Urban Community Public Space Micro-renewal Environmental Planning ——Take Datang Xiang Community as an Example

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Abstract. The urban community micro-renewal planning project represented by the first-line and new first-tier cities has begun to gradually sprung up. This paper analyzes the excellent practice of urban community renewal planning in Datangxiang of Hangzhou, summarizes the project implementation strategy and community public space planning techniques, in order to provide working ideas for urban community micro-renewal construction, in order to further improve the quality of community public space and household life satisfaction.

1. Introduction
In recent years, many large cities in China have encountered bottlenecks in the process of urban development and construction. On the one hand, the urban environment and ecological system need to be updated urgently. On the other hand, the cities are facing pressure from various aspects due to the large-scale demolition and construction. Now it is impossible to achieve the comprehensive transformation effect of the old city through one-time planning. Community micro-renewal is a popular urban renewal method in recent years. Through partial and step-by-step transformation and renewal of the material living environment of the old community, in order to fundamentally improve the working, living services and daily leisure conditions, improve the space utilization rate, create a better livable living environment for community residents, and further improve the city appearance and quality, contribute to urban renewal. The main project of community micro-update is to transform and design community public space.

2. Urban Community Micro-renewal
Urban community micro-renewal focuses on improving the quality of small public space and community vitality. The improvement of the quality of small public activity space in urban community mainly includes the careful design, characteristic transformation, vertical beautification and landscape improvement of small public places and facilities, such as green square, street corner, pocket park, sports ground and other small public places and facilities with low utilization rate and low quality; it also includes the reasonable reuse of old community buildings, mainly for the improvement of community public space quality. The old buildings that are idle and unused for a long time in the community, as well as the historical buildings and Industrial Relics that need to be repaired, should be reconstructed and their functions renewed.

Community vitality can also be enhanced through the renovation and design of public space to create more interesting and human entertainment space, so as to achieve the effect of condensing community culture, increasing household "sense of ownership" and enhancing residents'
communication[1]. Moreover, we can make open community public space more open—introducing commerce or self-operation of residents, breaking the closure of the community to a certain extent Closed and the function of the relative single, to increase the vitality of the community.

3. Discussion on Micro-renewal Environmental Planning of Community Public Space in Datangxiang

3.1. Basic Information on Datangxiang Community
Hangzhou Datangxiang community was founded in April 2001, residential buildings are mostly built in the 1980s, the elderly population is close to 30%. It is a typical old district. Located between the two high-end communities of Xinhua garden and Wulin No.1; at the same time, near the canal, you can walk along the canal, which has a superior geographical location; in addition, Datang new village also has a good humanistic accumulation and Aifen Liu—the inheritor of Hangzhou paper-cut intangible cultural heritage.

Years of accumulation, so that the community problems emerge in endlessly, such as the poor environment, the lack of vitality of the community, the aging of community infrastructure and other problems surfaced. As a key community micro-renewal project, Datangxiang renovation project has achieved very good results. We analyze the reconstruction project of Datang community from two aspects: public space quality improvement and community vitality improvement, and summarize the experience.

3.2. Quality Improvement in Public Space

3.2.1 Ageing community infrastructure
Over time, some of the community's infrastructure is now severely ageing. For example, public water supply and drainage facilities (sewer aging), public fitness and children's entertainment facilities (fitness equipment aging) and long-term disrepair of community buildings and so on. In response, we take community micro-update to the public space environment for a series of improvements.

