PLAN OF ORTHOPEDIC AND TRAUMATOLOGY SPECIALIST HOSPITAL

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ABSTRACT

Along with the times, the quality and quantity of hospitals in Indonesia also continue to grow. According to Statistics in Indonesia, the number of births in Indonesia is still high, as well as the mortality rate shown by the 2012 medical survey which is also still high. So that improving the quantity and quality of maternal and child is still needed. Based on data from the Ministry of Health of the Republic of Indonesia, pregnant women do not have access to go to midwives or doctors in the regions. Suburban communities, especially in the Medan Sunggal area, do not get adequate services and facilities in terms of health, especially maternal and child health. So with that, the Mother and Child Hospital will be established in the Medan Sunggal area is expected to fullfill the necessities of the community in the suburbs of Medan. The Mother and Child Hospital was designed with the theme of Green Architecture so that the resulting building design is comfortable with an environmentally friendly atmosphere so that it can be considered to be the main destination for everyone who is pregnant and giving birth.

Keywords: health facility; orthopedic; traumatology; hospital; green architecture.

Received:	Revised:	Accepted:	Available online:
2021-09-21	2021-09-29	2021-10-12	2021-10-21

INTRODUCTION

The city of Medan has an area of 26,510 hectares (265.10 km²) or 3.6% of the total area of North Sumatra. Thus, compared to other cities/regencies, Medan has a relatively small area with a relatively large population. Geographically, Medan is located at 3° 30' – 3° 43' North Latitude and 98° 35' - 98° 44' East Longitude. For this reason, the topography of the city of Medan tends to tilt to the north and is located at an altitude of 2.5 - 37.5 meters above sea level.

Along with the times, the quality and quantity of hospitals in Indonesia also continues to grow, namely with the emergence of specialist hospitals. However, due to the increasingly complex needs of the community, people tend to use medical personnel offered by other countries which are more complete in terms of facilities and in terms of more secure security. However, for some cases, such as medical personnel for childbirth, people tend to use medical personnel who are easily accessible due to the time factor of birth that cannot be accurately determined, especially for normal births and also psychological factors, namely discomfort moving or moving due to a large gestational age. . So that an increase in maternal and child hospitals is still needed to accommodate the demands of the community's needs.

In addition, according to Statistical Data in Indonesia, the number of births in Indonesia is still high, reaching around 4.5 million babies each year. Likewise, the mortality rate shown by the 2012 medical survey is also still high, namely the maternal mortality rate is still above 200 per 100 thousand births and child mortality is above 34 per 100 thousand births. Meanwhile, the maximum maternal mortality rate according to data from the Minister of Health is 102 per 100 thousand births and the infant mortality rate is 23 per 100 thousand births. health during pregnancy. In addition, to reduce the mortality rate of babies born less healthy or malnourished.

A pregnant woman who will go through the delivery process of course also crave proper facilities in terms of childbirth such as pregnancy therapy, pregnancy consultation, a safe and comfortable

pISSN 2302-4240
eISSN 2655-2086

Volume 10, No. 2, December 2021, pp.373-392
DOI: http://dx.doi.org/10.32832/astonjadro.v10i2

birthing process, even a mother also needs a solution if she has a disease related to pregnancy. Likewise, children, small children or toddlers usually need very special care, considering their condition which is still vulnerable to the outside world. From this, it is realized that actually mothers and children need facilities and facilities that can serve the needs of mothers and children themselves.

Based on data from the Ministry of Health of the Republic of Indonesia, pregnant women do not have access to go to midwives or doctors in the regions. According to Dr. Lukman Laksmono from the Directorate of Maternal Health Development, Ministry of Health, RI, his party has known this for a long time. “On average, 10% of mothers in Indonesia have never had their pregnancy checked by health workers.

Communities on the outskirts of the city, especially the Medan Sunggal area, do not get adequate services and facilities in terms of health, especially maternal and child health. So with that, the Mother and Child Hospital will be established in the Medan Sunggal area. It is hoped that with the presence of this Mother and Child Hospital, the needs of people in the suburbs of Medan will get easy access in terms of location and medical service centers are fulfilled and affordable.

The aims and objectives of this Maternal and Child Hospital project are:

1. Provide services for maternal and child health so that health services in the suburbs of Medan can be reached by the surrounding community.
2. Improving the quality of life style of pregnant women who are not healthy with a hospital that is recreational so that it has a positive effect on the psychology of mothers and children.

The problems that may be faced by the author in the planning and design of this Mother and Child Hospital include:

1. How to improve services for maternal and child health in the city of Medan?
2. What is the form of the design of the Maternal and Child Hospital that is able to improve the quality of life of pregnant women?

Building planning including hospital buildings must pay attention to safety and comfort for each patient. If the patient is not comfortable eating, there will be trauma for each patient and patient caretaker (Syaiful.S, 2012; Syaiful.S, Yuliantino.M, 2017; Syaiful.S, Elvira.Y, 2017). Careful planning regarding this development must take into account the conditions in the field and the applicable development standards so that it is expected to be a reference material for other hospitals. Parking planning will affect security, comfort and affordable accessibility (Syaiful.S, Rulhendri.R, 2018; Syaiful.S, et.al, 2020; Syaiful.S, Andana.R, 2021). This activity must be free from the influence of parking vehicles and this rule must be established. Good parking will increase the comfort of every patient, medical doctor and nurse at the hospital (Syaiful.S, Wahid.N, 2020).

