
PLACE IDEAL FOR AGING CARE: DETACHED HOUSE WELLBEING

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ABSTRACT

As the world's population ages, the elderly experience mobility limitations, sensory impairments, and cognitive decline. There is an increasing need to address older people's health and life quality. Concurrently, biophilic design has gained recognition as a promising approach to enhancing human health and wellbeing by incorporating natural elements into the built environment. Integrating place identity and place attachment principles into the early planning and construction stages can optimize the benefits for elderly residents. The research aims to find how place attachment could help improve older people's wellbeing. This research examines the cases of detached houses with field studies. It analyses it from the principle of place identity and the dimension of place attachment to make an adaptation and modifications to accommodate specific needs. The resulting concept uses vegetation, the dynamics of wall textures and colours, furniture, railings, and Chinese geometry for creating age-friendly and sustainable environments.

Keywords: detached house, elderly, place attachment, wellbeing wellbeing.

INTRODUCTION

The issue of the large number of elderly populations is a challenging issue in global countries. As they age, the elderly are more vulnerable to environmental conditions such as air pollution and hot temperatures. They experience a lack of movement and are familiar with chronic disease (Kabisch et al., 2017; Segalin et al., 2017). There are 727 million people aged >65 years, equivalent to 9.3% of the worldwide population in 2020 and is estimated to increase to 1.5 billion or more in 2050, representing 16.0% of the total population (UN, 2020). Based on data from the Central Statistics Agency (BPS), the elderly population grew by 18 million (7.6%) in 2010 up to 27 million people (10%) in 2020. This figure is expected to increase to 40 million people (13.8%) in 2035 (Ministry of Health, 2022). This estimate could become a problem for countries with a demographic bonus in 2030 when the population of productive age (15-64 years) outnumbers those of non-productive age.

In line with WHO predictions regarding the trend of increasing the population of elderly in various countries in the world, Indonesia is one of the countries facing this trend. In 2016, the population of Indonesian elderly over 60 years old was estimated at around 22,630,882 people, and it is projected to grow to 31,320,066 people in 2022 (Ministry of Health, 2022).

The home environment can be a way to improve the well-being of older people. By integrating architectural and environmental elements to create the 'ageing in place' as place attachment, elderly people can feel an atmosphere that trains cognitive, motoric, and sensitivity and creates an atmosphere of togetherness. This is evidenced by several studies regarding elderly preferences for nature-based recreation and the need for an attachment to the place (Wen, 2018). Dwelling environments may harm older individuals' feelings of exclusion and loneliness (Prattley et al., 2020). The social wellbeing of the elderly appears to be particularly susceptible to changes in population dynamics within urban areas (Bullen, 2016). The relationship with nature is a fundamental aspect of biological needs that affect human health, productivity, and wellbeing (Abdeal, 2019). This research is expected to provide reference on the spatial conditions of space integrated with natural elements to create a homey feeling in the house so that it can provide an atmosphere following the requirements and preferences of the elderly population. In previous studies, many studies have discussed the relationship of place attachment with the elderly's wellbeing and its application in architecture in a country with four seasons. This study raises this concept through the context of older adults in a tropical environment so that it can be a design solution for homes with elderly residents.

THEORY / RESEARCH METHODS

Elderly Environment

A solid relationship exists between the dwelling environment and life quality (Bonaiuto & Alves, 2012). Quality of life can be seen as a broad concept in a dwelling environment with an important function. This relation is essential for the elderly due to two interrelated reasons: (i) elderly individuals typically spend the majority of their day in their house and neighbourhood (Bonaiuto et al., 2004), and (ii) the dwelling environment holds particular significance for older adults because it promotes the sense of continuity from the past (Korpela, 2012), promotes a good self-image (Rubinstein & Parmalee, 1992), and facilitates the development of identity, independence, and wellbeing (Eyles & Williams, 2008). This is closely related to the term ageing in place (Lewis, 2020; Roger, 2020)

Exposure to green open spaces is an essential factor that can enhance the independence of the elderly. Another research has revealed that such exposure is associated with various benefits, including the expansion of social networks, physical activity, upgrade the coping ability of significant life events, and the restoration of resources of attention, which tend to be drained under stressful circumstances (Lord et al., 2011; Jothikaran, 2020). This exposure serves as a strategy to bridge the perceived gaps between the current state of development and the desired state. Two

coping strategies come into play in this context. The first strategy involves proactive adjustment of life circumstances to align with personal preferences, while the second strategy involves reactive adjustment of one's own preferences to accommodate situational restrictions (Brandtstädter & Renner, 1990). These strategies, assimilation and accommodation, respectively, play a crucial role in maintaining life satisfaction. Assimilation involves actively modifying the environment to achieve goals, while accommodation implies passively accepting life's conditions and challenges.

