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Designing Disability-Friendly Apartments with a Healing Environment Approach in East Jakarta

Gabriela Natasya[1*], M Maria Sudarwani[2], Ulinata[3]
Universitas Kristen Indonesia
Corresponding Author: Gabriela Natasya gabrielanatasyaah@gmail.com

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A B S T R A C T

Jakarta is the center of government, economy, and socio-cultural activities. As Indonesia's largest metropolitan city, Jakarta attracts a steady influx of people from various regions seeking employment, education, and access to comprehensive city facilities. Population growth in East Jakarta is driving a high demand for vertical housing. However, most existing apartments still do not fully address the needs of people with disabilities, resulting in limitations in mobility, accessibility, and comfort. The application of the healing environment principle is realized through optimizing natural lighting, healthy air circulation, selecting environmentally friendly materials, and integrating green open spaces. In terms of accessibility, the design includes barrier-free circulation paths, ramps with standard slopes, elevators that accommodate wheelchair users, and residential units with flexible layouts.

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INTRODUCTION

Jakarta is the center of government, economy, and socio-cultural activities. As Indonesia's largest metropolitan city, Jakarta attracts a steady influx of people from various regions seeking employment, education, and access to comprehensive city facilities. Population growth, unbalanced by land availability in East Jakarta, has led to land density.

Population growth, which is not balanced with land availability in East Jakarta, has led to land overcrowding. This is evident in the shrinking green open space, the proliferation of densely populated settlements, and the increasing need for vertical development to accommodate housing and public facilities. According to data from the Jakarta Central Statistics Agency (BPS), East Jakarta has the largest population among all administrative regions, with over 3 million people. This situation places significant pressure on land use, particularly for housing and supporting infrastructure.

People with disabilities have equal rights to adequate housing, as mandated by Law Number 8 of 2016 concerning Persons with Disabilities. Unfortunately, many urban housing developments still lack consideration for their special needs, severely limiting their daily activities such as moving around, interacting socially, and enjoying a healthy environment. Data from the Central Statistics Agency (BPS) shows that the number of people with disabilities in Indonesia is significant and continues to increase annually. The concept of a healing environment in architecture presents a relevant approach to creating housing that not only meets accessibility standards but also supports the psychological, emotional, and health aspects of its occupants.

LITERATURE REVIEW

According to the Big Indonesian Dictionary (KBBI), an apartment is a residence consisting of a bedroom, bathroom, kitchen, living room, and other facilities, located on one floor of a multi-story building, and equipped with public facilities such as a swimming pool, fitness center, and parking area. The most dominant function of a dwelling is apartments, where all the activities of the residents are relatively similar to those of a typical residential area. Apartments consist of several residential units, each with its own main space: a living room, bedroom, family room, dining room, bathroom, and kitchen.

Apartment Classification Based on Building Height

High-rise apartments are high-rise apartments with more than ten floors, and can even reach forty or more. These apartments are typically located in downtown areas or central business districts (CBDs), utilize high-rise reinforced concrete or structural steel structures, and are equipped with high-speed elevators and advanced utility systems.

Figure 1. Apartment Pakubuwono Residence
Source: Rukamen.com

Apartment Classification by Room Type

1. 1 Bedroom Type
   1 Bedroom type has one bedroom completely separated from other areas such as the living room, kitchen, and bathroom. The average area of this unit ranges from 40–60 m², depending on the apartment class (mid-range or premium).

Figure 2. Type 1 Bedroom
Source: Rukamen.com

2. 2 Bedroom Type
   This type has two separate bedrooms, a living room, a kitchen, and one or two bathrooms. The area ranges from 60–90 m².

Figure 3. Type 2 Bedroom
Source: Rukamen.com

In this design, the author focuses on the classification of people with physical disabilities. This design does not address other disability classifications, namely intellectual disabilities, mental disabilities, and sensory disabilities. Disability is a long-term physical, intellectual, mental and/or sensory limitation that can cause obstacles and difficulties in interacting with the environment in participating fully and effectively with other citizens based on equal rights.

According to Law of the Republic of Indonesia Number 8 of 2016 concerning Persons with Disabilities, people with disabilities are divided into four categories: physical disabilities, intellectual disabilities, mental disabilities, and sensory disabilities. In this design, the author focuses on the classification of people with physical disabilities. This design does not address other disability classifications, namely intellectual disabilities, mental disabilities, and sensory disabilities.

A physical disability is a condition that disrupts motor function, limiting activities, especially those related to mobility. Some examples include: the effects of amputation, paralysis due to stroke, paraplegia (paralysis from the hips down), dystrophy (muscle weakness), and stunting (growth disorders).

The focus of needs: physical accessibility such as ramps, elevators, handrails, and wheelchair ramps.

a. Government Regulation Number 16 of 2021 concerning Implementing Regulations of Law Number 28 of 2002 concerning Buildings
b. Regulation of the Minister of Public Works and Public Housing Number 14 of 2017 concerning Requirements for Building Accessibility
c. Law Number 28 of 2002 concerning Buildings
d. Regional Regulation Number 4 of 2022 concerning the Implementation of Respect, Protection, and Fulfillment of the Rights of Persons with Disabilities
e. Gubernatorial Instruction Number 14 of 2019 concerning the Provision of Accessibility for Persons with Disabilities within the DKI Jakarta Provincial Government

A healing environment is a spatial and environmental design concept that aims to support the physical, psychological, and emotional healing process for its users. (Bagus Gede Parama Putra et al., 2023). One approach to a natural healing environment emphasizes the importance of incorporating natural elements such as sunlight, vegetation, water, and natural materials into the built environment.

