

Based on the Research in the Construction of the Surrounding Projects of the Wetland Park

-- Taking the Shaying River National Wetland Park in Taihe County, Anhui Province as an Example

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Abstract

The report of the 19th National Congress of the Communist Party of China pointed out, "Accelerate the establishment of the legal system and policy orientation of green production and consumption, and establish and improve the economic system of green, low-carbon and circular development." On January 30, Comrade Xi Jinping chaired the Political Bureau of the CPC Central Committee During the third collective study, it was emphasized: "It is necessary to build a resource-saving and environment-friendly green development system, realize green, circular and low-carbon development, harmonious coexistence between man and nature, firmly establish and practice the concept that lucid waters and lush mountains are invaluable assets, and form human To develop a new pattern of modernization in harmony with nature." Building a green development system is an inevitable requirement for the construction of a socialist ecological civilization and a modern economic system. We should fully understand the important position and role of the green development system in building a modern economic system, strengthen the awareness and determination to implement the spirit of the 19th National Congress of the Communist Party of China, and build a beautiful China. In the process of China's socialist modernization drive, energy saving and emission reduction is undoubtedly a necessary way to achieve green economy and green development. Now that the epidemic has not yet ended, another crisis has emerged. Meteorologists have found that extreme high temperature weather has occurred at the north and south poles at the same time, and climate warming has caused the originally quiet and beautiful poles to become devastated. Today, water resources and water environment problems have seriously plagued the development of various countries and regions, and the safety of wetland ecosystems has gradually become the focus of people's attention. Therefore, the application of energy conservation and emission reduction in wetland protection is imminent. In this paper, the Shaying River Wetland Park in Taihe County is taken as an example to study the application of energy saving and emission reduction in the surrounding projects of the wetland park. After the Shaying River Wetland Park in Taihe County was approved by the state in 2015, there are a series of environmental damages such as pollution from factories in the surrounding projects, which are not conducive to the construction of the Shaying River National Wetland Park. Under this background, this paper introduces the ecological concept into the construction of surrounding projects of Shaying River, and applies the ecological engineering theory to the construction of surrounding projects. Through the research methods such as questionnaire survey, field visits, and summary of relevant domestic and foreign research, in-depth understanding and analysis of the theory of river ecosystems, as well as the review and summary of relevant domestic and foreign research, draw lessons from domestic and foreign research on the construction and renovation of wetland park surrounding projects. Based on the successful experience, according to the flood control

safety, ecological safety and the service function of the ecosystem of the Shaying River, and in accordance with the principle of multi-objective planning, the theoretical system and methods of ecological management of the Shaying River are discussed, and the effective methods suitable for the construction of the surrounding projects of the Shaying River Wetland Park are explored. Methods--- Constructing "Greenmanner" system and contract energy management mode, constructing surrounding slow-living neighborhoods, and promoting tourism around wetlands to help the construction of surrounding projects of Shaying River Wetland Park and provide reference for the construction of surrounding projects of other wetlands. In order to successfully achieve the "two centenary goals", we must fight the tough battle of pollution prevention and control now, achieve a fundamental improvement in the ecological environment by 2035, and build a prosperous, strong, democratic, culturally advanced, harmonious, and beautiful modern socialist country by the middle of this century. . By that time, we will not only be a country with highly developed material civilization, political civilization, and spiritual civilization, but also a country with highly developed social civilization and ecological civilization. We must make unremitting efforts to protect the ecological environment and create a new era of socialist ecological civilization.

Keywords

Ecological Civilization; Wetland Park; Engineering Construction; SPSS; Greenmanner.

1. Introduction

In recent years, with the rapid development of my country's economy, the awareness of energy conservation and emission reduction has been increasingly put on the agenda. In addition to changing living habits in daily life and saving energy at the source, the development of new energy and high technology has also become important. The rapid development of cities and the rapid increase of GDP have brought about an ecological balance that has attracted widespread attention. The state has also implemented a series of policies on the construction of surrounding projects of wetland parks to maximize the ecological, economic and social benefits of wetland parks[1]. Since the 1990s, the surrounding projects of the Shaying River have become increasingly polluted and water quality has continued to deteriorate, making it difficult to use water for industrial and agricultural production, resulting in a series of problems such as reduced agricultural production, stagnant industrial development, and endangering people's health. Since the construction of Shaying River National Wetland Park in Taihe County, this situation has been improved. Only the concept of energy saving and emission reduction can be better used in the construction of surrounding projects of Shaying River National Wetland Park[2].

Through the implementation of scientific and reasonable governance methods and governance models, Shaying River National Wetland Park will help Shaying River National Wetland Park to better exert its social and ecological benefits, and drive rural economic development to achieve economic benefits. Provide reference for the construction of surrounding projects of other national wetland parks, and jointly build a beautiful China[3].