Regarding the everyday activities associated with one's residence, these researchers distinguished between three types of adaptations: (a) modifications of the physical environment, (b) adjustments to the social setting or environment, and (c) changes in the individual. Strategies focused on adapting to the physical environment are considered the most proactive strategies with assimilation. Whereas strategies related to personal adaptations ("surrender" response) are included as reactive and in line with the accommodation. Adaptations to the social environment are generally accommodative.

The researchers have explored the influence of the home environment aspect on the prediction of healthy ageing, which includes action behavioural (the ability to do daily activities), cognitive-evaluative (fulfilment in life), affective (signs of stress or depression), and social involvement elements (Iwarsson, 2004). The emphasis on the dwelling environment stems from the great tendency of elderly persons to age in the comfort of their homes (Scanlon & Devine, 2001). This preference is encapsulated by the concept of "ageing-in-place," which refers to an ongoing interaction between an ageing individual and their environment, characterized by mutual changes over time, with the individual's physical location remaining constant (Lawton, 1990). Older adults' inclination towards aging-in-place is tied to their desire for freedom to pursue their preferences and keep control of their surroundings and regular activities (Leith, 2006). Additionally, one's home holds significant personal meaning as recollections, visions, desires, anxieties, and the link between the past and the present (Pallasmaa, 1995).

Creating a humanised spatial environment involves considering a range of design elements, including the layout and arrangement of spaces, the choice of materials and colours for floors, walls, and furniture, the presence of artistry, the quality and quantity of daylight and lighting fixtures, the inside and outside views, the windows' dimension, the hygiene, and the overall climate of the space. These design attributes, as highlighted, are essential for meeting the basic needs of users and ensuring a satisfying environment (Anderson, 2021; Zong, 2019).

Place identity

Place identity involves incorporating place into a person's concept of self. Place identification does not have to be with towns, cities, or countries, and the physical environment will be part of it. There are four principles of identity (Bonaiuto et al., 2002; Knez, 2005), such as:

- **Distinctiveness**
Identifying with a place, people are distinguishing themselves from everyone who is not from there.

- Continuity
It was facilitated by a place providing links to the past and prospects for the future.
- Self-esteem
Being associated with somewhere that you like is also an evaluation of yourself because the place is part of you, and you are part of it.
- Self-efficacy
a person's belief that they can achieve what is needed to meet the demands of their life.

Place Attachment

Place attachment focuses on the community level, with less attachment to neighbourhoods than regions/cities and houses or dwellings. Place attachment is formed by two aspects, namely individual aspects related to the age of occupant profiles, length of stay, activity routes and experiences and environmental aspects related to social networks, security, and stability of ethnic diversity (Brocato, 2006 in Putra, 2016). There are dimensional or component principles that build place attachments, such as:

- Person
Individual factors, such as the experience of the place, along with cultural experience. Place attachment can be an individual experience or a socio-cultural element, in which case there is a shared attachment.
- Place
A distinction between the physical and social characteristics of a setting. People can become attached to a place because of their interactions with others.
- Process
It was identified in psychological research, which are cognitive (thought), affective (emotion), and instrumental (behaviour/psychomotor) actions. People will have memories (cognitive) attached to a physical setting, along with meanings that have evolved for that place.

This research was conducted through field studies on detached house case studies. Through field studies, the conditions of the cases were studied and analyzed based on the principles of place identity and the dimension of place attachment, then a design proposal for the well-being of the elderly. The case study was chosen because there were older adults living in the house.

RESULTS AND DISCUSSION

Case Study

The house is in Sidoarjo district, where the wind comes from the east and northeast with an average speed of 3.6 m/s, humidity is 76%, rainfall is 181 mm³, the temperature during the day is 29°C and 26°C at night, and the house is facing 15° counterclockwise facing north. The elderly are active in their bedrooms, living rooms, kitchens, and backyards (Figure 1). Neighbouring houses flank the house, and the

neighbours rarely interact with each other (Figure 2). At first, she lived in a rural area in Jember; then, she moved when her husband died in 2012. Before her husband died, she regularly visited this house once a month.

The elderly are around 80 years old and have Chinese ethnicity. She is a grandmother of six grandchildren. She likes to cook and sew and has a hobby related to plants, especially bonsai. These activities are intended to keep her busy and maintain her cognitive, psychomotor, and affective value of herself. In that house, she lives with her oldest son, daughter-in-law, and two grandchildren.

