

A STUDY ON PROPOSAL OF APARTMENT REMODELING FACTORS FOR RESOLVING GRIEVANCES IN ELDERLY HOUSEHOLD

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Abstract— The elderly households in Korea have different characteristics from the non-aged households in various aspects such as economic, social, physical, and emotional. In particular, in terms of economics, unlike other countries, Korea's pension system is late, so there are mainly assets composed of homes, but the income is almost on a cliff. In addition, the behavior is often uncomfortable from the physical point of view. The purpose of this study is to propose an element of the remodeling project that enables the home to support the elderly's income cliff and physical difficulties.

As a result of arranging the remodeling elements proposed in the related laws and studies, the most basic one can suggest the level of internal interior remodeling, such as replacing non-slip floors and attaching handrails to toilets for the safety of the elderly. In addition, there is a barrier-free space that can be moved with or without a wheelchair. In addition, the most important element technology to present in this study is to remodel the elderly's house into two types by dividing it into two houses as an alternative to the income cliff of the elderly

Keywords— Elderly Households, Distress, Apartment, Remodeling, Dividing House by Remodeling

1. INTRODUCTION

Aging is expected over the next several decades in all regions of the world.(P. Uhlenberg, 1992). Korea's aging population is progressing more rapidly and seriously. In 2000, 8.17% of the total population of Korea entered the “aging society” as elderly people over 65 years old(Y. Cho. and Y. Yoon, 2011). In addition, the elderly in Korea have different characteristics from other aspects such as economic, social, physical, and emotional.

In particular, in terms of economics, unlike other countries, Korea's pension system is late, so there are mainly assets composed of homes, but the income is almost on a cliff. In addition, the behavior is often uncomfortable from the physical point of view. Of course, not all problems arising from the increase in the elderly can be solved through the home. However, it is necessary to make efforts to match the characteristics of the elderly, starting with the home, an important component of our lives. Therefore, the purpose of this study is to propose the architectural planning element technology of the remodeling

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project that enables the home to support the elderly's income cliff and physical difficulties.

2. THEORETICAL CONSIDERATIONS

2.1 THE ELDERLY IN SOUTH KOREA

Korea's legal senior citizens are over 65. According to the Funeral Population Estimation of the National Statistical Office(2019), in 2029, 24.1% of the total population is 65 years of age or older. In addition, by 2059, 43.4% of the population will be aged 65 or older. Not only does it increase life expectancy, but the birth rate is falling rapidly. Therefore, it is necessary to prepare not only for the improvement efforts of Population aging, but also for the overall population for Population aging.

The elderly are different from the non-elderly in terms of economic, social, physical and emotional aspects. Economically, there are usually homes that are assets, but have less income. And since the house is owned as a single-family house rather than an apartment, the house is old and it is difficult to cover the cost of maintenance. On the social side, they want to create economic income through continuous social activities, and through this, they want to maintain a smooth relationship with the family. However, it suffers mainly from poor, low-wage work. Even though it is not physically necessary to live through the help of others, the threshold inside the house acts as a risk factor. In particular, there are frequent fall accidents because there are no handrails or non-slip facilities in toilets and bathrooms. Emotionally, cognitive decline and solitude are required.

In the study of the Housing Market Segmentation using STP Strategy, Y. Cho and S. Lee(2015), ANOVA analysis was conducted to determine if there is a difference between households' assets and incomes, focusing on the generation of baby boomers. As a result, there was a difference between households' assets and incomes, and the elderly households before the baby boomer generation in Korea did not know many assets, but they had about one house, but their incomes were extremely reduced.

2.2 KOREAN APARTMENT REMODELING

Remodeling is a construction act to maintain and improve the performance of a building. It refers to a relatively large-scale renovation work that advances the structural, functional, environmental or energy performance of existing buildings, and improves the productivity, comfort, and health of residents. It means increasing value and increasing economics. Among the types of remodeling, there is a method of repairing only the exterior of a building, or a method of improving the interior and exterior of a building through remodeling. In addition, the main difference that is distinguished from new construction or reconstruction is that remodeling maintains and improves performance while preserving existing buildings without breaking them down.

As a method of improving an old building, it is used in many terms such as reform and renovation, but in Korea, it is legally remodeled by the Building Act (Article 2) and Enforcement decree of the Housing Act (Article 2).The term "remodeling" means an activity of substantial repair or partial extension of a building for preventing its deterioration or for improving its functions on law. And after 15 years of construction, it can be legally remodeled (National law Information Center, 2020).

Laws related to remodeling in Korea are distributed in various laws, and many regulations and revisions are made in a short time. Starting with the provision of whether or not to ease the application of remodeling construction standards through the revision of the Enforcement Decree and the Enforcement Decree of the Building Act in 2001, and continued to promote remodeling, ranging from the Housing and Construction Act to the Tax and Land Planning and Utilization Act. There were legislation and revisions.

