Urban Elderly Community Micro-Renewal Planning and Design - A Case Study of Wuhan Anjing Community

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Abstract. This paper briefly introduces the general situation of Wuhan Anjing community project, and analyzes the existing problems of this elderly community from the perspective of community planning and design on the basis of preliminary investigation. By means of low-impact transformation and micro-governance, this community is designed for transformation from the aspects of road traffic organization, transformation of main entrance and exit gates, micro-renewal of public space, etc. Through functional renewal, the vitality of the old community is explored, the overall environmental quality is improved, and reasonable suggestions are provided for its sustainable development.

1. Introduction
With the acceleration of China's aging process, the number of people over 65 will reach 167 million by 2020. Due to the lack of reasonable planning and design in the early stage, obsolete facilities, insufficient activity places, and the lack of physical and psychological considerations for the elderly in environmental design and architectural details, the living environment of the existing elderly communities in the city cannot meet the needs of the elderly. In view of the above problems, we take Wuhan Anjing community as a case, through research and design, to discuss how to carry out micro-renewal planning and design for urban elderly community through low-impact transformation and micro-governance, so as to optimize and improve the urban living environment.

2. Project Overview
Anjing community is one of the earliest residential areas built in Jiang 'an District of Wuhan. It has good geographical location and mature urban environment atmosphere (Figure1), and still has high urban social function value. This residential area is built early, belong to typical old residential area, the building house age is more than 50 years. The existing buildings are low and dilapidated, and the multi-storey buildings generally lack elevators and barrier-free facilities. Large building density, little public space, inadequate supporting facilities and low living comfort are the key points of renovation and renewal of old areas in Wuhan.
3. Research and Analysis of Community Status

There are a large number of elderly people in this community. At present, the overall environment is relatively old, the road traffic is congested, the infrastructure is not complete, the public equipment is damaged and aging, the public activity space and social services are insufficient, and the living environment needs to be improved. From the perspective of community planning and design, the Anjing community has the following problems to be solved.

3.1. The Entrance Recognition is not Strong
As it is adjacent to Jiefang Avenue and has been built for a long time, the entrance of the community currently has problems such as traffic congestion, poor identification, antiquated gate head shape and lack of night lighting.

3.2. Mixed Traffic on the Roads
The entrance traffic is chaotic and congested, and there is a lack of pedestrian and vehicle diversion design. Due to the limited space, the ground public parking spaces are mainly scattered parking areas along the street, and the environment and management conditions are poor. The roads in the community are basically 1-2 lanes, some of which are narrow and inconvenient for motor vehicles. The number of existing motor vehicle parking spaces in the residential area obviously cannot meet the parking needs of residents. It has become a common phenomenon that motor vehicles occupy the roads and destroy the green space, which even leads to the blockage of life passage, endangering the property and life safety of residents.

3.3. Inadequate Sanitation and Greenery
The garbage room is damaged, the surrounding sanitary environment is poor, and there is no construction waste stacking point; the trees in the community are lack of pruning all the year round, shading and windproof, which also has a certain impact on the lives of some residents. The community lacks the daily maintenance and cleaning of greening, the planting density is too high, some public green space is full of weeds, single green planting, lack of seasonal changes, and the overall landscape effect is not good. There are unused green areas that have not been fully utilized.

3.4. Lack of Public Space
The community lacks reasonable planning for public space and greening land, and the landscape furniture is old with single function. Due to the inconvenience of walking and other reasons, the activity scope of the elderly is mainly in the community and its surrounding areas, while the existing hardware facilities in the community cannot meet the recreational needs of the elderly. There is no independent activity area for children and sports area for the elderly, no open space for holding public activities, and no suitable communication place for residents[1]. There is a lack of barrier-free design in the activity area for the elderly, which is a potential safety hazard.
4. Micro Renewal Transformation Concept
Due to its mature urban environment and high social function value, this community is not suitable for large-scale overall demolition and reconstruction, so it is more suitable for micro-reconstruction at present. Micro-transformation refers to the renewal method implemented through partial demolition and construction of buildings, replacement of building functions, preservation, repair and improvement, and improvement of infrastructure on the premise of keeping the existing building pattern unchanged [2].

In view of the current situation of a large elderly population in this community, corresponding age-appropriate transformation should be considered, that is, the design should make the facilities, environment and space of the community more in line with the living habits of the elderly, while strengthening the safety transformation to ensure the safety and comfort of living. The transformation focuses on the improvement of the overall environment function, strengthening the individual characteristics of the community, and enhancing the vitality of the community[3]. Due to the residents' psychological expectation of "returning to quietness and seeking for a sense of belonging", the new vitality of the old community is explored through functional renewal. By means of element extraction, style simulation and innovative design concept implantation, environmental design objectives are achieved.

