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## REVIEW ARTICLE

# STUDY ON OUTDOOR ENVIRONMENT LANDSCAPE DESIGN STRATEGY FOR URBAN ELDERLY COMMUNITY

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### ABSTRACT

With the continuous expansion of the population of the elderly and the deepening of the population aging, the whole society is paying more and more attention to the aging problem. Through the investigation and study of the landscape design of the urban community for the elderly, this paper digs deeply into the current status quo and summarizes the behavioral psychological habits of the elderly by analyzing the senses of the environment for seniors, therefore, it summarizes the important ways of the landscape design of the elderly community, and provides a feasible method and way to create a safe and comfortable environment for the outdoor environment of the elderly endowment community.

## INTRODUCTION

### 1. The Challenge of the Public Environment in an Aging Community

Since 2020, the people born in the 60s of last century began to enter the age of 60, the sanatoria industry is booming, China's pension industry will enter the blowout growth period of about 10 years. In recent years, the State Council has continuously issued relevant policies on the old-age service industry, requiring the improvement of the urban material system to match the service for the aged. "To let the old have someone to depend on; to let the old have place for treatment, and to let the old to have institution for study", etc. has constantly become the slogan of the aging issue. Environmental landscapes have always been designed for the healthy people, although the regulations have been constantly stressed in recent years that the public environment should be used for the use of the whole people, the primary concern in environmental design is the accessibility of the physically handicapped, especially the wheelchair users, and the needs of all users are not fully considered, in particular, the elderly population is often marginalized, and people with Alzheimer's disease are more overlooked. Many countries are trying to improve the quality of life of these marginalized people, designing space through inclusive design policies and setting up environmental

facilities. How to strengthen the match between outdoor space environment and psychological needs of elderly people in outdoor communication based on existing communities and new types of developing elderly communities; how to improve the existing auxiliary facilities outside the community through good accessible design, inclusive design and other theoretical basis, has been an important issue concerning the integration and innovation of inclusive design, the sustainable life style of the elderly and the elderly community service system.

### 2. Seniors' Perceptions of Community Environment

For most elderly people, it is important to engage in outdoor activities and exercise. The long-term indoor environment is relatively simple, in particular, the majority of elderly living in pension institutions are mostly living with others, their personal freedoms and their sense of autonomy are easily destroyed, causing the elderly feeling nervous and anxious, which has negatively affected their health in the long run. In the outdoor environment, the elderly can be physically and mentally relaxed and enjoy the health brought by nature. The author conducted random interviews with seniors in urban settlements, talked with healthy elders and those who lost some functions, many elderly people who interviewed said they intended to exercise and breathe fresh air, even though they were just hanging around, but they were physically and mentally pleased; it would be something "meaningful" if they going out to walk the dog or shop for groceries, thus they can gain the cognition of self value. For those elderly people who

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have lost some of their functions, going out makes them feel able to control their own life, choose their own destinations and successfully complete their journey; for people with Alzheimer's disease, aging will make them feel lost and self-esteemed, but in outdoor activities, taking a look at what's going on in the surrounding community and accomplishing some simple tasks will enable them to feel resumed self-esteem and physical functioning. In addition, most elderly people think that outgoing activities provide them with more social possibilities, in addition to pre planned social activities such as shopping, shopping, shopping, visiting friends and friends, they will chat with their neighbors and play on the body building apparatus, and life becomes rich and diverse. According to the three types of outdoor activities put forward by Jan Gehl, activities such as shopping, walking dogs and other daily life activities are almost daily for elderly people with stronger physical function, these behaviors are not related to external environment, and elderly people will not change their schedules due to environmental changes. Walking and strolling, sunbathing, strolling and other spontaneous activities would happen only if the elderly have the willingness to participate, and the external environment is suitable and the weather is in good condition, especially for people with Alzheimer's disease or some elderly people with deteriorating functions, they prefer to stay indoors if the outdoor environment can not guarantee their safe travel. Therefore, the poor quality of the outdoor activity space directly affects the frequency of this type of activity for the elderly. Elderly people in the same space are easy to generate social activities, especially in open public places, encounter, greeting, and chitchat, etc. exist at any time, therefore, it is important to create a public place, although the composition of the material environment does not have a direct impact on the quality of social interaction, content and intensity, architects and planners can influence people's opportunities to meet and observe and listen to others. 1 Favorable outdoor space environment can increase the time spent outdoors for the elderly, thereby increasing the frequency of their encounters and conversation opportunities.

Certainly, not all seniors go out with joyful feelings. Some seniors candidly acknowledge the negative emotions of anxiety, fear, boredom, embarrassment and confusion. One of the most common negative emotions is anxiety and fear. Some are afraid of coming to an unfamiliar environment, some are afraid of going out because of unsteady or poor eyesight. They believe that many factors in the environment, such as uneven roads, roads without seats, bicycles on the sidewalks and larger rampway, will make them feel like going out is a difficult thing. Some people have lost their way to find the location of the entrance of the building through a lot of identification and memory, and identify different places, streets, or buildings. For people with Alzheimer's disease, if someone goes out with them, they will feel relatively relaxed.

