

Construction of Green and Smart City in Chengdu

--Based on the Experience of Pusan City

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Abstract

This paper, Construction of green and smart city in Chengdu --Based on the experience of Pusan City combines the similarities between Chengdu and Busan city in South Korea, and uses the experience of Busan city for reference to explore a green and smart city road in Chengdu. That is to build a city space model with high quality of life, use comprehensive land use to make the city full of vitality, improve urban humanity, build a digital city, and finally plan to build a zero energy consumption city, so that the architecture can be integrated into urban development for a long time.

Keywords

Green Development; Smart City; Chengdu; Pusan.

1. Introduction

Since 2020, the COVID-19 "pandemic" has been transformed from a seemingly technological governance crisis or a public health crisis to a systemic crisis with inherent contradictions in the capitalist mode of production, manifested as an ecological crisis with corona virus breeding and a governance crisis with inefficient response to the epidemic. Undoubtedly, in the process of modernization development, people are increasingly aware that the harmonious coexistence between man and nature should be the main theme of social development, and any transformation that ignores the laws of nature and destroys nature at the cost of thinking will eventually be counterbalanced by nature.

Not only in developed countries, but also in developing countries, social transformation is a common topic discussed by mankind. From "to develop" to "how to develop", the "avoiding blindly develop" have gradually become the trend of urban transformation development. Through reading the article "Beyond Green Capitalism --Social Ecological Transformation and the Perspective of the Global Green Left", it can be seen that ecological issues will play an increasingly important role in future politics, as an issue to change the current dominant way of production and life. The key point of social ecological transformation is to create an attractive way of production and life, a kind of politics and culture that can make life prosperous and peaceful, personality can be highlighted, and ecology can be developed sustainably [1].

2. Development Goals of Smart City in Chengdu

At the beginning of the 14th Five-Year Plan, Chengdu set the goal that "by 2022, the smart city architecture system of the whole city will be fully enhanced, and the "urban brain" will be fully promoted, entering the first square of the National Smart City, becoming a model city for the construction of "Digital Government and smart society". In order to achieve this goal, it is very important to have a smart plan that suits the reality of Chengdu. In this regard, in the proposal for the

fourteenth five year plan of Chengdu's national economic and social development and the long-term goal of 2035, it is proposed that we should adhere to the scene driven, algorithm enabled, intelligent collaboration and multi governance, build a resilient, green, pleasant and safe new model of Intelligent City Development, and become the national "digital government The model city of "smart society" construction [2].

It can be seen from the above that it is imperative to build a green and smart city suitable for Chengdu.

3. Chengdu eco-park city construction plan

In February 2018, when inspecting Tian fu New Area in Chengdu, General Secretary Xi Jinping proposed that the characteristics of park cities should be highlighted and ecological values should be taken into account in development. "Park City" was officially proposed for the first time.

In July 2018, Chengdu issued the "Decision of the CPC Chengdu Municipal Committee on Implementing the Important Instructions of General Secretary Xi Jinping's Visit to Sichuan to Accelerate the Construction of a Beautiful and Livable Park City". In the Decision, systematic thinking was carried out on what a park city is and how to build a park city. Park city is oriented to the harmony between production, life and ecology, and the integration of nature, economy and society, to realize the combination of urban space and park form, and to establish a highly unified sustainable urban development model of human environment. The construction idea of Chengdu has changed from "building parks in cities" to "building cities in parks", and from the unification of "production-city-people" to the coordination of "people-city-industry" [3].

Thus, the concept of park city does not contradict with the concept of smart city. On the contrary, they complement each other and can be integrated.

4. Prospects and problems of green and smart city construction in Chengdu

At present, Chengdu has made some achievements in the construction of smart city and Park City. But at the same time, it is also facing more challenging opportunities: firstly, how to make the city more dynamic and warmer, and improve the humanity in the process of intelligent upgrading; Secondly, how to attract more high-quality resource elements in improving the basic innovation ability of the city; Finally, in the construction of a new smart city, how to make the architecture integrate into the urban development for a long time, and grow, adapt and constantly evolve.

5. Pusan Smart City Construction

Pusan is selected as the reference object of Chengdu Green smart city because Pusan is located in the center of three rivers and the project area is about 2.8 square kilometers. Chengdu has 12 main streams and dozens of tributaries, such as Min jiang River and Tuo jiang River, which has the similar natural conditions to create a pleasant urban park. As well as people's open and inclusive humanistic thought gives Chengdu the acceptance of culture. Pusan, as the leading city of smart city construction in South Korea, started with the u-city master plan formulated in 2005, and built the first local intranet, smart service project and smart city construction project in China.

In the beginning, the Pusan government have planned the new smart growth city where people and cities grow together. Firstly, three types of intelligent characteristic blocks are designed: (1) intelligent life block. The concept of lid (low impact development) is used to build a pedestrian block with scenes of driverless parking and smart parking (2) Cultural activity block. The square type cultural activity block with a width of 40 meters and a length of 500 meters introduces intelligent street lamps, guide robots and patrol robots to create a safe and convenient neighborhood environment (3) Boats transport waterway. In the waterway block where ships can run, the water and heat operation center is set up, and the water circulation supply and other water related intelligent technologies are applied to provide intelligent shopping services for citizens along the waterway. Secondly, Pusan government plans to connect 14 kilometers of green space and waterways within the city to form a "blue-green" network of waterside and green space in just five minutes, no matter when and where,

Finally, the smart city platform is used to drive the sustainable innovation of the city. Firstly, the urban computing platform based on supercomputing is constructed. The second is to create an intelligent communication environment. Based on 5g mobile communication network, the most suitable intelligent communication architecture for smart city is designed. More important is to build a network security platform to achieve a secure service environment [4].

6. Inspiration of Pusan smart city construction to Chengdu smart city development

First, in terms of humanity, we can first learn from Pusan's "new smart growth city smart city space where people and cities grow together" to build smart life blocks and cultural activity blocks. Build a high quality of life of urban space model, with comprehensive land use to make the city full of vitality. The city center is regarded as a public space, and the city is equipped with business, residential, commercial, cultural and other urban functional areas [5]. In this way, we can not only reduce the commuting time of urban residents through balanced land use planning. It can also improve the connectivity of urban functional space and promote the interaction of citizens by building intelligent characteristic blocks. Secondly, we should learn from Pusan's practice of using robots to start "smart health", which mainly promotes the construction of two aspects. One is to pay attention to the daily health of citizens. The second is to cultivate intelligent medical industry integrating artificial intelligence, big data, medical technology and other innovative technologies, and to narrow the local gap of medical level by introducing cutting-edge precision medicine.

Furthermore, in terms of introducing resources, we can learn from Pusan and build a digital city to make data collection, management and utilization freer. Such as the construction of urban computing platform based on super computing.

Finally, Chengdu will apply water temperature difference to supply heat energy for the city, and it is expected to establish water and heat supply centers in five regions in stages to meet 10% of the overall heat consumption of Chengdu. It is expected to use passive technologies of zero energy consumption buildings, such as high-performance external wall heat insulation and cutting off thermal bridge to strengthen heat insulation and air tightness and reduce energy loss. There are also zero energy building active technologies, such as solar power (PV), hydrothermal, geothermal and so on.

7. Conclusion

To protect the natural environment is to protect human beings. In addition to the introduction of high-tech products and convenient infrastructure, the construction of cities should also consider how to maximize the value of human beings. This article combines the two concepts of green and humanity, and explores a road of smart city branch road suitable for the development of Chengdu, which has a great inspiration for the construction of Chengdu smart city.

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