5. Renovate and Update Design by Stages

5.1. Renovation of Main Entrances and Exits
To enhance the closed boundary of the community, from the original open community into a closed community managed by access control system. Reasonably simplify the entrance and exit, demolish the original iron gate inside the community, and transform the primary and secondary entrances and exits in different levels. At the same time, strengthen the traffic safety and vehicle management at the entrance, and separate people and vehicles. Change the gate at the entrance and exit of the vehicle and add the middle guard box(Figure 2).

5.1.1. Elements extraction.
Collect the current architectural vocabulary in the surrounding environment of the community, such as: thread decoration, architectural form, garden landscape facility form and its color and material combination.

5.1.2. Style simulation.
Abstract architectural vocabulary is extracted to supplement the existing environmental language and emphasize the sense of age of the community.
5.1.3. Innovative design implantation. The integration of metal weathering steel is concise and powerful, which forms a contrast with the thick brick skin.

5.2. Road and Parking Facilities Renovation

Get through the road internal circulation, set up scientific and eye-catching traffic facilities, and optimize the management of the road traffic organization in the community. Strengthen the effective connection between the roads in the community and the main roads in the city, reasonably arrange the entrances and exits of the community, integrate with the urban roads, and alleviate the traffic pressure.

5.2.1. Adjust vehicle routes. Set up traffic island in front of the entrance of the community and cancel the parking space in the entrance area. Partially cancel the motor vehicle parking space on one side of the main venue of residents' activities to ensure the openness and safety of the activity site[4].

5.2.2. Widen roads and regulate parking. The length of two lanes is 7m, and that of single lane is more than 3.5m. The turning radius of the main road is extended to 6m. Make full use of existing space and transform parking facilities. Demolish illegal buildings, add centralized parking lot, and standardize marking parking (Figure 3).

![Figure 3. Parking space design](image)

5.3. Micro Renewal Design of Public Space

5.3.1. Micro renewal design of square in front of primary school. Because of the large traffic flow in front of the primary school, it is necessary to remove the illegal buildings in front of the gate and expand the area of the square to alleviate the traffic congestion. The square design includes: small Recreation Square, memorial culture wall, landscape rest corridor, plants and seats, safety railings, parking area by time, assembly area, etc. (Figure 4,5). Through the square to divide and organize the sequence of space, the specific layout form should consider the impact of the urban landscape.

![Figure 4. Square activity area in front of primary school](image)  ![Figure 5. Landscape rest corridor](image)
5.3.2. Micro renewal design of community center garden. As a concentrated place for residents' activities, the design of the central garden includes: chess and card area for the elderly, landscape seats and drying racks, healthy footpaths, central planting devices, large-scale activity square, children's activity area, elderly fitness equipment area and cultural landscape wall (Figure 6,7).

![Figure 6. Aerial view of the community center garden](image1)

![Figure 7. Landscape seats](image2)

The planting of green space in the center can be carried out overall planning, combined with existing architectural sketches, landscape furniture, trees, landscape quality improvement. In terms of plant configuration, each group forms a landscape feature, and the plant should be scientifically configured according to the trees, shrubs and herbs to optimize the visual effect.

5.3.3. Micro renewal design of community neighborhood farm. The marginal area of the community is utilized to open up small planting places to enrich the amateur cultural life of elderly residents and enhance emotional communication[5]. Residents can choose the type of planting here and experience the fun of planting (Figure 8).

![Figure 8. Neighborhood farm planting area](image3)

5.3.4. Community garbage house micro update design. Add centralized garbage room. In the community to choose a convenient road traffic, appropriate away from the living area, easy to access the operation of sanitation vehicles. A perfect water supply and drainage system is set up to facilitate the site cleaning needs. The shape of the building should be simple and beautiful, and the height and width should consider the scale requirements of the transport vehicle.

6. Summary
The transformation of the elderly community is a gradual and perfect process. In the micro renovation of Anjing community, through the redesign of public space, the security, identifiability, interest and ornamental of the space are increased, which provides more possibilities for the communication and exchange of residents. Extract the characteristics of community culture, into the design, hope to
reshape the community image, attract more residents to return to the community, form a harmonious and warm neighborhood atmosphere, and tap the new vitality of the old community.

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8. References
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