

# Research on the Application of Ecological Landscape Design in Urban Construction

Wenkang Zhou

Jingdezhen Ceramic University, Jingdezhen, Jiangxi, 333403, China

**Abstract:** *The purpose of urban construction is to promote the sustainable and healthy development of interpersonal relations through deep reflection on the value orientation of interpersonal relations, which is not out of utilitarianism. This paper mainly starts with new-type urbanization, conducts an in-depth analysis of its ecological connotation, and studies how to solve the contradiction between people and land existing in the current urban construction process through ecological landscape design, so as to effectively solve the drawbacks faced by traditional urbanization. From the perspective of ecological landscape, various problems and challenges in the current process of small town construction are analyzed. According to the current research theories on ecological landscape in China and other countries, ecological problems in the current process of domestic urban construction are emphatically explored, and relevant solutions are proposed.*

**Keywords:** *ecological landscape, construction of small towns, landscape design, strategy*

## 1. Introduction

In our country, the urbanization process has been going on for nearly 15 years. However, under the combined action of various factors, the current ecological environment problem is still relatively prominent, and many people do not realize the importance of this problem. Based on this background, China officially put forward and began to implement the new urbanization strategy, and vigorously advocated the construction of healthy ecological small towns. The ecological landscape design in urban construction has become an important trend in current landscape design. China has a vast territory and abundant resources, and the distribution of small towns is also very wide. The landform, climate and geographical environment of each small town are different to some extent, and these factors play an extremely important role in the aspects of human landscape, regional landscape characteristics and overall planning. At this stage, the main content that needs to be studied is how to combine the local humanistic characteristics, topography and ecological environment and other characteristics of landscape design, so as to weaken the damage to the environment as much as possible. Under the guidance of the concept of ecological city and sustainable development, the main trend of urban construction in the future is ecological town, and ecological landscape design is an important means to achieve this goal[1].

## 2. The overview of Ecological Landscape Design

The ecological aspect of landscape design focuses on the use of ecological principles to design land and outdoor Spaces, the design of human ecosystem as the core. In ecological landscape design, the planning and design of natural process is the foundation. The goal of ecological landscape design is to realize the coordination and balance between man and nature. By restoring, protecting and improving the natural environment, ecolandscape design provides better ecological services, including water resources management, biodiversity conservation, soil conservation and climate regulation.

In practice, ecological landscape design needs to consider the knowledge and methods of ecology, environmental science, land use planning and other disciplines. Professional landscape architects need to possess a deep understanding and analytical ability of ecosystems, as well as innovative design thinking and technical approaches. Due to the continuous development of technology and economy, the application mode and scope of landscape design are also expanding, and the pursuit of humanistic spirit and regional culture is beginning to be emphasized. Nowadays, the idea of ecologism is rising gradually, which provides a new direction and ideas for modern landscape design, and ecological landscape design has become the mainstream trend[2-3].

The essence of ecological landscape design is to create a green environment, in which the technology and concept of green ecology will be applied, its purpose is to present the beauty of nature and enrich the philosophical connotation of design, to show the harmonious relationship between man and nature. At present, the public generally believes that ecological landscape design is the development and evolution direction of landscape design, and it is also regarded as a higher level of landscape design. It is based on ecological protection and environmental remediation, and deeply thinks about the concept of human-centered.

### **3. Problems of ecological landscape in urban construction**

#### ***3.1. The overall plan lacks systematic design***

Since the 1980s, the number of small towns in China has increased rapidly, resulting in many small towns with planning problems. One of the obvious problems is the weak foundation of landscape construction, which is mainly caused by the extensive construction mode and the lack of systematic landscape design.

In order to meet the rapidly growing demand, urban planning often pays more attention to economic efficiency and speed, while ignoring the protection of the ecological environment and the quality of landscape construction

Large areas of roads and squares have become the main landscape features of small towns, but this urban design has affected the overall layout of small towns. In order to improve the landscape construction of small towns, there are several key aspects that need to be considered. First of all, the urban planning department should strengthen the guidance and supervision of small town planning. Secondly, we should pay attention to the integrity and system of the landscape, avoid scattered construction layout, and create the unique style and charm of small towns through reasonable landscape planning and design.

There was also a need to focus on the principles of resource conservation and sustainable development. The construction of small towns should follow the principle of ecological friendliness, make reasonable use of land resources, and reduce the damage to the natural environment. In landscape design, ecological restoration and protection can be adopted to introduce elements such as green vegetation and water to create a livable urban environment.

An expert once said: "Cities are the crystallization of human civilization, and the beauty of cities is closely related to people's happiness." Therefore, in the construction of small towns, we should pay attention to the protection of ecological environment and the quality of landscape construction, and through reasonable planning and design, we can build a small town that is suitable for living, working and traveling.