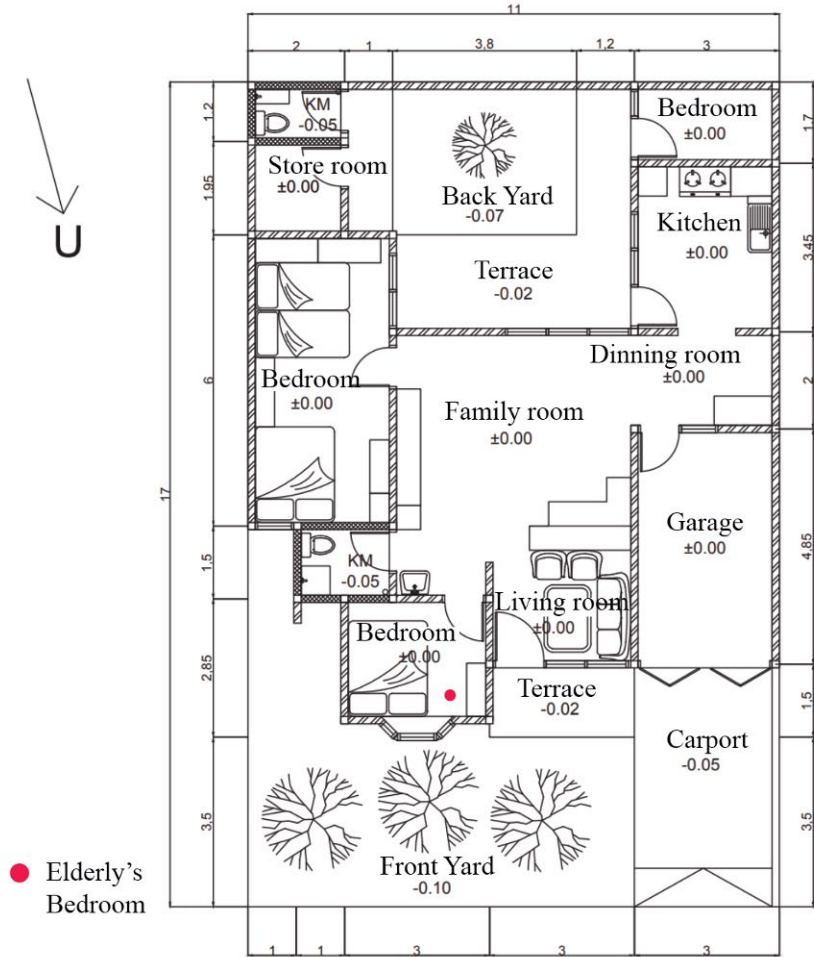


Figure 1. The Existing House Floor Plan

Source: Survey Result, 2023



Figure 2. The Location of the House
 Source: Survey Result, 2023

Discussion

House analysis is based on the principle of place identity and place attachment dimensions (Table 1), and the implementation related to elderly needs is shown in Table 2.

Table 1. The Analysis of Place Idea in the Existing House

Aspects	Principles/ dimension	Design Existing	Design proposal	Description
Place identity	Distinctiveness	The house is like an ordinary typical house for a dwelling developer.	I am giving a Chinese vibe from the furniture with the green colour to immerse the rural area.	The bedroom is different from the other bedroom due to its Chinese vibe.
	Continuity	The existing house is the standard typical house for a dwelling.	The feeling of possession of the house is shown by looking at the ancestor and family picture.	The house holds many good memories of the family because it is a house that passes from one generation to another.
	Self-esteem	There is no engagement of	Emotion bond is shown by the	Emotional bond can be

	the house with the experience of the elderly.	family picture and the appliance already used for generations.	seen from the family 's use of the house for generations.
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Source: Survey Result, 2023

Table 1 Cont. The Analysis of Place Idea in the Existing House

Aspects	Principles/ dimension	Design Existing	Design proposal	Description
Place identity	Self-efficacy	There is no feeling of attachment inside the house.	Modify the environment by providing tools.	The railings encourage the elderly to be more independent, which fulfils the ego of the elderly.
Place attachment	Person	The initial design is for general users.	Seen from the impression of red colour, texture, and Chinese ornaments	The place is trying to recall the Chinese tradition of the elderly.
	Place	The place is a typical city house not specifically for the elderly.	Physical characteristic: Seen from the impression of red colour and Chinese ornaments. Social characteristic: sewing together with the daughter-in-law or her grandchildren.	The elderly are attached to the characteristics of the Chinese house and the interaction with their relatives.
	Process	There is no experience or feeling of engagement inside the house.	We keep the Chinese vibe inside the house, like the lampions and the togetherness while sewing.	The elderly have memories that are attached to a place and interaction.




