Housing and Environmental Development for the Low Income Elderly in Bangkok : a Case Study on Rental Housing of National Housing Authority, Bangkok, Thailand

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Abstract

Thailand Is becoming a super-aged society in 2031 which causes development of housing and environment for elderly is an important issue during urbanization. The National Housing Authority (NHA) has been set to provide subsidized housing for elderly with low-income, who face affordability and accessibility issues. The objective of this study was to suggest components of the development of the right adequate housing and environment for seniors. It was conducted by using a case study of rental housing development of NHA. This study is qualitative research using a housing safety checklist for older people with 3 NHA rental housing areas include Ramintha Rental Housing project, Huai Khwang Rental Housing project and Din Daeng Rental Housing project. The result of the study showed that all 3 rental housings scored less than 60 percent caused by unsafe bathrooms; a lack of handrails, elevators and proper ramp slopes. there are 3 senior housing and environment development guidelines: 1) Physical and environmental development, senior housing concept should be considered elderly basic needs, project should prepare suitable location; project plan and focus on positive space. 2) Emotional and social development. The project should prepare sufficient and reasonable spaces to senior group activities. And 3) Economic development. The project should prepare areas for senior service units.

Keywords : Elderly; City; Housing; Environment

Introduction

Thailand has a total population of 66.5 million people, with 12 million elderly (aged over 60 years) approximately 18% of the total population. It has become "Completely Aged Society" in 2022 and will become a Super-Aged Society in 2031 with proportion of elderly more than 28 percent of the total population [1]. According to Goal 11: Sustainable cities and communities of Sustainable Development Goals (SDGs) [2], that aim to make cities and human settlements inclusive, safe, resilient and sustainable, outcome target 11.1, By 2030, ensure access for all to adequate, safe and affordable housing, and basic services and upgraded slums. Providing housing for low-income earners is an important mission of the National Housing Authority (NHA) [3], but the NHA's rental project is inappropriate for the elderly. Therefore, the researcher aims to prepare the guidelines for the housing development and environment suitable for the elderly in the rental building project of the NHA, with the following objectives: 1) to survey housing and the environment in the rental building project according to the rehabilitation plan to improve the quality of life (rental) in Ramintha, Huai Khwang, and Din Daeng Rental Housing project at Bangkok, and 2) to propose guidelines for the development of housing and environment in a suitable format for the elderly in low-income cities.

The Universal Design are not entirely about accessibility but about the appropriateness

of design solutions to gender, to demographic group, and to social and economic setting. The Design for all principle consists of seven principles, 1) Equitable use, 2) Flexibility in use, 3) Simple and intuitive use, 4) Perceptive information, 5) Tolerance for error 6) Low physical effort; and 7) Size and space for approach and use [4]. Until the Accessibility of Housing has set criteria for housing suitable for the elderly and disabled, consisting of 7 topics, including entrances and halls, doors, corridors in buildings, ramps, elevators, stairs, and bathrooms [5]. Apart from creating designs that work for everyone, it's important to also consider what older people need. These needs can be put into two groups: basic needs that take care of their physical requirements, and more advanced needs that focus on their social well-being. These advanced needs include things like helping them live longer, keeping their bodies and minds active, and making sure they can hold onto the things they gained earlier in life, such as knowledge, expertise, wealth, prestige, and authority [6]. Consequently, the notion of managing accommodations for the elderly entails a consideration of both individual and societal needs. Elderly group are part of society [7], according to related research studies, it was found that, there were two types of changes in the elderly, 1) physical or body condition that

directly affecting an environment management to be concern about the inside and outside living safety of residence [8-11], 2) social, psychological and economic changes, should be allocated for joint activities for all ages of people. It is a flexible area to use and the elderly can conveniently and safety to access. Including access to public health service system [12-15]. Especially that low-income elderly have access to housing. It is the first to establish the Guidelines for Affordable Housing for the Elderly by the World Health Organization Global Network for Age-friendly Cities and Communities [16].

