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Micro-renewal of old communities in Huang Shi city

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ABSTRACT

With the rise of the urban renewal motion in recent years in China, more and more cities have shifted the focus of construction to the renovation and renewal of old areas. The renewal of the old community plays an essential role in the urban upgrading of China, which is related to the quality of a city, as well as a crucial criterion for evaluating the comfort of the living environment. The old community to retain their vibrancy and culture is needed to renew by a way of modernization. The paper will discuss how to use micro-renewal design to improve the quality of the old community, awaking the historical memories of the community simultaneously, thereby balance the relationship between history and use-value.

KEYWORDS

micro-renewal, old communities, historical memories, urban upgrading, modernization

1. INTRODUCTION

Residence is an important carrier of human life. It reflects people's living conditions for a certain period, is also a marking left by city's development. The overlapping of old residences and new-style residences in the city, that enables reflect the urban renewal process, and makes a sustainable development of urban context. In the past, the renewal strategy of old community in China was entirely reconstructed the whole areas. Although, the renewal mode has greatly improved the living environment of the residential area, it also tore up the historical features of the city, cause the fragmentation of historical context. The issue of relationship between the new and old architecture in the urban fabric are crucial in all cities, which represent physically the combination of historical part of corridor streets, grid organization of the roads, squares, green public spaces, free standing public buildings and buildings articulated in a line with a main façade [1]. Therefore, any new design and intervention in these historical places should be done without damaging their cultural heritage values [2]. According to the old community renewal project data released by the China Housing and Urban-Rural Development Bureau from January 2020 to July 2020, 32 regions in China have undertaken renewal projects in old communities, with a construction start rate of 70% (Fig. 1).

The renewal of old communities plays an important role in the urban renewal system. It can not only improve the quality of life of residents, but also protect the unique cultural and historical context of the city.

2. METHODOLOGY

2.1. Micro-renewal

‘Micro-renewal is a new revival method, that rebuilds the infrastructure in the community by demolishing useless parts, and repairs and protects the historical parts of the area [3].

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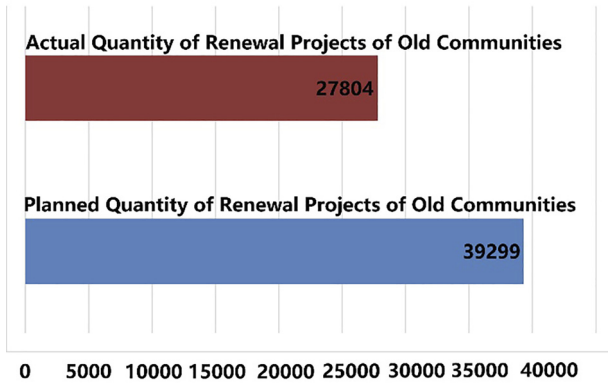


Fig. 1. Source from China housing and urban-rural development bureau August 2020 (Drawing by pan Hao Wei)

Difference from the past reform strategies, ‘micro-renewal’ does not require complete demolition of whole the area. It arises specifically for small-scale areas or communities in cities (Table 1).

Comparing with traditional renovation methods, the new one has advantages. First, the construction cost of ‘micro-renewal’ of the old community is lower than the cost of the overall demolition and rebuilding. Secondly, the construction organization of ‘micro-renewal’ is more flexible and simpler than that of traditional. ‘Micro-renewal’, as a new upgrading method, which is evolution from the traditional upgrading method under culture demand, emphasizes balancing the usage function and historical culture by necessary new construction, protection, demolition methods [4] (Fig. 2).

2.2. Symbiosis between human and nature

The key to philosophy of symbiosis is to respect and protect the ‘territory’ of the sides, the sides of human and nature [5]. The landscape design of old communities, designers should use sustainable and green design as solutions on the basis of respecting and protecting the nature to create a pleasant natural landscape for residents (Fig. 3).

