

Designing Mental Disorder Rehabilitation Facilities in Medan Using a Healing Architectural Approach

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ARTICLE INFO

Article history:

Received 16-1-2024

Revised 14-8-2024

Accepted 21-8-2024

Available online 31-8-2024

E-ISSN: 2622-1640

P-ISSN: 2622-0008

How to cite:

Marpaung B O Y, Aritonang A P. Designing Mental Disorder Rehabilitation Facilities in Medan Using a Healing Architectural Approach. International Journal of Architecture and Urbanism. 2024. 8(2):317-326.

ABSTRACT

One of the grounds that supports this design is the high incidence of mental diseases in North Sumatra, particularly in Medan, and the dearth of appropriate rehabilitation facilities. According to information from the Indonesian Ministry of Health in 2019, there are a lot of issues with mental diseases among Indonesians, particularly in the province of North Sumatra. Up to 31.86% of North Sumatran's population suffers from mental illnesses. Additionally, 35.55% of people in Medan in North Sumatra as a whole suffer from mental illnesses. It is a component of several therapy processes for the recovery of ODGJ through physical, psychological, and social methods, according to the 2017 Indonesian Minister of Health Regulation of Rehabilitation. Designing health center buildings, especially rehabilitation centers, is highly advised when using healing architecture. The architecture used to promote healing or repair is known as "healing architecture." Because color and natural elements in buildings can assist patient rehabilitation, these two features are typically associated with healing architecture in its application. Because there is a connection between a building's architecture and the healing requirements of its occupants, healing architecture is crucial in rehabilitation center construction. It is intended that with the availability of treatment facilities that match the quality and design of better buildings, awareness of the significance of mental health in society would grow and an increasing number of individuals will have the courage to speak up and seek treatment. Social stigma will automatically decrease as a result.

Keywords: healing architecture, mental disorder, rehabilitation



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1 Introduction

Mental disorders are changes in mental function that lead to impaired mental function. There are many different types of mental illnesses, including mild, moderate, and severe mental illnesses. This facility's layout is intended for those with mental illnesses who also need non-medical treatment or rehabilitation [1]. According to information from the Indonesian Ministry of Health in 2019, there are a lot of issues with mental diseases among Indonesians, particularly in the province of North Sumatra. Up to 31.86% of North Sumatran's population suffers from mental illnesses. Additionally, 35.55% of people in Medan in North Sumatra as a whole suffer from mental illnesses [2]. The provincial capital of North Sumatra is Medan city. On the island of Sumatra, it is the biggest city in the east. The Deli Serdang Regency, to the west, east, and south, as well as the Malaa Strait, to the north, are the immediate borders of the Medan city area. It can be said that the design of a rehabilitation center for mental disorders in Medan is the design of a facility that offers treatment and healing procedures for those who experience minor or severe mental diseases. Establishing facilities and employing healing architectural features in Medan City can assist medical staff and the people who work there in performing their duties effectively, in addition to serving as healing aspects for patients. In a series of therapeutic procedures for the recovery of ODGJ using physical, psychological, and social approaches,

rehabilitation is one of the stages [3]. As a result, Medan needs a facility for the treatment of mental illnesses. To aid the recovery of mentally ill patients with adequate facilities but subpar care, Medan has several mental institutions. Additionally, the building doesn't use any features of Healing Architecture.

The architecture used to promote healing or repair is known as "healing architecture." Because color and natural elements in buildings can assist patient rehabilitation, these two features are typically associated with healing architecture in its application. The three key components of Healing Architecture are people, process, and site. The goal of the Healing Architecture concept is to establish a comfortable environment for users to interact with so that patients can forget their agony. The physical surroundings of patients may have an impact on their psychological well-being and mental health. About building design, which includes picking colors for the building, building symbols, clear visuals, and the usage of roof gardens on the building, the application of the recovery Architecture idea to the exterior is also capable of assisting patients in the process of mental recovery. In the meantime, the building's inside is decorated with calming color schemes. Using light hues and natural examples as inspiration, design a novel idea.

