

Analysis on the Space Design of the Elderly Residence under the Background of New Rural Construction

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Abstract: In recent years, China's rural areas have experienced significant economic and social changes. As the country comprehensively promotes the strategy of agricultural modernization and rural revitalization, the economic structure and lifestyle in rural areas have undergone fundamental changes. On the one hand, the optimization and upgrading of the agricultural industrial structure has transformed from traditional agriculture to efficient, ecological and leisure agriculture, and the processing and sales of agricultural products have become more diversified and market-oriented. On the other hand, with the acceleration of urbanization, more and more rural residents flock to cities, resulting in changes in the population structure and labor composition in rural areas. At the same time, with the popularization of education and information technology, residents in rural areas pay more and more attention to the quality of life, and the demand for housing and living environment is increasing. In view of this phenomenon, based on the background of the new rural construction, this paper deeply discusses the space design of the elderly housing, and aims to put forward the reference scheme of the old-age model which adapts to the living needs of the elderly and conforms to the characteristics of the new rural construction.

Keywords: New rural construction; The elderly; Residential space; Design

Introduction:

With the deepening of China's new rural construction, rural areas are facing unprecedented changes. Among them, the design of housing for the elderly, as a key issue, has been paid more and more attention by the society and academia. As an important part of society, the comfort, safety and convenience of the living environment of the elderly directly affect their quality of life. In the context of new rural construction, this paper discusses the key issues of residential space design for the elderly. This paper mainly analyzes the characteristics of new rural construction, the design principles and requirements of the elderly housing, and puts forward the spatial layout optimization scheme for the change of family structure. Special emphasis on the importance of green building materials and energy-saving design, designed to provide reasonable guidance and reference for the elderly residential design.

1. Characteristics and trends of new rural construction

1.1 New Rural Construction Policy Overview

In response to the changes of rural economy and society, our government has implemented a series of new rural construction policies. These policies mainly focus on improving rural infrastructure, raising farmers' living standards and promoting rural economic development. Specifically, it includes the reform of the rural land system, the construction of rural housing and public facilities, and the adjustment of the agricultural industry structure. The government emphasizes people-oriented, pays attention to the sustainable development of rural communities, and promotes the protection and inheritance of rural culture. Through the implementation of these policies, it aims to realize the modernization of rural areas, improve the quality of life of farmers, and promote the integrated development of urban and rural areas.

1.2 Aging trend of rural population in

With the development of social economy and the aggravation of population aging, China's rural areas are also facing severe challenges of aging. This trend of population aging has brought a series of social and economic problems, such as labor shortage,

insufficient pension services, and unequal distribution of medical resources. The increase in the proportion of the elderly in rural communities has put forward new requirements for the design of rural housing and community facilities, especially in the construction of rural shared buildings, the safety, convenience and comfort of home care. Therefore, in the process of new rural construction, we must take into account this demographic characteristics, rational planning and design of rural housing and public facilities to meet the needs of the elderly.

2. Principles and requirements of residential design for the elderly

2.1 Geriatric friendly design concept

The elderly-friendly design concept emphasizes that the special needs of the elderly should be fully considered in the residential design to create a safe, comfortable and convenient living environment. This concept involves all aspects of the house, including barrier-free design, suitability of the interior environment, and connection to the external community. In terms of barrier-free design, the focus is on eliminating obstacles in the living space, ensuring that the ground is flat and unobstructed, providing handrails for stairs and entrances, and considering the space requirements for wheelchair access. The indoor environment should take into account the vision and hearing loss of the elderly, and adopt appropriate lighting and sound design. In addition, the design should facilitate the daily life of the elderly and the use of first aid facilities, such as emergency call systems. Age-friendly residences should also consider connectivity with the outside community to facilitate the participation of the elderly in community activities and daily mobility.

2.2 Safety and convenience requirements

Safety and convenience are two core elements in the design of the elderly housing. Safety first requires that the residential structure is stable, the materials are harmless, and the design such as non-slip floors and spacious corridors can reduce the risk of falling. Suitable grippers and support devices shall be provided at special positions. In addition, the house should be equipped with smoke alarm, gas leak alarm and other safety facilities. In terms of convenience, it is necessary to consider the mobility and daily habits of the elderly, such as the easy operation of door and window switches, and the reasonable layout of furniture. At the same time, the introduction of smart home systems can help the elderly manage home equipment more conveniently and improve the quality of life.

