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Research on the Policy and Housing Characteristics for the Elderly in Japan ——Taking Fukuoka as an Example

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Abstract

Suitable housing for the elderly is of great significance to the development of the aging society all over the world. Japan's housing supply has accumulated rich experience in adapting to aging. This paper takes Fukuoka as an example and selects typical policy, rental house and housing renovation for case studying. Based on policy and research, this paper discusses the characteristics of aging-friendly housing in Japan, and provides a reference for China.

Keywords: Housing for Elderly, Japanese Housing Policy, Field Research, Housing Design and Renovation

1. Introduction

Suitable housing is an important means to ensure the safety and improve the quality of life for the elderly. Japan and China are both Asian countries, Japan have entered the stage of aging society earlier, and have accumulated rich experience in housing for the elderly. Taking Fukuoka as an example, the analysis of housing for elderly includes three aspects: housing policy, rental housing characteristics, and housing renovation. Furtherly, this paper discusses the characteristics of aging-friendly housing in Japan, and provides references for the development of aging-friendly housing in China from above three aspects.

2. Related Works

Many countries in the world advocate 'aging in place'. Aging-friendly housing supply is the cornerstone of the vigorous development of the silver-haired economy, and it needs to be solved in a sustainable way (Malik K and Mikolajczak E 2019). Residential design has a direct impact on the emotions, psychology, and safety of the elderly living in it, and interior space can provide security for the elderly at the physical level (Abd Rahman et al., 2022). Residential aging-friendly design involves multiple aspects such as design for all, universal design, and inclusive design (Grazuleviciute-Vileniske et al, 2020). In addition, Smart home technology can also be used to improve the potential of assisting the elderly to live independently (Helal S and Bull C N, 2019).

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3. Background

Aging is basic national condition of China at present and for a long period of time in the future. Compared with other countries, China's aging has the characteristics of 'large number, fast speed, and large differences'. Houses are one of the most frequently used places for the daily life of the elderly. At present, 90% of the elderly in China will live in their own homes in the near future. Ensuring that the elderly 'have a house to live in' and that the quality of the housing can meet the increasing living needs of the elderly is an important means to improve the security and happiness of the elderly's life.

Japan is one of the countries with the highest aging population in the world, which has a similar cultural background with China. Japan entered the aging society in 1970, nearly 30 years earlier than China, and has accumulated rich experience in aging development, which is worth learning from. Fukuoka is located in the Kyushu area, and it is one of the most livable cities in Japan. Taking Fukuoka City as an example, this paper sorts out the current policies of Fukuoka City, and conducts field research on local residential buildings for the elderly to analyze their aging-friendly characteristics, so as to provide reference for the construction of residential buildings for the elderly in China.

4. Methodology

4.1 Field Research

Field research is the collection of raw data outside a laboratory, library, or workplace setting. The approaches and methods used in field research vary across disciplines. On the basis of sorting out Fukuoka's aging-friendly housing policies, this paper selects typical housing cases and analyzes from different aspects, such as housing layout and design, renovation design methods, and elderly-friendly service processes.

4.2 Case study

A case study is expected to capture the complexity of a single case, and the methodology which enables this has developed within the social sciences (Johansson R, 2007). Taking Fukuoka City as an example, this paper comprehensively studies the real cases of its housing policy, rental housing design, and aging-appropriate housing renovation, analyzes the characteristics of the cases, and extracts valuable reference strategies.

5. Characteristics of aging-friendly housing

5.1 Housing Policy—Taking Fukuoka City as an Example

Fukuoka City formulated the ‘Fukuoka City Securing Residential Stability Plan for the Elderly’ in accordance with the ‘Residential Stability Program for Seniors’ in combination with local conditions. Housing policies for the elderly are closely related to national policies and Fukuoka policies, and are also related to local ordinary housing policies, welfare security systems, and elderly care insurance systems (Fig. 1.). The current policy introduces the degree of aging, the types and characteristics of housing for the elderly, and the housing problems for the elderly that need to be solved urgently.

