Research on Micro-renewal Design Strategy of MengZhui Bay Block in Chengdu Old City

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Abstract: With the continuous expansion of the city, the significance of the regional characteristic culture reflected in the traditional streets space has become increasingly prominent for urban space. Therefore, the renovation of traditional residential streets is of great significance in the urban space repair work. This article takes the current challenges of residential streets in the old city as research issues, and through field investigations and case studies, constructs a set of design strategies suitable for the micro-renewal of traditional houses in the old city of Chengdu.

1. Research background

1.1. Sequelae of major demolition and construction
Urbanization is a powerful engine of China's economic development. Since the reform and opening up, China's urbanization process has been further accelerated, and the shape of the city has begun to undergo great changes. China's population increased rapidly from 173 million in 1978 to 712 million in 2012, and the urbanization rate increased from 17.92 percent to 52.57 percent. The number of cities increased from 190 to 668, with an average annual increase of 14 [1]. However, many contradictions and problems are hidden behind the rapid urban expansion. A lot of urban construction leads to the contraction of urban land, the damage of urban texture, single city style, etc. The development and reconstruction of new city and old city have brought about profound changes in urban social space.

1.2. The dilemma of traditional residential blocks and their renewal
Traditional residential blocks are generally located in the central city, with convenient transportation, superior geographical location and other characteristics. However, its internal living structure is complex, and the street system gradually becomes chaotic due to the serious phenomenon of private building. Its backward environment does not match with the development of existing cities.

1.3. The importance of traditional residential blocks to maintain the vitality of the old city
Urban public space is the space in the city that is open to the public for use and various activities [2]. It provides an open space for urban life, which is different from the indoor private space. It is an important stage for citizens to carry out their daily urban life. The traditional residential block is different from the modern closed residential district. Its open character keeps a good interactive relationship with the city. Traditional residential blocks can be regarded as the continuation of urban public space, and the smooth
and continuous space is the basis of maintaining the vitality of the old city space. Many functions in the city, such as commerce, transportation, landscape, etc., spread among the blocks with the open spatial form, forming a rich block life (as shown in Figure 1). While keeping the open space of the block, the multi-level road classification also determines the privacy of the inner life of the block. The naturally formed street texture and node, combined with the natural landscape of the block, form an extremely rich traditional living space, bearing a colorful life culture.

Figure 1-Life in a traditional residential block in Chengdu

2. Research significance

2.1. Necessity of micro-update in the renewal work of traditional residential blocks

Traditional urban renewal usually has two ways to deal with the old city problem. Method 1: Big demolition and construction, urban renewal like real estate development. It follows the principle of maximizing capital benefits. There is a huge difference in scale and texture between the old and new buildings. Moreover, this renewal mode is mainly based on local plots within the site, and there is no consideration for overall renewal and development of the site.

Method 2: Urban renewal with overall protective planning. In this way, the planning concept has been transformed from the reconstruction of the whole area to the control protection, focusing on the protection and integration of cultural and historical resources within the site. However, in the real transformation, there is a huge conflict between the urban renewal with the goal of control and protection and the commercial development with the goal of pursuing profits, which makes it difficult for the leader of urban renewal to control the balance between protection and development in the area.

2.2. Supplement to the existing urban micro-renewal theory

At home and abroad, organic renewal, urban acupuncture and moxibustion and small-scale gradual renewal are generally advocated, emphasizing the urban renewal mode of avoiding all demolition and reconstruction, and targeted renovation on the original basis. It discusses the small scale and gradual manner of micro updates, but does not specify what micro updates contain. In practice, the problems existing in the city should be deeply explored and fixed according to the specific goals, so as to promote urban renewal. Therefore, the concretization of research content becomes one of the main research trends of micro-update theory. Micro-updates are not updates that are specific to one place, but updates that are specific to multiple points or blocks. The existing researches focus too much on how to ensure the small scale and gradual progress of micro-update, but do not limit the scale and divide the boundary.

3. Definition of relevant concepts

3.1. Traditional residential blocks

Traditional residential blocks refer to the areas with concentrated historical and cultural relics, which can fully reflect the traditional features and local features of a certain period and facilitate the protection of the whole area. From the perspective of street form, the block has a high-density built environment on the ground floor, which defines the scale of the block with orderly block space and buildings. At the
same time, it also reflects the spatial activity of the street system, which is mainly based on walking force.

3.2. Micro-renewal
Micro-renewal refers to a kind of urban renewal method that aims to renovate the basic environment, activate and fill the original texture, and create urban vitality by carrying out targeted repair and transformation, protection and repair of the existing buildings and space environment while maintaining the basic context and pattern of the original site. Micro-renewal idea is the inheritance and development of organic renewal theory. On the basis of the overall protection of the original fabric and style of the old city, residents, designers and communities are called on to participate from the bottom up. We should respect the original order and development law of the city, grasp the key problems of each district system, take appropriate scale and reasonable scale, and update the small plots in the site, so as to form a regional chain reaction of independent renewal of the old city. It is not simply to repair and improve the existing space of the block, but to consider the overall situation of the block environment on the basis of respecting the existing spatial order of the block.

4. Research method

4.1. Literature induction
From the perspective of literature review, this paper systematically studies domestic and foreign works on the renewal of traditional residential blocks, micro-renewal strategies and other aspects, and analyzes the experience that can be used for reference by referring to successful cases, which serves as the reference basis for this paper to study the characteristics of traditional residential blocks in Guangzhou.

4.2. Field research method
Through the field investigation of traditional residential blocks, the original images and data are obtained. Through the interviews with the residents on the scene, the original data are sorted out and classified, so as to summarize the status quo characteristics and existing problems of traditional residential blocks. Finally, based on this, the improvement methods are sought.

5. Project reconstruction research

5.1. Background of the project
Among the old five urban districts of Chengdu, the urban construction of Chenghua District is relatively backward, and there are many old factories and old neighborhoods. However, with the development of Chengdu's central urban area and the rapid development of the real estate industry, land resources are tight. The Chenghua District Government is paying more and more attention to the quality of urban cities and investing more resources in urban renewal. The Mengzhui Bay Urban Renewal Project is an important project for the urban renewal of Chenghua District. Chenghua District has a number of old factories in Chengdu, including the People's Carton Factory, Hongguang Electron Tube Factory, Cutting Tools Factory, and Chengdu Radio Measuring Instrument Factory. It has strong memories of the old city.

5.2. Project Micro-renewal
This update is based on the premise of respecting the historical context, the overall style update and supporting upgrades, with rich landscape details to reproduce the old Chengdu living by the water, drinking tea and chatting.
Like most traditional residential neighbourhood in Chengdu, this neighbourhood also suffers from the lack of quality public space due to the cluttered street environment. At the same time, the resident population of this neighborhood is showing an ageing population, and elderly people nearby often rely on the roads here for activities and exchanges.

In this renovation, the original building structure is retained. On the basis of respecting the original texture and space shape, according to the community activity records, the building facade is transformed, and it is transformed into a tea room and a coffee shop. Light steel structure is used to reinforce the old wall. The resident population in the neighborhood can shuttle between the old walls and feel the blend of old and new. To a certain extent, it can form a linkage effect with the surrounding business districts, attract foreign tourists, and create the possibility for the transformation of community functions.

The micro-renewal design strategy summarized in this paper has some universality and some limitations. Each block has different characteristics and different key contradictions. Not all blocks can be used as a sample for micro-renewal design. The renewal of traditional residential neighborhoods should be people-oriented and reflect the diversity of neighborhood life.

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