

Research on Urban Planning Based on Geographic Information System

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Abstract: China's urban development is facing severe environmental problems, and urban planning transformation is imminent. Under the ecological background of low carbon and green concept, urban planning is faced with new methods and ideas. In practice, urban planning and construction is influenced by many factors, such as society, economy and nature, which makes urban planning and construction a long-term and complex project. Based on geographic information system technology, this paper compares the urban planning procedures and methods at home and abroad, and theoretically analyzes the current status and existing problems of urban planning in China, including: overall planning, zoning planning, tactical planning, and planning. The use of new technologies and the scientific and democratic planning work. In order to change this situation, it is necessary to use administrative, supervisory, economic, and legal means to exert the function of urban planning and promote the implementation of urban planning.

1. Introduction

Nowadays, China's environmental pollution is serious. With the development of urbanization, how to carry out urban construction scientifically and rationally has become a major issue for planners. How to carry out urban construction scientifically and reasonably is a problem that urban planners need to think about and solve under the background [1]. Planners should combine the background of the environment. At present, the large-scale urbanization movement is still going on all over the world, especially in the developing countries, whose urbanization is in the transitional stage from the beginning to the rapid development or even in the stage of rapid development [2]. In the coming decades, China's urbanization level will be greatly improved, the urban population will increase by geometric multiples, and the number and scale of cities and towns will continue to expand. Under the circumstances that the congenital deficiency of the natural environment, the huge population base and the lack of water resources, land resources and energy are difficult to reconcile, the state is paying more and more attention to urban planning [3]. In the process of rapid social and economic development, the daily administrative management of urban planning must always face various problems and contradictions. The solution of these problems, relying only on the existing administrative management, can not be completely solved, and needs to be innovated in many aspects such as planning concepts and system construction [4].

Under the new situation of global economic integration, China's economy has made considerable progress. Especially in the past decade, the speed of urbanization in various parts of China has accelerated, which has promoted the tremendous development of urban and rural economy. The consideration of investment and income in urban construction should be one of the most important aspects of operating a city [5]. The country regards the sustainable development of the city as the basic task of urban planning work. This is of profound significance. It is both a must for China's cross-century development and a trend of cross-century development in the world [6]. However, due to the long-term neglect of the function of planning, the scientific nature of urban planning is far from fully reflected in the reality of urban development and construction. In this case, great changes have taken place in the construction system, layout planning and construction style in the process of urbanization development in China, and with the further development of urbanization, this trend will continue [7]. Using pioneering thinking, urban planning should be carried out from a macro perspective so as to achieve an effective unification of ecological benefits and social and economic benefits.

2. Attaching Importance to the Space Utilization of Regional Coordinated Development

With the advent of the era of globalization and the intensification of inter-city competition, the strategic thinking of urban development is changing from traditional construction-oriented to operation-oriented. Especially, the document clearly stipulates that we should "give full play to the role of urban planning in regulating urban land and space resources, and promote the coordinated development of urban economy and society". It's about finding a mechanism for change from conflict [8]. Exploring new planning methods and establishing functional urban planning work system are the contents of the change. In general, although the depth and quality of planning completed in many cities are not necessarily ideal, such as: planning theory is not mature enough, the basic information of planning is incomplete, and the technical means are not perfect. The scientific nature of urban planning represents the objective understanding of the urban existence mechanism and the urban development law of urban planning; the functionality of urban planning means the effective intervention of urban planning for the rational development of the city and the concrete urban construction. On the other hand, it is necessary to develop public transportation on a large scale [9]. For some megacities, it is necessary to actively carry out feasibility studies on large-scale rapid rail transit on the ground and underground.

The development of regional economy must pay attention to the comprehensive problem of coordination and space utilization between regions. The region is part of the country. GIS is a spatial database system that combines CAD technology and database technology. When performing urban planning, it can easily obtain the location coordinates of residents' planning points through data access. The integration of urban planning into the whole region has been carried out in the planning of urban and rural integration planning, which has positive significance for urban and rural planning [10]. With the steady progress of China's modernization construction, urbanization construction has also made some achievements, but based on China's national conditions, China's urbanization construction reflects a unique nature: in the long-term process of agriculture, the foundation of industrialization is not solid, and then there is a situation that can not keep up with the pace of modern information society. However, this model is not conducive to the orderly development of urban planning, so the government's rights should be checked and balanced, and the public's awareness of planning participation should be enhanced, so as to create the possibility for the real implementation of urban construction.

As the carrier of various activities, cities around the world, regions and urban governments are actively striving to cultivate and improve the competitiveness of cities in order to occupy the most advantageous strategic position in the new international division of labor and strive to maximize the use of international resources. In theory, the policy strategic environmental impact assessment (PSEIA) should take precedence, followed by the planning environmental impact assessment (PEIA) of regions and industries, and the environmental impact assessment (EIA) of construction projects. Perhaps it is not as good as planning administrative work, such as planning preparation or planning permission, to allocate and redistribute social resources and public interests directly. However, through the planning of post-approval management, various urban constructions can be promoted in accordance with the urban planning formulated according to law. In the increasingly fierce urban competition, the key to the success or failure of a city is whether it can turn its resources into competitive advantages, thereby enhancing the attractiveness of investors (enterprises), tourists and residents. Urban planning is an important basis and basic means for the state to implement macroeconomic regulation and control of urban development. All of this is very important for China's urban planning. Taking into account the interests of many parties, seeking a proper solution to all kinds of difficult regional problems is the experience and trend of urban and rural development at home and abroad.

