

Research on the Ecological Landscape Design of Urban Wetland Park

Bei Li

Nanjing Hongshan Forest Zoo, Nanjing, Jiangsu, 210008, China

Keywords: Urban wetland park, Ecologicalization, Landscape design

Abstract: In recent years, the ecologicalization of wetland parks has attracted the attention of Chinese and foreign scholars and experts. With the requirements of landscape design, it is the key task for urban landscape construction and development to do well in coordination and guidance between ecological functions, economy and culture. Therefore, we must do a good job in the large-scale construction of urban wetland parks and build a complete planning management system. We need to guide landscape design and urban planning and design into a normal working state, build an overall ecological environment framework, and enhance the development of urban areas.

1. Introduction

Wetland is the basic composition of natural ecosystem and an indispensable part of human living environment. Wetland has a huge influence in the urban construction and planning management. Different from the general urban ecosystem, urban wetland parks have high ecological value. And it can realize the transfer of active and effective management concepts around entertainment and leisure, sports exercise, culture and education. In the development of wetland parks in urban area landscape design, planning and guidance need to be done from basic cognition, land use planning, social benefits and other aspects. So we can fully demonstrate the value of the ecological development of urban wetland parks. The author analyzes and discusses this in combination with practice as follows.

2. Overview of the Ecologicalization of Urban Wetland Parks

2.1 Basic Concept of Wetland

Wetland is the basic structure of the scientific system, and the academic circle focuses on different angles in defining wetland. At the earliest stage of wildlife management in the United States, the wetlands were considered to be “land covered by intermittent or permanent shallow water.” Later other countries extended this basic concept and believed that wetlands also included artificial construction, which could be permanent or staged. It may be the environmental type of the marshland that exists permanently or periodically. Obviously, wetland has ecological value and is a semi-open system or independent system in the process of excessive land or aquatic system. It has its own development law and plays an irreplaceable role in urban planning and construction.

2.2 Overview of the Ecologicalization of Urban Wetland Parks

The wetland composition of urban wetland parks has diversified characteristics. Based on ecological research, this article pays more attention to the coordination of natural and artificial operations to construct various types of wetland environments. According to the conditions of urban sites, wetland parks are mainly composed of natural wetland parks and constructed wetland parks. The former use natural wetlands to complete the construction of urban wetland parks. While the latter realizes the ecological construction of wetland parks on the basis of artificial wetland or artificial excavation. The ecologicalization of wetland parks pays attention to the diversity and functionality of the ecosystem, which can show that in the process of urban construction and development, human beings retain the characteristics of wetlands to complete the settings of natural culture, modern science and technology education.

2.3 The Impact of Urban Wetland Park Biochemistry on the Development of Landscape Design

2.3.1 Guarantee Economic Output

On the basis of ensuring the ecological nature of urban construction and development, people pay more attention to economics. This is the basic theorem to be followed in various industrial construction stages. Wetlands are water-rich areas. From the early days, people lived by water and planted various plants. Humans completed the planting and management of agricultural and sideline products and obtained living conditions. In addition, during the application of industrial raw materials and combustion materials, the wetland completes the reserve of plants. Therefore, the development of the fishery, forestry and animal husbandry industry is essentially based on wetlands. Based on ecological construction, the scope of landscape design is relatively narrow. And it pays more attention to the expansion of artistic and cultural functions and has a certain economic influence.

2.3.2 Show Ecological Function

Wetland's own attributes are quite special. In the wetland environment, the diversified biological difference mode is constructed and various animals have a good living environment in the process of survival, migration and habitation. Wetlands can complete water storage and flood control, and are more functional in water flow adjustment and water volume adjustment. It can not only achieve the purpose of maintaining water and soil balance, but also effectively avoid flood disasters, which is beneficial to improve the quality of landscape design. The ecological construction of wetlands in the urban environment can achieve the purpose of pollution control. This is because in the ecological environment, the biological ecology of Mars is insufficient, and the circulation of carbon dioxide and other gases in the soil is slow. Finally, it achieves a kind of carbon sequestration. As a result, the harmful gas becomes organic carbon.

2.3.3 Government Management

China's landscape design and urban construction must be carried out in accordance with urban development goals. Effectively applying the concepts of ecological civilization and green environmental protection and strengthening the core work of ecological environmental protection will effectively integrate with the goals of urbanization development. The same is true for landscape design. According to the work needs of government departments, cities and towns will be efficient, energy-saving and healthy. The implementation of the development goals of the city will complete

the construction of a virtuous ecological cycle model, provide citizens in urban areas with a good living space, and ensure the construction and development of urban areas.

3. Relevant Measures to Realize the Ecological Landscape Design of Urban Wetland Parks

3.1 Ensure Ecological Circulation and Balance Landscape Structure

Water resources in wetland parks are basic resources, and sufficient water resources can guarantee the development of wetland ecology. In the landscape design stage, the design about water is the basic work to achieve ecological landscape design. Therefore, it is necessary to construct the water system network in the park, complete the water system circulation between the various blocks of the wetland, and continuously improve the relationship between the ecological expressions. What's more, We can construct a circulating water system to effectively implement the supply of water resources. According to the environmental characteristics of the wetland, geographical location, etc., we can complete the collection and application of the surrounding water supply and drainage, domestic miscellaneous drainage, and rainwater. In addition, we can complete the supplement and application of the wetland's reserve water resources after purification treatment.

