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Study on Sustainable Urban Planning and Environmental Governance from the Ecological Perspective

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Abstract

The acceleration of urbanization has brought more development opportunities and challenges to the city, and also brought great pressure on the ecological environment. The proposal of sustainable development puts forward higher requirements for urban planning in China. At present, China is facing many problems, such as the deterioration of ecological environment, the shortage of urban land resources and excessive energy consumption. In this case, in order to promote the sustainable development of the city, it is necessary to realize the coordinated development of urban planning and environmental governance. Based on this, this paper takes sustainable urban planning and environmental governance from the ecological perspective as the research object, firstly analyzes the basic principles of sustainable urban planning and environmental governance from the ecological perspective, and then analyzes the implementation strategies of sustainable urban planning and environmental governance from the aspects of urban-rural integration development, ecological resources protection, ecological security construction and economic structure adjustment, with a view to providing certain reference for urban planning staff.

Keywords

Ecological vision; Sustainable urban planning; Environmental governance

Introduction

In recent years, my country's urbanization process has accelerated, and the urban population has shown a continuous growth trend, which has placed higher demands on urban planning. Against the backdrop of increasingly serious environmental pollution, the understanding of the relationship between urban planning and environmental governance has gradually deepened, recognizing their close connection. Urban planning not only provides a theoretical basis for environmental governance but also promotes sustainable urban development to a certain extent. Therefore, in-depth research on sustainable urban planning and environmental governance from an ecological perspective has significant practical implications.

Currently, urban planning faces numerous problems and shortcomings in its implementation. These include: insufficient standardization in urban planning processes; a lack of a scientific sustainable development evaluation system; and insufficient emphasis on ecological and environmental governance. These issues must be addressed proactively, requiring rational analysis and reflection on existing problems to establish a comprehensive sustainable development evaluation system as a crucial basis. Based on this, this paper analyzes and studies sustainable urban planning and environmental governance from an ecological perspective.

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1. Basic Principles of Sustainable Urban Planning from an Ecological Perspective

1.1 Principles of Ecological Protection

In urban planning and environmental governance, the principle of ecological protection is the fundamental principle of urban planning and environmental governance, and also the fundamental guarantee for urban development. The principle of ecological protection requires that in urban planning and environmental governance, the actual situation of the natural environment must be fully considered, and the principles of ecological protection such as protection priority, conservation priority, natural restoration and adaptation to local conditions should be taken as the basic basis for urban planning and environmental governance. On this basis, the rational use of resources and effective improvement of the environment can be achieved, thereby ensuring that urban planning and environmental governance can meet the actual needs of human social development. In addition, under the principle of ecological protection, urban planning and environmental governance are also required to establish a sound ecosystem, and on this basis, the protection and restoration of various ecological resources can be achieved, so as to ensure the balanced development of the ecosystem (Gao et al., 2020).

1.2 Principles of Optimized Development

In urban planning and environmental governance, it is essential to adhere to optimized development as the fundamental principle, taking ecological civilization construction and urban development as the central tasks. Based on this, and combined with the actual situation of urban development, the effective utilization of resources must be fundamentally achieved. The principle of optimized development is mainly realized through optimized urban planning and full utilization of resources. Specifically, this is manifested in the following ways: in urban planning, sustainable development should be the fundamental guiding ideology, with environmental protection and economic development as core components; in resource utilization, natural resources should be fully utilized, waste should be eliminated, and resource utilization should be maximized; in urban construction, urban planning and environmental governance should be carried out in accordance with the actual situation and guided by the principle of ecological priority. Furthermore, optimized development must also properly handle the relationship between economic development and environmental protection, organically combining the two to achieve a win-win situation for both economic construction and environmental protection.

1.3 Principle of Coordinated Development

In urban planning and environmental governance, we must adhere to the principles of urban-rural integration, ecological resource protection, ecological security construction and economic restructuring. On this basis, we should start from multiple perspectives such as policy formulation, economic construction and social development (Wang et al., 2019) to achieve coordinated urban development.

2. Implementation Approaches for Sustainable Urban Planning and Environmental Governance

Under the ecological perspective, urban planning and environmental governance should adhere to the basic principle of sustainable development, achieve the coordinated unity of resource conservation, environmental protection and socio-economic development, and promote integrated urban-rural development. Urban planners should, on the basis of doing a good job in regional spatial layout planning, rationally plan urban infrastructure construction, optimize urban and rural spatial structure, and achieve integrated urban-rural development. In the process of urban planning, we should strengthen the protection of ecological resources (Yu, 2022). By establishing an ecological compensation mechanism, we can increase the ecosystem service functions of the surrounding areas of the city and realize the compensation for the ecosystem service functions of the surrounding areas of the city.

In the process of urban planning, scientific and technological means should be fully utilized to protect and restore natural resources. For example, advanced environmental protection technologies can be used to treat solid waste, reducing resource waste.

In strengthening ecological security, urban planners should focus on raising environmental awareness. Strengthening urban environmental protection can effectively reduce the probability of traffic accidents, natural disasters, and pollution incidents. For example, urban planning should fully consider the environmental carrying capacity of surrounding areas; urban planning should emphasize the planning and design of green spaces, increasing green areas and green coverage; and building design should fully consider their impact on the surrounding environment. Furthermore, the concept of sustainable development can be integrated into urban construction to improve the scientific and rational nature of architectural design.