3. Analysis of the space design of the elderly residence under the background of the new countryside

3.1 Family Structure and Housing Needs

Under the background of new countryside in China, the change of family structure has put forward new challenges and demands for the space design of the elderly housing. With the massive migration of the younger generation to cities, rural households have shown a significant trend of “empty nest”, that is, more and more elderly people live in their homes alone or with their spouses. This change in family structure leads to a shift in the living needs of the elderly, thus affecting the direction of residential space design.

First of all, in the new rural construction, the combination of group care and home care mode has obvious advantages compared with traditional rural scattered houses. Group buildings establish “shared buildings” based on rural public service centers, comprehensive service stations and other facilities, and allocate them in different areas according to the different living habits of the elderly. A certain number of centralized pension spaces can be set up, and they can also provide for the aged at home according to the wishes of the elderly, in the “shared building”, institutions such as door-to-door medical institutions, community centralized canteens and public entertainment centers are set up to meet the needs of the elderly at all ages. For home-based care, the “shared building” in group care is also an upgrade and optimization of the traditional single-function residential space pattern.

Secondly, for the group of home-based elderly care, their homestead houses can be transformed and improved to improve their safety and comfort under the condition of meeting the physiological characteristics and mental health needs of the elderly; for people with certain living ability but due to poor physical condition or suffering from diseases, some houses can be considered to be built as rehabilitation training places, Emergency call system and easy-to-reach medical auxiliary facilities should be set up inside the house.

In addition, considering that the elderly in rural areas often have deep feelings for the land and the natural environment, in empty nest families, distant relatives are not as good as close neighbors, and the residential design should be integrated with the group pension building as much as possible. A barrier-free channel with convenient and safety protection facilities should be built between the single building and the group activity space, so that the elderly can enjoy the same comfortable and healthy lifestyle as their peers while meeting their physical and psychological needs.

3.2 Home Care Space Layout Optimization Scheme

Single-story structural design: In view of the possible limitations of elderly movement, single-story residential design is more appropriate. This can avoid the potential risks caused by stairs, and at the same time facilitate the maintenance and cleaning of daily life.

Open layout: The use of open layout can make the interior space of the house more spacious and bright, which is conducive to the extension of the line of sight and the freedom of activities. At the same time, the open kitchen and living room design is conducive to the interaction of family members, especially in the holiday family gathering more warm.

Spacious bathroom and kitchen: The bathroom and kitchen are two spaces that require special attention. Adequate rotation space should be designed, non-slip floors and handrails should be installed, and low worktops and easy-to-operate equipment should be considered to ensure the safety and convenience of the elderly [2].

Rehabilitation training space: After combining the equipment allocation of the medical service center in the “shared building”, the humanized design can be carried out according to the specific needs of the elderly at home, and the on-site rehabilitation service can be provided for the elderly who are not convenient to go out.

3.3 Green Building Materials and Energy Saving Design

The use of green building materials and the application of energy-saving design are the key to improve the quality and sustainability of housing in the context of new rural design for the elderly. Green building materials are not only environmentally friendly and healthy, but also help to improve living comfort, which is especially important for the elderly. First of all, choosing non-toxic or low-toxic building materials can reduce indoor air pollution and protect the health of the elderly. Secondly, the use of materials with good thermal insulation properties can effectively maintain the indoor temperature, while also ensuring a comfortable environment that is warm in winter and cool in summer. In addition, the use of renewable energy technologies such as solar panels and geothermal energy can achieve energy savings in heating and lighting, which is also in line with the trend of sustainable development. The design of green roofs and rainwater collection systems can also effectively use and recycle natural resources, while increasing the green area of the house and providing more pleasant outdoor spaces for the elderly. In the interior design, the use of energy-saving lamps and intelligent temperature control systems and other energy-saving equipment, not only can reduce power consumption, but also provide a convenient life experience [3].

Conclusion:

After comprehensive analysis, this paper puts forward the design concept of the elderly residential environment to adapt to the characteristics of the new countryside, emphasizes the importance of safety, convenience and comfort, and points out the key role of green building materials and energy-saving design. These studies are of great significance for improving the living environment of the rural elderly and promoting the sustainable development of social economy. In the future, residential design for the elderly will continue to develop to meet the growing needs of the elderly.

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