From author’s view relationship between human and nature is always a relationship of symbiosis. When human beings stay in nature, they will miss the buildings in the city; however, when they stay in the city, they will want to be surrounded by nature. In the renewal design of the Feng Ye Shan community, the authors will discuss about the symbiosis relationship between landscape and humans, changes

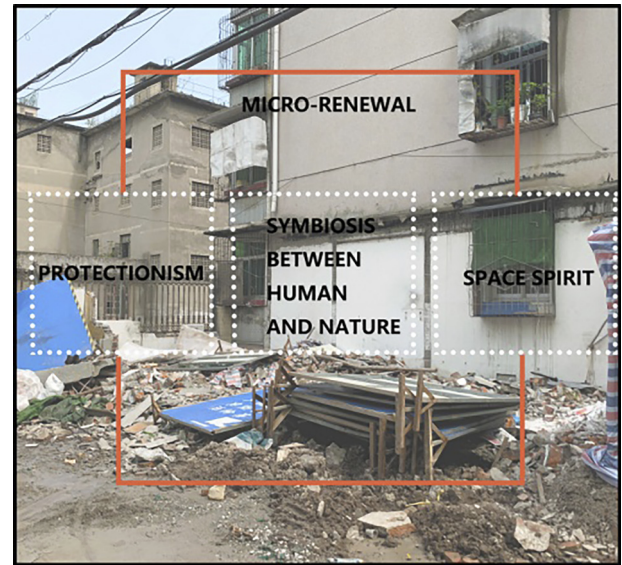


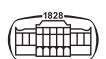
Fig. 2. Diagram of methodology (Source: Drawing by Pan Hao Wei)



Fig. 3. Symbiosis between human and nature (Source: drawing by Pan Hao Wei)

Table 1. Table of comparison function of entirely rebuilding and micro-renewal (Source: drawing by Pan Hao Wei)

Comparison of Old Communities Reconstruction Modes		
Reconstruction Mode	Entirely Rebuilding	Micro-Renewal
Construction Scope	Wide Range	Small Modification
Construction Pattern	Entirely Rebuilding	Partial Renovation
Construction Period	Long Period	Short Term
Historical and Cultural protection	Unprotected	Good Protected



neighbors, and the relationship between residents is close in the community.

3.2. The crisis and difficulties in the Feng Ye Shan community

According to the China Residential Building Code, the service life of residential buildings is 50 years [10]. However, the low quality of construction materials and the underdeveloped construction technology in 20 years ago, and the problems of unmanned management after the completion of residential buildings have led to the average lifespan of residential buildings in China's residential buildings less than 30 years [11]. The Feng Ye Shan community has been built more than 20 years, infrastructures and environment standard in the community have been outdated, which cannot adapt to the modern city without being updated. The negligence of the community management has caused the Feng Ye Shan community to be in a state of unrepaired and lack of community management for a long time. In the state of disorderly, the community had many problems, which reflected in the following points.

Façades damage of residential buildings: The façade of the original residential buildings in the Feng Ye Shan community is decorated with terrazzo. Due to the damage of the decoration material, the façade of building is severely peeled and damaged, which caused environment appearances of the community was in dilapidated condition (Fig. 6).

The lack of public space in the community: The time when community was built, the living standard of residents who lived in Huang Shi city, was low. Improving the material living standard and solving the problem of lack of housing became the most concerned topic at that time. Nowadays, with the economy growth of China, people's material living standards have been greatly improved, at the same time, people have more requirements for the environment of community housing. However, the lack of public space in Feng Ye Shan community has become one of the reasons that restrict the vitality of the community, so the construction of community activity space is particularly



Fig. 6. Façades damaged of residential buildings of Feng Ye Shan community (Photographed by Pan Hao Wei)

important. In addition, the community was built earlier and did not consider the construction of internal landscape area environment, resulting in the lack of vegetation in the internal landscape planting area of the community and is in a state of waste. The messy planting area also causes environmental problems in the community that mosquitoes and bacteria breed (Fig. 7).

The lack of community spirit: The old Feng Ye Shan community is an employee community of Hua Xin Cement Company. The residents who originally lived in the community, were mostly familiar neighbors, with the deteriorating community environment, the aborigines moved out of the community one after another, resulting in a stable community structure network gradually disintegrated according to the author's on-site inspection.