### **3. The present situation of the environmental space outside the aging community**

The present situation of using external space is the key content of the research on outdoor environment in the elderly community. Although the elderly are interested in entering the courtyard and believe that they are good for health, the survey finds that most of the outdoor activities of the elderly in the retirement community are generally not as good as expected. 2 In retirement communities, the external environment space is

different from the interior space such as corridor, living room and restaurant, which is selective. If the design is not reasonable or there is a design defect, it will reduce the use of external space, and can not promote health. Through a survey of several urban pension institutions and communities, the author found that the outdoor environment of the community seems to be good, and the landscape facilities are sound, but the actual use rate is far from being able to help the elderly to restore health. The elderly rarely stay outdoors, even if they are just walking through rather than stopping. The outdoor environment is not attractive and interesting, with the weakness of its own physique and the negative factors of bad weather, the environmental problems of the community are exposed. The author sums up the questions as follows.

#### **3.1. There is a barrier between indoor and outdoor space, which can not attract the elderly to go outside**

In a number of pension institutions the author visited, many buildings were found lacking French windows, reducing the connection between the interior and the outside. Even if there was a form, most of it was covered by the external vegetation, and it's not easy to see the outdoor situation in the room. It is not effective to promote the enthusiasm of the old people to participate in the outdoor activities. For the staff, it is impossible for them to constantly pay attention to the moving elderly in the room.

#### **3.2. The road environment is similar, making it more difficult for elderly to identify their homes**

Most elderly people have the experience of losing their direction in places where they often go in and out, whether they have Alzheimer's disease or not. "Even in familiar streets, most of the respondents will be very confused when facing the road intersection, because here they need to decide where to make a turn"<sup>3</sup>. As age grows, it is becoming more and more difficult to find the way by memory or on a map. In the survey, the author found that the community structure of their lives is in a complex environment. The roads are surrounded by complex buildings, and the entry of building units is similar, many entrances and exits are located at the dead ends of the road ends. For people with Alzheimer's disease in the elderly, moving within the community is an unknown travel, if they do not identify the right direction, they will feel tired and reduce the frequency of egression.

#### **3.3. The distribution of uneven activities and the lack of recreational facilities are inconvenient for the elderly to go out and communicate**

This is a common problem in different communities. Because the places for the elderly are too dispersed, and the time they spend on outdoor activities varies, almost every single event has no chance to meet each other, elderly people can not enjoy the fun of sitting on benches, there are no people or things to watch, and there is no fellow to communicate with. Bored to see the bored scene outside the window, the elderly indoor are more reluctant to go out of the room. So it creates a negative cycle: No activity will occur because no activity happened. In addition to this, many community health trails lack seats along the way, the degenerated elderly need to rest at any time during the walking process, the lack of recreational facilities or a long interval of rest facilities will bring them psychological fear and refuse to go outside.

### **3.4. The greening design has single functionality can not satisfied the multiple needs of outdoor activities for the elderly**

In most communities, the greening design varieties are rich, color collocation and ornamental effect are strong, but the function of plant in space design is ignored. Green planting can define the field between outdoor places, obstruct the traffic and increase the psychological safety of the elderly. At the same time, the plant can form tall shelter and combine with the seat to form a sheltered space, increasing the practicality of the seat. And the author found that most of the rest seats are isolated, and there are no facades in the rear of the seat and on both sides of the seat, so the utilization rate is very little.

## **4. Landscape Design Proposals for Elderly Outdoor Space**

According to the above problems, the author divides the external space environment of the community, and puts forward the corresponding design strategies respectively.

### **4.1 Indoor and outdoor transitional space**

The interior and exterior transitional space mentioned here refers to the link space inside and outside the building, and it can also be regarded as an extension of the building to the outdoor space. According to the above-mentioned indoor and outdoor buildings exist in the line of sight and activity barrier, create a transitional space and a moderate transformation between the interior and exterior. On the one hand, it will create a buffer for the sharp change of indoor and outdoor vision and functional environment. On the other hand, it will provide more rest areas for the elderly, so that the elderly can better see outdoor scenes and promote the elderly to go outdoor activities. Therefore, the transition zone can be divided into two parts: indoor and outdoor. The indoor section increases the window of the existing building facade to form the permeability of the building facade, allowing the elderly to watch the outdoor situation directly through the window, transparent design can also make the elderly feel that they can be looked after, increasing the sense of psychological security; at the same time, the expanded window can enhance the indoor light source, narrows the gap between the interior and the outside, and avoids the vertigo of the elderly. In the outdoor part, add structures to the boundary of the building facade, and form a certain shade space, in this space, furnishings and movable seats are set up to facilitate communication and conversation for the elderly and to watch outdoor people and activities. In addition, the design of the transition space should also involve some details. For example, the location and marking of the entrance should be convenient for the elderly to identify, and the design of different buildings and entrance should be different, avoid elderly people from confusing their own living units, in the absence of memory, allowing them walking-in after observing; at the same time, the entrance and exit should be completely barrier free, taking full consideration of the use of the wheelchair users or the old people using the help line, The lever type door handle is used without the entrance and exit of the automatic door, which is convenient for the elderly.

