

Research on the Design of Suitable Aging Space

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Abstract: With the intensification of the aging degree in our country, the elderly pension problem is always a social problem to be solved, which has attracted attention from the country and people. From the perspective of space design, this paper analyzes the living and living space suitable for the elderly, and deduces the specific measures for the design of age-suitable space through the design points of age-suitable space and the existing problems of living space for the elderly. The purpose of this paper is to create a suitable and comfortable retirement space for the elderly, reflecting the social responsibility of the design industry and the view of the goodness of design.

Keywords: aging, aging space, the goodness of design

1. Introduction

At present, the aging degree is becoming more and more serious, the social pension system is not perfect, the number of pension institutions is insufficient, and most elderly people will choose to care for the elderly in the community family[1].

2. Behavioral characteristics analysis of the elderly population

Zhou Yanmin once said: "The environmental design of aging residential areas is not only a barrier-free design for the safe travel of the elderly, but also to meet the multi-level needs of the elderly's living life." This requires us to understand the real demands of the elderly and the characteristics of the group [2].

The behavioral characteristics of the elderly are embodied in visual vision loss, auditory hearing loss, language communication disorder, tactile sensation loss, physical slowness in action, memory loss in thinking, etc [3]. According to the behavioral characteristics of the elderly, it can be inferred that the contemporary living space for the elderly should adapt to the living habits of the elderly, and the age-appropriate design is corresponding to the design concept of space design for the elderly, so that the elderly can feel comfortable and secure in a specific space.

2.1 Design concept and key points of age-appropriate space

Age-appropriate space design, that is, adhere to the "elderly oriented" design concept, designers start from the perspective of the elderly, and effectively feel the different needs of the elderly.

In the process of the design of age-appropriate space, the basic points of safety, convenience, applicability, comfort and humanization should be followed, the specific transformation process should be perfected, and the transformation plan should be formulated according to the characteristics of the elderly's body, the characteristics of sensory aging and the characteristics of health [4-5].

With the increase of age, the physical function of the elderly gradually decreases, which is reflected in the slow movement of the limbs, the decline of hearing, and the decline of visual vision. Therefore, the safety of the elderly should be paid attention to as the first point in the design process of aging space for the elderly. For example, in terms of anti-slip measures, the materials of the ground and stairs should choose materials with good anti-slip performance to avoid slipping accidents when the elderly walk around, and anti-slip MATS or armrests can be laid on the ground and stairs to provide better support and stability. To have good lighting especially in corridors, stairwells and bathrooms and other areas, the elderly have poor eyesight, good lighting can help them see the surrounding environment more clearly, reduce the risk of falling, in the design process, to ensure the safety of electrical equipment and avoid the risk of electric shock, water sources should also have corresponding anti-hot

measures, to avoid the elderly due to touch the hot water and be scalded. In areas prone to fall risk such as corridors, stairs, washrooms and bathrooms, it is necessary to set up solid handrails and handrail facilities to provide additional support and balance, design spacious and smooth passageways and emergency exits, so that the elderly can quickly and safely evacuate in an emergency. These are some of the safety points that should be noted in the design of age-appropriate Spaces.

The design process of age-appropriate space follows the key points of comfort, such as reasonable layout, reasonable space layout is crucial to the comfort of the elderly, design spacious passageways and rooms, so that the elderly can move freely, and provide enough activity space, at the same time, according to the needs of the elderly, the commonly used facilities and services are arranged in a position that is easy to access and operate. It is necessary to design comfortable seats and beds for the elderly to facilitate their daily life. The seats should be supported and ergonomic in design, and equipped with functions that can adjust the height and tilt Angle to provide comfort to meet different needs. The physiological function of the respiratory system of the elderly is constantly degraded, which requires high indoor air quality. Maintaining good indoor temperature and air quality is essential for the comfort of the elderly, designing appropriate ventilation systems and environmental control equipment to ensure the adjustment of air circulation and indoor temperature, indoor should have enough natural light to enter, and set up appropriate artificial lighting to supplement the light, lighting devices should have soft light, avoid glare and shadow. At the same time, it provides enough brightness to ensure that the elderly can clearly see the surrounding environment and objects. By considering the above comfort points, the aging space design can provide a livable and comfortable living environment for the elderly, meet their living needs and improve their quality of life.