Ecological environmental pollution is a problem in the development of urban areas. The main pollution includes air, soil, water and other different modules which forming the basic element composition of the ecological base. We can design the water purification zone, use the degraded and damaged wetland, and combine the artificial technology to complete the reconstruction and restoration of the wetland park. In this process, the sewage is filtered and settled, and then all kinds of biological purification are completed in the soil. Finally, it becomes an important component in the circulatory system.

3.2 Applied Park Culture

In the urban wetland park, human beings can understand the characteristics of urban development and the unique historical and cultural background. Not only can they use the written conditions to complete the records of various historical books, but also reflect the application of cultural resources such as existing buildings and heritage. At the stage of ecological development of wetland parks, the cultural function of landscape design is reflected. On the one hand, from the life concepts and traditional ideas of the people in the region, there are new ideas during the application of water resources, and it is also included in the protection of cultural resources and the diverse display of water culture. On the one hand, the human-oriented principle is applied to achieve the goal of harmonious coexistence between humans and nature. And the essence of urban water culture can be continued for a long time. Among different cultural backgrounds, the goal of harmonious coexistence between humans and nature is achieved.

The reconstructed or reconstructed wetland park has the original natural features, but also contains historical and cultural accumulations that can show the quality of the city and realize the outline of the urban development context. It need to show the deep-seated cultural characteristics. In the stage of cultural inheritance and development, we need to pay more attention to the construction of high-quality urban space. It can effectively realize people's expectations for diversified urban development. Therefore, during the landscape design of the wetland park, we can follow the principles of ecological development. It also needs to combine historical and human resources to show regional characteristics and ultimately feedback the characteristics of the times in today's society.

3.3 Guarantee Plant Diversity

Plants cannot be ignored in the landscape design stage. And it is also the basic components of the ecosystem. It can be said that the final visual effects of urban wetland parks are closely related to basic tasks such as intuitive plant layout and cultivation management. Therefore, the layout design of wetland plants is also a part that cannot be ignored in the landscape design of urban wetland parks. It not only shows ecological value, but also combines aesthetic value and economic value, highlighting landscape benefits and comprehensive application features.

In the planning stage of plant species, the principles of species diversity and natural reproduction should be reflected. And the requirements of plant diversity should be considered. What's more, aquatic, terrestrial and wetland plants should be combined to ensure the hierarchical nature of the ecosystem. In order to ensure the survival rate of plants, it is necessary to select localized plants as much as possible to achieve the development goal of regional ecological balance. Plant species and characteristics are different in different regions. In addition, the same plant has different morphological characteristics in different seasons. The reasonable combination of plants in the four seasons is a way for many senses to mobilize visitors' sense of experience. The application of popular educational signs of plants in it provides basic knowledge for people to expand their cultural knowledge. Now, the ecological balance and coordinated development goals of the wetland park are reached.

4. Conclusion

Urban wetland landscape design is a relatively fragile ecosystem that requires people to maintain and maintain. And it is a gift from nature to mankind. In view of the actual development of urban areas, the completion of the construction of the destroyed wetland ecosystem, and the application of work patterns that focus on the coordination of ecological protection and social development during the landscape design period are the key points of the wetland park design. According to the development situation of urban areas and the requirements of land use area planning, the construction of the circulation system and the coordination of culture and plant configuration will inevitably achieve the goal of urban wetland ecological landscape design.

References

- [1] Tu Fang (2008). *Research on the Ecological Cultural Landscape Design of Urban Wetland Park [D]*. Hubei Academy of Fine Arts.
- [2] Zhang Yuanyuan (2010). *Research on the Landscape Design of Urban Ecological Wetland Park[D]*. Wuhan University of Technology.
- [3] Yuan Min (2013). *Research on the wetland garden landscape design: Taking Hengshui Lake Wetland Park as an example*. 2013.
- [4] Xu Xinzhou, Lu Jianguo, Liu Guohua (2009). *Plant Landscape Design of Wetland Park in Muyan Riverside Area of Nanjing*. Forestry Science and Technology Development.
- [5] Zhang Yuanyuan (2011). *Research on the Landscape Design of Urban Ecological Wetland Park*.
- [6] Yuan Guangyu, Han Xiutian, Xu Jinxia (2011). *A Brief Talk on the Planning and Design of Plant Landscape in Wetland Park-Taking the Landscape Planning of Jilong River Wetland Park in Junan County as an Example*. Transformation and Reconstruction-2011 China Urban Planning Annual Conference Proceedings.
- [7] Sang Xia. *The establishment of Ganhe National Urban Wetland Park in Xianning City to promote the development of ecotourism*. *Anhui Agricultural Sciences*. vol.46, no.607, pp:140-144.
- [8] Zhang Yiyuan (2016). *Reality and confusion: Research on the landscape design method of wetland park under the concept of ecological city*.2016.