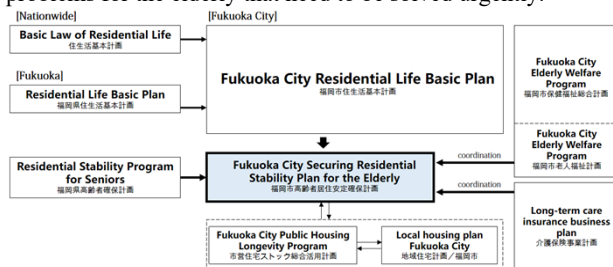


Fig.1. Elderly housing policy of Fukuoka

5.1.1 Overview of Aging in Fukuoka

The degree of aging in Fukuoka City is slightly lower than that of Japan and closer to the level of China. The data predicts that Fukuoka City will reach 31% in 2040 (Fig. 2.). Its aging characteristics include the following aspects: (1) While the degree of aging is aggravating, the proportion of the elderly is increasing year by year. (2) The number of households with elderly people is increasing year by year. Moreover, the proportion of single elderly and couples families is increasing year by year, and the elderly families also have the characteristics of low income (lower than the average level of ordinary families); (3) The number of people who need long-term care increase, and the increase in elderly with dementia has exceeded expectations.

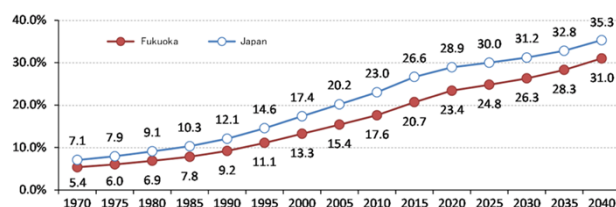


Fig.2. Aging trends in Fukuoka City

5.1.2 Housing type

According to different housing ownership, housing for the elderly can be divided into two categories, rental housing and ordinary commercial housing. Among them, rental housing can

be divided into private or public housing. According to different providers, public housing can be divided into housing provided by local public organizations and public enterprises. The public housing provided by local public organizations in Fukuoka City is mainly municipal housing (市営住宅). The number of municipal housing and elderly housing with service accounts for the majority of the total number of rental housing for the elderly in Fukuoka.

Table1. Rental housing type in Fukuoka

Private housing	rental housing for the elderly (municipal certification)
	Seniors Homes with Service
public housing	rental housing for the elderly (Provided by UR)
	municipal housing (C)
	municipal housing (B)

5.1.3 Current situation

According to research and statistics, the housing problems for the elderly currently include the following aspects: (1) Changes in the family structure of the elderly have brought about a variety of housing needs, among which the number of single elderly and couple elderly households is increasing significantly. Moreover, due to trends such as declining birth rate and urbanization, the isolation of the elderly from society is becoming more and more serious; (2) The phenomenon of ‘old people living in old houses’ is widespread, and nearly half of the housing for the elderly was built before 1980(Fig. 3.), the anti-seismic performance does not meet the existing standards. (3) The number of single and couple elderly families with dementia is expected to increase., there is a need to provide more medical care and a deeper understanding of dementia, not only to care for the physical health of the elderly, but also to respect the values and individuality of the elderly.

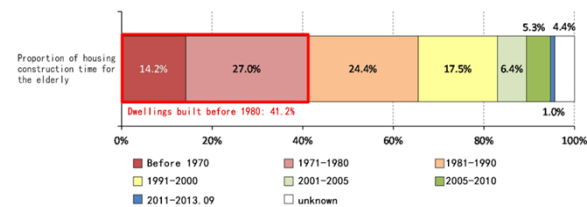


Fig.3. Construction time of housing for the elderly

5.1.4 Strategic Objectives and Measures

Based on the above problems, Fukuoka City takes ‘Aging in Place’ as the overall concept, that is, to create an environment that allows the elderly to live in a place they are familiar with, and proposes three solutions and strategies to ensure that the elderly live in peace: (1) According to the physical and mental conditions and living needs of the elderly, provide a variety of housing type; (2) Strengthen the institutional support for the elderly to live in; (3) Continue to build a comprehensive security system for the elderly to live and work in peace and contentment.

In terms of diversified housing supply, Fukuoka City first proposed to further strengthen the supply of rental housing for the elderly, while providing government subsidies, medical care, rent reduction and other safeguards. Secondly, promote the renovation of existing houses. The aging-appropriate renovation follows the principles of universal design, so that the elderly who live at home can better cope with the declining

physical functions. At the same time, promote the aging-friendly renovation of public housing such as municipal housing. In addition, the government also provides certain renovation subsidies, and vigorously popularizes knowledge about housing renovation for the elderly, and teaches the elderly how to use the welfare system, further promoting the enlightenment, publicity and participation of residents and related industry personnel. Finally, continue to develop the construction of elderly care facilities for elderly families who have difficulty in home care.

