

# Study on Aging Design of Urban Pocket Park

## -- Take Wuhan Vanke Golf Park as an Example

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### Abstract

**With the deepening of social aging and the gradual maturity of urbanization in China, the range of activities of the elderly living in high-density cities is gradually limited. Pocket park, as an open space scattered in all parts of the city, can become an effective means to solve this problem. Based on the analysis of the development status of pocket park, combined with the physical characteristics and activity needs of the elderly, this paper puts forward the design strategies to improve the aging adaptability of pocket park. Combined with the specific analysis of the newly built pocket park in Wuhan, this paper summarizes the aging adaptability design of pocket park in the case, and points out the future aging adaptability development direction of pocket park.**

### Keywords

**Aging; Pocket Park; Open Space; Suitable Aging Degree.**

## 1. Opportunities for the Development of Aging Pocket Park

### 1.1. Origin of Pocket Park

The concept of pocket park was put forward by Robert Zion at the exhibition with the theme of "new park served by New York" organized by the New York Parks Association in May 1963, and the earliest Pocket Park - Perry Park was built in New York in 1967 [4]. Pocket park was originally evolved from the traditional European micro landscape design, and then became the key to solve the problem of urban green space under the expansion of global urbanization. Park, open space and greenway differentiation published by NRPA (National Recreation and Park Association) defines pocket park as: Pocket Park is the smallest park type built to meet limited or isolated recreational needs [5]. It is precisely because of this feature that pocket park can make good use of the micro open space or idle space in the urban structure for green space construction. Because the space location of the construction is often adjacent to the main roads and buildings, pocket park has a strong affinity to the people. At the same time, the different green space and functional design enable it to provide different leisure services for local residents.

### 1.2. Development Status of Pocket Parks in China

The construction and development of pocket parks in China can be roughly divided into two stages: the initial exploration stage (1991-2010) and the rapid development stage (2010 to now). At present, with the acceleration of urbanization, China is in the rapid development stage of pocket parks. For example, Beijing, Fuzhou, Shanghai, Guangzhou, Hangzhou, Wuhan and other high-density central cities are in full swing in the systematic construction of pocket parks [6]. However, due to the late start of relevant research and different social development compared with western countries, As a result, the theoretical system of urban pocket park design suitable for our society is not perfect. The problem to be studied is how to combine the current situation of social development in China to make the design of pocket park not only

have high "quality" to attract residents into pocket park, but also have practical "functions" to meet the living needs of surrounding residents.

### 1.3. Aging Pocket Park Demand

In combination with the deepening of China's aging, the traditional old-age lifestyle based on family and park has gradually failed to meet the living needs of the middle-aged and elderly in high-density cities [7]. As a rapidly developing open urban space for rest, pocket park has the characteristics of large green area, many construction types and can be seen everywhere, which is very suitable for the elderly to travel and rest. Therefore, according to the characteristics of the deepening degree of aging in China, the research on the aging design of pocket park can effectively put forward construction suggestions for improving the construction quality and service quality of pocket park, accelerate the construction of an age-friendly society in China, and actively deal with the social problems of deepening aging.

## 2. Analysis of Characteristics of the Elderly

### 2.1. Analysis of Behavior Ability of the Elderly

To study the design method of aging adaptation, we should first analyze the behavior characteristics of the elderly. For the definition of the elderly in China, the age stage of 45-59 years old is defined as the early stage of aging, and the age stage over 60 years old is defined as the elderly stage. With the increase of age, the aging characteristics of the elderly will be shown through different phenomena. Among them, the aging features are the functional degradation of bone and muscle system, the functional degradation of nervous system, the degradation of perceptual ability, etc., followed by the reduction of body flexibility, the decline of memory and thinking ability, the decline of visual and hearing ability, etc. For the construction of pocket park, the designer should fully consider the problems caused by these physical changes of the elderly people in the process of playing.

### 2.2. Activity Demand Analysis of the Elderly

**Table 1.** Classification of elderly population

Classification of the elderly	Age	physical behavior
early old age	45-59	Good physical condition and mental health Enjoy sports-style dynamic life and leisure-style static life
old age	60-79	Good physical condition, good mental condition Minor labor activities, prefer community square activities
Advanced Age	≥80	General physical fitness Severe decline in physical function, suitable for static activities

According to the classification of the characteristics of the elderly, as shown in Table 1, the physical capacity and activity needs of the elderly at different ages will also be different. The majority of the elderly served by pocket park are self-care elderly with full self-care ability or the elderly with partial self-care ability who need to rely on handrails, crutches and other travel AIDS. The main activity needs of the self-care elderly include dynamic activity needs such as aerobics, walking, fitness exercise and walking the dog, as well as static life needs such as playing chess, sitting still, taking care of children, listening to music and opera, reading books and newspapers. However, due to the limited mobility, the assisted elderly usually do not have a wide range of activities, so they enjoy the static life of individual static leisure, social and family interaction and so on. Therefore, when carrying out the aging design of pocket park, we should also fully consider whether it can meet the general activity needs of the elderly.