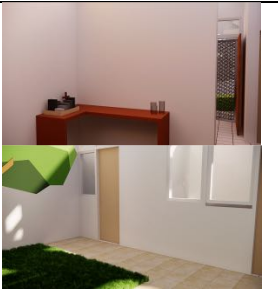

Source: Survey Result, 2023

Table 2. The Analysis of The Place Idea for Elderly Needs

Principles	Design Existing	Design Proposal	Elderly Needs
Distinctiveness (Bedroom)			Age-friendly environments increase the overall quality of life for older adults.
Continuity (Family room)			To maintain memories related to their past, it is related to their cognitive ability.

Source: Survey Result, 2023

Table 2 Cont. The Analysis of The Place Idea for Elderly Needs

Principles	Design Existing	Design Proposal	Elderly Needs
Self-esteem (Family room)			Address the physical and functional needs. It is aging in place by allowing the elderly to stay in a familiar situation adapted to specific physical requirements that promote mobility and independence.
Self-efficacy (Backyard)			The sense of familiarity and comfort provided by an attachment to their home and community can contribute to a greater sense of security, well-being, and overall life satisfaction.
Person (Bedroom and Family room)			The design offers a stable and predictable environment that promotes stability and reduces stress or anxiety. The design proposes railings to help the elderly.
Place (Family room and Backyard)			

<p>Process (Family room and Front yard)</p>		<p>The attachment to dwelling fosters a sense of belonging, social support, and social connections. It provides opportunities for interaction and participation in activities, vital for maintaining social networks.</p>
<p>Self-esteem (Family room)</p>		<p>Address the physical and functional needs. It is aging in place by allowing the elderly to stay in a familiar situation adapted to specific physical requirements that promote mobility and independence.</p>

Source: Survey Result, 2023

CONCLUSIONS

The connection between place attachment and the needs of elderly individuals is a significant aspect to consider. Place attachment refers to the emotional bond and sense of belonging that individuals develop towards a particular place or environment. For older adults, this attachment to their living environment is closely linked to their specific needs. Place attachment plays a crucial role in meeting the diverse needs of elderly individuals, encompassing psychological wellbeing, wellbeing, social connection, and physical functionality. Understanding and promoting place attachment can contribute to creating supportive and age-friendly environments that enhance the overall quality of life of the elderly population. In this study, the changes are done in the rooms often used by the elderly, such as bedrooms, family rooms, and yards. The changes are shown by the wall texture, colour, decorative elements, tools to help the elderly, like railings, and the additions related to the elderly's hobbies, like sowing and planting bonsai.

REFERENCES

- Abdelaal, M. S. (2019). Biophilic campus: An emerging planning approach for a sustainable innovation-conducive university. *Journal of Cleaner Production*, Vol 215, 1445-1456, Elsevier, Canada.