5.2 Characteristics of Elderly Rental Housing

Based on the relevant policies of housing for the elderly in Fukuoka City, this paper investigates the examples of rental housing and residential renovation for elderly, and analyzes their aging characteristics. This paper will first study the current situation of rental housing for the elderly from the aspects of housing selection mechanism, case analysis and its characteristics.

5.2.1 Housing selection mechanism for the elderly

The occupancy of rental housing is aimed at elderly people who have reached the age of 60. Couples and elderly people can apply for occupancy only when one of them is over 60 years old. Depending on the family income of the elderly, they can receive government rent subsidies ranging from 10% to 40%. Residential residences for the elderly that provide services can apply for long-term occupancy. It is stipulated that the area of a single bed should not be less than 25 square meters (not less than 18 square meters if there are restaurants and activity rooms in the public area), and there should be staff from the operating agency. Medical staff are stationed during the day and assess the living conditions of the elderly.

Eligible elderly people can log on to the local official website to apply by themselves, or go to a special intermediary window and have the staff help them to apply. The information on the website provides a variety of screening options, such as geographical location, rental price, nursing level, etc. The elderly can search according to his or her situation and needs. This paper takes a typical rental housing for the elderly and senior home with service for research and analysis.

5.2.2 Elderly Rental Housing

The rental housing for the elderly named ‘Abitare’ investigated in this paper (Fig 4) is located in Chuo district of Fukuoka City, with convenient traffic conditions in the surrounding area. The surrounding facilities are complete, including subway stations, various convenience stores, shopping centers, commercial complexes, hospitals, primary and secondary schools, kindergartens, etc. The rental housing has relatively complete facilities, including bicycle parking, monitoring of the public area of the residence, and an emergency call system.



Fig.4. Photos of the rental housing

The rental housing provides a variety of housing types for the elderly and families, including "1K", "1LDK", "2LDK", etc., which can meet the living needs of various elderly family, including single elderly and couples. Most of the people who choose this type of residence are self-care elderly, and the room has characteristics such as handrails in the bathroom and barrier-free in the interior space.

Table 2. Different layouts of the rental housing

	Floor plan	Interior
1K		
	Suitable for single self-care elderly to live. Equipped with relatively complete bathing facilities and a simple kitchen;	
1LDK		
	Suitable for couples, elderly people or nuclear families, the partition between LDK and the bedroom can be opened and closed, and the space has flexibility;	
2LDK		
	Suitable for the backbone families of the elderly or couples and elderly families, and the space also has flexibility;	

5.2.3 Seniors Homes with Service

In addition to the rental housing for the elderly, there are also seniors homes with Service, which are characterized by the living and medical services provided. The residential case investigated in this paper is located in Chuo district, Fukuoka City (Fig 5), and is aimed at the independent elderly and the elderly of different care levels.

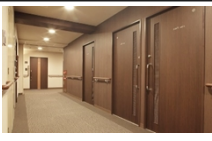


Fig.5. Photos of the seniors home with service

Seniors Homes with Service is equipped with public spaces such as open cafeterias, public bathrooms and halls. In addition to the public cafeteria, each residence is equipped with an open kitchenette, which can meet the cooking needs of the elderly at home and improve their living comfort. In terms of software services, if the elderly have any problems in living, they can

contact the staff at any time, such as accompanying shopping for medical treatment, home nursing, and nursing insurance. The residence provides 24-hour manual management and services for the elderly, such as daily security checks, setting up body sensor sensors to sense whether the elderly have not moved for a long time, etc. At the same time, there are emergency call buttons on the bedside, toilet and bathroom of each room. Staff can be quickly informed in critical situations.

Table 3. Floor plan and interior photos

Floor plan	Interior	
		
	Living room	Restroom
		
	Corridor	Public space

5.3 Renovation for the elderly

In addition to living in rental housing, a large number of elderly people live in privately owned housing. Due to the long-term use of the housing, it brings inconvenience to the daily life of the elderly. Therefore, aging-appropriate renovation of existing housing is also one of the issues. The main purpose of the renovation is to reduce the burden of caregivers in home care and improve the life quality of the elderly. This paper will analyze and research from two aspects of implementation process and renovation content.

