

# auri research brief

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## A Plan to Support Elderly Community Care Housing Using the Living Lab

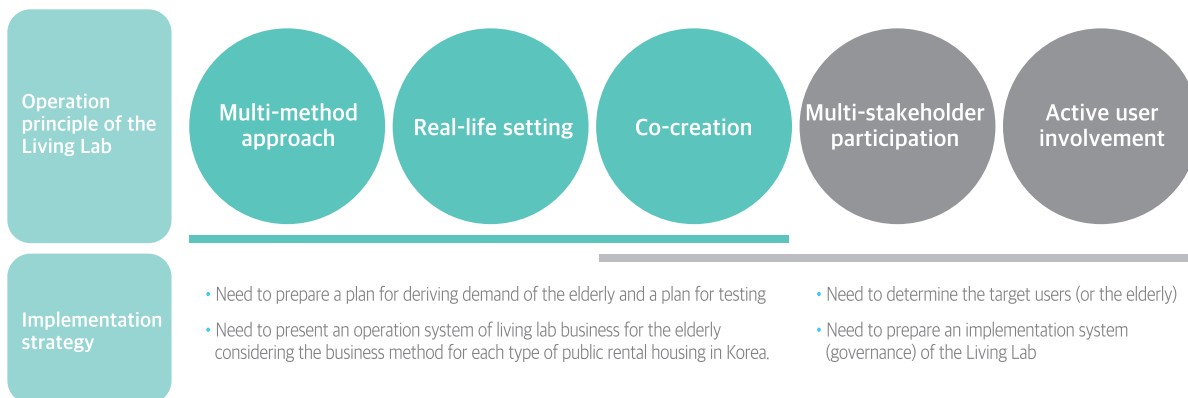
The World Health Organization emphasizes the importance of providing elderly-friendly physical environments and services in order to realize healthy aging, while urging to prepare countermeasures at the community level. Due to the COVID-19 pandemic in December 2019, a consensus is being formed among the public that the elderly should be able to receive the care services that they need in residential spaces. In response to these social changes, the Government of South Korea (hereafter, Korea) announced that it would discover and expand a 'community care housing (care service + housing)' model that connects various care services (nursing care, medical care, and independent living support) and residential environment (2018), and plans to build a customized residence in consideration of the physical and cognitive characteristics of the elderly.

In order to plan for customized community care housing, a channel is required to reflect the opinions of the elderly as users as early as possible at the design stage, and to experiment and supplement ideas by directly experiencing and evaluating services and physical environments in actual daily life. However, community care housing in Korea, that is, the current procedure of the projects for public rental housing for the elderly, lacks the steps to reflect the various

needs of users. For most of the projects, suppliers plan and design the housing for the elderly and supply them to consumers. In this respect, the living lab, which has been recently used as a methodology for customized architecture and urban design, can be used as an effective tool for planning customized community care housing.

Therefore, the applicability of the living lab was investigated as a tool to support the community care housing plan for the elderly. An operational plan of the living lab was also proposed that is applicable for the community care housing plan for the elderly. Considering the characteristics of the elderly community care housing and the purpose of its construction, the main care targets were determined as people aged 65 or older with mild symptoms of an insufficient physical and cognitive level. The spatial scope was limited to public rental housing.

Living labs for the elderly in other countries, such as Belgium and Switzerland, have shown the merits of the operating principles of the living labs and reflected the principles of community care housing. In Korea, there is no case of planning community care housing for the elderly using the living lab concept. Moreover, the operation plan for the living lab is also insufficient, which is applicable to the public rental housing business. Accordingly, this article presents (1) targets who need community care housing support and the type of housing business, and (2) an operation plan for living labs that can be used in community care housing (public rental housing) projects in Korea. In other words, a plan to investigate the demand of the elderly, a plan for testing, and project procedures for the living lab, and the governance of the living lab is presented.



**[Figure1] Implementation Strategies to Introduce Living Labs for the Elderly in Korea**

Source: Authors

Considering the changes in the criteria of eligible people for public rental housing and related projects for the elderly in Korea, the targets who need the community care housing support are the elderly with limited physical activity but are able to live independently, the elderly with mild dementia, and the elderly living alone. The type of housing preferentially applicable in the public rental housing business in Korea was investigated, suggesting that new public rental housing (apartment type) and remodeling public rental housing (multi-family housing type) are preferred. Depending on the type of suggested housing models, a project procedure for the living lab, a plan to determine the demand of the elderly, and a corresponding test plan was proposed.