3. Existing problems of living space for the elderly

Nowadays, there are many space design problems that are not suitable for the elderly in the living space of the elderly. These inappropriate designs increase the security risk of the elderly and reduce the life experience of the elderly.

(1) Lack of accessibility design: The principle of accessibility belongs to the main points of space design, which is mainly used to ensure the characteristics of spatial disability and convenience, clear and concise functional streamline, improve recognition, ensure the accessibility of travel and flat ground, no ground fluctuation, ensure good lighting of indoor space, avoid the monotony of space color, many elderly people lack of barrier-free design. If there is no ramp or elevator and other facilities, it is difficult for many elderly people with mobility difficulties to go out and carry out activities, which intensifies the feelings of loneliness in the heart of the elderly, and is not conducive to the normal life of the elderly to a large extent.

(2) Indoor safety hazards: The elderly are prone to fall and slip accidents, but many living Spaces have safety hazards, such as unstable stair handrails and no anti-slip measures on the ground, increasing the risk of injury to the elderly.

(3) Unsuitable furniture arrangement: The furniture arrangement in some elderly people's homes does not meet their needs, such as the seat is too low or too soft, the bed height is not suitable, and the support strength is poor, resulting in the elderly feeling uncomfortable in daily activities.

(4) Poor lighting conditions: insufficient light or uneven lighting will affect the vision of the elderly, increase the difficulty of operation, and increase the risk of falling, many elderly living space lighting design is not considered, the need for better lighting equipment and suitable light sources.

(5) Lack of social space: Some elderly people face the problem of social isolation, lack of appropriate social space and activities. The process of socializing increases the well-being and quality of life of the elderly, so providing suitable social space is crucial for the elderly.

(6) Lack of intelligent facilities: With the development of science and technology, intelligent facilities provide a lot of convenience for the life of the elderly, but many elderly people lack intelligent facilities in their living space, unable to meet their living needs.

Nowadays, there are some corresponding problems in the living space of the elderly, which need to be paid attention to and solved by the current society, so as to provide a safer, comfortable and suitable living environment for the elderly.

4. Specific measures for aging space design

4.1 Residential living space

4.1.1 Bedroom design

The mild tone is conducive to the sleep of the elderly, but also should pay attention to the overall lighting and ventilation conditions of the bedroom. The biological clock of the elderly is very sensitive in the high-rise residential living space, when the elderly's behavior cannot be coordinated with the rhythm and cycle of nature, The elderly's own psychological and emotional activities are likely to be disrupted, as shown in Figure 1 and Figure 2.

Therefore, the place where the elderly sleep should face east as far as possible, so that the elderly wake up when the sun rises and the light is full of the house, or the balcony or terrace of the bedroom faces east to ensure that the elderly can see the sun in bed [6].

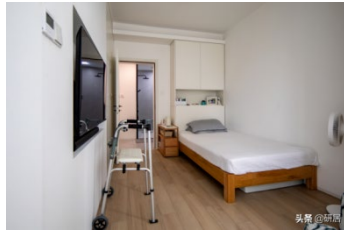


Figure 1: Bedroom design (from the Internet)



Figure 2: Bedroom design (from the Internet)

4.1.2 Kitchen design

The kitchen design of the elderly provides sufficient storage space to meet the needs of food storage, you can consider expanding the kitchen area to increase social space, through the open shelf to place various items, both practical and beautify the kitchen, but also add some special functions and facilities in the kitchen to meet the needs of the elderly and improve their quality of life. For example, install some kitchen appliances that are easy to operate and clean, such as smart stoves, electric kitchen tools, etc., so that the elderly can cook and clean more easily. You can also consider setting up some user-friendly designs in the kitchen, such as switches and control panels that are easy to touch and operate, non-slip floors and handrails, to provide a safer and more comfortable use environment. Maintaining good lighting is also very important to ensure that the interior of the kitchen is well lit to reduce visual obstacles for the elderly during the cooking process. In short, designing a kitchen suitable for the elderly needs to consider its functionality, safety and convenience. By combining the layout with the dining room and living room, providing sufficient storage space, setting up open shelves, adding special functions and facilities, as well as reasonable layout and user-friendly design, a comfortable, safe and convenient kitchen environment can be created for the elderly, promoting their participation in family life and improving the quality of life , as shown in Figure 3 and Figure 4.