- Andersson, M., Granath, K., & Nylander, O. (2021). Ageing-in-Place: Residents' Attitudes and Floor Plan Potential in Apartment Buildings From 1990 to 2015. *HERD: Health Environments Research & Design Journal*, 14(4), 211–226, Elsevier, Canada.
- Bonaiuto, M., Carrus, G., Martorella, H., & Bonnes, M. (2002). Local identity processes and environmental attitudes in land use changes: The case of natural protected areas. *Journal of Economic Psychology*, 23, 63
- Bonaiuto, M., Bonnes, M., & Continisio, M. (2004). Neighborhood evaluation within a multi-place perspective on urban activities. *Environment and Behavior*, 36, 41–69.
- Bonaiuto, M., & Alves, S. (2012). Residential places and neighbourhoods: Toward healthy life, social integration, and reputable residence. In S. Clayton (Ed.), *The Oxford handbook of environmental and conservation psychology* (pp. 221–247). New York: Oxford University Press.
- Brandtstädter, J., & Renner, G. (1990). Tenacious goal pursuit and flexible goal adjustment: Explication and age-related analysis of assimilative and accommodative coping strategies. *Psychology & Aging*, 5, 58–67.
- Brocato, E.D. (2006). *Place Attachment: An Investigation of Environments and Outcomes in A Service Context*. Arlington: The University of Texas
- Bullen, E. (2016). *Older people in Manchester: A profile of residents aged 65 and over*.
- Eyles, J., & Williams, A. (2008). *Sense of place, health and quality of life*. Aldershot: Ashgate.
- Iwarsson, S. (2004). Assessing the fit between older people and their physical environments: An occupational therapy research perspective. *Annual Review of Gerontology and Geriatrics*, pp. 23, 85–109.
- Jothikaran et al. (2020). Older adults in traditional and modern living arrangements in southern India: The importance of maintaining a sense of belonging and positive intergenerational exchanges. *Journal of Aging Studies*. Vol 54, 100867. Elsevier. Canada
- Kabisch, M. van den Bosch, R. Laforteza (2017). The health benefits of nature-based solutions to urbanization challenges for children and the elderly – a systematic review, *Environ. Res.* 159. 362–373.
- Knez, I. (2005). Attachment and identity are related to a place and its perceived climate. *Journal of Environmental Psychology*, pp. 25, 207–218.
- Korpela, K. M. (2012). Place attachment. In S. Clayton (Ed.), *The Oxford handbook of environmental and conservation psychology* (pp. 148–163). New York: Oxford University Press
- Lawton, M. P. (1990). Knowledge resources and gaps in housing for the aged. In D. Tilson (Ed.), *Aging in place: Supporting the frail elderly in residential environments* (pp. 287–309). Glenview: Scott, Foresman, and Company
- Leith, K. H. (2006). "Home is where the heart is, or is it?" A phenomenological exploration of the meaning of home for older women in congregate housing. *Journal of Aging Studies*, pp. 20, 317–333.
- Lewis, C., & Buffel, T. (2020). Ageing in place and the places of ageing: A longitudinal study. *Journal of Aging Studies*, 54, 100870, Elsevier, Canada.

- Lord, S., Despres, C., & Ramadier, T. (2011). When mobility makes sense: A qualitative and longitudinal study of the daily mobility of the elderly. *Journal of Environmental Psychology*, 31(1), 52–61
- Ministry of Health (2022) *InfoDATIN Lansia Berdaya, Bangsa Sejahtera*, Pusat Data dan Informasi Kementerian Kesehatan Indonesia, Jakarta
- Pallasmaa, J. (1995). Identity, intimacy, and domicile: Notes on the phenomenology of home. In D. N. Benjamin, D. Stea, & D. Saile (Eds.), *The home: Words, interpretations, meanings, and environments* (pp. 131– 147). Aldershot: Avebury.
- Prattley, J., Buffel, T., Marshall, A., & Nazroo, J. (2020). Area effects on the level and development of social exclusion in later life. *Social Science & Medicine*, Vol 246, 112722, Elsevier, Canada.
- Putra, R (2016) *Kajian Place Attachment Di Kampung Pecinan Tambak Bayan Tengah, Kota Surabaya, Region*, Vol. 7 (1), 1-51,
- Rogers, W. A., Ramadhani, W. A., & Harris, M. T. (2020). Defining Aging in Place: The Intersectionality of Space, Person, and Time. *Innovation in Aging*, 4(4).
- Rubinstein, R. L., & Parmalee, P. A. (1992). Attachment to place and the representation of the life course by the elderly. In I. Altman & S. M. Low (Eds.), *Human behaviour and environment: Advances in theory and research (Place attachment, Vol. 12, pp. 139–163)*. New York: Plenum Press
- Scanlon, E., & Devine, K. (2001). Residential mobility and youth wellbeing: Research, policy, and practice issues. *Journal of Sociology and Social Welfare*, 28, 119–138, Elsevier, Canada.
- Segalin, P. Kumar, K. Micadei, A. Fornaro, F. Gonçalves (2017). Size–segregated particulate matter inside elderly residences in Sao ~ Paulo, Brazil, *Atmos, Environ. Times* 148,139–151, Elsevier, Canada.
- United Nations, World population ageing 2020 highlights. <https://www.un.org/development/desa/pd/zh/news/world-population-ageing-2020-highlights>. (Accessed 14 June 2023).
- Wen et al. (2018). The elderly in green spaces: Exploring requirements and preferences concerning nature-based recreation, *Sustainable Cities and Society*, Vol 38, 582–593, Elsevier, Canada.
- Zong, H., Liu, Y., Wang, Q., Liu, M.L., Chen, H., 2019. Usage patterns and comfort of gardens: a seasonal survey of internal garden microclimate in the aged care homes of Chengdu City. *Int. J. Biometeorol.* 63 (9), 1181–1192. Elsevier, Canada.

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