5.3.1 Process of aging-adaptive retrofit

Before the renovation, the elderly in need can consult by phone or visit a special agency or welfare nursing insurance department. Renovation can be subdivided into for the disabled and housing for the elderly, and specific housing renovation procedures and funding policies have been formulated. The renovation content mainly includes ‘installation of indoor handrails’, ‘elimination of indoor height difference’, ‘replacement of floor materials with anti-slip measures and convenient passage’, ‘replacement of sliding doors’, ‘replacement of squatting pits with sitting toilets’ and so on.

Renovation for the elderly is mainly carried out by the long-term care insurance division of each city and district. Elderly families in need first discuss with the responsible care manager (ケアマネジャー) to determine the content of renovation and renovation, and at the same time ensure that the ownership of the house or renovation is approved by the owner of the household. After determining the renovation content, the elderly can take photos of the living conditions of the house and provide them to the renovation contractor. The contractor will provide the occupants with a construction estimate, and the occupants can find different contractors for valuation and compare them. After the resident has decided on a contractor, he or she needs to apply and confirm with the Welfare and Long-term Care Insurance Division of the ward. The resident should submit the application at least 3 days before the

construction date, and if there is any change after the application, it can be adjusted in time with the Long-term Care Insurance Section. After the construction is completed, it is necessary to complete the process of paying the construction fee and submitting the completion notice. The Long-term Care Insurance Division will review the completion of the construction and the payment amount.

According to different family incomes, elderly families can apply for subsidies ranging from 10% to 100% of the renovation costs. Residents first submit an application to the Welfare Care Insurance Division of each district, and the staff will interview the elderly's family to confirm the renovation content and the physical condition of the elderly. After deciding whether to grant subsidies, the construction can be carried out. After the construction is completed, the elderly families will go in again to confirm and finally pay the subsidy amount (Fig. 6.).

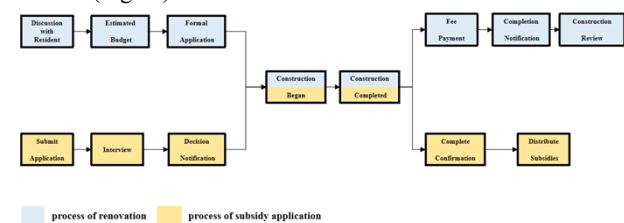


Fig.6. Process of renovation and subsidy application

5.3.2 Renovation content

According to different renovation scopes, aging-friendly renovation can be divided into complete set of renovation, partial renovation, and auxiliary equipment support. Partial space renovation can be furtherly divided into kitchen and bathroom, living room, bedroom renovation, etc. according to different functional spaces. Different scopes of renovation have their own advantages and disadvantages. A whole set of housing renovation can maximize the living quality of existing housing, but there are disadvantages such as high costs and long construction period; the partial renovation is relatively flexible, and the impact on people's life is relatively small, which is more frequently used in home renovation. The use of aging assistive devices is the most flexible, but it depends on the relatively mature assistive device product market.

(1) A complete set of renovation for the elderly

The household is a nuclear family of an elderly couple, and the elderly needs to take care of one of their disabled sons on a daily basis. There are height differences between the rooms, and the satisfaction with the use of the water area is low. Therefore, the renovation needs to meet the requirements of aging and barrier-free at the same time. Firstly, the reconstruction solved the problem of the original narrow traffic and height difference, and part of the wall was demolished so that the aisle can take advantage of the dining and kitchen space for lighting; secondly, the original kitchen was changed to improve its space utilization efficiency. Secondly, in order to facilitate family bathing and reduce the burden of nursing work for the elderly, the area of bathrooms and washrooms has been expanded. Finally, the entrance and Japanese room have been appropriately expanded to improve the quality of life for the elderly at home (Fig.7.).

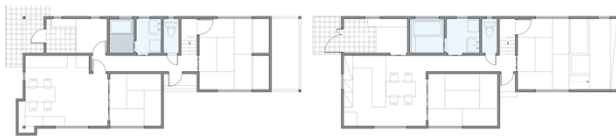


Fig.7. Plane before and after renovation

During the renovation process, the renovation design of the ‘water space’ is the part that the designer focused on. The whole renovation revolves around the layout of the bathroom and toilet. The first floor is used as the core of family life and elderly activities, so that the whole family can live an efficient and high-quality life on the same floor.

(2) Partial aging renovation

In the partial renovation, the renovation of the bathroom space is particularly important and difficult, so this paper selects bathroom renovation for analysis. This case is a family with grandmother, husband and wife and grandchildren. The current situation of the bathroom has the following problems: (1) The floor material is ceramic tiles which is slippery, and the elderly take a bath in winter is very cold; (2) The window on the north side facing the street, the area is too large, and the location of the bathroom sink is awkward and inconvenient to use; (3) There are steps between the corridor, toilet and bathroom, which is inconvenient for the elderly to use.

