

THERAPEUTIC DWELLING: MENTAL REHABILITATION AND HEALING CENTER WITH BIOPHILIC DESIGN CONCEPT IN WEST JAKARTA

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Abstract.

Mental health is one of the most important issues in the world, including Indonesia. Indonesia is the second-ranked country with the highest total cases of mental disorders in Southeast Asia, which reached 9,162,886 (Estimates Global Health, 2017). According to Asia's Least and Most Stressful Cities (2017), the city of Jakarta is ranked 6th as the most stressful city in Indonesia. This mental health problem is triggered by a fast-paced lifestyle which makes it difficult for the people of Jakarta to adapt to one another so that people feel stressed or depressed. Unfortunately, society's paradigm of mental health disorders creates a stigma that can hinder the healing and recovery of sufferers. From a psychological point of view, environmental factors play an important role in the healing process for people with mental disorders. This is commonly referred to as a healing environment which is carried out by managing the relationship between nature, humans, and buildings that can support healing. The purpose of writing this design report is to plan a Mental Rehabilitation and Healing Center with a Biophilic Architecture approach in the City of Jakarta which is capable of providing therapy for sufferers of mental disorders with details including (1) planning and designing a Mental Rehabilitation and Healing Center that can accommodate therapy activities and healing with the Healing Environment method; (2) planning and designing a Mental Rehabilitation and Healing Center with a Biophilic Architecture Approach in the City of Jakarta. The method of discussion in this report uses descriptive methods, with factual data collection through literature studies, observational studies, analysis, and conclusions.

Keyword: *Mental Rehabilitation Center in West Jakarta City, Biophilic Architecture*

INTRODUCTION

Nowadays, mental health is an important issue in the world, especially in developing countries like Indonesia. Based on Estimates Global Health data in 2017, Indonesia is ranked second with the highest total cases of mental disorders and depressive symptoms in Southeast Asia with a total of 9,162,866 cases and the city of Jakarta is one of the cities in Indonesia which ranks 6th as the most stressful city in Asia. This is due to the fast-paced lifestyle which makes it difficult for the people of Jakarta to adapt to one another, thus triggering mental health problems. Approximately 14% of the total population of DKI Jakarta experience stress with acute stress levels reaching 1-3% and severe stress reaching 7-10% (Risikesdas, 2013). Based on data from the Cilandak Health Center, West Jakarta, in 2016, the number of mentally ill patients reached 23,188 people and increased in 2017 to 30,926 people. In 2017, Asia's Least and Most Stressful Cities stated that the City of Jakarta was ranked 6th as the most stressful city.

Unfortunately, in Indonesia, the issue of mental health is still a stigma that can hinder the healing and recovery of sufferers of mental health because of labeling, exclusion, and stereotypes in society that make sufferers prefer to remain silent or not consult. The 2018 Basic Health Research (Risikesdas) stated that only 1 in 11 people with mental disorders seek treatment and 91% of other sufferers do not. DKI Jakarta has at least 13 hospitals with services for mental disorders, and 3 of them are located in West Jakarta.

From a psychological point of view, environmental factors play an important role in the healing process for sufferers of mental health disorders, namely 40%, medical factors 10%, genetic factors 20%, and other factors 30%. Healing with a healing environment is a type of approach that is often used in the healing process for sufferers of mental health disorders which is a holistic concept that aims to prevent sufferers from being exposed to stress which will hamper the healing process. To achieve a healing environment approach, it is necessary to regulate the relationship between nature, humans, and buildings and in this case, architecture has a role as a mediator by transmitting the situation of psychiatric facilities as a therapeutic medium in the process of active rehabilitation and reintegration of people with mental health disorders.

Biophilic architecture is considered to be the right architectural approach to support the healing concept of a healing environment. Concerning psychology, biophilic design is considered capable of being a means of recovery from stress. Theory suggests that there are stressful and non-stressful environments and that non-stressful environments can actively help people recover from stress and burnout (Gills). The presence of natural elements can reduce heart rate and pulse variability, lower blood pressure, reduce cortisol, and increase the activity of the parasympathetic nervous system, as well as reduce the activity of the sympathetic nervous system (Soderlund). In addition, a fashion designer and urban gardening supporter, namely Ron Finley, also stated that "Gardening is the most therapeutic and defiant act you can do. Especially in the inner city, you are strawberries", which supports that biophilic architecture is also an architectural concept that can respond to the environmental potential for mental rehabilitation center buildings in Jakarta.