Because of the connection between a building's architecture and the healing requirements of its occupants, rehabilitation center facilities should adopt healing architecture. It is envisaged that the presence of treatment facilities that match the caliber and aesthetics of superior buildings will promote awareness of the significance of mental health in society and inspire more people to speak up and seek treatment. As a result, societal stigma will automatically decrease.

The process of restoring damaged bodily parts for people (hospital patients or disaster victims) so they can become valuable human beings and have a place in society is referred to as rehabilitation in the Big Indonesian Dictionary [4]. Recovery from or improvement to the best results for people who have a history of mental illness is called rehabilitation [5]. A technique known as rehabilitation is used to restore mental health after it has been lost and to deal with the emotional fallout of losing one's talents [6]. After finishing a curative program, rehabilitation is the process of enhancing the physical and mental well-being of drug addicts. This treatment seeks to ensure that those who have developed a drug addiction stop using it and are free from illnesses of the brain, nerves, and kidneys, as well as character changes, mental harm, AIDS, syphilis, and other diseases brought on by drug use [7]. The goal of rehabilitation is to replace a damaged or ill form with one that can function normally [8]. A person has the legal right to return to his or her prior status, as determined by the court, through rehabilitation. According to Criminal Procedure Code article 1 paragraph 22 (which defines rehabilitation as the human right to have his rights to position, dignity, and respect restored at the level of investigation, trial, or prosecution without using reasons based on the law and mistakes made by individuals or laws that have been applied based on which have been regulated in this Law), rehabilitation is the right to have his rights to be given at the level of investigation, trial, or prosecution.

When a person has a mental disorder, their thoughts, feelings, and behaviors are altered. The Big Indonesian Dictionary's (KBBI) definition of "mental disorder" is "mental imbalance leading to abnormal attitudes or behavior". People with mental disorders, commonly referred to by the acronym ODGJ, are people who have problems with their thoughts, feelings, and behavior. These problems can cause suffering and make it difficult for them to perform their duties as human beings [9]. A category of illnesses known as mental disorders causes both physical and mental dysfunction. However, even though sometimes the symptoms can be noticed in physical circumstances and can lead to discomfort and difficulties with performing human activities, this aberration is not brought on by illness or damage to specific bodily parts [10]. According to the American Psychiatric Association, a mental disorder is a psychological or behavioral pattern that manifests in a person on a clinically significant level and is connected to stress, disability (damage to one or more significant areas), or an elevated risk of painful death, painful incapacity, or loss of freedom [11]. Mental disorders are modifications in mental functioning that lead to disturbances in these processes, causing distress in the sufferer and difficulty performing social tasks [12]. Mental disorders are medical conditions that occur from disruptions in social, psychological, genetic, physical/chemical, and biological functioning and produce psychological or behavioral difficulties [13].

The Latin word *rehabilitate* is where the word *rehabilitation* is said to have originated. *Re* means "again," and *habitare* is Latin for "suitable" or "fit." Restoring something to its original state or returning it to a normal state is the meaning of *rehabilitation*, which refers to the word's etymology. A mental disorder rehabilitation facility is a location that supports the process of helping someone recover from trauma-related harm and reach their

optimum levels of function, independence, mental stability, and well-being. In light of the foregoing knowledge, the author is particularly interested in looking at Rehabilitation Centers that optimize the repair of psychological damage so that patients with mental problems can resume their normal lives. When a person's mental health is bad, they typically lack the abilities necessary to participate, operate, and assist others in their community as they ought to. In addition, the individual needs to deal with the stigma associated with having an illness, which may cause the patient to become less socially adept and more reclusive. The goal of the mental disorders rehabilitation center is to provide a setting where patients can receive rehabilitative psychological health care, preventing their condition from getting worse.