### 3. Design Strategy of Aging Pocket Park

#### 3.1. Safety Design

For the aging construction of pocket park, safety should be the primary core design principle, because the decline of the physiological function of the elderly makes them more vulnerable in the process of activities. Therefore, in the design of pocket park, the entrance and exit and the park route should be as far away from the roadway as possible to achieve the separation of people and vehicles; In terms of spatial layout, the activity routes in the park should avoid being too complex and reduce decorations that are easy to block the line of sight, so as to avoid causing the elderly to get lost or not responding in time to some unexpected situations; In terms of environmental design, factors such as skid resistance of pavement, height drop of steps and pavement slope, coverage of lighting system, warning signs in dangerous areas, etc. shall also be taken into account; At the same time, in terms of landscape design, avoid planting plants with sharp thorns, toxic and harmful, floating flocs, and choose some rehabilitation plants with bright colors, insect repellent and fragrance to stimulate the vision and smell of the elderly.

#### 3.2. Convenience Design

For the aging construction of pocket park, its convenience should also be considered. The improvement of convenience can increase the utilization rate of pocket park for the elderly to a certain extent. To improve the convenience, we must first ensure the accessibility of the pocket park. The park should set up multiple entrances and exits and ensure that the elderly can accurately find the location of the park. The design of entrances and exits should also be barrier free for some elderly and special groups. For some pocket parks with large area, the functional zoning and road signs of the park should fully take into account the problem of poor eyesight of the elderly, and use some colorful and large signs to guide the activities of the elderly. At the same time, for some less noticeable park construction locations, the park can be named in combination with the local environmental characteristics and park signs can be set up in the surrounding areas. This way can not only create a sense of intimacy between pocket park and residents, but also well attract the surrounding elderly to go to the Park for rest.

#### 3.3. Comfort Design

For the aging construction of pocket park, it is also essential to improve the comfort. In full consideration of the decline in the activity ability of the elderly, pocket park should provide more comfortable rest facilities for the elderly, such as scaffolding, kiosks, seats, tables, etc., so that they can find comfortable rest positions anytime and anywhere during their play. At the same time, considering the experience of the elderly, tables and chairs, which are in contact with the human body, should be made of wood or other comfortable materials as much as possible to avoid the transmission of cold temperatures to the elderly in cold weather. In addition, from the perspective of landscape design, selecting a reasonable plant configuration can not only create a colorful natural environment, but also adjust the air temperature and humidity, improve the viewing experience of the elderly and heal the body and mind of the elderly.

#### 3.4. Richness Design

For the construction of pocket park to adapt to the aging, what the elderly need most is that pocket park can meet their activity needs in urban life. From the classification of activity needs, pocket park should be designed in the following two aspects.

Static activity richness design: the elderly often have static life needs such as sitting still, listening to opera, chatting, playing chess, etc. for this type of activities, it can be considered to plant tall and broad-leaved trees or build shelters, pavilions and other environmental facilities with shading effect to provide shade and rain protection. At the same time, it can be considered

to design the seat facilities as "L" and "concave" "S-type" and other forms a semi closed conversation space to enhance the sense of security of the elderly in conversation and improve the effect of communication and interaction. If possible, pocket park can build a more private functional area in the park to carry out art activities such as painting and calligraphy exhibition, drama exhibition and storytelling, so as to enrich the daily life of the elderly.

Dynamic activity richness design: most elderly people have the habit of fitness, which is one of the purposes of entering the park. The pocket park needs to provide enough exercise space for the elderly to exercise, dance, martial arts and walk, and appropriately add exercise equipment when conditions permit. When planning these space areas in the design, the collective activity area should be separated from the individual activity area to avoid the mutual influence of people with different activity needs. At the same time, the site design should also take into account the safety, convenience and comfort.

#### 4. Taking Wuhan "Vanke Golf Park" Pocket Park as an Example

Wuhan is a high-density city that is vigorously promoting the construction and upgrading of pocket parks. Taking Wuhan pocket parks as an example, the aging element analysis can effectively reflect the current aging development level of pocket parks. This paper takes Wuhan Vanke Golf Park as an example to analyze. It is located at the south entrance of Vanke Golf City Garden community, Jinshan Avenue, and is reconstructed from the original sales department square. It is one of the new pocket parks in Wuhan. The park is built near the lake and adjacent to the golf course in the East. It has unique geographical advantages in terms of greening degree and geographical environment. It is suitable for the elderly to travel and rest. In terms of environmental design, the pocket park also adds many elements suitable for aging to meet the leisure needs of the elderly, as shown in Figure 1.