#### ***3.2. The proliferation of artificial landscapes***

From the ecological point of view, small town landscape can be divided into two types, the first type is natural ecological landscape, the second type is artificial landscape. Due to the continuous advancement of urbanization, many natural environments have been destroyed or occupied, which has caused serious impact on the environment of small towns. Artificial environment is gradually playing a dominant role in the ecological environment of small towns, while the proportion of ecological landscape is getting smaller and smaller, and some regions even sacrifice the ecological environment to build humanistic landscape. As a result, the ecological nature of the landscape is destroyed and the ecological environment is out of balance.

The landscape construction of some small towns often only pursues the gorgeous appearance, ignoring the basic functions of artificial landscape to meet the needs of environment and residents' life. There are many problems in landscape construction, which lacks consideration of urban development and actual needs of residents. It lacks excavation of local culture and pays too much attention to decoration, but fails to really enrich the cultural atmosphere of cities and towns.

#### ***3.3. Lack of regional cultural characteristics***

To a certain extent, this trend of urbanization of small towns can be understood as the pursuit of economic development and quality of life. With the growth of the economy, people's requirements for

living environment are also increasing, hoping to enjoy more convenience and comfort brought by urbanization.

However, there are also problems and challenges in the process of urbanization in small towns. Firstly, large-scale demolition and construction may lead to the loss of the original historical, cultural, and architectural features, damaging the unique scenery and traditional atmosphere of small towns. This urbanization model may cause small towns to lose their uniqueness and become homogeneous.

Secondly, the transportation, environmental, and resource pressures brought about by urbanization also need to be taken seriously. Small towns often lack sound infrastructure and service systems, and large-scale construction may have negative impacts on traffic congestion, environmental pollution, and resource consumption.

In the process of urbanization in small towns, attention should be paid to the protection and inheritance of historical and cultural heritage. Through reasonable planning and design, local architectural styles and traditional elements should be integrated to create a unique urban image. At the same time, attention should also be paid to developing characteristic industries and tourism resources in small towns, enhancing their attractiveness and economic vitality[4-5].

The cultural connotation of small towns is an important reflection of their taste. However, compared to the rapidly developing economy and society, some small towns have obvious cultural backwardness. This contrast has caused many residents to start denying traditional culture, leading to a large number of demolition and construction. Previously, many people would focus on protecting ancient sites, historical buildings, temples, and so on. However, they would demolish some unique and traditional residential buildings and historical blocks, and rebuild them on this basis. This phenomenon can cause damage to the environment of small towns, and also lose the previous cultural atmosphere, even submerging their own cultural traditions.

#### **4. The strategies of ecological landscape design in urban construction**

##### ***4.1. The system planning landscape structure***

The composition and arrangement of small town landscape is the landscape structure, and the landscape structure will affect the landscape effect to a great extent. Generally speaking, the structure of small town landscape is relatively unstable, and has outstanding characteristics of rural landscape, so in the process of landscape construction, we should pay full attention to its weak links, and supplement and optimize these links.

The detail control of small town landscape construction is very important. Especially when integrating natural landscape elements, it is necessary to pay attention to rationality in order to maintain its natural state and integrity. For example, existing forests, rivers and mountains can be preserved or restored in small towns, making them an important part of the landscape. In addition, the planning and design of small town landscapes need to take into account human and historical factors. The unique charm and historical culture of small towns can be integrated into the landscape by preserving and restoring historical buildings and cultural heritage. In the landscape construction of small towns, it is necessary to give full play to the role of landscape designers, urban planners, ecological experts and other professionals to provide valuable suggestions and guidance. At the same time, extensive communication and participation with residents and communities will increase their sense of identity and participation in landscape construction.

In short, the landscape construction of small towns needs to pay special attention to the integrity of landscape structure and the ability to integrate multiple elements such as nature, humanity and history. Through attention to detail control, reasonable integration of natural landscape elements and the participation of professionals, a unique and attractive small town landscape can be created to bring a good life experience to residents and visitors.

##### ***4.2. To protect sensitive areas of ecological environment***

In the landscape planning and design of small towns, the sensitive areas of ecological environment are often neglected. These sensitive areas include ecological protection areas, agricultural protection areas, and historical sites, which play important roles in the entire landscape. However, due to its fragile and vulnerable nature, once damaged, some areas may be difficult to recover.

In order to protect these ecologically sensitive areas, we need to pay special attention to them in landscape planning and design, and use scientific theories for analysis and evaluation. Firstly, we should conduct an environmental capacity assessment to determine the limits of human activities and development that these sensitive areas can carry. Through scientific methods and data, we can understand the carrying capacity of sensitive areas and avoid environmental damage caused by exceeding their capacity range.

When formulating protection strategies, we need to comprehensively consider the needs and interests of different stakeholders. Protecting ecologically sensitive areas does not mean completely banning human activities, but rather planning and managing within a reasonable range. For example, in ecological protected areas, tourist passages and observation platforms can be set up to allow people to enjoy natural scenery up close, but the number and behavior of tourists should be limited to avoid causing excessive pressure on the ecological environment.