The lack of open public space for residents to communicate in the community is the cause of the disintegration of the neighborhood relationship and the gradual disappearance of the community spirit. In order to revitalize the community spirit, reshape the vitality of the community, and rebuild the neighborhood relationship, the design of "micro-renewal" of the community needs to focus on the design of the public activity area, so that the public activity area becomes a place where residents' activities and exchanges are concentrated.

4. EXPLORATION OF 'MICRO-RENEWAL' IN FENG YE SHAN COMMUNITY

The design principle of the Feng Ye Shan community is to modernize and upgrade the public space within the community while maintaining the integrity of the basic area of the community. In the "micro-renovation" of the Feng Ye Shan community, not only the community parking lot was added, the community road was renovated, but also the layout and planning of the community's internal activity area and landscape planting area were emphasized. The purpose is to establish a new community model, including residential and outdoor activity functions (Fig. 8).

The reconstruction of the landscape area in the community transforms the functional unity of the landscape area into a comprehensive landscape area integrating ornamental, open and playful features. The specific way to renew



Fig. 7. The lack of public space in Feng Ye Shan community (Photographed by Pan Hao Wei)



Fig. 8. The lack of community spirit in Feng Ye Shan community (Photographed by Pan Hao Wei)

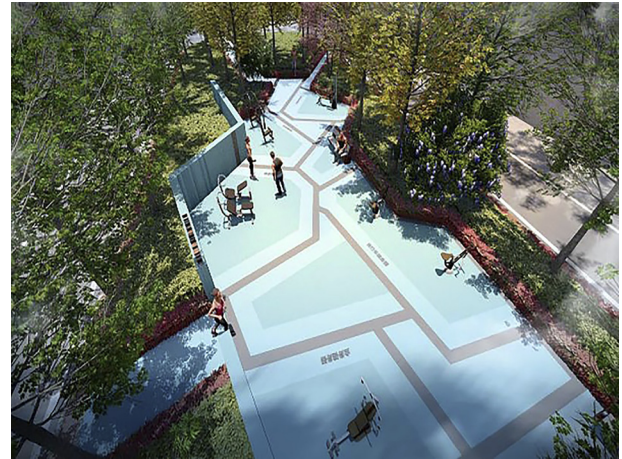


Fig. 10. Strolling space of Feng Ye Shan community (Source: edition by Pan Hao Wei)



Fig. 9. Landscape plan of Feng Ye Shan community (Source: drawing by Pan Hao Wei)



Fig. 11. Relax space with landscape space of Feng Ye Shan community (Source: edition by Pan Hao Wei)

landscape areas in the old community is need to demolish abandoned buildings and enlarge the boundary of the original landscape areas (Fig. 9).

According to the different characteristics of the four seasons in Huang Shi, the vegetation species should be selected the evergreen local vegetation in all seasons to improve the green coverage of the community and reduce the maintenance cost of the landscape. The lack of activity spaces in the Feng Ye Shan community is one of the reasons for the lack of community spirit in the community. In the renewal design of the community activity area, not only the scale and comfort of the community activity area should be considered, but the activity area should also be built into an area, which place could awake the vitality of the community (Fig. 10).

The jumping colors and childlike rubber floor pavement exude vitality throughout the activity area. The decoration of outdoor amusement facilities and multifunctional seats attracts children and parents in the community to play and

chat here. After the refurbishment of the activity area, the spirit of the community that was about to dissipate was restored. Children who play are good at running. In order to prevent children from falling while running, the floor of the activity area adopts a soft plastic floor, which is a manifestation of humanized design (Fig. 11).

5. CONCLUSION

The 'micro-renewal' is a new method of engineering design and management for old communities retrofit, which requires the cooperation among the governments, design institutions and residents. The new method also needs to increase the function of communities and excavate the historical culture context, meanwhile, protects the historical buildings and gives a new use function to historical buildings, integrates the historical culture into present, make a symbiosis between past and present.

The old community buildings with historical charm are the most unique buildings in the city. They can reflect the development of human habitation. The ‘micro-renewal’ of old communities should not only pursue the neat form surfaces of buildings, but also consider the daily activities of residents in communities, which includes the improvement of communication spaces, the improvement of visual aesthetics and the penetration of history and culture into communities. Community spaces should become important places for daily life of residents, and they can bridge history and current times.

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