2 Methodology

A qualitative method with descriptive study is utilized when designing a rehabilitation facility for mental problems to choose a place [14]. The goal of the descriptive research approach is to provide a comprehensive, in-depth description of the object or subject under study to find a solution to the issue. The design location that was selected is located near the Medan Mental Disorders Rehabilitation Center. There are crucial factors to take into account when developing a center for the rehabilitation of mental disorders, including location choice. The analysis is a more in-depth examination of the information gleaned from field survey findings and then compared to benchmarks derived from literature study findings. Researchers collected data to identify the energy context in the design area [15].

3 Results and Discussion

3.1 Project Description

The project location is on Flamboyan Raya Street, Tanjung Selamat Village, Medan Tuntungan District, Medan City, North Sumatra (Figure 1). According to the RDTR, the Medan Tuntungan area is designated as land for a health area. This site is located in a high-density residential area. Getting to the site is not difficult but it is very close to the main road.



Figure 1. Project Location

Source: Google Earth [16].

At 2.5 to 3.75 meters above sea level, the city of Medan leans toward the north. It was discovered that the topography at the design location tended to be flat from the findings of observations (surveys). Using either private or public transportation, the primary entry to the site area is via Flamboyan Raya Street, via Setia Budi Street. No barriers are blocking direct access to Flamboyan Raya Street from the Setia Budi Street intersection.

3.2 Mass Concept

The site or site plan in Figure 2 is designed based on a multi-mass arrangement which is divided according to its function. The mass is arranged around the shape of the site to create space in the middle area of the site as an activity area for rehabilitation center users. Site plan processing is carried out to create an atmosphere that

can support the healing architecture theme and become an active space by utilizing circulation arrangements. Elements on the site are influenced by vegetation, facilities, and technology. Before determining the site design, first determine the shape and position of the building. This is done so that the pattern of the outdoor space obtained organically follows the shape of the building. The organic formation of outdoor space can create a balance between outdoor and indoor space. The purpose of the vegetation in the site design is to provide guidance, shade, and aesthetic appeal. The color of the plants can have a psychological impact by enhancing sensations of joy as well as quiet and coolness. Similar to how it protects people up close, technology also serves to safeguard people from harm at a distance. The patient/rehabilitation center user activity area is located in the center of the property. Here, multiple pools serve as a source of water sound. A person's mentality can be influenced by the sound of splashing water to be relaxed, comfortable, and unconcerned with the circumstances.

