

# The Study of How the Symbiotic Idea Influences the Development of the Satellite City Construction

—Take Mancheng City in Hebei Province for Example

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**ABSTRACT:** Satellite city is a product for the development of big city to a certain degree. As a counter urbanization phenomenon, it has the function of sharing home city's pressure and extending the role of the mother city. Close to the central city, it also has the relative independence. Satellite city, after long time of development, has constantly improved, but some problems still exist in the middle of the development. The purpose of this paper is to seek a kind of model to fit the development of satellite city through the introduction of symbiotic thought.

**KEYWORD:** The fourth generation of satellite cities; Regional cooperation; Symbiotic idea; Coordination

## 1 INTRODUCTION

With the development of society and economy, China's urbanization is also in the continuous development. In the process of urbanization, the ones who charge and design the city are unceasingly to explore and look for a suitable situation of urbanization development pattern. In China, big cities have been developing rapidly while small and medium-sized cities develop relatively slowly. For this case, we should seek suitable small and medium urban development pattern. For me, based on national conditions, China's small and medium-sized cities cannot disperse distribution as Europe and the United States and develop small towns and villages with independent characters. [1]We can only develop satellite towns. China is now in the fourth exploration stage for developing satellite city, guiding the construction of the fourth generation satellite city with introducing symbiosis which can effectively coordinate the development of satellite towns with home city and maximize the role of satellite cities.

## 2 THE DEVELOPMENT OF SATELLITE CITY

The concept of satellite towns was born in Britain. The United States scholar Taylor has formally put forward and used the vivid concept of "satellite". The development of satellite town has experienced four stages: The first generation satellite city was called dormitory town which come from E. Howard's "garden city". The earliest satellite city was with the main function of strong autonomy. The urban area is mostly the residential areas and urban residents are

mostly female worker of mother city who can only travel back and forth along the line between the mother city and satellite cities. They were living in the suburbs but work in center city so they had strong reliance on home city.[2]

The second generation of satellite cities, compared with the dormitory city, has larger scale and distance from the central city. Their industrial function is more apparent and the independence also increased, becoming half independence satellite towns. But there is no functional mixed business area is established. However, this developing mode of the satellite city further reduced the mother city's pressure of living, employment and traffic and so on. The third generation of satellite city was basically independent from the home city. In the local area, people can obtain employment with modern independent center.

The third generation of satellite city was a new town. Saarinen in his book "the city's growth, recession and the future" had expounded the organic evacuation in theory. He thought that the city which tends to decline today, need to have an evolution on the basis of the principle of reasonable urban planning, so that the city will have a good structure for the healthy development. Saarinen puts forward the viewpoint that the city needs organic evacuation urban structure. He thought that this structure should not only conform to the nature of human settlement and facilitate people to the common social life, but also let people feel the pulse of the city while not departing from nature. Organic evacuation theory has guided the construction of the third generation of satellite towns. The function of this kind of satellite city is relatively perfect and its independence is very strong so that it can rely on its own development.

[3]Its basic living and working problems are no longer needed to be solved by mother city which reduces the traffic pressure between the satellite and the home city. Also, the role of "magnetic" can also be better reflected.

At present, it has developed to the fourth generation of satellite city which is no longer a city with single center structure but with open multicentric structure and multicenter connection city circle. Satellite towns have link with mother city relying on high-speed communication line and the function of the home city has gradually spread to the satellite city. Also, there has established the convenient traffic facilities between the satellite cities. The function of the satellite towns have been diversified and more densely populated. Therefore, the distance from home city is becoming larger. The city has effectively alleviated the population and the environmental pressure of the original home city, also, they have become the drive force so that they have the very strong radiation, even became the center of the magnetic. And it not only has the economy link with city, but associates with other satellite cities and gives priority to the highway traffic axis in the formation of "mesh" with unique features such as science and technology, leisure, education, ecological agriculture and so on to build new towns of moderate scale. The cities are with independent scope of administrative divisions, so formulating developing goals can more consider their own geographical conditions. Fourth generation satellite cities set more emphasis on multiple satellite cities and the area of city circle, so that the fair cooperation and equal status can make the satellite cities enjoy more resources to provide power for the development of themselves.[4]

### 3 THE DEVELOPMENT OF THE SYMBIOTIC THOUGHT

#### 3.1 *Text and indenting*

The symbiosis is abstract from biology and used in various fields by experts and scholars. Its original meaning is the close and mutually beneficial relationship between two different creatures. In the symbiotic relationship, one unit provides the other one with help on its survival. At the same time, it can also get help from the other one. Introducing the symbiosis to the city plan has its preciously existing paradigms. Swedish architect firstly put forward the concept of symbiosis to describe the Sweden as an ecological city. Through a unified organic urban planning, the combination of the various subsystems could achieve the effect of  $1 + 1 > 2$ . In the 80s last century, the Japanese architect Kishio Kurokawa put forward the idea of "symbiosis" and apply it into his design. Qiu baoxing, a deputy minister of housing and urban-rural development in China, also believed that the concept of "symbiosis" decided the success of ecological city construction. Ecological city is a

mixed land space, paying attention to the mix of living, industry, employment, ecological and park system. Also, it paid attention to the consistence of "energy, resources and building", "city service function and industry", "natural climate and landscape".