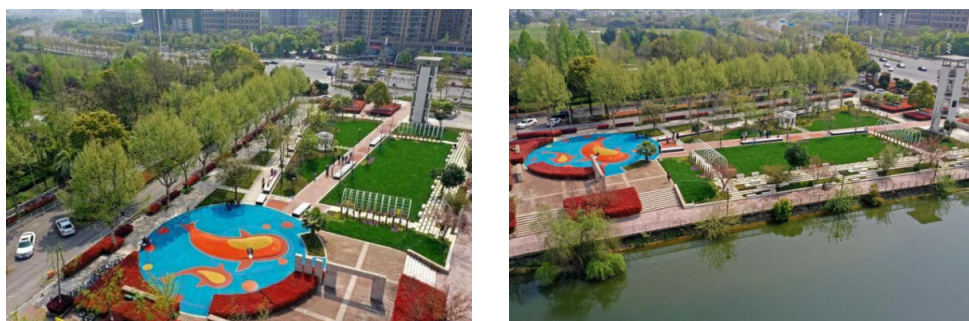


Figure 1. Aerial view of Wuhan Vanke Golf Park

##### 4.1. Park Safety Analysis

In terms of environmental design, the golf garden is very safe. Fences are set at the roadside and lake sides to separate people and vehicles, and eliminate the hidden danger of the elderly falling into the water. The garden at the roadside divides the boundary between the pocket park and the road by planting shrubs, and decorates the pocket park with this green space. At the same time, the road construction with clear planning, wide vision, appropriate step height and no large slope fully reflects its safety, which is suitable for the elderly as an activity choice.

##### 4.2. Analysis on the Convenience of Visiting the Park

In terms of the convenience design of the park, the whole park is an open public space with multiple entrances and exits in the spatial structure, which is convenient for the elderly to enter and exit at any time during the activities. At the same time, during the transformation process, the park also takes advantage of the original hydrological survey landmark that cannot be removed, names it as the starting point of Jinyin Lake greenway as the landmark of the park, as



shown in Figure 2, and designs the park logo on the stone bench of the park in the creative form of rainbow color dislocation and position splicing, as shown in Figure 3. Using these eye-catching and interesting design forms as the logo of the park helps the elderly quickly find the location of the pocket park, deepen their sensory impression of the pocket park, and improve the convenience of visiting the park.



**Figure 2.** Golf Park landmark - starting point



**Figure 3.** Golf Park Logo - Rainbow bench of Jinyin Lake greenway

### 4.3. Analysis of Garden Comfort

In terms of the comfort design of the garden, a large number of long stone benches are set along the road and the lake for tourists to rest. At the same time, in the landscape design, the lawn, Wutong, ginkgo and Nata oak trees are used to form a green, yellow, gold and Red Mosaic in color. The rich color environment and the viewing experience of a variety of plants can effectively stimulate the senses of the elderly, delight their mood and improve the comfort of the garden.

### 4.4. Analysis of Garden Tour Richness

In terms of the richness design of the park, the pocket park effectively divides the road, children's activity area, rest area, collective activity area and other functional areas in the form of planting green plants and decorations. The large number of long stone benches set up along the internal roads and the greenways along the lake, as well as the rose pavilions on the lawn of the park are suitable for the elderly to sit still, talk, watch the lake scenery and other types of static activities. The park center is distinguished by the blue color, and a circular children's amusement area is built in the creative form of whale shape, which adds interest to the whole park and meets the needs of some elderly people for activities with children. Next to the children's activity area, there is a large area of collective activity area, which is divided into two with stone arch decorations in the middle, which is convenient for the elderly to carry out various types of dynamic collective activities such as martial arts and dancing, while the wide greenway near the lake is suitable for the elderly to walk slowly for a long time.

### 4.5. Summary

Based on the above analysis, the golf garden has many elements suitable for aging in environmental design, which are specifically reflected in its safety, convenience, comfort and richness. In terms of service objects, it can also meet the needs of people of multiple ages.

However, there are still some places that can be improved in the aging design, such as the lack of barrier free design for the special elderly people on the route from the lake greenway to the central square in the park, and the lack of shading and cooling rest facilities in the stone bench rest area of the internal roads in the park.

## 5. Conclusion

Aging is a natural phenomenon that human beings must accept. The deepening of aging is also the basic national condition that China will face for a long time. As a rising design concept in high-density cities, pocket park is constantly developing both in quantity and design theory. Its characteristics make it an activity place that can effectively improve the life of the urban elderly. Combined with the development characteristics of pocket park and the characteristics of the elderly, this paper discusses how to better integrate aging elements into the design and construction of pocket park, and makes a specific analysis in combination with the construction of pocket park in the city, and finally comes to the conclusion that Wuhan has integrated a large number of aging elements into the current pocket park construction. In order to further improve the aging adaptability of pocket park, the designer should pay more attention to the activity characteristics and psychological needs of the elderly in the future design, especially in the barrier free design and psychological comfort. This can not only improve the service quality of pocket park, but also help to improve the happiness of the elderly and promote the harmonious development of society.

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