Many researches on the remodeling direction of public rental housing are considered as researches related to remodeling factors considering the elderly in Korea. E. Hong(2018) recognized the problem of housing environment and support for the elderly as a problem to be solved by the family, so the importance of housing planning for the elderly was not high. Since the number of elderly households consisting of married couples is rapidly increasing, it was argued that a housing plan with consideration for the elderly is necessary to prevent safety accidents and provide a stable living environment for the elderly. For this reason, four remodeling types of planes were presented in terms of safety. However, there are assets facing middle-class and general households that are not low-income households in public rental housing as in this study, but they do not provide a solution to the economic problems of elderly households whose income is a cliff.

On the other hand, according to a study by Y. H. Park(2014) on the status of residence of retired apartment renovation considering the physical characteristics of the elderly. However, as in this study, only passive remodeling suitable for physical difficulties is proposed rather than remodeling proposals to solve the economic and physical difficulties of the elderly.

3. ELEMENT OF REMODELING

The element technology of remodeling can be roughly divided into three stages. If the remodeling projects with legal allowances and demands in reality are combined, the first stage can be defined as the level of internal interior, the second stage is the level of interior and exterior and equipment construction, and the third stage is the level of interior and exterior and structural changes and expansion.

In detail, the interior level of the first stage includes replacement of faucets, window frames, etc., and replacements for exclusive parts. Partial faucet. The level of interior and exterior and facility construction in the second stage includes the replacement of finishing materials throughout the complex including dedicated and public areas, improvement of the environment of the complex such as parking lot, inner road, landscaping, replacement of facilities and piping such as electric facilities, balcony expansion, stepped telephone in the hall This is a comprehensive renovation that includes improvement of parts other than structures, such as (extension of elevators). The third level includes interior and exterior structures, and changes and extension levels include repairing, changing, or expanding structures or external structures such as pillars, beams, bearing walls, and main stairs of buildings. In addition, the increase in the number of households and the vertical expansion are also included.

J. Han and D. Shin(2012)derived horizontal expansion ratio, core shape and tooth position, and vertical expansion as factors affecting the business feasibility of remodeling an old apartment complex, and suggested three alternatives by combining each variable. As a result of the study, it was found that reducing the contribution per household by increasing vertically as much as possible within the current legislation is more effective for remodeling business and economic efficiency.

4. SUGGESTED REMODELING FACTORS TAILORED TO THE ELDERLY

The remodeling factor tailored to the elderly needs to be suggested from two main points. The most basic one can suggest the level of interior remodeling, such as replacing non-slip floors and attaching handrails to toilets for the safety of the elderly. In addition, there is a barrier free realization that can be carried with wheelchairs or strollers for aging people. In addition, the most important elemental technology in this study is to remodel the elderly's house into two generations by dividing it into two generations as an alternative to the income cliff of the elderly. In addition, in the case of multi-family

houses, if the number of households is increased or vertically expanded, in the case of the existing senior citizens, rather than expanding the area of the house in which they live, the increasing portion will be remodeled into a new generation to be utilized as a resource for rental income.

First, in order to solve the physical difficulties of the elderly in Korea, remodeling for safety is to realize a universal design including a barrier-free space through remodeling. Universal design is the American architect R.L. Mace advocated. In terms of universal design, safety is secured, but it must be conveniently used by both the elderly and non-elderly people, such as the personnel who care for the elderly. In addition, comfort should be secured. That is, even if the handrail is attached to the bathroom for the safe use of the elderly, this handrail is not intended to be a facility that is inconvenient for the elderly. From this point of view, even if you are not an elderly person, whether you change the floor to a non-slip or remove the door frame or chin from the floor is not a big problem. The most prone to collisions between the elderly and non-aged people are handrails. In particular, in the case of a handrail for walking, it may reach the waist of an adult, which may act as an obstacle. After replenishing these points, remodeling should be done.

The remodeling factor that can be approached to address the economic difficulties of the elderly is ultimately to find a way to generate income for the elderly. In this area, it can be considered that remodeling is superior to urban maintenance projects such as redevelopment or reconstruction. In the existing urban maintenance project, the elderly who have an old house as an asset have to come out from where they lived because of the cost incurred in destroying the old house and building a new house. Because there is. However, if you can increase the area of the existing house through active remodeling and consider the fact that the size of the household is reduced to 1,2 of the elderly's household, if you can divide the rest of the space into one house, leaving the minimum space, economic difficulties of these elderly people The problem can be solved. The increased household portion can be used by senior citizens to generate income through monthly rent. However, also in this area, legal regulations and cost issues must be decided(Fig. 1).