MATERIAL AND METHODS

The method that will be used in the preparation of this Final Project Report (LPA), be collecting factual data regarding existing data in the City of Jakarta and its surrounding areas through literature studies, study observations, analysis, and conclusions. Literary Studies look for various types of literature that explain the theoretical basis related to rehabilitation centers for mental disorders, as well as literature on the processing of outer and inner spatial planning, especially for its application to therapeutic residences or mental rehabilitation centers that prioritize environmental healing in their healing methods.

By using data searches and direct images of residential therapy objects or mental rehabilitation and consultation centers, as well as other buildings and locations that have the same function the analysis parsed and reviewed the results of the data obtained, then compared with the literature study. After that, the principles, building requirements, standards, and conclusions are taken. Combining the data and information that has been obtained from the data collection process which is then analyzed by reviewing and reviewing the data and then processed into the formulation of planning and design concepts according to the expected goals. The conclusion, produces the formulation of planning and design concepts as a solution to the problems that exist in the subject matter.

CONCEPT

Therapeutic Dwelling: Mental Rehabilitation and Healing Center is a mental rehabilitation and healing center in the form of a therapy house aimed at people with mental disorders. Therapeutic itself is a term which, when interpreted based on the Kamus Besar Bahasa Indonesia (KBBI), means therapy or healing through a mental system or mindset that creates feelings of improvement, healing, and recovery. While Dwelling is a noun form in English that means a house to live in.

Mental Rehabilitation Center Building Requirements

Rehabilitation requirements used refer to general requirements of a psychiatric hospital in between as follows:

- a. Avoid sharp shapes
- b. Avoid using glass.
- c. Room heating, ventilation, and air conditioning placed on the ceiling or part of the wall tall
- d. Avoid designs with details that can easily be tampered with
- e. Two-way door use
- f. The operation of the elevator is key only
- g. etc.

Mental Rehabilitation Center Site Standards

Based on the Regulation of the Minister of Health of the Republic of Indonesia Number 56 of 2014 concerning hospital classification and licensing, the requirements for the location of a mental hospital include:

- a. The mental hospital is not isolated, it cannot be far from the city center, no more than 15 Km.
- b. Not in a hazardous area (on the edge of a slope, near the foot of a mountain prone to landslides, near a creek or body of water that can erode the foundation, close to an active/earthquake fault line, prone to tsunamis, prone to flooding, in a typhoon/hurricane zone, and others).
- c. Accessibility infrastructure must be available for transportation routes.
- d. Adequate availability of public utilities such as clean water, sewage, electricity, and communication/telephone lines.
- e. Availability of parking space.
- f. Not under the influence of SUTT and SUTET.

Mental Rehabilitation Center Building Standards

- a. The building meets the minimum building floor area requirements.
- b. The building complies with the provisions of the building code consisting of :
 - KDB with a max value 10-50%
 - KLB and the max height of the building stipulated in the regional regulation
 - The free distance of the building includes the boundary line of the building
 - In accordance with the general spatial plan for the City of Jakarta with the designation of mixed zones as well as office, trade, and service zones, this Mental Rehabilitation Center is included in the type of hospital building or building for the practice of specialist doctors. This type of hospital building or building for the practice of specialist doctors is permitted to be in a mixed zone or office, trade, and service zone.
 - The location is close to a hospital or other health care center.
 - The location is in a cool area, where a cool area is an ideal area for recovery efforts.
 - Located in a strategic environment, not too dense with vehicles to avoid noise and pollution, but the location must be easily accessible by public transportation; facilitating the attainment of both visitors and patients.
 - Close to nature so that you can take advantage of the site's surroundings for the healing process from the city center.
 - An environment with fairly clean air quality, not in an industrial area.
 - Availability of city utilities such as sanitation, piped water, electricity, and telephone networks.
 - Has a minimum area of 1 ha.

- c. The building meets the following health requirements :
 - Have adequate facilities for air ventilation and good lighting
 - Have sanitize inside and outside the building which includes clean water supplies, black water arrangement, garbage, and rain arrangement.
- d. The building meets the following accessibility requirements :
 - Ease of access and achievement on the site includes road functions, availability of public transportation, and distance from the site location. The location selection considers the ease of access between the main road and the building. The main road as the main access to the building is easily accessible and has public transportation routes.
- e. The availability of adequate utilities will influence the planning of the Mental Rehabilitation Center as a public building. The availability of clean water, electricity, telephone, and other networks around the site will facilitate the planning of a functioning Mental Rehabilitation and Healing Center.
- f. The condition of the topography of the land will affect the planning and design of the building area that will stand on the site. Good and appropriate soil management will provide positive feedback for the sustainability of life in the building area and can support the activities in it.