Research Methodology

This research is conducted using a qualitative approach. It involves using a checklist to collect data and using questionnaires for community leaders in the National Housing Rental Building Project. Additionally, semi-structured interviews are used as research tools. The study also includes a literature review and gathers relevant information from three low-income housing development sites: Ramintha, Huai Khwang, and Din Daeng Rental Housing projects overseen by the National Housing Authority (NHA). See Figure 1.
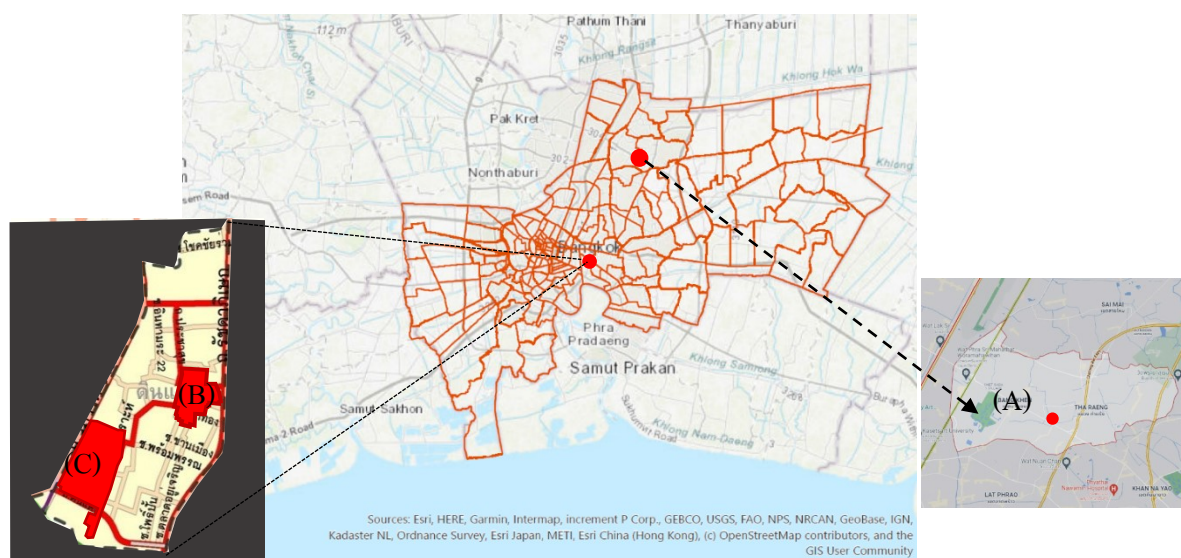
Ramintha(A), Huai Khwang(B), and Din Daeng(C) Rental Housing project

Figure 1 The location of the case study of Rental Housing projects in Bangkok area in each district
Sources: https://bmagis.bangkok.go.th/

Selection of key informants

Key informants are divided into two parts.

1) Community leaders living in the National Housing Authority Rental Building Project, 5 persons per 1 community.

2) Qualified persons, experts and people with experience in developing housing and environment suitable for the elderly. By defining 3 representative groups, namely those who set the policy group of practitioners and a group of 6 academics to analyze success factors, problems, obstacles, methods of operation leading to application in accordance with the context of Thailand.

Key informants for this study were purposefully selected using a specific sampling method. These individuals were selected on purpose because they play important roles in the community and have experience in creating suitable housing and environments for the elderly. The criteria for their selection are outlined as follows:

1. Community leaders (5 people per community) 15 person

2. Assistant Governor of National Housing Authority 1 person

3. National Housing Architects level 8 2 person

4. Head of community center 3 communities 3 person

Research Instrument

1. Provide tools by creating preliminary questionnaires and surveys

On the issue of housing for the elderly that accordance with factors in the study. Including creating questionnaires for key informants and used checklist for a survey of a housing and environment for the elderly.

The researcher used a questionnaire to collect data for analysis as follows:

Part 1: Questionnaires about personal information, lifestyle, overall health, caregivers, body function problems, and the scene of the accident.

Part 2: Environmental and housing information interview, the characteristics of the current residence, residents, number of members, period of residence, problems encountered in housing, future housing needs, areas that need to be improvement.

Part 3: Elderly activities in the community data collection.

Part 4: Assessment Checklist for Elderly Housing and Environment: Identifying Current Conditions, Usage Issues, and Implementation Challenges. The checklist is structured around five distinct topics: 1) Environment and Community Facilities, 2) Corridor Accessibility (both internal and external), 3) Multilevel Travel Accessibility, 4) Bathroom and Toilet Facilities, and 5) Housing Units. (Table 1)

References for the Assessment Criteria from Legislation and Manuals:

1. Ministerial Regulations on Building Facilities for the Disabled or Disabled and Elderly, A.D. 2005 (B.E. 2548) [18].

2. Building and Environmental Design Recommendations for All, A.D. 2014 by the Association of Siamese Architects under the Royal Patronage [19].