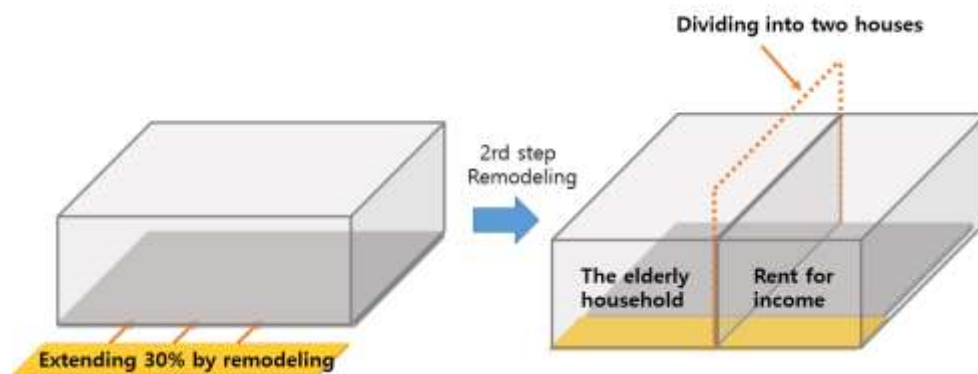


Fig. 1 Expansion and Division Remodeling to Secure Income for Elderly Households

In the current law, a duplex house, in which one house is divided into two and shares one wall, is not divided. In the case of apartments, it is not free to increase the number of houses. Although remodeling, which increases the number of homes, has recently been legally permitted, there are a number of legal restrictions that can be implemented in reality, requiring flexible deregulation. Lastly, the cost of remodeling requires continuous development of technology related to construction method that can minimize the cost once. In addition, in the case of apartments, it is possible to propose a way to partially increase the portion of the house to be used to cover expenses through pre-sale, and to make the remaining portion of the whole house profitable from rental. However, even in

this area, the consent and legal regulations of the existing generation are a hindrance. In the future, legal restrictions on joint ownership and leasing are required.

5. CONCLUSION

Korea's aging population is progressing more rapidly and seriously. Korea has already entered the 'aging society' in 2000. On the other hand, the elderly in Korea have different characteristics from other aspects such as economic, social, physical, and emotional. In particular, in terms of economics, unlike other countries, Korea's pension system is late, so there are mainly assets composed of homes, but the income is almost on a cliff. In addition, the behavior is often uncomfortable from the physical point of view. Therefore, the purpose of this study is to propose a remodeling factor that can solve the grievances such as the income cliff and physical difficulties of the elderly.

As a result of analyzing the element technology of remodeling in consideration of laws, existing literature, and demand in reality, remodeling can be roughly divided into three stages. The first level can be defined as the level of interior, the second level is the level of interior and exterior and facilities construction, and the third level is the level of interior and exterior and structural changes and expansion.

Remodeling to resolve the grievance of the elderly requires two or three steps of remodeling rather than one step of remodeling the interior level of the interior, which makes the old house beautiful and stylish. That is, for the safety of the elderly, it is possible to propose a level of interior remodeling, such as replacing with a non-slip floor and attaching a handrail to the bathroom. In addition, there is a barrier free realization that can be carried with wheelchairs or strollers for aging people. Furthermore, it is to realize universal design. In particular, even if you are not an elderly person, changing the floor to a non-slip or removing the door frame or chin from the floor cannot be considered as a big problem. The most prone to collisions between the elderly and non-aged people are handrails. In particular, in the case of a handrail for walking, it may reach the waist of an adult, which may act as an obstacle. After replenishing these points, remodeling should be done.

In addition, the most important elemental technology in this study is to remodel the elderly's house into two generations by dividing it into the second generation as an alternative to the income cliff of the elderly. In addition, in the case of multi-family houses, if the number of households is increased or vertically expanded, in the case of the existing senior citizens, rather than expanding the area of the house in which they live, the increasing portion will be remodeled into a new generation to be utilized as a resource for rental income. However, in order to realize these aspects in reality, legal regulations or apartments must first solve the problem of consent of existing residents.

In the future, it is necessary to present alternatives to these institutional supplementary methods, incentive systems that can promote the existing residents' consent, or to form a social community. In addition, it is necessary to continuously develop building technology, such as dividing a house or making two doors. As mentioned previously, there are some problems to be solved to enable this remodeling. First, it is necessary to take additional consideration on the problem of deterioration in the quality of elderly housing, which occurs when one house is cut into two. Second, it is necessary to analyze the feasibility of the additional cost and energy consumption increase caused by cutting the house into two units compared to expected rental income. Third, it is still necessary to consider how to overcome legal limitations. The inability to provide a suitable alternative to these areas is the limitation of this paper and is expected to be suggested through further research.

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