Basic routine facilities within the community, such as chairs, benches, kiosks for staying and resting, and sanitary facilities such as garbage bins, which facilitate garbage sorting. Based on the need of space quality improvement, but limited investment and other reasons, such facilities in the community micro-renewal: facilities used in the material can choose environmental protection, low prices and recycling; different facilities corresponding to different groups of people, different communities corresponding to different types of facilities. For example, in terms of materials, the use of waste second-hand materials or garden waste to make outdoor chairs and stools. On the other hand, the appropriate size of wooden piles can be selected and cut to 30~45 cm high placed on the corresponding site for people to rest; or the grass-planting bricks, hollow bricks and so on can be used as the support of the chair stool, the board or wood can be inserted into the hollow brick hole to form a chair stool surface, which together to form an outdoor seat. In addition, some recyclable daily necessities can also be used to make outdoor facilities. Waste jeans, rain boots, tires, cans, mineral water bottles, etc. in which landfill planting soil, planting can be made into "interesting flower pots ", some" interesting flower pots "through a certain form, which can be used as the constituent unit of "vertical greening"; abandoned bicycle tires, beer bottles, etc., through a certain regular arrangement and combination, can form a garden guardrail, decorative walls, etc; abandoned bicycles, iron supplies, wood, branches and other things, can be welded or wire, hemp rope field assembly to make outdoor fences; Using used doors and windows and waste wood, combined with connected hinges, can be built into a simple and delicate greenhouse to help warm plants survive in the winter. These recyclable wastes come from the daily life of community residents. Their secondary creation and utilization can not only effectively solve the practical problems of limited capital investment, but also require the practical cooperation of residents in the final formation of facilities. Therefore, it has a certain cohesive Role in guiding residents to participate in community co construction.

Among them, Datangxiang community has part of the wall peeling off problem, which not only affect beauty, but also have hidden danger of safety (Fig.1). Here, it is "slightly updated" into a comic
wall (Fig. 2), made of metal tubes made of "sound tube" to become the best toy for parents and children (Fig. 3). Not only solved the wall aging, but also beautified the community.

Another aspect is the community's fitness facilities. Many communities are simply building some of the most basic fitness equipment here, many of which are rusty and out of repair (Fig. 4). We can take a look at the practice of the Datangxiang community: a bird's eye view over the Datangxiang community will find an additional chessboard on the ground. Many curious children come to play every day. They can invent their own ways of playing, can stone scissors cloth to play, can also throw sandbags (Fig. 5). From then on, it was full of children's laughter, which brought a little joy to the boring equipment[2].

3.2.2 Abandoned community sites idle

Some areas of Datangxiang community do not have a clear way of use, and leaves are accumulated all year round (Fig. 6). In view of this, it has been "micro updated" into a children's paradise; four new swings stands have been added, there are also swings in the shape of ducklings and bones used by children (Fig. 7).

In addition, due to the large number of elderly people in the community, the elderly usually take a walk to buy vegetables and need to rest. More chairs for rest should be set up in the community (Fig. 8, 9). There are some dead corners in the old community. In the Datangxiang community, these dead corners are slightly updated into empty spaces for the elderly to rest for a short time (Fig. 10). By adding benches and graffiti on the surrounding walls and on the ground, the monotonous concrete walls of the community are added some vitality (Fig. 11).
For the micro-update of community idle space, we can also transform it into a garden, square, temporary study and so on, so as to provide a more and comfortable living environment for community residents.

3.3 Promotion of Community Vitality
The elderly population of Datangxiang community is close to 30%, and the residential buildings in the community are mostly completed in the 1980s, which is a typical old district. Many old residential areas are accompanied by aging residents, building aging and other problems, the promotion of community vitality is the key to the old district freshmen. Through the transformation of Datangxiang community, we analyze how to improve community vitality through public space transformation from three aspects: convenience service, commercial introduction and community self-creation.

3.3.1 Community convenience services
There are no signpost, no sign, no rest and entertainment facilities, lack of design in public areas, and the use experience of residents has not been taken into account. This is a common problem in many old residential areas. In the process of micro-renewal and transformation, it is urgent to improve the convenience service items to improve the living experience of residents.

In the reconstruction project of Datangxiang, the designer adds leisure chairs to the open space next to some road nodes according to the characteristics of the flow of people, which is convenient for the elderly to take a nap; uses lively colors on the ground to mark the location of the building nodes and guide the traffic flow lines; and adds guide signs to facilitate residents, courier brothers and foreign visitors to reach their destination quickly and accurately[3]. These creative convenience services themselves make the community more dynamic, but also because of convenience to enhance the household living experience, promote residents to love "home".