3. Elderly Home Standard Guide A.D. 2020 (B.E. 2563) by the Office of Promotion and Protection of the Elderly, Office of Welfare Promotion and Protection of Children, Youth, Opportunistic Persons, and Elderly, Ministry of Social Development and Human Security (MSDHS) [20].

Table 1 Scoring according to the housing and environment assessment form for the elderly

Specification	Full score	Scoring results	
		Mandatory criteria	Criteria should be provided
1. Environment and Community facilities	6	3	3
2. Corridor and foot part	5	3	2
3. Travel in different levels or between floors	9	9	-
4. Bathroom / Toilet	9	3	6
5. Housing unite	3	2	1
Total score	**32**	**(20)**	**(12)**

Standard level
☐ Excellent Level (Mandatory criteria = 20 points, should be provided = 11-12 points)
☐ Very Good (Mandatory criteria = 20 points, should be provided = 9-10 points)
☐ Good level (Mandatory criteria = 20 points, Should be provided = 7-8 points)
☐ Moderate level (more than 60% Mandatory criteria = 12 points or more, Should be provided more than 60% = 7 points or more)
☐ Should be improved level (Less than 60% Mandatory criteria = less than 11 points, Should be provided more than 60% = less than 7 points)

Using the scoring principle based on actual conditions. The total score must be more than 60% because it is a criterion related to the safety of the elderly. (Compulsory more than 60 percent = 12 points or more, should be provided more than 60 percent = 7 points or more)

2. Semi Structure Interview

This step was used for experts and people who have experience in developing housing and environment suitable for the elderly. The questions for interviewing experts are divided into 4 issues,

2.1 Development of housing and environment suitable for the elderly.

2.2 Related parties.

2.3 Areas or projects for the development of housing and environment suitable for the elderly.

2.4 Modern tools and innovations in housing development and environment suitable for the elderly.

Results and Discussion

1. Result of survey for residential buildings and environment of Ramintha, Huai Khwang, and Din Daeng Rental Housing project

Summary of survey for residential buildings and environment of Ramintha, Huai Khwang, and Din Daeng Rental Housing project by using checklist shown in Table 2 and Figure 2.

1.1 Results of housing and environment survey, in the rental building project according to the rehabilitation plan to enhance the quality of life (rental) in the Bangkok area, Ramintha, Huai Khwang, and Din Daeng Rental Housing project for environment and housing suitable for the elderly development. It found the residential building should be improved even though every project was more than 60 percent on the mandatory criteria. The Huai Khwang Community Housing Project has achieved the highest assessment score. However, it falls short of meeting certain mandatory criteria. Following this, the project lacks appropriate bathroom facilities, including steps between indoor and outdoor spaces, handrails, shower seats, doors narrower than 90 centimeters, and insufficient space (1.5 meters) for accommodating wheelchairs. In addition, there is a noticeable shortfall in vertical mobility, as there is no provision for an elevator or suitable equipment to facilitate movement between floors. Moreover, the ramps in the project are compromised by unsuitable steepness, inadequate width, and an absence of handrails.

Table 2 Result of Assessment of Housing and Environmental Conditions for the Elderly Across 3 Communities

Specification	Full score	Ramintha		Huai Khwang		Din Daeng	
		Mandatory criteria	Criteria should be provided	Mandatory criteria	Criteria should be provided	Mandatory criteria	Criteria should be provided
1. Environment and Community facilities	6	3	-	3	1	3	1
2. Corridor and foot part	5	2	-	3	-	2	-
3. Travel in different levels or between floors	9	5.5	-	5.5	-	4.5	-
4. Bathroom / Toilet	9	1	1	1	1	1	1
5. housing unite	3	2	-	2	-	2	-
Total score	32	13.5	1	14.5	2	12.5	2
Grand Total score		14.5		16.5		14.5	

