

# Review on Preservation and Renovation Practice of Chinese Historical Blocks

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**Abstract.** With the rapid development of urbanization in China, more and more attention has been paid to the preservation and renovation of historical blocks. While great progress has been made on the planning theories and practices on historical blocks preservation and renovation, there are still some problems in China. This article reviews and summarizes the development of the theories and practices of reservation and renovation planning of historic blocks in China from five aspects as space and environment, cultural inheritance, social management, planning methods and new technologies, and then raises some suggestions for future planning and practice.

## 1. Introduction

With the rapid development of urbanization in China, more and more attention has been paid to the preservation and renovation of historical blocks.. The planning practice of the preservation and renovation of historical blocks have been carried out all over the country. From the large-scale material renewal model of "Three Fong Seven Lane" in Fuzhou in 1994, to the "Organic Renewal" theory raised by Liang Yong Wu in 1996, to the gradually diversified models appearing in the 21 century like "Self-organizing model", "Urban Catalyst theory", "Organic Microcirculation Renewal Model", "Small-scale Progressive model", "Environmental Micro-renewal model", "Cultural Diversity Protection model", "CMDR theory" and so on, theories of preservation and renovation for historical districts continue to develop. On this basis, many scholars have carried out research on the protection and renewal planning practice of historical blocks from the aspects of space and environment, cultural inheritance, economic recovery, social management, planning methods and the use of new technologies.

## 2. From the spatial and environmental perspective

The protection update of spatial pattern and function has always been the focus of historical block protection update. Shu tong Sun and so on through the investigation and analysis of Beijing Chang Xin Dian Historical District, put forward from the perspective of residents, from the macroscopic preservation of the historical district of the spatial pattern, in the residents ' way of life, living environment and residents ' behavior and other microscopic aspects of the effective renewal of historical blocks, to maintain synchronized development with the times. Zheng Zeng and so on believe we should transform simplex functions of historic block, renew its main function, focus on improving space, joint each part of block with net structure and take great control of building and population capacity in order to relieve bearing pressure and improve the quality of environment. Pan Fang proposed that the update is a protection update, and in the resource re-planning configuration to be reasonable, to protect its overall pattern, the original texture.

It can be seen that in terms of space and environment, the spatial texture of historical blocks should be carefully combed, with the focus on historical buildings, with historical streets as the main line, with historical blocks as the face, to achieve the point line of the linkage protection update. For the construction of a beautiful environment, we should also pay attention to the layout of the node space.

In function, in addition to the original residential mainly function, we should also introduce "culture, business and tourism" and other functional forms.

### **3. From the perspective of cultural inheritance**

In the aspect of cultural inheritance, Huang Yi et al analyzed that we should build a regional and personal mode to represent culture by excavating cultural resources of historical blocks. In terms of space, we should adopt various measures to reshape historical features. In terms of society, more open space should be designed to make interactions between people possible. In this way, cultural capital can be transformed and rational regeneration can be promoted. Tian Pengxu et al proposed a mode of soft market development by comparing three modes of protective development. While protecting DNA of historical blocks, Tian believed, we should adopt new mode of development, excavate their internal features, release cultural charm and inherit their culture.

Synthesizing existing researches, culture is at the core of regenerating historical blocks. It is important for us to excavate hidden cultural elements, extract cultural symbols and apply them to reshape texture of historical architecture. Also, these elements and symbols should be integrated into industrial chain of tourism and commerce as main part of development. Consequently, landscape area can be recovered and key space can be remoulded. Besides, referring to guiding regeneration of commercial types, we insist that we focus on local culture and give consideration to multiple cultures.

### **4. From the perspective of economic revival**

In the aspect of economic revival, based on "micro-renewal" which includes texture restoration, morphological reconstruction and functional replacement, Ye Lu improved the appearance of historical blocks [6] by grasping the "degree" of design. By transforming their own hematopoietic function and endogenous operational mechanism, we can intelligently face complex external environment and achieve the revival of historical and cultural blocks using micro-update model.

Shi Xiangbin et al believed we must regenerate certain commercial types of historical blocks such as promoting development of service industry (particularly tourism) and improving architectural forms of historical blocks. Then historical blocks will be activated. Yu Ying et al emphasized the importance of implanting micro-center on the premise of "people first" by exploring "Suzhou hanging bridge". It activates blocks from the inside and recover their texture. In addition, with support of smart city and new technologies, blocks may achieve healthy sustainable development, which present vitality and bring new experience to people.

Through comparative studies, researchers found that in order to prevent historical blocks from falling into vicious circle of "regeneration-stable development-structural imbalance-decay", an independent regeneration mechanism should be established. Furthermore, we need to improve commercial types and structure effectively, which focus on the third industry. In the end, by building a commercial system, we could avoid behindhand development form of "divide but not cooperate".