3. Concentrate on the Internal Law of Urban Growth and the Phenomenon of Urban Agglomeration

With the further deepening of reform and opening up, most cities are becoming larger and larger,

and the trend of urban expansion and suburbanization is becoming more and more obvious. Successful urban management depends on the grasp of market mechanism and skillful application of market operation mode. Cities are economic centers. This transformation of the mode of economic growth will have a profound impact on the development of cities in China. This is the general situation facing the development of cities in China at a deep level. The economic system is a top-down, strict and directive planned economy model. The state government or its competent authorities control all aspects of economic operation and social life. To some extent, it reflects the general picture of urban development. Our future work is by no means an easy negation or reinvention of previous planning work. It is much more convenient to solve with the support of the GIS software system. Because in the GIS environment, it is convenient to obtain the coordinates of each load point and the coordinates of each substation, and the calculation results can also be displayed on the screen. When the project development and construction needs to provide topographic maps, the cost is recovered and the contradiction of capital investment is solved. The construction of contemporary urbanization requires new pioneering thinking to meet the individual needs of the people. Planners should stand on a macroscopic perspective and use long-term perspectives to guide and guide, so as to promote the better development of urbanization in China.

In recent years, urban ecological sensitivity analysis has used GIS. The use of GIS makes the sensitivity factor quantifiable and the data more accurate. However, due to the accuracy of GIS, the pre-planning work must be in place. Planning EIA is different from project EIA. The wide-scale and high-level planning makes the EIA better able to solve long-term and regional environmental problems. Planning EIA helps resolve conflicts that cannot be resolved at the project level and can analyze the cumulative environmental impact of a large number of projects. From the perspective of professional characteristics, on the basis of the concept of urban planning, urban planning post-approval management has typical characteristics of public administration. Operating the city's land resources is an important part of operating the city, and it is also the closest to the planning and construction of the city. To solve these problems, the key is that the relevant leaders of the city should break away from the traditional idea of relying solely on the extension to develop the economy and gradually change the mode of economic growth according to the requirements of the central government. Urban planning, as a means of building and managing a city by the state or the city government, plays its full role under the strong control of administrative measures. Insufficient attention has been paid to the structural linkages between road system and other land use systems, resulting in unreasonable overall layout of the whole planning. Especially when planning deep people to study the travel rules and transportation cost, this problem becomes more important.

The transformation of China's economic growth mode will be a process. In the study of urban development and its relationship, I think we should pay attention to grasp the stage and regional characteristics of this process. The transformation of the mode of economic growth. Urban planning is only a tool, but does not establish its own scientific understanding of urban development; planners are only as the spokesperson of government decision-making, and can not express their own independent views. Planning for individual districts of cities that are selectively carried out. The focus of the plan is to carry out more in-depth land use planning on a large proportion of drawings. The main reason for the above problems is that we have not mastered and studied the objective laws of urban development, and the nature and phenomena have not revealed enough. In the final planning results stage, experts and technicians were added to review and accept the results, and the quality of planning results was well grasped.

In order to rectify the problems such as the general planning is too rough and the operation is not strong, the municipal planning authorities uniformly study and formulate technical measures for the compilation of the district and county-level urban master planning in accordance with the requirements of the content and depth of the regional planning of large cities. With the help of the existing theory and practical experience, a set of natural ecological urban construction theory has been created. At the present time when urbanization is further accelerated, we should adhere to a realistic attitude, attach importance to the protection of the ecological environment, and build on local characteristics. For the implementation of space, the eco-city should plan to fully respect the

current status of the water system, and the planning plan combines the current water system to increase corridor connectivity and improve traffic accessibility. Modern urban development trends not only pose a threat to the surrounding natural environment, but also bring about a huge burden on the urban population due to the environmental changes brought about by urbanization. Urban expansion and the construction of municipal infrastructure are inevitable. However, when it comes to the actual work of post-approval management, especially in the analysis of the causes of various shortcomings in the current post-approval management system, it is not difficult to find the deep-seated causes of such problems. The population size is the basic parameter of urban planning. If it is set too high, it will cause a series of problems. Therefore, we must pay serious attention to it and seriously correct the existing problems.

4. Conclusions

As a technical project, urban planning is incapable of directly intervening in reality. Only by comprehensively applying administrative, supervisory, economic, legal and other means can we ensure the function of urban planning. For the first time, this paper uses the "space location - configuration" model in the central ground theory to solve the architectural layout problem in urban planning. The corresponding model has been established to make the scale of the problem greatly reduced. Innovative ways of thinking, do something for nothing, guide the goal of deepening reform and transforming government functions, strengthen planning functions and institutional team building, and conditionally set up a separate planning bureau. Judging from today's economic development, the process of urbanization is accelerating, and a variety of urban problems appear and intensify, which are closely related to the background of global industrialization. Urban planning under the premise of ecological background has become the core measure of urban development. It is helpful to reduce environmental pollution and ecological damage and relieve the pressure of sustainable development to integrate ecological concept into urban development planning. Therefore, in urban planning, a large number of basic planning methods have been used to improve the efficiency of urban planning, to complete the work that other planning methods can not do, and to promote the integration of planning and urban planning, so that the two disciplines can be integrated.

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