

The Concept of Behavioral Architecture in Redesign of Budi Mulia 3 Tresna Werdha Sosial Institution, Jakarta

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Abstract

Getting old is a natural process that happens to everyone. Elderly are individuals aged over 60 years who have decreased biological, psychological, social and economic functions. The important thing in designing housing for the elderly is comfort and safety for the elderly in terms of architecture. The study of behavioral architecture in residential design for the elderly is an alternative approach to creating comfortable and safe housing. This is because the elderly need more detailed and in-depth observations of their behavior which will later be implemented into building designs, both physical and non-physical, because a comfortable environment will have a positive psychological impact on the occupants. The Budi Mulia 3 Tresna Werdha Social institution in South Jakarta has inadequate buildings such as: small land and buildings, adequate courtyards without a healthy garden for the elderly, inadequate space in the guest house, materials that are hazardous to the elderly, such as the use of glass on the windows of the house which has started to break down, an inadequate kitchen, dirty rooms and a multipurpose room which has been used as a warehouse because it is not feasible. Because of these existing conditions, a redesign of the orphanage is needed to meet the need for comfort and safety for the elderly living in the social institution. The method used in this design includes evaluating the existing conditions by observing the physical and non-physical conditions in the orphanage, including collecting data on the residents of the orphanage including their characteristics and behavior, as well as collecting data on facilities and infrastructure that do not meet the standards and needs of the elderly. The evaluation continued with the re-planning of the building with an emphasis on the behavior of the elderly, then the building was redesigned. With this redesign, it is hoped that the residents of the Budi Mulia 3 Tresna Werdha Social Institution will have a residence that prioritizes comfort and safety based on the behavior of the elderly living in it.

Keywords: behavioral architecture, redesign, elderly

INTRODUCTION

The human environment, both natural and built, has big influence on feelings, behavior, health problems overall general, and productivity. Humans respond to where they live and where they live works consciously or unconsciously. When someone feels comfortable fulfilled will usually respond positively to the environment, people more accept the space and its contents if they provide comfort (Halim, 2019). It can be concluded that the environment, both natural and built, is more or less have an influence on humans. A comfortable environment will provide positive impact also for the psychological occupants. Therefore, deep architectural design requires an understanding of the characteristics inhabitants so as to produce an appropriate built environment (architecture). with users. Apart from that, it can also have a positive impact create the desired behavior. Likewise with social institutions, by understanding the characteristics of the elderly, is expected to create residential buildings suitable for the elderly.

The name of the Social Institution itself is generally negative in the eyes of the public Indonesia. This negative view is compounded by the current condition of social institutions There



are still many who just stand by without paying much attention to comfort and safety for its residents. Meanwhile, elderly people tend to experience physical decline and emotional uplift so in terms of architecture of course different from humans when they were young. According to the Constitution of the Republic Indonesia Number 13 of 1998 concerning the Welfare of the Elderly that efforts to improve the welfare of the elderly so far is still limited to efforts to provide as intended in Law Number 4 of the Year 1965 concerning Providing Social Living Assistance to Social Persons, which at this time felt to be inadequate when compared with development problems of the elderly, so that those who have experience, expertise, and wisdom needs to be given the opportunity to play a role in development.

This is indeed a nursing home that has been seen in Indonesia so far uncomfortable place, with very minimal facilities, and buildings which may no longer be used. Likewise with the situation of Budi Mulia 3 Tresna Werdha Social Institutions in South Jakarta is lacking adequate, such as: small land and buildings, adequate yard without there is a healthy garden for the elderly, space in the guest house is not adequate, materials that are dangerous for the elderly such as the use of glass on the windows of the guesthouse which are starting to break down, the kitchen is inadequate, the rooms which is dirty and a multipurpose room which has been used as a warehouse because it is not suitable.



Figure 1. Existing Conditions of Budi Mulia 3 Tresna Werdha Social Institutions, 2022

Behavioral Architecture is architecture that has a human perspective, which able to understand and accommodate human behavior captured from various sources various kinds of behavior, be it the behavior of creators, observers and also natural behavior surroundings

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(Mangunwijaya, Y.B, 2019). Strategy with redesign applications on This social institution is an effort to redesign the social institution building for restore function and user comfort, where behavioral architecture become part of the final design. In planning, redesign The Budi Mulia 3 refers to the results of the retirement evaluation, SNI standards and application of behavioral architecture concepts.

RESEARCH METHOD

Several methods used in the process of writing the contents of this final assignment report are as follows:

Data collection stage

Primary Data Collection :

Make observations or observations of the Budi Mulia 3 environment which is used as a basic reference for this redesign the building. Observations are made in a way Observe the location and activities of perpetrators in the area location and behavior of the perpetrator towards the relevant study location. Carry out documentation with photos of related study locations and activity conditions around the site. Conduct interviews with officers on guard at around the study location and the residents of the orphanage who live in the orphanage.

Secondary Data Collection

Obtain administrative data of related study locations was at Budi Mulia 3 management officers. Obtain data from trusted sources such as BPS (Central Statistics Agency) Indonesia.