3. Implementation Strategies for Sustainable Urban Planning and Environmental Governance

3.1 Constructing a scientific evaluation system for sustainable development

The construction of a sustainable development evaluation system in urban planning is a highly comprehensive task, requiring the integration of various subsystems to form a complete sustainable development evaluation system. In practice, it is crucial to rationally select evaluation indicators and choose appropriate evaluation methods based on the city's specific circumstances. When constructing the evaluation indicator system, the principles of scientific rigor, systematicity, and feasibility should be followed. Sustainable development theory can be used as a reference to build a scientific evaluation indicator system.

When constructing a sustainable development evaluation index system, it is necessary to analyze the actual situation of urban economic and social development and establish a sound index system. In addition, a combination of qualitative and quantitative methods can be used to construct a sustainable development evaluation index system. When formulating evaluation indicators, it is necessary to pay attention to the principles of comprehensiveness, scientificity and operability. By conducting a comprehensive analysis of various indicators, the sustainable development level of each city can be obtained. When constructing a sustainable development evaluation index system, it is necessary to clarify the connotation and goals of sustainable development and use them as the basis for relevant evaluation. At the same time, corresponding construction standards should also be formulated. In order to better implement sustainable urban planning and environmental governance, it is necessary to start from the aspects of urban planning preparation, implementation and supervision and management, and construct a scientific sustainable development evaluation system (Yuan, 2022).

3.2 Conduct ecological city planning work

The quality of urban planning directly affects the sustainable development of the entire city. Therefore, in the actual process, relevant departments should do a good job in ecological urban planning and improve the quality of planning. In the specific process, the sustainable development goals should be clarified in combination with the local conditions. Based on the actual situation and development goals of the region, a scientific and reasonable urban planning system should be established. In the actual process, the sustainable development goals should be clarified according to the specific situation of the city. On this basis, the specific work content should be clarified, thereby improving the quality of planning (Zhu & Li, 2020). At the same time, the sustainable development evaluation system should be clarified in the urban planning process, and the entire urban planning work should be optimized. At present, some regions in China still have significant defects and deficiencies in the sustainable development evaluation system. For example, many regions have not established a scientific sustainable development evaluation system. When carrying out environmental protection work, it is only used as an evaluation indicator, without combining the actual situation to conduct detailed analysis and thinking of the indicator. Therefore, it is difficult to effectively improve and enhance the system in the actual process. From an international perspective, countries such as Germany have established a complete sustainable development evaluation system. Therefore, when carrying out urban planning, we should attach great importance to the establishment and application of the sustainable development evaluation system. First, indicators should be selected and determined reasonably based on the actual situation of the region; second, the indicators should be scientifically analyzed from an ecological perspective; and finally, a sound sustainable development evaluation system should be established based on the actual situation.

3.3 Strengthen the emphasis on urban environmental protection work

When conducting urban planning, it is essential to prioritize urban environmental protection, making ecological environment governance a crucial component of urban planning. Simultaneously, ecological principles should be actively applied to urban planning to ensure the full implementation of sustainable development concepts, thereby fundamentally improving the level of ecological environment governance. With the emergence of the sustainable development concept, relevant departments should pay close attention to it and actively consider its implications, establishing a comprehensive evaluation system to apply sustainable development principles to urban planning. Furthermore, scientific and rational urban planning schemes should be developed based on the actual ecological environment conditions.

When designing a sustainable development plan, it is essential to fully consider the actual conditions of urban resources and the environment, and to conduct a reasonable assessment of existing resources and the environment. The final sustainable development plan should be determined through a reasonable analysis and assessment of existing resources and the environment. The design of the sustainable development plan must fully consider the coordinated development of people, society, and nature. In this process, ecological environmental protection should be an important component and a key focus of the planning. At the same time, it is crucial to strengthen the emphasis on and implementation of ecological environmental governance. Strengthening the emphasis on and implementation of ecological environmental protection can effectively reduce the adverse impacts of urban planning on the ecological environment. For example, in carrying out urban planning, the establishment and improvement of urban greening systems can increase the area of urban green space and improve the urban green coverage rate. Simultaneously, the construction of green transportation systems can alleviate urban traffic congestion.

3.4 Make full use of green and energy-saving technologies

Guided by the concept of sustainable development, urban planning should adhere to the design principles of green, low-carbon, and environmentally friendly practices, making full use of green and energy-saving technologies. The rational application of green and energy-saving technologies has a positive effect on improving the urban environment. For example, in building planning, new energy sources such as solar and wind power can be utilized to reduce dependence on non-renewable energy sources and minimize their damage to the ecological environment. Furthermore, urban planning should fully consider the ecological environment and, based on this, rationally apply green and energy-saving technologies, making urban environmental protection and ecological governance important components. For example, in urban greening design, green vegetation and lawns can be used to green the urban environment and strengthen urban ecological greening construction. Additionally, in urban sewage treatment, greywater reuse technologies can be adopted. For example, rainwater harvesting systems can be used for road irrigation. Solar and wind power technologies can also be rationally applied in urban planning. Moreover, urban planning should also rationally utilize appropriate building technologies based on the climatic conditions of different regions.

4. Conclusion

The ecological environment is crucial for human survival and development. To achieve ecological protection and governance, sustainable development principles must be a key basis for urban planning, strengthening both protection and governance. In practice, relevant departments must recognize the importance of sustainable urban planning and environmental governance, developing reasonable planning schemes based on the current situation. They must also strengthen ecological environment governance efforts and ensure the feasibility of planning schemes by establishing a comprehensive sustainable development evaluation system. In short, the effectiveness of urban planning and environmental governance directly affects the overall development of the city; therefore, relevant departments must attach great importance to and strengthen the implementation of sustainable urban planning and environmental governance.

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