For example, when applying the living lab to the project procedure of new long-term public rental housing, it is required to classify the design elements of the housing for the elderly into common elements, customized elements, and other (optional) elements in the planning stage and to finalize the list of tenants in the design stage(basic and implemented) or in the early stage of the construction in order to establish a housing plan that reflects the demands of the elderly. After a certain period (about 6 months) has elapsed after admission of the elderly, demands for the housing plan is investigated again to have feedback on the plan. During this process, renovation on the housing can be supported to elderly residents who want to change the plan if the change is applicable, and appropriate housing can be recommended to the elderly who live in aged housing and want to move to another community care housing or facility.

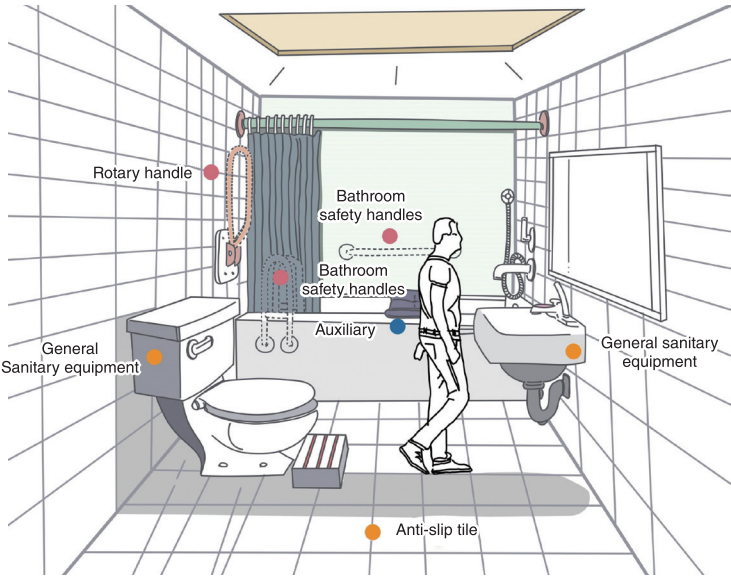
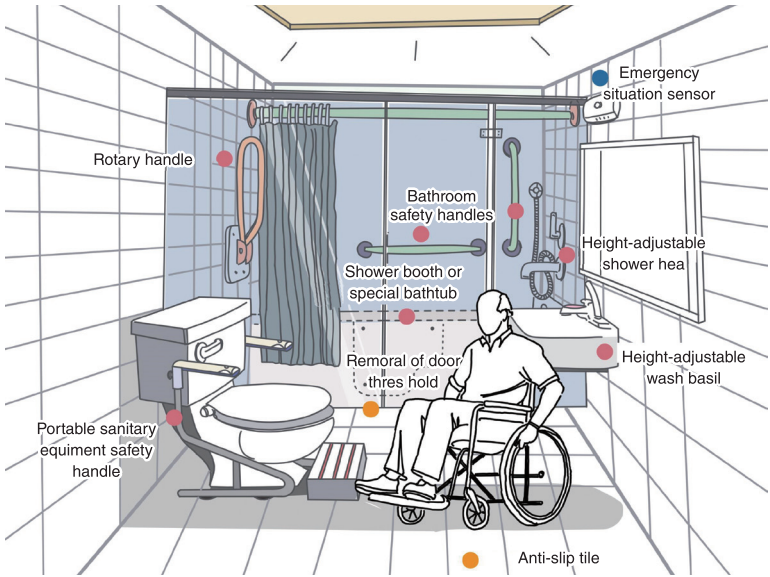
The project procedure of the living lab for the elderly can be implemented based on the living lab governance, which was proposed to establish the governance led by local governments (the public sector) in consideration of the operating principles for the living lab and the project procedure of public rental housing in Korea. The core concept of the living lab for the elderly is that residents directly participate in experiments in an actual daily life environment for customized planning. The public rental housing project for the elderly goes through the process of setting and placing an order for the annual supply from the public. It is desirable for local governments to take on the role of a project manager who oversees the living lab project. Local governments should enter into an agreement with the private and public-private sectors and local residents to secure housing plans or the elderly in which the opinions of the users are reflected. In addition, local governments need to select and match appropriate project implementers and experts in industry-academia-research experts in consideration

[Table 1] Procedure to use the living lab in the new long-term public rental housing business

