two exits face the Amber Water Tower and the Skeleton Water Tower. The designer was inspired by the revolutionary years that the Zhongshan Shipyard in Guangdong Province went through, including the ten years of the Cultural Revolution. The heavy red color is intended to remind the audience that “revolution is not a dinner party.” (e.g. as pointed by Black [6])

(4) Zhongshan Art Museum

The main building of the Qijiang Park, the Zhongshan Art Museum, is a two-story building. The exterior design of the exhibition hall emphasizes industrial elements, reflecting the characteristics of the park. The outer wall of the exhibition hall is made up of lemon-colored concrete pillars with iron-gray steel frames on top. The huge floor-to-ceiling glass windows make the exhibition hall look like a factory. It provides residents with a waterfront leisure space for viewing and appreciation.

(5) Qijiang Pier

The traces of the old shipyard can be seen everywhere in the park, preserving the historical culture and integrating local cultural elements into the design of leisure space. The Qijiang Pier provides a comfortable and culturally rich leisure space. The construction of the Qijiang Pier has also improved the waterfront accessibility of the leisure space, while also providing tourists and residents with a space for sightseeing and entertainment.

(6) Water Landscape

“When designing the Qijiang Park, the existing vegetation of the shipyard was fully utilized to create an open public leisure space that reflects the cultural characteristics of the industrialization era. The park has formed a series of features around this theme, among which ecological and waterfront features are the main ones.” (e.g. “as pointed by Black [4]”) In the water landscape design, the park uses several forms to blend water, living creatures, and people into an edge ecological environment (i.e., Table 1).

Techniques for managing the landscape of waterfront areas	features	spatial realities
Terraced Aquatic and Wetland Planting Platforms	A series of terraced aquatic and wetland planting platforms were designed in the Qijiang Park, which are completely or partially submerged in water at different times.	
Waterside Boardwalks	On the terraced planting platforms, a series of grid-like waterside boardwalks were constructed, which rise and fall with the changing water levels. People can walk on these boardwalks and get up close to the water and various aquatic, wetland plants, and living organisms.	
Water and Plant Communities	The park has chosen native plants to form a community belt of aquatic, swamp, wetland, and mesophytic plants according to the changes in water levels and depth, in order to display a variety of native aquatic plants. All plants are native wild plants, including aquatic plants such as lotus, water caltrop, sweet flag, umbrella sedge, and umbrella fern, as well as wetland and mesophytic plants such as reeds, rushes, elephant grass, white grass, and other grasses and sedges.	

Table 1. Qijiang River Waterfront Landscape Design Form of Zhongshan Qijiang Park.

Source: Photograph taken by the author

4.3. Optimization Strategies

Qi Jiang Park in Zhongshan City is an important urban park with a long history and rich cultural heritage. However, with the development of the city and the improvement of people's living standards, the old facilities and design of Qi Jiang Park can no longer meet modern people's needs for leisure and entertainment. Therefore, this paper aims to study the updated design of urban waterfront leisure spaces, taking Qi Jiang Park in Zhongshan City as an example, and proposes optimization strategies and measures to improve the quality and attractiveness of the park.

(1) Vegetation Beautification Strategy

Although Qi Jiang Park has rich vegetation, some green belts have withered or become disorderly due to long-term neglect. Therefore, we need to redesign and arrange vegetation, increase the density and variety of vegetation, and layout natural landscapes, architectural landscapes, and water landscapes in combination to create beautiful ecological environments and visual experiences. Specific strategies include:

a. Optimizing the green belts on both sides of the park's entrance and main paths, strengthening the greening of lawns and flower beds, and improving the landscape effect and visual experience.

b. Adding green paths, gardens, and woods inside the park to create a close-to-nature environment such as "tree-lined avenue" and "garden path," promoting communication and interaction between people and nature.

c. Adding lakeside trees and aquatic plants, enhancing the ecological functions and beauty of the lake, and building landscape corridors, observation pavilions, etc., to provide more places for visitors to appreciate and rest.

(2) Adding Entertainment and Leisure Facilities Strategy

Qi Jiang Park has relatively few entertainment and leisure facilities, most of which are old and need to be updated and supplemented. Therefore, we suggest adding more modern entertainment and leisure facilities in the park to meet the diverse needs of modern people. For example, setting up children's play areas, fitness areas, yoga areas, etc., providing diverse sports and fitness venues, attracting more visitors to exercise.

(3) Strengthening Environmental Maintenance Strategy

Many landscape nodes and public facilities inside the park are aging and damaged. Strengthening environmental maintenance work, regularly checking facilities, timely repairing and updating them, ensuring that the park's landscape facilities are in good condition, and providing better touring experiences for visitors.

(4) Improving the Intelligence Level of the Park

Introducing intelligent facilities to improve the management efficiency of the park and the visitor experience, such as installing intelligent audio systems and intelligent lighting systems, can improve the intelligence level of the park, and also provide better services and experiences for visitors.

The above is a detailed description of the optimization strategies for Qi Jiang Park in Zhongshan City. By optimizing the park's vegetation, adding entertainment and leisure facilities, and strengthening environmental maintenance, the quality and attractiveness of Qi Jiang Park can be improved, providing better leisure and entertainment places for citizens and tourists. At the same time, the strategies and

measures of this study can also provide reference and inspiration for the updated design of other urban waterfront leisure spaces.

5. Conclusions

This paper studied the renewal design of urban waterfront leisure spaces using Zhongshan Qijiang Park as an example. Based on an overview and analysis of domestic waterfront leisure spaces and the actual situation of Qijiang Park, some thoughts and suggestions were proposed regarding the renewal design of urban waterfront leisure spaces.

Firstly, as the green heart of the city, waterfront leisure spaces have important ecological, cultural, and social functions, and should fully consider the balance of ecological protection, cultural inheritance, and social needs. In the renewal design, attention should be paid to the protection and restoration of the ecological environment of the waterfront area, the increase of natural elements such as greenery and wetlands, and the enhancement of the ecological service function of the waterfront area. At the same time, local cultural and historical elements should be reasonably integrated to showcase local features and strengthen the cultural connotation of the waterfront area. Waterfront leisure spaces should provide diverse social facilities and activity spaces to meet the needs of different groups of people and promote social interaction.

Secondly, in the renewal design, full consideration should be given to improving the water safety of the waterfront area. At the same time, attention should be paid to ecological restoration and protection of the waterfront area, using ecological engineering and sustainable management methods to promote ecological restoration and biodiversity protection of the waterfront area.

Finally, the renewal design of waterfront leisure spaces should focus on public participation and social governance. Waterfront leisure spaces are public spaces and should fully consider the needs of residents and users, encourage public participation in the planning, design, and management of waterfront areas, and form a co-construction and sharing social governance pattern. Improving the management efficiency and service level of the waterfront area.

In summary, the renewal design of urban waterfront leisure spaces is a complex task that requires full consideration of ecological, cultural, social, and sustainable development factors. Through the study of Zhongshan Qijiang Park, this research hopes to provide useful inspiration for the renewal design of urban waterfront leisure spaces, and provide reference and inspiration for the future development and research of urban waterfront leisure spaces.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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