Definition of Biophilic Design

Biophilic design is a building design concept that used to represent the relationship between building users, nature, and buildings. The concept of biophilia posits the idea that contact with nature plays a fundamental role in human physical and mental well-being, which carries out the inherent relationship between humans and nature (Wilson, 1984).

PLANNING LOCATION



Figure 1. Site Planning Location
Source: ArcGIS Earth (processed by author)

The planning location for Therapeutic Dwelling: Mental Rehabilitation and Healing Center is a site located on Jl. Komp. Puri Indah Blok R, No. 1, Jl. Puri Indah Raya, RT.1/RW.2, South Kembangan, Kembangan, West Jakarta City, Jakarta. This site is in zone C.1, Sub Mixed Zone with a site area of $\pm 32,000 \text{ m}^2$ or 3.2 ha. Geographically, the site is bordered by:

- North: Jl. Royal Flower
- South: Jl. Raya Puri Indah
- East: Carsome Puri Experience Center
- West: Indomobil Nissan Datsun Puri Indah

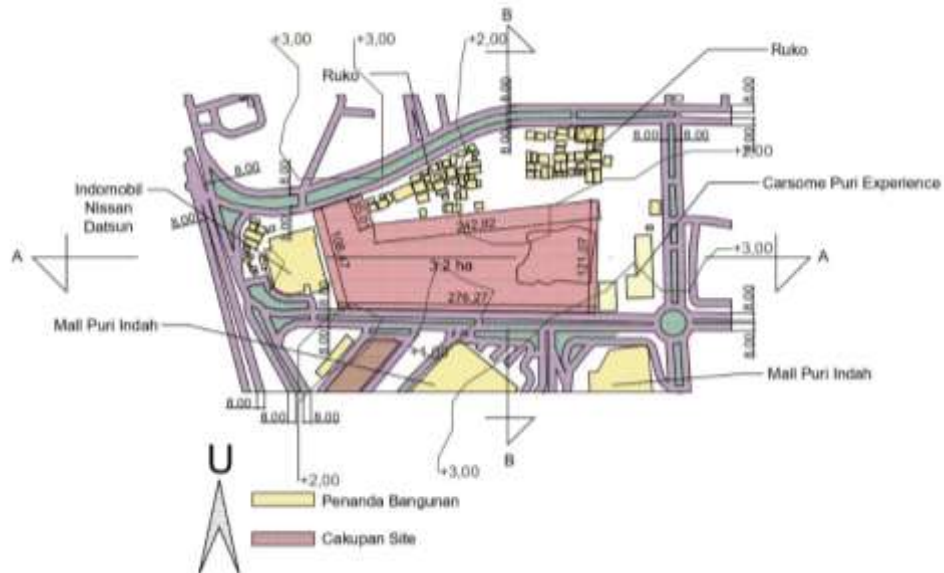


Figure 2. Site Planning Location
Source: ArcGIS Earth (processed by author)

Administrative data regarding the area of the site and regulations related to the Spatial Plan on the site are as follows:

- Site Area : ± 32,000 m² or 3.2 ha
- PSL (Pattern of Environmental Properties) : SP (Very Dense)
- KDB (Basic Building Coefficient) : 50
- KB (Building Height) : 32
- KLB (Building Floor Coefficient) : 5
- KDH (Coefficient of Green Area) : 25
- KTB (Basement Footprint Coefficient) : 60
- Type : T (Single)
- GSB : 10 meters

CONTEXTUAL ASPECT APPROACH

Accessibility

The location of the site can be reached via the main road, namely via Jl. Kembangan Raya and through local roads, namely Jl. Puri Indah Raya. Jl. Kembangan Raya is a collector street, while Jl. Puri Indah Raya is a local road. The road network in front of the site is quite wide and can be passed by vehicles from 2 directions. Both access points can be accessed using private vehicles and also a special access point via Jl. Kembangan Raya can be traversed by public transportation, namely public transportation B04 and Bus 3E, making it easier for visitors to reach the site by using city public transportation.

Responding to the context of the site, accessibility on the site is divided based on its function, namely accessibility for pedestrians, vehicles, and goods.

- a. Pedestrians can access the site via pedestrian on Jl. Raya Puri Indah, which is the road used by public vehicles to the site. The circulation flow for pedestrians is designed in an attractive, efficient, safe, and comfortable way for pedestrian users so that the entire commercial area can be accessed with several communal space points as meeting points.