### **4.2 Courtyard space**

In the elderly community, the courtyard space can be understood as the group green space or the space before the

mansion, which is the most frequent place for the daily communication and activities of the elderly. According to the mental state and habit of different old people, the design of courtyard space should be designed for different types of communication areas to meet the needs of different contacts.

In particular, the courtyard space can be divided into dynamic communication space and static communication space. The dynamic communication space is based on the fitness activities, setting up the active fitness field and providing the necessary fitness equipment for the exercise. Static interaction space mainly involves activities such as sun exposure, chess playing, chatting and so on. It has certain requirements for microclimate and detail design, and needs semi privacy and private places for communication. As a result, the size of different spaces has a direct impact on the psychological feelings and behavior of the elderly in the use of places, and this perception will change with the physiological changes of the elderly. In order to better promote the activities of the elderly in the courtyard space, the space scale should give them comfort, safety and identification as much as possible, and meet the structural characteristics of both large size and small size. The scale of dynamic interaction space shall be kept within 100 meters of sight distance space and the smaller static interaction space shall be controlled at about 10 square meters to meet the privacy exchange of the elderly.

In addition, attention should also be paid to highlighting the functional space through the enclosing forms of different borders. The boundary forms such as hedges, terrain, water bodies, and low walls echo the plants to increase the spatial level. In the degree of group space, different groups should be distinguished to meet the use of different types of elderly people. In addition, attention should also be paid to highlighting the functional space through the enclosing forms of different borders, such as hedges, topography, water bodies. For older people with strong self-care, they a stronger enclosure can be designed, provide them with the privacy of the exchange, but at the same time need to maintain contact with the outside world on the line of sight, reduce the sense of isolation, the formation of intervals and continuous space experience; for elderly people with severe deterioration of their body functions, the space enclosed by the two sides is designed so that they have space for shelter and care for the carers.

### **4.3 Moving and staying space in the road**

Road space in the community is an area where the elderly are frequently used, walking, exercising, and talking are universal activities on the footpath. An inclusive community of seniors should follow a path that is both accessible and secure. First of all, we should design a reasonable walking route for the elderly, set the ring route as much as possible, and avoid the appearance of the circuit breakers or the blind alley. They not only restrict the ability of the elderly to move around, but also obscure the identification of the community road, when older people go astray, they may be confused and uneasy. And a reasonable circular route always presents a fresh street scene in the course of walking, avoiding the psychological depression of the old people because of their turning back, and circular route is the simplest way of knowing, can avoid loss of direction due to memory attenuation. At the same time, along the path of the ring road, it is necessary to set up a short cut path with different length, and it is convenient for the elderly to choose the appropriate walking route according to their own situation.

Secondly, set aside spaces and seats for distance along the promenade. In accordance with the behavioral and psychological habits of the elderly, a public seat should be set up at 100~125 meters per interval. The seat should be set up facing the road to enable the elderly to observe the road scene. The position should not only take into account the shadow sunscreen area, but also guarantee the sunshine to the sun area, so that the elderly could choose according to their own needs. The side of the reserved space also needs to reserve space for wheelchair users to stay. Thirdly, community roads should be smooth, seamless joints, non-slip, and avoid the use of pebbles, stepping stone on water surface and other walking roads. The unevenness of the pebble road will make the old people unable to walk comfortably. When using mobile walking tools, they may trip up because of the small undulating of the pebble.

#### 4.4 Landscape plant configuration

Good greening design in the community can not only improve the environmental quality, but also have a positive impact on the physiology and psychology of the elderly, and add color to their spiritual design. Therefore, on the one hand, we need to enrich the types of landscaping, provide more diversified viewing angle, and make the plant landscape interact with the elderly to enrich the daily life of the elderly. The most direct way is to open up a certain area of fruit and vegetable planting areas to create a guided spontaneous planting place, which can provide community's own needs, bring safe and healthy green food to the elderly, and enable the elderly to participate in community construction and landscape space construction and

maintenance in person, so as to maximize the interaction of the community landscape space, through labor to exercise, they can not only find the joy of life, but also find the social recession because of declining social sense of belonging, which actually let the elderly experience "the Elderly Happiness". At the same time, it is necessary to pay attention to the relationship between landscape plants and communication space, through appropriate landscape plants to create different types of communication space, and pay attention to the opening and closing of the space on the soft boundary of plants, there should be a private space for the protection of the old people and the open space that does not obstruct the sight of the view, so that the planting of plants in the field of vision of the elderly is hierarchical, thus to better ensure the safety and permeability of the elderly in the enjoyment of leisure.

#### 5. Conclusion

The relationship between environmental space and human behavior is not simply a matter of decision, environmental space can induce rather than determine the way people behave, but people also play subjective initiative and transform space in their activities 4. Adhering to the characteristics and needs of the elderly is the only way to create a comfortable, quiet and clean outdoor environment and ideal living space for the elderly, so as to enrich the elderly's life in their later years. The outdoors communication, which is urgently needed by the elderly, is built on a sound outdoor communication space. This is not only the task of the designer, but also the content of the continuous research by all walks of life of the whole society.

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