With the help of the construction and development of fourth symbiotic, it could go smoothly with coordinating and solving the contradiction between satellite city and home city. And then it could form a symbiotic development pattern of benign development.[5]

### 4 SYMBIOTIC THOUGHT AND THE BASIC CONTENT OF URBAN CONSTRUCTION

#### 4.1 *Symbiotic unit*

Symbiotic unit is a unit of symbiotic relationship between basic energy production and exchange which is the basic material conditions to establish a symbiosis. In different areas of symbiotic relationship, the characteristics of the symbiotic unit are also different. In the symbiotic relationship among cells in biology, the nucleus, cytoplasm and mitochondria are symbiotic units. In the field of urban planning in cities, every single city is a symbiotic unit.

#### 4.2 *The symbiotic mode*

Symbiotic mode has become a symbiotic relationship, refers to the symbiotic unit combination and interaction. It reflects the strength of the effect among the symbiotic unit matter, the energy exchange and information exchange.

#### 4.3 *The symbiotic environment*

Symbiotic units emerge and develop in a certain environment, so all the factors outside the symbiotic unit are called the symbiotic environment. The symbiont created by Symbiotic units and symbiotic environment have interaction. Symbiotic environment has an effect through material, information and energy exchange.[6]

### 5 THE APPLICABILITY OF THE SATELLITE CITY CONSTRUCTION UNDER THE GUIDANCE OF SYMBIOTIC THOUGHT

#### 5.1 *The symbiotic relationship between Satellite city and home city*

This kind of symbiotic relationship between satellite city and home city is a symmetric reciprocal symbiosis, namely when the satellite towns share the mother city's pressure of the population, industry, environment, traffic and so on, it also could enjoy the material conditions, energy and advanced information provided by home city. [7]Satellite can developed

into a relatively independent town rely on the mother city while the home city can also rely on satellite cities to reduce internal stress and improve the quality of residents' life, work, travel and other more aspects.

### 5.2 *Improve the symbiotic environment between satellite towns and home city*

In the symbiotic relationship between satellite city and home city, satellite towns and home city are of the symbiotic unit, needing to rely on improving the symbiotic environment to promote the development for both of them. If we want to do so, we should care about the symbiotic environment from the following three aspects.

#### 5.2.1 *The same value*

We should pay more attention on the importance of satellite towns and make the satellite towns are of equal value with home town. Although the satellite city is separated from mother city, in space, it needs to maintain integrity. In the process of planning the development of the city, we need to give consideration on both home city and satellite city, making the development of both cities reach a balance state and let the satellite city's development speed can meet the needs of the mother city so that it can provide a steady stream of power for the development of the city.[8]

#### 5.2.2 *The mutual interpenetrating*

Satellite city and mother city have mutual penetration which can eliminate the double bind field inside the satellite city. Satellite city and the mother city have kept united in the space. The satellite city needs to maintaining its independence while pays more attention to the interacting with mother city.[9] The internal factors' interacting with each other from the home city, such as housing and the environment, transportation, etc., can strengthen the satellite city on the city population and industry attractiveness.

#### 5.2.3 *Insert the third space*

Insert the third space, namely the intermediary space to the development between satellite towns and mother town. Ignoring the conflicts or dealing this contradiction by force will not make the urban problems completely solved which may also breed more conflicts. Since the contradictory between them are opposite to each other, inserting an intermediary space in the midst of the two would play the buffered role which can avoid direct contradiction in a series of problems.

### 5.3 *Positive significance of symbiotic thought*

The role of the fourth generation of satellite towns is mainly reflected in its function of sharing the mother city's population, industry, environment, traffic

pressure on the ability of introducing symbiosis ideological guidance for the construction of satellite towns. And, it can clear the symbiotic relationship between the mother city and the satellite city and how to improve this symbiotic relationship under the development of the environment with a target for developing the satellite city planning.