- b. The car entry area can be accessed through the main entrance which is located on the south side and is directly connected to Jl. Raya Puri and the entrance which is located in the northwest of the site. Which is directly connected to Jl. Royal Flower. The car park is divided into two places. The main parking area is located on the west side of the building and a special parking area for the disabled.
- c. The entry area for motorized vehicles is located on the south side which is directly connected to Jl. Raya Puri Indah and on the northwest side of the site which is directly connected to Jl. Royal Flower. While the exit area is located on the south side. The motorbike parking area is located in the southwest.
- d. The entry and exit area for goods is located on the side entrance on the west side of the site which is directly connected to Jl. Raya Puri Indah. The entry and exit areas of these goods are separated from the main entry and exit areas. The circulation of goods by large vehicles is directed directly to the loading dock, where the circulation of goods from the loading dock to each area of the building uses a mini cargo electric vehicle.

Climatology

- a. The plan for this mental rehabilitation center is to face south with the addition of a building cantilever that can produce a cold area because of the shadow below.
- b. Place the secondary layer on each side of the building that is not protected by vegetation and cantilever, for grilles or ventilation in the north and south areas. Room temperature can be controlled and lighting can be optimal.
- c. The layout of the building mass utilizes the northern part of the site boundary zone elongated and the eastern part of the land broadly. In addition, processing the contours of the land so that the land is higher than the road to obtain an optimal hierarchy and a clear view of space

View

For the view, the floor plan is designed innovatively which is able to provide maximum views. The outside of the room is curved to add a perimeter for the view, with the right arrangement, any room can have that view.

ARCHITECTURAL ASPECT APPROACH

Building Mass

The process of forming building masses is inseparable from the biophilic architectural approach, the scope of mental health, and the design principles that are determined.

The Face of the Building

Biophilic design is one type of design that can reduce stress, increase creativity, and clarity of mind, increase well-being, and accelerate healing. In planning the Mental Rehabilitation Center, the application of the biophilic concept is realized by implementing selected patterns into the building design.

- a. Presenting plants in the building, both in the building interior and exterior of the building, especially in the rehabilitation meditation area.
- b. Using the implementation of organic forms in buildings.
- c. Take advantage of natural lighting.
- d. The presence of the water element is non-depressing and harmless for patients with mental disorders.



Figure 3. Therapy Room
Source: author



Figure 4. Building Facade
Source: author



Figure 5. Therapy Pool
Source: author



Figure 6. Therapy Room
Source: author

DESIGN RESULTS



Figure 7. Block plan
Source: author

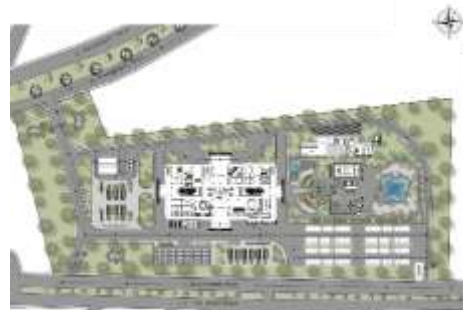


Figure 8. Building Facade
Source: author

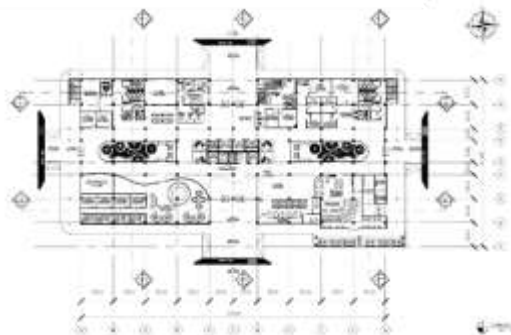


Figure 9. First Floor Plan
Source: author

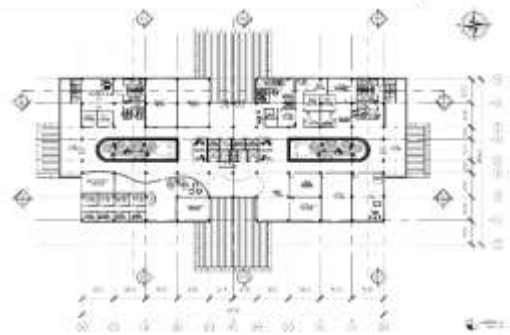


Figure 10. Second Floor Plan
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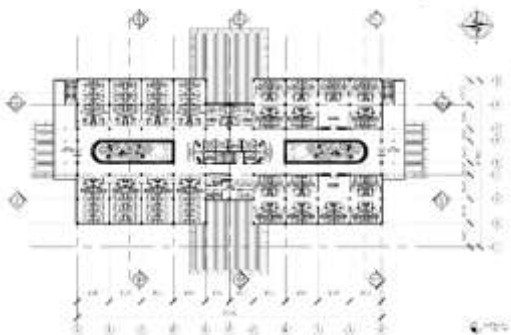