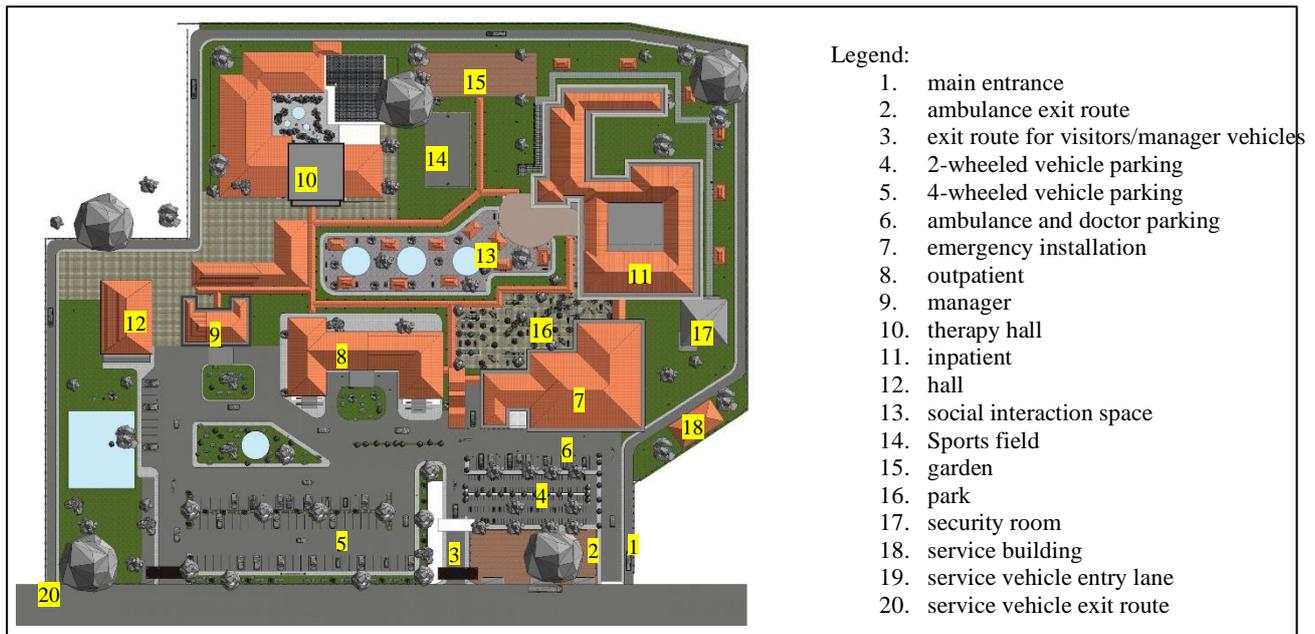


Figure 2. Siteplan

This image, which is located on the ground plan with its south-facing orientation, depicts the interaction between the circulation of the inner and outside spaces, demonstrating which can be accessed by the general public, which is exclusively used by patients and medical personnel, and which is used by services (Figure 3). The arrangement of building masses also indirectly creates this circulation. The Rehabilitation Center building for mental diseases likewise uses horizontal circulation, as evidenced by the way the hallways and pedestrians/sidewalks move through the space.

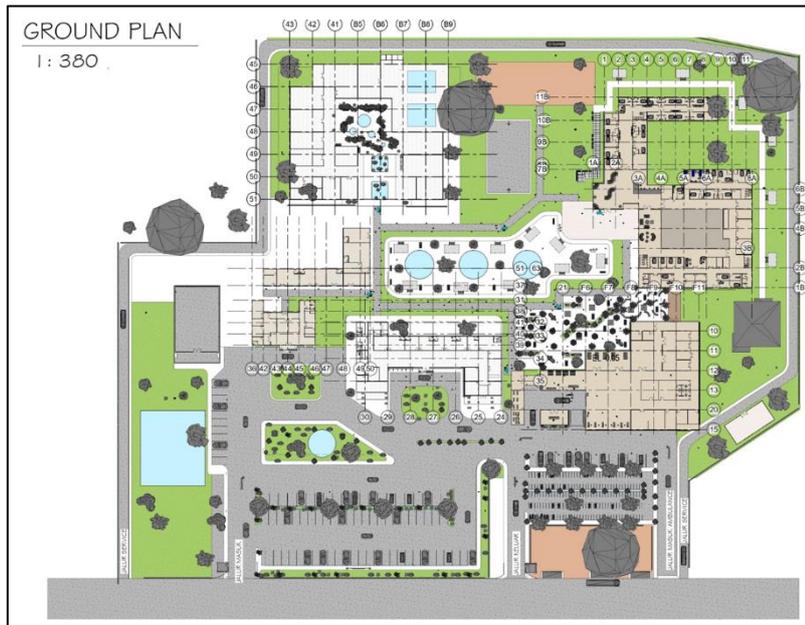


Figure 3. Ground plan

There are outpatient and emergency facilities next to each other in the building's front area, and the emergency facility is connected to the inpatient facility, making it simpler to move patients who must receive inpatient care. The placement of the buildings is also connected. To make it simpler for patients who desire to receive therapy, the inpatient and therapy centers are also close to one another. Additionally, because of the management building's design, which provides direct access to the site's central gathering space, staff may find it simpler to keep an eye on patients and the on-duty medical personnel. And from any angle, you can see the management building. Whether a building is public or private has an impact on where it is located. The outpatient care center, emergency room, management building, and hall are located in the public zone's front structures. The inpatient and rehabilitation halls are located in the private zone's building, which is towards the back. Visitors must report to the nurse's station at the entrance if they wish to enter the patient area.