Under the guidance of symbiotic thought, building satellite cities can change subjective consciousness of urban residents and migrant population and identity the equal value from the home city. At the same time, the satellite city has mixed part of the development of mother city, providing the impetus for the development of satellite towns and increasing the satellite city's internal opportunity, which can greatly improve the satellite city's population, the attraction of investment, etc.[10]

## 6 THE TYPICAL CASE ANALYSIS OF MANCHENG COUNTY IN HEBEI PROVINCE

### 6.1 *The location of Mancheng County*

Mancheng country is located in the east of Taihang Mountain. At the ancient time, it was the border for Yan and Zhao and belonged to the city Baoding in Hebei province. The city had 2000 years history and had cultivated the pioneered "recruiting" culture with a series of typical figures such as Guo Kui, splendid culture, the representative of North Wei dynasty, named Yang Xuan etc. Mancheng country has the convenient transportation, only 19 kilometers from Baoding and not more than 150 kilometers from Beijing, Tianjin, Shijiazhuang. Its total area is of 658 square kilometers, half of which is mountainous area.[10]

### 6.2 *The orientation of Mancheng city*

According to Baoding's "one town with three satellite cities" plan, it will build the ecological satellite city and the West Garden with peace and harmony, taking a well-off society developed in an all-round way as the goals.[11]

### 6.3 *The symbiotic thought to guide Mancheng county construction*

#### 6.3.1 *Improve the Mancheng's city value*

Mancheng, as an important part of Baoding's city plan, makes effort to build Baoding's harmonious garden. Based on the development of the tourism industry, Mancheng would develop its own economy in order to share part of the ancient city of Baoding's city function.

Baoding's development cannot only depend on the industry, but also the ecological industry, such as tourism. Also, it needs the equal value proposition with the place of Qingyuan. Moreover, it should intensify the development of tourism resources and

give the equal development effort to the city tourism resources.

### 6.3.2 *To strengthen the resource exchange and transformation and mutual penetration with local resources*

Mancheng country, as an important satellite city of Baoding, should cooperate with the development needs and pattern in the interests of the Baoding city.

Mancheng country not only needs to develop the tourism industry, but also focuses on developing production, processing and other industries and has the construction of the "Three Garden Zone", namely the economic development zone, South Korea village emerging industrial park, Dace paper product camp. At the same time, it has undertaken parts of Baoding city's enterprises. Bringing parts of the Baoding city's development resources into Mancheng city has reduced the Baoding city's environmental pressure, and also, it has driven the development of county economy.

Based on the concept of symbiosis, the city is experiencing the economic development, and at the same time, paying attention to the construction of the country road and building the "seven horizontal and twelve longitudinal" road network framework.

With the network to be built perfectly, it has strengthened the communication and exchange with Baoding. And also, it has alleviated the Baoding's city traffic pressure and the resistance of the urban development while promoted the development of the county economy.

At the same time, Mancheng country also strengthened the construction of the old city transformation and urban villages. By improving the living environment and the county overall image, it has achieved "four changes" (villagers turns to residents, rural area turns to community, the collective economy turns to mixed economy or joint-stock economy and collective land turns to state-owned land), which is convenient for rural country's mutual penetration and makes greater room for the development of the country seat.

### 6.3.3 *Insert medium city to the butt joint*

Satellite cities butt joint is prone to produce problems such as uneven development or the inconsistent concept of population. This would require the interlay medium to solve this problem.

The development of new city has docked with the Baoding city. Based on the development plan, it tends to implement a number of key engineering projects to accelerate the construction of "Four big area", promoting new area development and improving the image of the county seat. In 2013, it has built a square (the trade city of Han culture) and Long Ji Tai He square, and has created two business centers with commerce, catering, entertainment, shopping which

adds a bright spot and improves the taste; Implement the comprehensive park east county sewage treatment plant upgrade project. (the separation of domestic sewage and industrial wastewater). In 2014, it has started the county seat surface water plant relocation project and the bus removal project, expanding urban service functions; Start the administrative district development project and construct a batch of garden plaza landmark. In 2015, had the plan of two artificial construction planning implementation of east lake and south lake and strengthening county's attractiveness; Be strict with new area planning control and improve the road, water, electricity, telecommunications and other facilities. We regularly organize urban construction project investment promotion activities to develop the headquarters economy and develop the small and medium-sized enterprises actively, undertake urban function transfer and make function of Baoding city share area.

## 7 CONCLUSION

Satellite town development cannot leave the correct ideological guidance. Bringing up the construction of the fourth generation satellite city and introducing symbiosis can better coordinate satellite city with the mother city and to strengthen the equal cooperation satellite city with mother city. The satellite city is no longer only in the secondary position and it can learn more resources to develop themselves, so that it can not only reduce the damage to its own, but also make the speed of the development of the satellite city increase significantly and promote the harmonious development of both.

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