Analysis Stage

This stage is the stage where the breakdown of the problem is based on the data that has been obtained, then it is analyzed based on non-physical aspects, contextual aspects, physical analysis of buildings and performance which will later be related to the problems that have been discussed.

Concept Stage

This stage is to explain the results of both physical and non-physical analysis which will be applied later to a design in the form of the concept of site, space, and form related to the behavioral architecture approach.

Design Stage

The results of the analysis and the concept of the site design will be explained in a visual form of the design results which are also outlined through architectural support applications.

RESULTS AND DISCUSSIONS

According to Soejono in Annisya (2014,3), WHO (World Health Organization) determines the age division regarding the elderly, namely:

Middle Age: age group from 45-59 years.

Elderly: age group from 60-74 years.

Elderly (Old): age group from 75-90 years.

Very old age (Very Old): the age group above 90 years.

The problem of the elderly occurs due to physically experiencing the aging process accompanied by decline in the function of the body system so that it will automatically decrease

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as well as psychological and social conditions at the peak of growth and development (Mangoenprasodjo and Setiono (2005:18-19). The problems experienced by the elderly, including:

Mental Conditions

Sychologically, generally in old age there is decline both cognitively and psychomotor. For example, decreased understanding in accepting internal problems in action.

Alienation (loneliness)

There is a decrease in the ability of the individual in hearing, seeing, and other activities so that they feel left out from society.

Post Power Syndrome

This condition occurs in someone who was originally have a position during the active working period. After stopping working, the person feels that something is missing in his life.

Disease problems

Apart from the physical processes that lead to degenerative, there are also many disorders found in old age, among others others: infections, heart and blood vessels, metabolic diseases, osteoporosis, malnutrition, drug and alcohol use, neurological diseases (stroke), as well as mental disorders, especially depression and anxiety.

Pynos and Regnier In Azizah (2016:23-26) written about 12 kinds of principles applied to the environment in aged care facilities for Assist in senior activities. These twelve principles grouped into physiological and psychological aspects, namely as follows:

Physiological Aspects

Safety and Security

Provision of a safe environment ensure that each user does not experience unnecessary harm desired. The elderly have physical and sensory problems such as visual disturbances, difficulty maintaining balance, reduced leg strength, and joint inflammation. This makes the elderly more prone to falls and injuries.

Signage/ Orientation/ Wayfindings

Where abouts of directions on environment can reduce confusion and facilitate Find out what facilities are available. Feeling lost is a frightening and confusing thing for the elderly which can further reduce self-confidence and self-esteem elderly. Elderly who experience loss of memory (senile) more easy to get lost in buildings by design rooms that are similar (homogeneous in design) and do not have directions

Accessibility and Functionality



Layout and accessibility is a requirement fundamental to a functional environment. accessibility is ease of obtaining and using facilities, infrastructure, and facilities for the elderly to facilitate elderly mobility.

Adaptability

The ability to adapt to functional environment.

Psychological Aspect

Privacy

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Namely the opportunity for the elderly to get space / a place to isolate oneself from others for people observation others so that it is free from unknown interference. Privacy auditory is an important point to pay attention to.

Social Interaction

Namely the opportunity to interact and exchange ideas with the surrounding environment (social). Objective grouping based on the age of the elderly is to encourage there is an exchange of information, recreational activities, discussions, and increase friendship. Social interaction reduces its occurrence depression in the elderly and giving the elderly an opportunity/sharing problems and life experiences.

Independence

Namely the opportunity given to do something own activities without or little assistance from labor. Independence can lead to satisfaction because the elderly do not depend on others.

Encouragement/ Challenge

Namely providing a stimulating environment safe but challenging. An environment that encourages seniors for activities you can get color, diversity of space, visual patterns and contrast.

Five Senses Aspect

Physical decline in terms of vision, hearing, smell that must be taken into account inside environment. Senses of smell, touch, sight, hearing and the feeling of experiencing decline goes hand in hand with increasing someone's parents. Sensory stimulation involves the smells from the kitchen or garden, the color and arrangement and texture of some materials. Design by paying attention to the five sense stimuli can used to create a more design or interesting. A safe and comfortable environment can indirectly be achieved give the elderly a familiar feeling towards their environment. Living in a new home environment is an experience confusing for seniors. Build familiarity with the elderly through a new environment can reduce confusion because change. Aesthetics / Appearance: a visible environmental design interesting. The overall appearance of the environment conveys a symbolic messages or certain perceptions to visitors, friends, and family about the life and condition of the elderly. Personalization: namely creating opportunities to create personal environment and marking it as "belonging" to someone individual. Homes for the elderly must provide opportunities for them to express self and personal expression.