2. Problems Existing in Shayinghe National Wetland Park in Taihe County, Anhui Province

2.1. Serious Soil Erosion

Due to local agricultural development and utilization, as well as various unreasonable engineering development, the vegetation around the Shaying River National Wetland Park has

been severely damaged, resulting in serious soil erosion around the wetland park. After the occurrence of soil erosion, due to the local high rainfall environment, a large amount of precipitation washed away the ground without vegetation protection, causing a large amount of sediment to flow into the river channel, raising the river bed, causing the river channel and lake in the area to silt up, deteriorating the environment, and seriously affecting the wetland. normal functioning of the ecosystem[4].

2.2. Wetland Pollution is Serious

During the construction process, due to unreasonable planning and the lack of follow-up measures, some pollution occurred during the construction process, which directly resulted in the damage to the wetland ecology. The pollution generated during construction mainly includes industrial wastewater pollution and dust pollution. During the construction, pile foundation construction, well point dewatering construction and concrete pouring will cause sewage discharge[5]. Many temporary water supply devices are of poor quality and are prone to leakage. And some construction sites directly discharge untreated sewage into wetlands in order to save construction costs. Once the sewage leaks and is not properly treated, it will quickly pollute the wetland ecosystem and even infiltrate the groundwater. However, due to concrete mixing, earth excavation, building demolition, transportation of building materials such as cement, and site leveling, dust problems are often caused. The dust will not only affect the air quality at that time, but also will be adsorbed on the plants in the later stage, which will hinder the photosynthesis of plants, and will cause water pollution in the waters[6].

2.3. Overutilization of Resources

The Shaying River Wetland contains abundant biological resources and water resources, which will be more or less utilized and exploited during the development and construction of surrounding projects. However, due to the unreasonable development and utilization all the year round, the resources of the Shaying River wetland have been exploited in a predatory manner and have been almost exhausted. Recently, with the acceleration of urbanization and the increase of population, the wetland area of Shaying River has been squeezed to a certain extent, and part of it has been requisitioned as urban construction land. The biological resources and land resources in the region have been over-exploited, and there is a certain amount of deforestation. and arbitrary expropriation of land. At the same time, due to the construction of water conservancy engineering facilities, the water inflow and flood season of the original surrounding rivers are controlled by man, and the replenishment to the wetlands is not as large as before, resulting in uncertain water inflows from the wetlands and prone to water resources depletion and other phenomena[7]. In addition, the demand for freshwater resources is increasing, the water resources of wetlands themselves have been over-exploited, and the groundwater they rely on for recharge is also decreasing day by day. In some areas, there have been problems such as drying up of wetlands caused by insufficient water resources.

2.4. Excessive Development of Tourism, Unscientific Planning and Design

At present, there is a lack of relevant scientific theories to guide the construction of wetlands, and the particularity of wetland landscapes has not been highlighted. It has not created an ecosystem with stable structure, diverse species and perfect functions[8]. The problems existing in planning and design include: unreasonable site selection and design, in order to pursue a large area, causing pressure on land; unclear functional division, core protection The boundary is unclear, and the regional characteristics cannot be highlighted; too many artificial changes and interference, too many squares and artificial buildings weaken people's sense of appreciation of the natural scenery; the landscape design is too formal, which changes the long-term formation of wetlands in the integration of nature and humanity. Landscape pattern, etc.

3. Innovative Design of Energy-saving and Emission-Reduction Projects Around Shayinghe Wetland Park

3.1. Innovation System of Engineering Construction Around Shayinghe Wetland Park

A survey from Gartner, the world's most authoritative IT research and consulting firm, shows that the cost of computers and their external devices accounts for almost 31% of information and communication technology energy consumption. Gartner mentioned in the Green T technology (Green IT) of "2009 T Ten Strategic Technology Report", this is already a strategic technology. And its importance will not diminish quickly.