Note: Full score of 32 (20 points for Compulsory score and 12 points Scores for should be provided partX
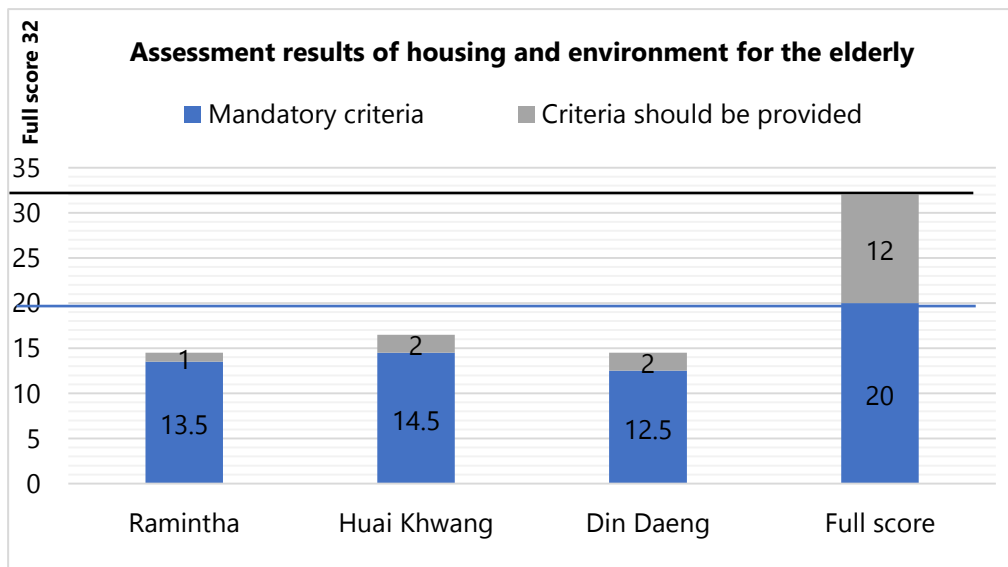
Figure 2 Results of the assessment of housing and environment for the elderly in 3 communities

1.2 Results of interviews with community leaders. It found most of elderly in the community could help themselves. Live with family about 3-5 persons per unit. The period of living in the project is more than 20 years. The problem found in the room is the bathroom due to the slippery and cramped spaces. Common area is a staircase due to its rough and dilapidated surface. The elderly people want to live in the same area with improvements to be appropriate.

1.3 Results of the experts interview. It can be concluded that the National Housing Authority has no plan to support for elderly housing. Because it is a project development in the main mission based on low-income earners housing. Currently, the National Housing Authority is prioritizing housing projects

for the elderly. This follows the universal design principle set out in the 2005 Ministerial Regulations, which focuses on facilities for disabled individuals and the elderly. In rental buildings for low-income earners, 10% of the units are designed for the elderly and located on the first floor. For future development, it should be developed based on the needs of the actual residents in the area conjunction with network creation of responsible agencies to develop projects in line with government policies. The key innovation is the community cooperation system to sustainably innovation accessible management for low-income earners. Therefore, participation innovation should be promoted, for example, savings projects, borrowing-returning of necessary equipment for the elderly service, a time bank is an exchange of time in a volunteer manner with cooperation of related agencies.

2. Guidelines of housing and environment suitable for the elderly with low income

Results from surveys of current conditions of all 3 rental projects, interviews with community leaders and executives managers of the National Housing Authority. The guidelines for developing housing and the environment suitable for the elderly in low-income cities can be summarized as follows:

2.1 Physical Development and environment.

2.1.1 Basic needs of the elderly should be concerned, such as physical safety and health, privacy, social interaction and personal security.

2.1.2 The development of housing for the elderly should be planned from the location selection to project lay-out, such as concern about various service sources, not isolation, near public transportation.

2.1.3 Creating a positive environment requires attention to factors such as easy accessibility, physical safety, well-defined personal boundaries, and the ability to foster motivation.

2.2 Social Development. Housing development should be concerned about social needs and elderly groups integrated into create or enhance social activities by providing adequate and appropriate space for elderly activities.

2.3 Economic changes in the elderly population, including reduced income and increased healthcare costs, have an impact on economic development.

2.3.1 It's important to create suitable spaces that collaborate with relevant government agencies to provide services for the elderly. This ensures access to high-quality services that are tailored to their age group.

2.3.2 Design housing and environments for the elderly to encourage longer stays, reducing hospital or nursing home moves. Prioritize collaborative, user-friendly, safe, and cost-effective designs for sustained living.

Conclusions

Creating suitable housing and environments for the elderly within the context of developing low-income cities poses significant challenges due to limited space during urban development. This makes it more difficult to ensure a good quality of life for the elderly population. There is still a limitation on the low-income elderly economic status which housing for the elderly in this era to the near future must be able to create an age-friendly environment with the goal for social activities, support and help within the community. NHA has an additional mission to build good quality housing, near affordable and low cost. It should include in the housing development and people's quality of life policy. Even it is difficult and may not be attractive to investors in economic terms, but housing policy will be an important tool for improving the well-being of the elderly to accessible for good, affordable housing options can be created and provide supportive environments for the quality of life of the elderly.