3.3.2 Introduction of community business
Commercial mobility promotes the activities of personnel, whether it is the introduction of commerce, or the self-support of residents, or even public welfare projects, all have the role of promoting the development of residential areas and increasing the vitality of residential areas.
After the water supply transformation in some communities, the water pump house is idle, and some supporting houses built according to the standards have not been fully utilized after the property is handed over. These old houses affect the appearance of the community and have difficulties in daily management. It is better to transform them into various small and exquisite shops and rent them to increase the vitality of the community. There are also large open spaces that can be used for other purposes, such as using environmental protection materials such as containers to build public welfare small community reading rooms for residents to share books or immerse in reading, or build coffee shops and dessert shops. Container building materials have many advantages, such as low cost, short construction period, good decoration, recyclable, changeable combination, easy to build, easy to dismantle and easy to carry, etc. According to the site form, containers of different specifications and different combination schemes can be selected. The two models are as follows (Fig.12, 13).

3.3.3 Community self-creation on micro-renewal
The so-called community self-creation, more is to encourage and guide the community residents, actively participate in the construction of their common home. The home built by themselves has close feelings for every flower and grass, and each table and chair has a story. Moreover, the community residents have a sense of ownership, and their daily care in the future will be more from the heart, so that the whole community will be more united and energetic.

Small renewal of large participation, to ask the people, people-oriented, that is, to teach fish, but also to teach fish. In the micro renovation and reconstruction project of Datangxiang community, in-depth investigation and visit, careful design, and decision-making plan by residents in the early stage. In the progress of the micro renewal project, it has been widely supported and supported by the residents. The residents spontaneously organized to send water and drinks for the design and construction team. During the construction period, the owner took the initiative to move the position to draw the ground guide map, children help draw color painting, adults help plant green plants, paint, etc. In this family transformation activities, we work together to improve the efficiency of construction, but also enhance neighborhood feelings.

In addition to cultivating the sense of master, guiding the residents to create and renew themselves is the long-term solution of community development and one of the ways to achieve community resilience. We can help citizens develop awareness of community space, encourage local residents to take the initiative to put forward renewal needs and suggestions, and recruit more mass groups to participate in the transformation. What the residents want is what the community needs most, and the users are the decision makers of the scheme. Here, the relevant government departments need to do a good job in the construction of communication and consultation platform, so that the effective mechanism of mass participation is gradually established, and promote the micro renovation project of urban community public space.

4. General Summary of Elements for Public Space Design
First of all, we should follow the unique geographical environment and cultural characteristics of the old urban community, meet the needs and spatial emphasis of the changeable environment in the old
urban community, and also respect the rights and suggestions of the residents. We must first understand what the community needs, what is missing, and then we can take the right remedy. Through the first two points, we know that the renewal of community infrastructure and the transformation of idle space, we should make rational use of resources, use recyclable materials from community life, turn waste into treasure, and guide residents to build together. Not only beautify the community, but also save money, more united residents, and ultimately bring community residents a better life. Secondly, in the aspect of community vitality, community infrastructure solves the living security of residents, but what the community needs more is spiritual construction. Through the discussion above, we can improve it from the aspects of convenient service, the introduction of business, community self-creation of these aspects to improve. In the construction of this aspect, the design and production of community public space is not dominated by designers, but the design scheme formed by the designer through the interview, investigation and communication with the residents and the government management department through accurate scientific calculation and evaluation. We should not only meet the needs of community residents, but also use scientific and rigorous design to complete the community micro-renewal[5]. As far as possible, we should make up for its shortcomings, increase its strengths, improve the differences caused by the changes of the times, and integrate the new culture created by the new era into it. Listen to the opinions of the masses and let the community residents participate in the construction of their own homes. In this way, after the landing of such facilities, they truly condense the community residents and promote community communication, which is of great significance to create a vibrant, charming and interesting community space.

5. Summary of Community Micro-renewal
"Community micro-renewal" has abandoned large-scale transformation activities. This progressive, small-scale, collage type urban renewal strategy is bound to combine many forces such as community residents, management agencies and designers. However, the appeal behind joint action lies in the balance and coordination of various interests. In this regard, the renewal and construction of public facilities is a very important medium. Due to the common use of community residents, its renewal design should pay more attention to functional regeneration and spatial activity, more attention to residents' living habits and behavior, and more attention to public participation and society They will govern, pay more attention to historical heritage and interest shaping, so as to help the community achieve common development.

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