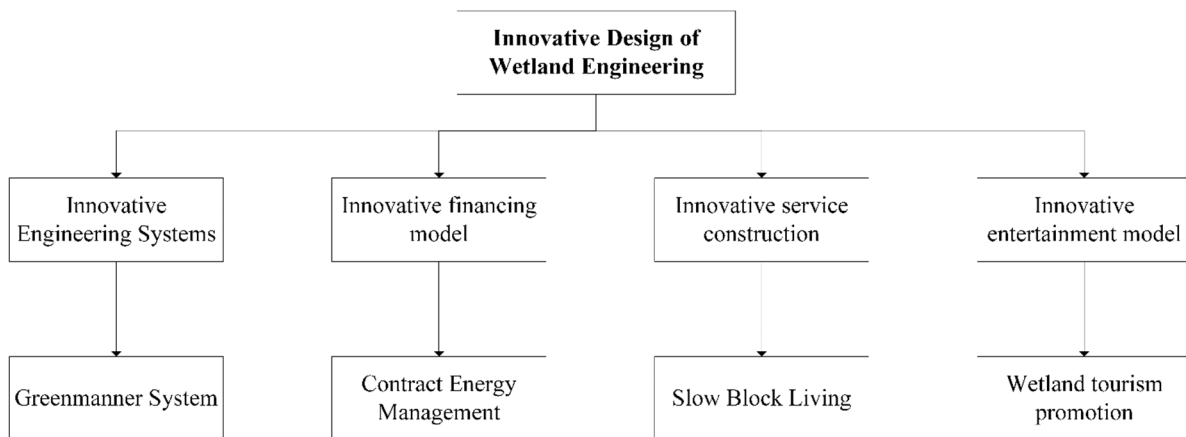


Fig 1. Innovative Design Structural Diagram of Wetland Engineering

For the engineering industry around the wetland park, green means an important structure that determines the development of the area . Including reducing natural energy consumption , reducing the use of building materials and so on. Since 2019, China has vigorously promoted energy conservation and emission reduction strategies around green wetlands . However , from the current point of view , the realization of this aspect is far from enough. The most important thing is whether the leaders of the surrounding industries have the concept of green overall management when formulating strategies. Only if the management and decision-makers generally have the concept of green management, then the application of green building technology is obvious. If the concept of green management is not considered , then the role of green energy conservation and emission reduction strategies can be said to be minimal .

A purpose-built application can be built to monitor, analyze, and report on the usage and waste of construction material classifications for surrounding works . Once you have this information. We hope that there is a way to encourage construction workers around the Shayinghe Wetland Park to change the material strategy, users around the wetland park to change their habits , and build a centralized management and control system " green office " in the center of the wetland . We decided to go down this road to supervise, centralize, organize, and recycle the amount of material used, and Greenmanner was born.

The constructed Greenmanner system leads the continuation of the low-carbon office era , and strongly supports the implementation of energy-saving and emission-reduction strategies.

Based on the understanding of such a green system, we can first realize the green office environment of the surrounding project of Shayinghe Wetland Park. The concept of energy saving and emission reduction was brought to the surrounding engineering offices. The Greenmanner system uses specific python codes to have a complete set of supervision, centralized control, sorting, and recycling fixed optimization and innovation algorithms. The

Green manner office application software, through the Wetland Park surrounding engineering company, uniformly sets and provides real-time, accurate individual and group average computer energy consumption data to employees, so as to motivate employees to reduce the overall energy consumption of the project through personal behavior. Make it aware of and take the initiative to take responsibility for the impact of personal behavior on the overall project operation and social environment.

3.2. Innovative Financing Models

Adhere to the transmission of the new financing structure model to the thinking of companies and business leaders in the engineering and construction industry around the Shayinghe Wetland Park. The following is the financing model we provide for us. The "energy contract" management model has the function of optimizing financing, and the financing function of the "energy contract" management model is more effectively applicable to the construction of the surrounding projects of the wetland park. "Contract energy" management, Energy Management Contracting, referred to as EMC, is through signing energy-saving service contracts with customers, providing customers with building natural energy audits, building project design and financing, building equipment procurement, energy-saving consumption determination and guarantee A complete set of energy saving and emission reduction services. A commercial financing operation mode that recovers investment and obtains profits from the energy-saving benefits obtained after the energy - saving and emission- reduction transformation of surrounding customers. For example, materials and energy -saving renovation of energy-consuming units do not require capital investment. The funds for the renovation and maintenance of building equipment are all undertaken by the surrounding energy-saving service enterprises. In this way, the surrounding industries and customers can achieve a win-win satisfaction under the leadership of energy conservation and emission reduction.

3.3. Innovative Slow-life Neighborhoods Around Shayinghe Wetland Park

Slow Living Neighborhoods are regions that are a more livable model of urban living : with a unique sense of place, good food, a healthy environment, a sustainable economy, and a laid-back, comfortable pace of community life. It can be seen that the slow life block is trying to find a way to organically combine modern technology with traditional lifestyles in a modern city. We also set it up in the construction of the surrounding Shayinghe Wetland Park, so that people can not only live in The surrounding wetland park enjoys many conveniences brought by modernization, and can fully enjoy the joy of life and have a regular, healthy and happy life. Therefore, the core values of building slow-living blocks around Shayinghe Wetland Park can be summarized as: environment priority, traditional features, place spirit, tasteful art, historical continuation and local context, etc.

From this point of view, the wetland park culture with local characteristics and the slow- life culture with global characteristics have natural cultural value coupling, especially in the aspects of advocating original ecology, original culture, aboriginal people, original location, original industry and so on. match. The cultural characteristics of the fusion of globalization and locality also constitute the source of inspiration for the craftsman's innovative design of China's "Wetland Slow Life District".