Acknowledgment

References

[1] Thai Gerontology Research and Development Institute (TGRI). 2021. Situation of the Thai elderly 2020. Nakhon Pathom: Institute for Population and Social Research, Mahidol University.

[2] United Nations Development Programme. (2015). Sustainable Development Goals. https:// www. undp. org/ content/ undp/ en/ home/sustainable-development-goals/goal-11-sustainable-cities-and-communities. html.

[3] National Housing Act. 1994. Government Gazette, Volume 111, Section 20.

[4] United Nations Economic and Social Commission for Western Asia. 1999. International Seminar on Environmental Accessibility; planning and design of accessible urban development in developing countries. At International Seminar on Environmental Accessibility, Beirut in 1999.

[5] UN-Habitat. 2014. Accessibility of Housing: A Handbook of Inclusive Affordable Housing Solutions for Persons with Disabilities and Older Persons.

[6] Somsak Srisantisuk. 1996. Sociology of Aging, Reality and Predictions in Thai Society. Bangkok: Chulalongkorn University Press.

[7] Mongkol Pathomkulvesarat. 2011. Improvement and development of a safe housing model for the quality of life of the elderly: a case study of Tha Ngam Sub-district, In Buri District. Singburi Province Master's thesis. Department of Housing Faculty of Architecture Chulalongkorn University.

[8] Office of Environmental Health. 2015. Environmental management suitable for the elderly. Bangkok: Office of the Veterans Affairs Printing Organization. Department of Health, Ministry of Public Health.

[9] Trairat Jarutat, Jiraporn Ketpichayawatana, Saranya Lomaneenopparat, and Kitti-on Challapati. 2005. Complete research report Project to study minimum standards for housing and environment of the elderly E-Library, Office of the Research Fund (ARDA). https://elibrary.trf.or.th/project_content.asp?PJID=RDG473.

[10] Information center Office of the National Health Commission. 2020. Passing on the concept of "Universal Design" design housing for the elderly. https://infocenter.nationalhealth.or.th/node/27612.

[11] Bamzar, R. 2019. Assessing the Quality of the Indoor Environment of Senior Housing for a Better Mobility: a Swedish Case Study. Journal of Housing and the Built Environment(2019). 34: 23-60. https://doi.org/10.1007/s10901-018-9623-4.

[12] Coyle, C., Buggy, S., Cagney, O., Farragher, L., Lee, C., Patje, D., & Long, J. (2021, 24 February). Housing with support for older people: An Endividence review. Dublin : Health Research Board HRD. https://www.hrb.ie/publications/publication/ousing-with-support-for-older-people-an-evidence-review/returnPage/1/.

[13] Jolanki, O. H. 2021. Senior Housing as a Living Environment That Supports Well-Being in Old Age. Frontiers in Public Health. 8: 1-12. https://doi.org/10.3389/fpubh.2020.589371.

[14] Mulliner, E., Riley, M., & Maliene, V. (2020). Older People's Preferences for Housing and Environment Characteristics. Sustainability. 12(14): 1-25. https://doi.org/10.3390/su12145723.

[15] Robinson, D., Green, S., & Wilson, I. (2020). Housing options for older people in a reimagined housing system: a case

study from England. International Journal of Housing Policy. 20(3): 344-366. https://doi.org/10.1080/19491247.2019.1644.

[16] World Health Organization. 2007. Global Age-friendly Cities: A guide. Retrieved from World Health Organization: https://www.who.int/ageing/publications/Global_age_friendly_cities_Guide_English.pdf.

[17] Ministry of Social Development and Human Security.2017.Housing Development Master Plan 20-year period (2017 - 2036). Electronic Library (E-Library) Ministry of Social Development and human security. http://ebooks.m-society.go.th/ebooks/detail/325.

[18] Royal Gazette. 2005. Ministerial Regulations specifying facilities in buildings for the disabled or handicapped and the elderly. 2005. (2005, 2 July), Royal Gazette, Volume 122. Section 52 Kor: 4.

[19] Association of Siamese Architects under the King's Patronage. 2014. Guidelines for Facility Design Convenient for everyone, Plus Place Co., Ltd., Bangkok.

[20] Office of the Promotion and Protection of the Elderly. 2020. Standard guide for elderly homes. Department of Older Persons. (2020, December 4). https://www.dop.go.th/download/knowledge/knowledge_en_20161702101655_1.pdf.