In the renovated bathroom, the position of the door opening and the traffic flow line were first adjusted, the washbasin was replaced to the position near the window and the area of the window opening was reduced, and the casement door was changed to a sliding door, which improved the space utilization. A gentle slope is used to eliminate the height difference between the corridor and the bathroom, handrails are installed, and the floor material is replaced to prevent the elderly from falling after taking a bath. Use bathtub with steps to facilitate the elderly to enter and exit the bath.

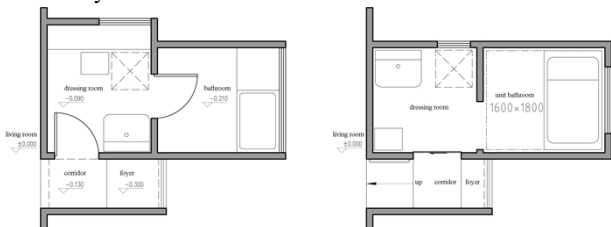


Fig.8. Bathroom before and after renovation

(3) Assistive devices for the elderly

When it is difficult to retrofit the house for the elderly, the use of aging devices could also improve the life autonomy of the elderly. For example, assistive devices could help the elderly complete movements such as getting up and sitting down. Electric toilets could assist the elderly to go to the toilet. Fukuoka City has a special assistive device display and experience field, providing a variety of assistive device products. However, some assistive devices has a large volume, and the matching and transportation issues between the assistive devices and the original residential space need to be considered.

Table 4. Various assistive devices

devices	use icons
floor guardrail	

electric chair	
push handrail	
toilet lifter	

6. Conclusion: Enlightenments to China

With the comprehensive development of housing for the elderly in China, the living environment of the elderly has been greatly improved. However, compared with Japan, there are still something worth learning in terms of policy, design, and renovation of housing for the elderly.

In terms of policy, although Japan’s national conditions are different from those of China, the premise of its policy formulation is based on a large amount of data research. There is a comprehensive and profound analysis of the housing situation, family structure, and living needs of the elderly, and establishment of a comprehensive welfare guarantee system in Japan. China has a vast territory, and there are great differences in living habits in different regions so the housing construction for the elderly should be based on the national conditions. Further research should be carried out on the behavioral and psychological characteristics and spiritual needs of the elderly in China, as well as the living needs of the elderly’s families, so as to provide information for policy formulation. In addition, more attention should be paid to vulnerable groups such as the elderly and the elderly with dementia.

As far as residential design is concerned, Japan provides a variety of residential products that can meet the living needs of the elderly with different family structures, and residents can choose according to their own conditions. Different types of residences have standardized features, which provide prerequisites for industrialized production, and at the same time ensure the high quality of construction and construction. For China’s housing, it is not only necessary to meet the increasing living needs of the elderly and other residents, but also to take into account the development of housing industrialization and strive to achieve the goal of green and sustainable development.

In terms of residential renovation for the elderly, Japan has formed a industrial chain, including design and construction parties, product suppliers, and service companies for the elderly, etc., and also has a national welfare system. China’s aging-appropriate renovation is still in the exploratory stage, and it is faced with more complex old housing conditions. It is necessary to carry out two-way research on the elderly and existing housing. Refined research and design can improve the elderly’s life quality and satisfaction.

In general, the construction of aging-friendly housing is a long-term development process, and the degree of aging-friendly housing can reflect the degree of social concern for vulnerable groups. For China, the adaptability of housing for the elderly can be strengthened from three aspects: policy formulation, housing supply, and housing renovation. For example, policy formulation forms a complete framework to

ensure high quality throughout the life cycle of housing construction. In terms of housing supply, we can conduct research on the diverse living requirement of the elderly and the correlation between the behavioral psychology of the elderly and residential space. Residential renovation can be conducted research from aspects such as housing assessment and renovation design methods.

Based on the current policies in Fukuoka City, as well as the analysis of the cases of rental housing and aging-friendly renovation, this article puts forward the imagination of the above aspects for China's elderly housing. But in the process of learning from foreign experience, conflicts and collisions are inevitable. It is hoped that the construction of elderly housing will be based on national conditions, learn from each other's strengths, and create a safe, healthy, efficient and fair living environment for the elderly.

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