Figure 3: Kitchen design (from the Internet)



Figure 4: Kitchen design (from the Internet)

4.1.3 Bathroom design

The bathroom is very important in the aging residential space, it is necessary to take into account the special needs and safety of the elderly, increase the barrier-free design in the bathroom, ensure that there is no threshold in the bathroom, convenient for the elderly to use wheelchairs or walkers to enter and exit, the ground surface should be smooth, avoid the danger of slipping, choose non-slip floor materials, in order to reduce the risk of slipping when the elderly walk around. These handrails should

be able to support the body weight and be installed securely and reliably , as shown in Figure 5.



Figure 5: Toilet design (from the Internet)

4.2 Outdoor communication space

In Communication and Space, Yann Gale divides outdoor behavior in public space into three types: necessity, spontaneity and social activity. The activities of the elderly in residential areas are mostly spontaneous activities, which are closely related to the quality of the outdoor environment. When the environmental quality of public space becomes better, the space is suitable and the function is perfect, this spontaneous activity will take place [7]. When designing outdoor public space suitable for aging, designers should combine open space with semi-open space, and pay attention to the design of greening, landscape pieces, seats and other facilities in the layout. In the design process, natural elements can be added into the design, and natural elements such as flower beds, grass and trees can be used to increase the beauty and comfort of public space. Natural elements can not only provide visual enjoyment, but also improve air quality, provide shade and mitigate the impact of the urban environment on the elderly, so that the elderly have a good mood when engaging in social activities, and promote physical and mental health.

(1) Create barrier-free access: Ensure that the access to public Spaces is spacious, flat, and free of obstacles. Older people may use walkers, wheelchairs, or other AIDS, so access should be spacious enough to allow them to move freely.

(2) Design non-slip ground: The physical function of the elderly gradually declines, for example, the coordination and convenience of the limbs are significantly reduced, and it is easy to fall, so in the process of designing outdoor space, attention should be paid to the materials of the ground pavement to have a certain anti-slip performance and grip, so as to reduce the risk of slipping when the elderly walk and increase the safety of the elderly in outdoor space activities.

(3) Installation indicator and guidance system: The outdoor space is one of the main daily gathering Spaces for the elderly. Due to the decline of physical function and the decline of brain memory for the elderly, it will be more convenient for the elderly to set indicator signs and guidance systems in the outdoor space. The indicator signs should be clear and readable, and the size of images and text should be moderate to meet the visual needs of the elderly.

(4) Rehabilitation and exercise needs: Nowadays, the elderly have a relatively early life schedule, and the elderly generally exercise in squares and parks in the morning. Facilities and Spaces suitable for exercise and rehabilitation are provided for the elderly, such as walking paths, fitness equipment, rehabilitation facilities, etc. This helps them stay active and healthy and provides opportunities for social interaction.

5. Significance of aging space design

With the arrival of the aging society, China pays more and more attention to the elderly life, the design of aging space can create a space environment centered on the elderly, the goal is to improve the quality of life of the elderly, so that they can better enjoy the later life. This means providing them with independence, autonomy and dignity while meeting their emotional, psychological and life needs. To improve the quality of life of the elderly and enhance the happiness of life of the elderly, creating a space suitable for aging is conducive to enhancing the public's awareness of this profession, which reflects the sense of responsibility and contribution of the design profession to the society.

6. Peroration

Aging is a major social problem facing the world today. Starting from the physiological and psychological needs of the elderly, how to design an aging space centered on the elderly, improve the quality of life and the sense of life experience of the elderly, and help the elderly live a safe, comfortable and happy life every day, which also shows the sense of responsibility and role of design for the society, and explains the meaning of the goodness of design in a way.

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