Principles in the Behavioral Architecture Theme

Principles of behavioral architecture themes that must be considered in implementation. The theme of behavioral architecture is the physical design of space that has variables which influence user behavior, namely (Anthonius & Egam, 2011:58- 59). The size with the shape of the room that is not right will affect psychology and user behavior. Adjustable room size according to user needs, where is the size of the room adapted to the activities and needs of users in one that room. Furniture and its arrangement: furniture is made to serve a purpose functionality and arrangement influence user behavior. Setup Indoor furniture is adjusted to suit needs and activities space user. Color has an important role in creating the atmosphere of space and support certain behaviors. Color influences psychological response and influence on the quality of space. Color used indoors must have positive value change or influence negative behavior.

COLOR PSYCHOLOGY

RED	YELLOW	BLUE
love, passion, warmth, dynamism, courage	energy, optimism, fun, joy, spontaneity	harmony, intelligence, sympathy, eternity
ORANGE	VIOLET	GREEN
striking, warm, exotic, original, aromatic	faith, vanity, devotion, fashion, fantasy	youth, natural, hope, refreshing, fertility
WHITE	BLACK	PINK
pure, lightness, honesty, innocence, truth	elegance, power, magic, mystery, conservative	romance, tender, femininity, delicacy

Figure 2. Color Psychology

Sound, temperature and lighting. Elements that have contribute in influencing the condition of space and its users. Loud noises can disturb a person's peace. So that not disturbing loud noises, then the room is made soundproof so that the sound does not disturb the peace of others. - Temperature affects the comfort of room users, where Room temperature greatly affects the comfort of the room (thermal comfort for Indonesians it is between 25.40 C – 28.90 C). - Lighting can affect a person's psychological condition. Spaces that tend to have minimal lighting make people be lazy and if it's too bright it can cause glare and unsightly.

Implementation of the Behavioral Architecture Concept in Design Recreative Land Zoning

Creating a land structure that provides a calm and peaceful atmosphere pleasing to residents with a stretch of green lawn stretches the shade as an application of the concept of behavioral architecture. Page green Budi Mulia 3 which is widely used for outside activities building (outdoor) so that it becomes a plus for occupants from outside the site.

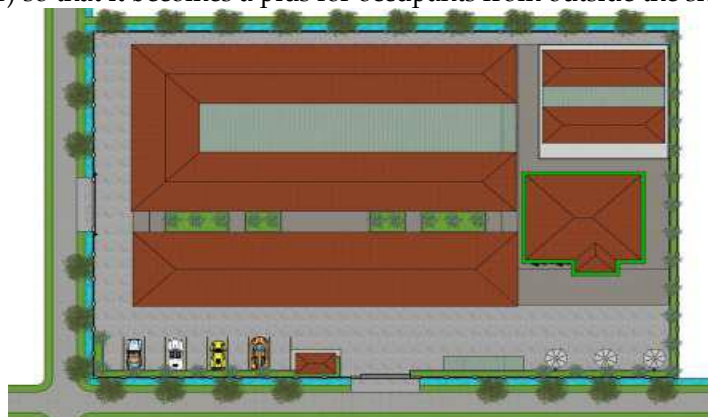


Figure 3. Recreative Land Zoning

Use of Grip Bars

Every wall in a building that is an elderly area, equipped with a Grip Bar with the aim of being a walking aid for the patient elderly people who experience a decline in physical condition such as being unable to walk for a long time, or easily lose balance.



Figure 4. Completeness of the grip bar on the interior and exterior of the building

Building Transport

Transportation in the building is equipped with ramps for makes it easier to use a wheelchair to reach the 2nd floor building. Around the ramp is equipped with railings to support it safety of ramp users.



Figure 5. Use of ramps

Maximize Natural Light

Natural lighting by utilizing morning sunlight and the bright light of the sky during the day. Every room in the building Get an exit opening so you don't need lights during the day day. In corridors and receptions such as lobbies, information areas, rooms sitting and waiting areas also have exit openings for access sky light so don't use the lamp.



Figure 6. Use natural lighting and ventilation

Use of contrasting colors in buildings

The use of contrasting colors is good for the elderly because lack of vision due to old age, use of white and light green gives a warm and comfortable impression to residents building of Budi Mulia 3.



Figure 7. Use of contrast colors in building

Vegetation Planning

The concept of applying vegetation to the Budi Mulia 3 is vegetation that can minimize high noise levels or low because the location of the area is on the main road which is the main access from the Main Street of the Social Services Sub-Department Complex. Vegetation has differences in each placement, namely as planting with quite dense strata, as shade and as regional aesthetics. The vegetation used is like golden teak wood plus, cape, kiara parasol, hibiscus and bougenvil. Wood tree teak gold plus is planted around the site because this tree can absorb noise up to 95% and when blown by the wind it will produce sound cool.




Figure 8. Vegetation Planning for behavioral architecture

CONCLUSION

The application of the concept of behavioral architecture in this redesign is based on the analysis of physical and non-physical design factors that have a direct impact on the behavior of the elderly. The implementation of this concept includes the recreational aspects of buildings, building transportation safety, utilization of natural ventilation and lighting for health, visual comfort, and vegetation planning for the elderly, for design output that is not directly related to the concept of behavior is not shown in this paper.

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