The concept of a healing environment stems from the understanding that the built environment has a significant influence on a person's health. Healing environments also emphasize that a positive environment can reduce stress, improve mood, and enhance the quality of life for both patients and residents. (Ulrich, 1984) Therefore, healing environments are applied not only to healthcare facilities such as hospitals, but also to residential buildings, public spaces, and apartments. According to Murphy (2008), there are three approaches to healing environments: natural, sensory, and psychological. In this design, the healing environment approach focuses solely on nature.

The natural approach emphasizes the importance of incorporating natural elements such as sunlight, vegetation, water, and natural materials into the built environment. The presence of natural elements has been proven to have a restorative effect that helps reduce stress levels, accelerate the healing process, and improve the quality of life for space users. This concept can be realized through healing gardens, building orientations facing green landscapes, and the use of materials inspired by nature.

Some key characteristics of a healing environment are:

1. Natural Lighting
   Increasing direct sunlight and adjusting indoor lighting to improve mood and improve circadian rhythms.
2. Connection with Nature
   Integrating natural elements such as landscapes, gardens, and green spaces to create a calming environment that promotes recovery.
3. Open Space and Ventilation
   Designing buildings with sufficient open space and good ventilation systems to improve fresh air circulation and indoor air quality.
4. Accessibility
   Ensuring good accessibility for all users, including those with special needs, to reduce stress and increase feelings of independence.

METHODOLOGY

This research focuses on the design of disability-friendly apartments using a healing environment approach in East Jakarta, addressing the need for inclusive, healthy, and sustainable vertical housing in urban areas. The research background is based on the limited number of apartments that optimally accommodate the needs of people with disabilities and the lack of attention to the quality of the built environment, which impacts the physical and psychological comfort of residents.

The research method used is a qualitative descriptive method with an architectural design approach. This was conducted through primary and secondary data collection, literature review related to apartments, universal design, disability accessibility, and healing environment theory, as well as a study of similar building precedents. The data obtained were analyzed through site analysis, environmental condition analysis, user analysis, spatial needs and relationships analysis, and design concept analysis. The healing environment approach was applied as the primary foundation of the design process, emphasizing the relationship between humans and nature, natural lighting and ventilation, visual and spatial quality of the space, noise control, and the use of green open spaces as supporting elements for recovery and comfort.

The disability-friendly concept is realized through the application of universal design principles to horizontal and vertical circulation systems, spatial dimensions, residential unit design, and the provision of safe and accessible shared facilities. The design results demonstrate that the integration of the healing environment approach and the disability-friendly concept can produce an apartment design that not only meets the functional and technical needs of the building but also creates an inclusive, comfortable living environment that supports the improvement of the quality of life of residents in the East Jakarta area.

RESEARCH RESULT

Key Concept: Healing Inclusive Living

Figure 4. Building Perspective

Source: Personal Analysis

The Healing Inclusive Living concept in this design emphasizes two core elements: Inclusive Design + Healing Environment. Therefore, the main concept is not only inclusive living together, but also comfortable, healthy, and healing living for all users, including people with disabilities. This concept also ensures that all spaces are accessible and usable by everyone, creating a calming home where everyone, including people with disabilities, can live independently, comfortably, and connected to nature.

The healing environment concept is implemented through the creation of a spatial atmosphere that reduces stress, provides a sense of comfort, and supports the physical health of occupants.

This includes:

a. Maximizing natural lighting, cross-ventilation, and open views to green areas.
b. Creating a courtyard as a center for spatial orientation and natural ventilation, also functioning as a space for social interaction and self-reflection.
c. Healing terraces on each floor function as vertical gardens, yoga areas, and relaxation spaces.
d. Integrating natural elements such as water, vegetation, and natural materials to create a harmonious and serene atmosphere.
e. This concept transforms the building into more than just a place to live, but also a healthy environmental therapy facility.

Functional requirements relate to how a building can function optimally and inclusively for all users, including people with disabilities.

These requirements include:

a. Universal accessibility: all areas (public, semi-public, and private) are accessible without physical barriers; ramps, elevators, wide corridors, and tactile signage are provided.
b. The podium functions as a public area and supporting facility: containing a lobby, community space, therapy facilities, light retail, and a healing area.
c. The tower functions as a residential area: providing residential units with universal accessibility standards (wide doorways, accessible bathrooms, wheelchair maneuvering areas).
d. Social interaction spaces: providing shared spaces to enhance social engagement and reduce isolation for residents with disabilities.
e. Inter-zone integration: efficient connections between public (common facilities), semi-public (resident facilities), and private (residential) zones.

CONCLUSIONS AND RECOMMENDATIONS

The design of a Disability-Friendly Apartment Using a Healing Environment Approach in East Jakarta was motivated by the increasing need for inclusive housing in dense urban areas and the lack of housing that can accommodate the comprehensive needs of people with disabilities. Furthermore, the high levels of stress in urban communities due to overcrowding and limited green space led to the implementation of a healing environment approach as an integral part of the design concept.

The primary concept used is Healing Inclusive Living, a design approach that combines the principles of universal accessibility (inclusive design) with a healing environment to create living spaces that are not only suitable and safe, but also calming, empowering, and improve the quality of life for all residents.

ADVANCED RESEARCH

Further research building on the study "Designing Disability-Friendly Apartments with a Healing Environment Approach in East Jakarta" could focus on evaluating the implementation of these designs through a post-occupancy evaluation to assess comfort levels, accessibility, and the impact on the physical and psychological well-being of residents with disabilities. Additionally, this research could be expanded by comparing the application of similar concepts in other cities across Indonesia, as well as integrating smart living systems to enhance residents' independence and quality of life in a sustainable manner.

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