The axonometric form in the design describes a section of each level of the building to show the function and placement of space in 3 dimensions (Figure 4). Based on the analysis carried out by researchers in regarding building intensity, it was found that the height of the buildings around the site is around 1-4 floors. Therefore, the designed building mass only consists of 1-3 floors (Figure 5).

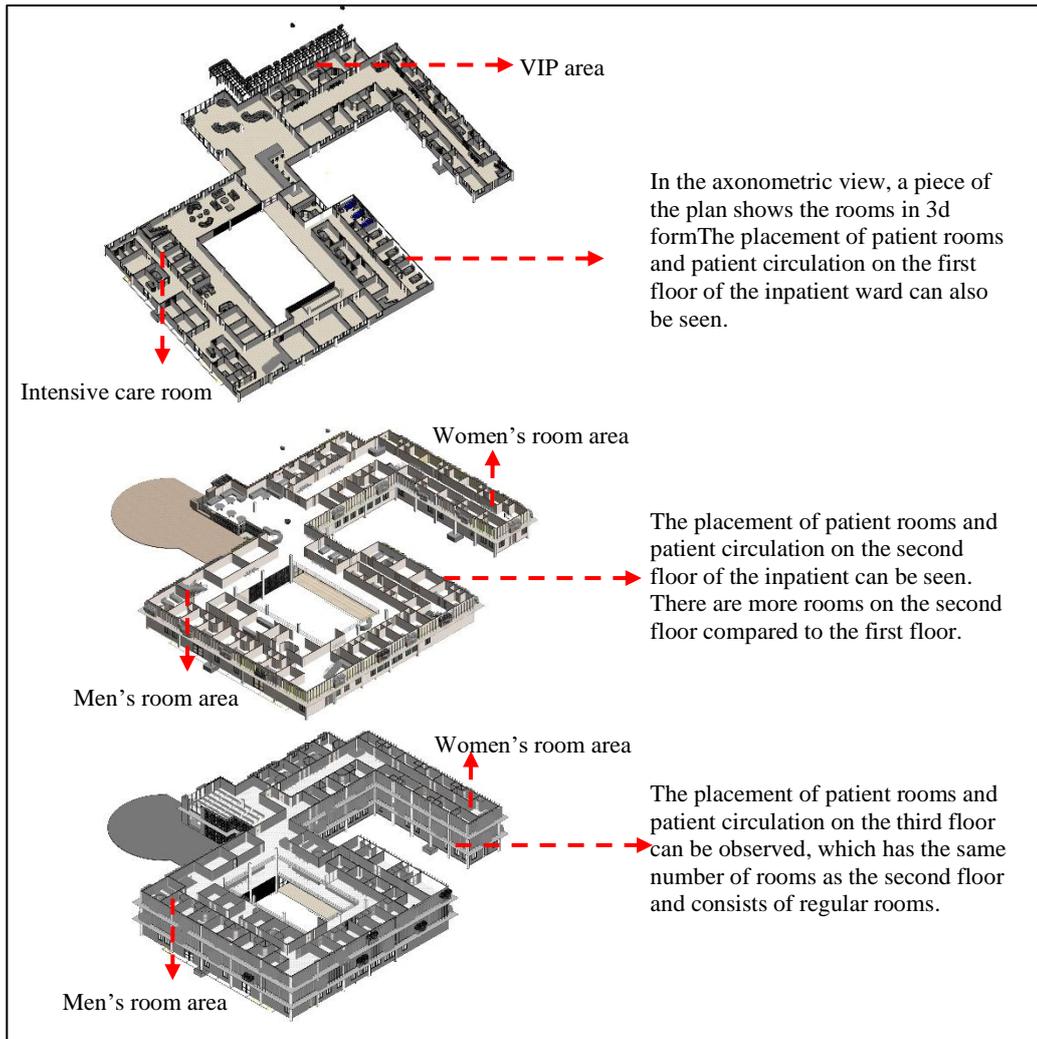


Figure 4. Axonometry

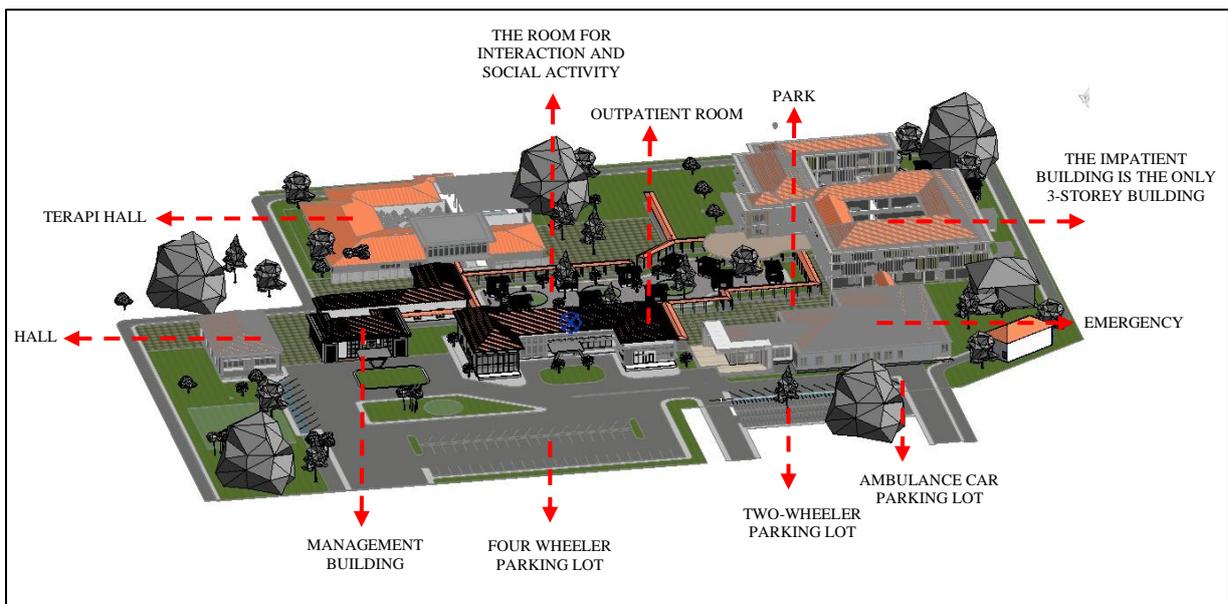


Figure 5. Landscape

3.3 Application of Healing Architecture Theme

Both the building's interior and external spaces implement the idea of healing architecture in place. Green affects the inner self, which is strongly connected to nature, thus it is applied to open and free regions. White

is used in structures or interiors to relieve pain, and sterility, and create an atmosphere of freedom and openness. In the outdoor area that is used with buildings, flower gardens are used as a sense of sight that benefits patients in the healing process, and the sense of touch creates a happy effect, lowers stress, keeps skin healthy, improves blood circulation, calms the mind, and so forth (Figure 6).



Figure 6. Application of Vegetation to Buildings

Optimizing the link between indoor and outdoor spaces to foster a sense of connection with nature is one way to promote comfort based on the healing architecture approach. This can be done by including windows in each space, building internal spaces with a variety of natural components such as inner courts, pools, and vertical gardens, adding windows, or extending the view to an exterior place with natural elements. By increasing plants that can aid in patient healing and by selecting plants that are appropriate for use in hospitals, such as philodendron, ivy, lilies, and lilies of Paris, it is possible to improve both psychological and physical healing, particularly in psychology or mental and physical therapy for patients (Figure 7).