Figure 11. Third Floor Plan

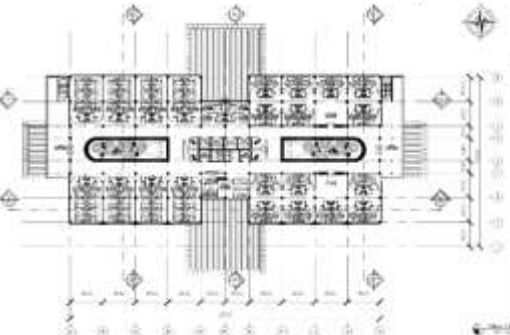


Figure 12. Fourth Floor Plan

Source: author

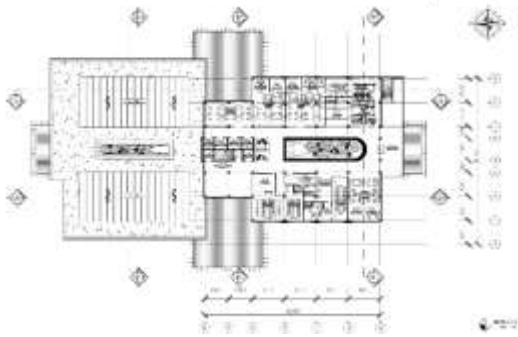


Figure 13. Fifth Floor Plan
Source: author

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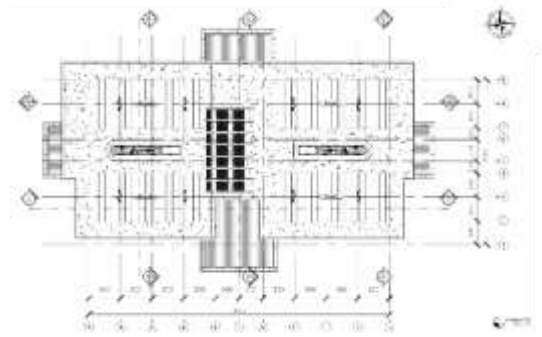


Figure 14. Roof Plan
Source: author



Figure 15. Front Facade
Source: author



Figure 16. Back Facade
Source: author



Figure 17. Right Facade
Source: author



Figure 18. Left Facade
Source: author



Figure 19. Section A-A
Source: author

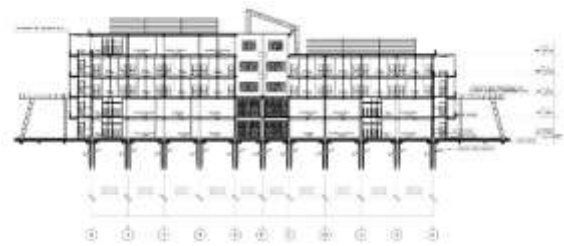


Figure 20. Section B-B
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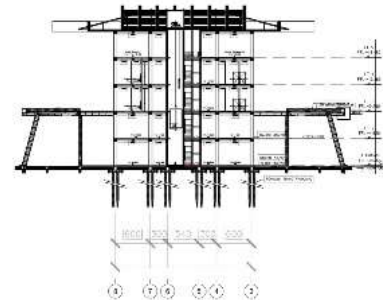
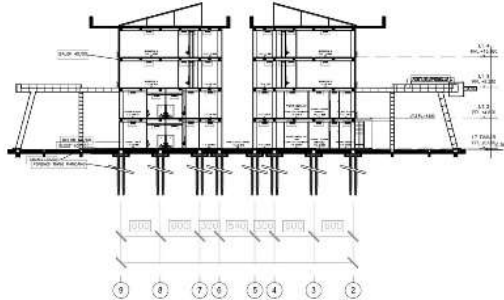


Figure 21. Section C-C
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Figure 22. Section D-D
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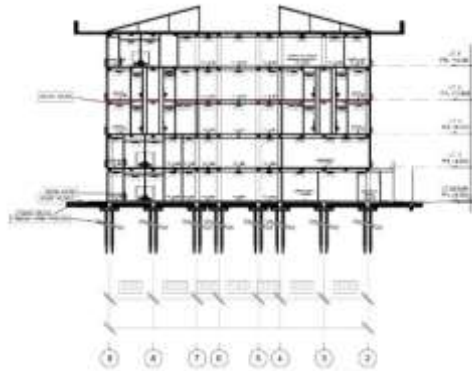


Figure 23. Section E-E
Source: author

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