Taking the natural ecological landscape of Shaying River National Wetland Park in Taihe County as an example, the government and other industries create a more favorable space for operators to use space through free combination of spaces, which can realize branded restaurants, theme hotels, business offices, self-occupation and entrepreneurship. and other types of business operations. Taihe Street builds a rich night economy in Taihe community, meets diversified shopping needs, reshapes Taihe commercial center, and renews a new era of business in the future. It will also become a new business card for Taihe County tourism. Taihe

County Government can actively advocate the concept of water-friendly and diverse life, and create a comfortable living area where people and nature live in harmony with the ups and downs of greenscape, waterscape, and stonescape, and create a beautiful residential area on Taihe Street with ingenuity. Taihe Community is close to the six major lake areas of Shaying River National Wetland Park in Taihe County, enjoying the view of the mountains and the water and enjoying the ecology alone. It will become an unrepeatable ecological new city in the urban heat island.

3.4. Innovative Tourism Promotion Around Shayinghe Wetland Park

Under the background of today's global tourism in China, this planning is based on the wetland nature of Shaying River National Wetland Park in Taihe County, and on the whole first emphasizes the development concept of "precise protection", and creates the first wetlands such as lakes, fields, mountains and forests. The integrated and precise protection, in part, emphasizes the precise protection and inheritance of traditional ancient villages, historical culture and folk memory. On this basis, it integrates the development concept of "global tourism", breaks through the traditional way of single "spot tourism", and emphasizes the "whole industry, all elements, all space, all time and whole process" of tourism development around wetlands. In terms of the development of wetland surrounding industries, Craftsman Yingguo adheres to the concept of "integration of river, city and lake, symbiosis of culture, city and tourism", and gives full play to and amplifies the geographical and spatial advantages of Shaying River National Wetland Park in Taihe County.

It not only highlights the cultural advantages of Guangji in the history, but also emphasizes the positioning of China's "wetland slow life", and at the same time follows the concept of "protection-utilization-improvement" to form a wetland composed of urban wetlands, agricultural wetlands, cultural wetlands and slow city wetlands. The group-type development pattern of wetland tourism products will eventually make Shaying River National Wetland Park in Taihe County the first panoramic wetland Slow-life leisure and vacation destination in the country.

References

- [1] Bavor, H.J., 2003. Urban wetlands in China: The nexus of biodiversity and functionality, 5th Workshop on Nutrient Cycling and Retention in Natural and Constructed Wetland, Borova Lada, CZECH REPUBLIC, pp. 400-407.
- [2] Celis, A., Mediavilla, R., Santisteban, J.I., Castano, S., de la Losa, A., 2017. The desiccation of Las Tablas de Daimiel (1750-1987): agricultural changes and environmental impact based on interpretation of the sedimentary record. *Historia Agraria*, 5-35.
- [3] Fang, X.S., Wu, R.Z., Feng, Y.J., Huang, Y.X., Liu, S., Yuan, L., Liu, J.C., Niu, X.J., Wang, X.C., Hu, H.J., 2021. Enhancing bird diversity via species differential analysis at the Haizhu National Wetland Park in Guangzhou, China: a case study. *Restoration Ecology* 29.
- [4] He, J., Ai, J.Y., Zhu, X.D., Sun, X., 2015. Ecological Compensation Standards of Wetland Restoration Projects. *Polish Journal of Environmental Studies* 24, 2421-2432.
- [5] Lv, Y., Guan, S.P., 2018. Exploration to the construction pattern of Wetland Park-Taking Haizhu Wetland Park as an example, International Joint Conference on Metallurgical and Materials Engineering (JCMME), Wellington, NEW ZEALAND.
- [6] Sauer, A.K., Driscoll, C.T., Evers, D.C., Adams, E.M., Yang, Y., 2020. Mercury exposure in songbird communities within Sphagnum bog and upland forest ecosystems in the Adirondack Park (New York, USA). *Ecotoxicology* 29, 1815-1829.
- [7] Tait, M.K., Brunson, M.W., 2022. Barriers and opportunities for cooperative wetland management: a case study in the greater Rocky Mountain National Park ecosystem. *Wetlands Ecology and Management* 30, 257-272.

- [8] Tan, X.H., Li, X.H., Peng, Y.L., 2021. AESTHETIC EVALUATION OF PLANT LANDSCAPE BASED ON PRINCIPAL FACTOR ANALYSIS AND SBE IN WETLAND PARK - A CASE STUDY OF JINLONG LAKE WETLAND PARK (CHINA). *Journal of Environmental Engineering and Landscape Management* 29, 40-47.