### **5. From the perspective of social management**

In the aspect of social management, Zhu Yong Jie had proposed that we should build a scientific protection system which can improve the construction of laws and management institutions, finally encourage the public to participate in the protection and renewal. It can also introduce more guaranteed funds to improve the restoration of historical features of blocks and complete the continuation of architectural characteristics, the upgrading and transformation of human environment. Yang Meng li et al had put forward that we should allocate resources rationally in historical blocks and conduct diversified network management by promoting the collaboration of multiple subjects. Simultaneously, the government can empower community planners to drive the public to participate

in protection and renewal. Planners need to carry out various tasks to coordinate the multi-interests in the historical blocks so that social problems can be solved properly.

How to balance the contradiction resulted from multiple interests between planning supply and planning demand to make multi-interest subjects reach planning consensus have become the focus of researches and discussions by various scholars. Combining with existing research, we should give priority to government guidance so as to improve the system of historical and cultural block protection. For the residents, we should provide better living conditions to relieve population pressure. And then by improving more public facilities, the resource can be reconfigured successfully. In addition, the government should encourage people to participate in planning mechanism and put it into practice so that the public's needs can be truly met.

## **6. Planning methods and technical applications**

### **6.1 Quantitative planning method for value evaluation**

In terms of technology, with the improvement of computer level, the scholars are good at using various software and models to make the value evaluation and analysis of the historical blocks, thus they can put forward some constructive and rationalization proposal for the protection and renewal of neighborhoods, and solve the problem of the protection and development of historical blocks quantitatively.

Different historical blocks have different cultures, traditional patterns, unique skylines, detailed architectures and courtyards with different spatial scales, which create a variety of cultural and spatial experiences. Therefore, it is very important to select appropriate value evaluation methods and determine the value factors of historical blocks according to local conditions. Many scholars have used various evaluation models for value evaluation in their research. For example, Yan Yi ran and Li Ping constructed a framework system of value evaluation on traditional feature districts by using analytic hierarchy process. The system assessed traditional feature districts according to three levels of multi-value elements: pattern and feature, architecture and place, history and culture. Taking Nanjing San Tiao Ying as an example, Zheng Xiao Hua conducted a single factor evaluation on the four factors of age, quality, floor and features of buildings. After that, he divided buildings into different grades and constructed a comprehensive evaluation system of historical architecture. Xiong Zhong yang and Wang Yang took Jian Gan District of Wuhan City as an example to propose a DPSIR-based evaluation method for sustainable renewal of historic blocks. Zhang Jun[14] took the historical blocks along the Middle East Railway as an example, with the help of Visual Word Bag Model he explored the relationship between the evaluation of historical blocks and the number and combination of elements of spatial structure from the perspective of computer vision classification, and evaluated the characteristics of the block space.

Specific to concrete research, scholars chose different value factors. In general, there are several different types: pattern and style, architecture and site, history and culture, commerce and economy. When researchers research from different perspectives and emphasizes, the value factors they choose will be different, too. When one researches from the perspective of space and environment, the value factor will be pattern and style of blocks; when one researches from the perspective of culture inheritance, the value factor will be history and culture of blocks; when from the perspective of economic recovery, the value factor will be commerce and economy.

### **6.2 Planning practice of protection and renewal combined with big data**

The concept of "Smart City" were put forward by IBM company in 2008. It means perceiving, analyzing and integrating intelligently in dimensions of environment, public utilities, urban service and local industry development under city government. It also responds to governments' activities and needs when exercising their functions of economic regulation, market supervision, social management and public service. It is a final goal for "Smart City" to build wonderful environment of life, work, rest and entertainment.

By now, Ministry of Housing and Urban-Rural Development has listed 300 cities in its three lists of pilot smart cities, which were published in chronological order.

In planning practice of protection and renewal of historical blocks, we should also use big data and joint planning methods with big data to make planning well-founded. Meanwhile, the planning should support smart city policies to make sure planned blocks are intelligent and data-jointed.

## 7. Commentary and enlightenment

The theories of protection and renewal for historical blocks had matured, the research perspectives had diversified, the practice had come into effect. But with the subsequent development, a series of new problems arose. For example, oriented as tourist attractions, historical blocks like “Yangzhou Shuang Dong”, “Anhui Hong Cun”, “Suzhou Zhou Zhuang” became over-commercialized influenced by the increase of tourists and residents’ pursuit of benefits. Public space has been occupied by tourists, residents’ lifestyle has gradually changed. During the process of protection and renewal for historical blocks, therefore, we should consider side effects of economic development, adopt proper planning methods and renewal patterns, coordinate tourism development and culture protection and emphasize the contradiction between rapid urbanization and protection for historical blocks.

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