In addition, we can also draw on the experience and wisdom of experts and celebrities. For example, renowned ecologist Edward Wilson once said, "We should view nature conservation as an investment, not a cost." This sentence reminds us that in the process of protecting ecologically sensitive areas, we should see their long-term value and significance, not just immediate benefits.

#### ***4.3. To advocate for the construction of ecological civilization***

The construction of ecological civilization has become the core content of development and construction, and its importance cannot be ignored. The construction of ecological civilization conforms to the laws of natural development on the one hand, and also conforms to the benign development relationship between humans and nature on the other hand. In the process of promoting the construction of small towns, it is necessary to firmly establish a scientific development concept, comprehensively consider the development of society, economy, and civilization, and unify the speed and quality of development.

When adjusting industrial development strategies, we should continue to promote energy conservation, emission reduction, low-carbon environmental protection, and achieve a new normal for the economy and society. In the construction of small towns, we can take a series of measures to promote energy conservation, emission reduction, and low-carbon environmental protection. Firstly, we can promote the utilization of clean energy, such as solar energy, wind energy, etc., to reduce reliance on traditional energy, reduce energy consumption, and greenhouse gas emissions. Secondly, we can strengthen energy management and monitoring, improve energy utilization efficiency, and reduce energy waste. At the same time, we can also encourage enterprises and residents to adopt energy-saving and emission reduction measures, such as using energy-saving lamps and purchasing energy-saving appliances.

At the same time, we also need to pay attention to sustainable economic and social development. We should actively develop green industries, promote innovation and application of environmental protection technologies, and promote economic transformation and upgrading. At the same time, we also need to pay attention to social equity and people's well-being, ensuring that development achievements benefit all people.

As experts have said, "The construction of ecological civilization is an inevitable choice for the development of human society and also one of the key to achieving sustainable development." Only by adhering to the construction of ecological civilization can we achieve harmonious coexistence between humans and nature and promote sustainable economic and social development. In the construction of small towns, we should always place ecological civilization at the core, guided by the scientific development concept, actively promote energy conservation, emission reduction, low-carbon environmental protection, and achieve a new normal of the economy and society. In this way, we can *leave a beautiful and livable home for future generations.*

#### ***4.4. To strengthen the construction of ecological corridors***

Ecological corridor refers to a kind of landscape structure, which often presents a linear belt, and can be divided into different types of corridors such as roads, rivers and forests according to the composition content. The landscape construction of small towns should attach great importance to the construction of ecological corridors, and it should be regarded as an important part of landscape planning. The advantage of this approach is that it can maintain the ecological balance, give full play to the emission and

absorption role of ecological corridors, and reduce the pollution to the surrounding environment as much as possible. On the one hand, the construction of ecological corridors can help improve the living environment, on the other hand, it can reduce the damage to the natural environment.

## 5. Conclusions

As a landscape formed by the interaction between humans and nature, the landscape of small towns has many unique characteristics. At present, the important trend of urban and rural development is the construction of small towns. However, the traditional concept of urban construction can no longer meet the new needs of the times. Therefore, the main task at this stage is to solve the environmental degradation problem caused by urbanization construction. This study mainly analyzes how to resolve the environmental problems exposed during the construction of small towns from the perspective of ecological landscape. The construction of small towns in various regions needs to fully consider their own practical situations, and on this basis, choose targeted construction methods and theories. Currently, the construction of small towns in China has formed corresponding technical standards and planning systems, but there are still certain limitations in the practical process in various regions. In addition, some new problems have also been exposed during the construction of small towns, so it is necessary to conduct in-depth exploration of the urban characteristics and ecological environment problems that exist in the process of small town construction. Especially in the process of small town construction and development, special attention should be paid to the issue of ecological landscape construction. Under the guidance of relevant theories such as landscape ecology and corner town construction planning, reasonable design and planning construction should be carried out. Finally, the construction of ecological landscapes is of great significance for the construction of small towns. In order to fully protect the natural environment of small towns and highlight the characteristics of their cultural landscapes, and to enable the inheritance and development of local cultural characteristics, it is necessary to fully value and play the positive role of ecological landscapes.

## References

- [1] Shaohua Zhu. *Research on the classification of landscape design and ecological landscape design [J]. Journal of Northeast Electric Power University, 2007(05):66-69.*
- [2] Xiaohua Ren. *Application of sponge city theory in road greening landscape design [J]. Engineering technology, 2023.*
- [3] Jun Ye. *The application of ecological concepts in landscape architecture construction [J]. Architectural Technology Research, 2023, 6 (1): 27-29.*
- [4] Huimin Wu. *Research on the Application of Original Ecological Elements in Agricultural Landscape Design under the Integration of Rural Revitalization [J]. Modern Agricultural Research, 2023, 29 (6): 76-78.*
- [5] Wenfei Liu. *Research on the application of ecological planning concept in landscape design [J]. Flowers, 2023 (6): 94-96.*