Figure 7. Color Concept

3.4 Inner Space Area

The interior atmosphere of the mental disorder rehabilitation center building is designed to make it easier for patients and medical staff to carry out activities to heal mental disorders. In the process of designing a building for a rehabilitation center for mental disorders, the principles of healing architecture are applied. Mentally disordered patients need room to wait and receive their turn for consultation and treatment services from the polyclinic. The polyclinic waiting room applies the healing concept by choosing neutral colors (Figure 8).



Figure 8. 3D Interior Outpatient

The function of openings in the room function as a facility for sunlight to enter (Figure 9), because the incoming sunlight can kill germs and bacteria in the room. The benefit of sunlight is to kill germs and also as a substitute for electric light so that the building can save on electricity usage. Openings in rooms are useful as a medium for air circulation so that the room is not stuffy or damp, helping with air exchange. With the opening, the patient can see conditions outside the room to relax the eyes and mind so that the patient becomes calmer and more peaceful. The use of foam on the patient's walls to make them impact-resistant also reduces the risk of unwanted harm to the patient and adds aesthetic value to the room. The shiny, patternless material creates a calming effect which is good for use in therapy/treatment rooms. The color symbolizes a certain situation or condition. The use of color in inpatient buildings is also based on psychological functions. on color psychology for mental health, green and yellow have psychological effects, increasing feelings of happiness, joy, and freshness and helping to ensure healing.



Figure 9. 3D Interior Inpatient

3.5 Outdoor Space Area

Outdoor spatial planning is divided into 2 types according to its function, namely active open space, namely open space that contains elements of activity in it, and passive open space, namely outdoor space that does not have elements of activity in it. The arrangement of outdoor space functions as a transition between the building and nature or the environment. Because it greatly influences the site's environment and the building's spatial planning. Outdoor space is a place for open space activities, circulation between buildings, as well as entrances to buildings and parking. In the design of the Mental Disorders Rehabilitation Center in Medan, outdoor space is used as a spatial element. The elements that form outdoor space in the design of the Mental Disorders Rehabilitation Center are divided into several zoning areas, namely consisting of public zones and private zones. The public zone consists of vehicle entry and exit routes, and parking areas for visitor vehicles, ambulances, employees, and medical personnel (Figure 10).



Figure 10. Outdoor Space

4 Conclusion

The third Sustainable Development Goal (SDG) states that a healthy life should be pursued at all ages. The Sustainable Development Goals (SDGs) have 17 goals and 169 targets. This is true for maintaining mental wellness at any age. Build up general mental health awareness in Indonesia to accomplish this goal. There is a demand for a hospital that can handle mental health concerns. The concept of healing architecture was used in the design of the Mental Disorders Rehabilitation Center. The structure is made up of multiple natural-looking multi-masses, putting into practice three crucial factors that pertain to people, process, and place. To improve the mental health and well-being of the patients there, these three features are implemented in the design of a mental disease rehabilitation facility, which considers the interaction between the building and its occupants. To aid patients in their own natural recovery, elements of healing architecture are incorporated into mental disease rehabilitation facilities. The use of a roof garden, as well as the creation of a garden inside the building as a connecting room, can help users, including patients, medical staff, and people who are active inside, feel calm so that they don't feel like they are in a hospital, which has a positive impact on the patient's mental health.

5 Acknowledgment

This project is a study of the design of Mental Disorder Rehabilitation Facilities In Medan Using A Healing Architectural Approach. This design aims to help patients in the mental healing process, both in terms of building design which consists of choosing colors for the building, building symbols, clear visuals, and the use of roof gardens on the building. The Department of Architecture, Faculty of Engineering, Universitas Sumatera Utara, and all those who helped with the study and design are acknowledged by the author.

6 Conflict of Interest

The authors certify that the manuscript does not have a conflict of interest.

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