Existing long-term public rental housing business*				Procedure for the living lab for senior residence (new long-term public rental housing)			
Project stages		Planning stage	Feedback stage: demands of the elderly	Project stages		Planning stage	Feedback stage: demands of the elderly
Stage 1	<b>1. Establishment of a long-term public rental housing supply plan</b> - Establishment of rental housing supply plan (confirmation of supply) - Planning and proposal for rental housing business (target sites, criteria, and ratio eligibility for admission) - Evaluation of project feasibility and selection of target sites	Plan	×	Stage 1	<b>1. Establishment of a long-term public rental housing supply plan</b> - Establishment of rental housing supply plan (confirmation of supply) - Planning and proposal for rental housing business (target sites, criteria, and ratio eligibility for admission) - Evaluation of project feasibility and selection of target sites	Plan	○
Stage 2	<b>2-1. Long-term public rental housing (preliminary and final) design</b>	Design	×	Stage 2	<b>2-1. Long-term public rental housing (preliminary and final) design / test</b> - Establishment of living lab governance for the elderly - Investigation/experiment on the need for customized housing plans and care services in consideration of the criteria for the elderly and the number of households → Planning a customized design strategy for long-term public rental housing - Classification of the design elements to be provided as common elements, custom design elements and other elements (option) → Preliminary and final design of customized long-term public rental housing	Design	○
	<b>2-2. Construction of long-term public rental housing (progress: 60~70%)</b>						
	<b>2-3. Announcement and selection of resident recruitment Adjustment of furniture layout depending on the type of residents</b> - Announcement and selection of tenant recruitment when the construction is 60~70% complete - Establishment and application of furniture layout, such as a kitchen sink that can be adjustable in height, considering the ratio of wheelchair users among the admitted residents						
	<b>2-4. Completion of long-term public rental housing construction (100% of process completed)</b>						
Stage 3	<b>3. Move-in of the admitted elderly</b>	Construction	○*	Stage 3	<b>2-2. Announcement and selection of resident recruitment Customized design elements and other elements (option) Survey on the demands for the plan to reflect the residents in the plan</b>	Construction	
					<b>2-3. Construction start/completion of long-term public rental housing</b>		
Stage 4	<b>4. Second announcement of tenant recruitment</b>	Management of operation	×	Stage 4	<b>3. Move-in of the admitted elderly / residence test</b>	Management of operation	○
					<b>4-1. Monitoring and feedback of satisfaction with the customized housing plans</b> - Survey on the customized housing plans and the need for care services after residing for a certain period of time; feedback based on the survey		
Limitation	· No project stage to reflect the needs of the elderly in the process of planning and designing community care housing			Improve-ments	<b>4-2 Second announcement of tenant recruitment</b>		
					· Customized housing plan by reflecting the needs of the elderly in the process of planning and designing community care housing · Feedback on the plan after a survey on the satisfaction of the housing plan and care service after the admitted elderly reside for a certain period		

Source: Kim et al. (2020). Living Labs: New Strategies for Community Care Housing Design for Elderly Architecture & Urban Research Institute. p.173

[Table 2] An example of a customized elderly community care housing bathroom plan

Bathroom plan			
Target		Elderly (general)	Wheelchair users
Planning element	Plan		
	Common	Anti-skid flooring, removal of door threshold, and drainage trench installation	
	Customized	① Door width, opening type <input checked="" type="checkbox"/> Basic type	① Door width, opening type <input checked="" type="checkbox"/> Extended type* (*Wheelchair accessible)
		② Sanitary equipment <input checked="" type="checkbox"/> General (wash basin and toilet) <input checked="" type="checkbox"/> Bathtub installation	② Sanitary equipment <input checked="" type="checkbox"/> Special (height-adjustable wash basin and toilet for the disabled)
Planning element	Options	-	③ Safety handle
		③ Bathtub <input checked="" type="checkbox"/> General <input type="checkbox"/> Special	④ Emergency situation sensor

Source: Kim et al. (2020). Living Labs: New Strategies for Community Care Housing Design for Elderly Architecture & Urban Research Institute. p.166-171

of the characteristics of the project and assign the local residents with partnerships as experimental participants to support the realization of a customized elderly community care housing plan.

If the above living lab operation plan is applied to the elderly community care public rental housing plan, it is possible to realize the customized community care housing design that reflects the needs of the elderly and the characteristics of aging.

**Keywords :** Living Lab for the Elderly, Community Care Housing, Housing for the Elderly, Public Rental Housing for the Elderly