RESEARCH METHODS

The framework of thinking is as shown in Figure 1 below:

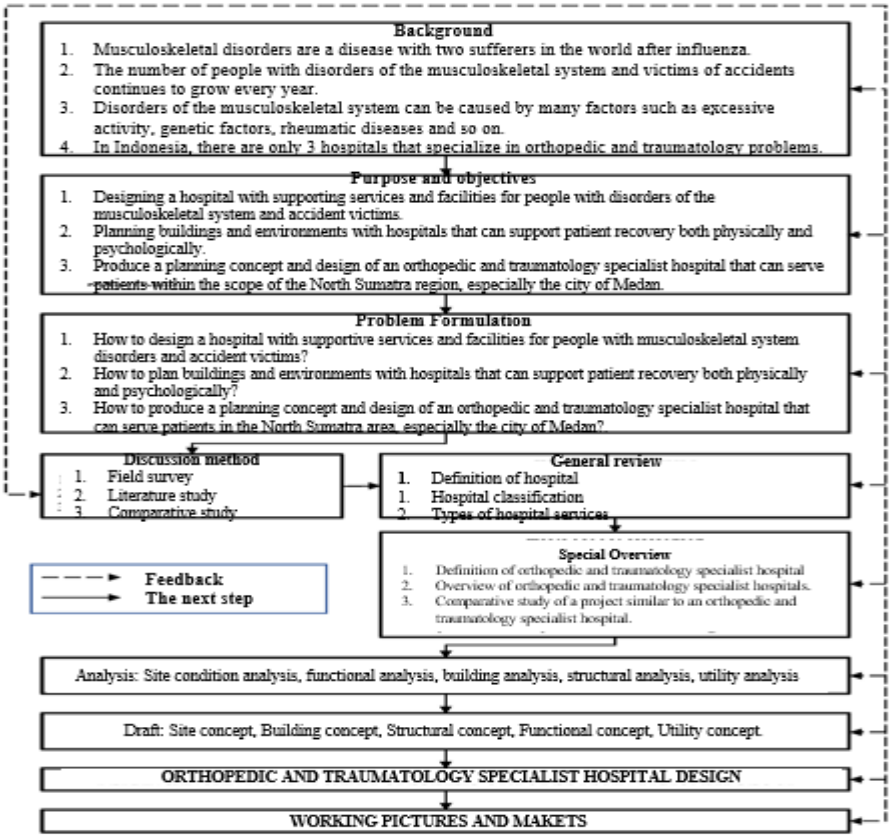

Figure 1. Mother and Child Hospital Mindset Source: Personal Analysis,2019

RESULTS AND DISCUSSION

Definition of Title

The following describes the meaning of each word in the project title, namely "Maternal and Child Hospital" which is described as follows:

1. Hospital is a building for treating sick people, a building for providing and providing health services covering various health problems. (Big Indonesian Dictionary, KBBI.web.id).
2. A hospital is a professional health care institution whose services are provided by doctors, nurses, and other health professionals. (Wikipedia.org).
3. Mother is the female parent of a child, either through biological or social relationships. (Wikipedia.org). Mother is a woman who has given birth to a child. (Big Indonesian Dictionary, KBBI.web.id).
4. A child is a person in the case of a naughty child who has reached the age of 8 (eight) years but has not yet reached the age of 18 (eighteen) years and has never been married. (Law on Juvenile Justice No. 3 of 1997 is stated in article 1 paragraph 2)

Based on the description of the title above, it can be defined, Maternal and Child Hospital is a place that is planned for the function of the health service section, especially serving the examination of mothers and children, such as pregnant women, mothers who are about to give birth, and health in children. This hospital plays a role in improving the health of mothers and children.

Hospital Classification

Central and local government general hospitals can be classified into 4 sections based on the elements of service, personnel, physical, and equipment (Siregar, 2004) as follows:

1. Class A umum general hospital

pISSN 2302-4240
eISSN 2655-2086
Volume 10, No. 2, December 2021, pp.373-392
DOI: http://dx.doi.org/10.32832/astonjadro.v10i2

Is a general hospital that has facilities and medical service capabilities of at least 4 (four) basic specialists, 5 (five) medical support specialists, 12 (twelve) other specialists and 13 (thirteen) sub-specialists.

2. Class B general hospital

   Is a general hospital that has facilities and medical service capabilities of at least 4 (four) basic specialists, 4 (four) medical support specialists, 8 (eight) other specialists and 2 (two) basic subspecialists.

3. Class C general hospital

   Is a general hospital that has facilities and medical service capabilities of at least 4 (four) basic specialists and 4 (four) medical support specialists.

4. Class D general hospital

   Is a general hospital that has facilities and medical service capabilities of at least 2 (two) basic specialists.

According to the Law of the Republic of Indonesia Number 44 of 2009, special hospitals can be classified into 3, namely:

1. Class A special hospital

   Is a special hospital that has the facilities and capabilities of at least specialist medical services and sub-specialist medical services according to complete specificity.

2. Class B khusus special hospital

   Is a special hospital that has the facilities and capabilities of at least specialist medical services and sub-specialist medical services according to a limited specialty.

3. Class C khusus hospital

   Is a special hospital that has the facilities and capabilities of at least specialist medical services and sub-specialist medical services according to the minimum specificity.

Special Overview
Definition of Theme

The theme approach for this school project is Green Architecture, where this word has many other terms, such as Eco-architecture, Sustainable architecture, and environmental architecture. Whatever the term, the three main objects that are certain and must be emphasized are living things, planets, and profit (3P = People; Planet; Profit).

The meaning of the word Green according to the Cambridge Advanced Learner's dictionary is "of a color between blue and yellow; of the color of grass", which means the color between blue and yellow; grass color.

Meanwhile, the meaning of the word architecture according to the Cambridge Advanced Learner's dictionary is "the art and science of designing and making buildings; the style in which buildings are made", which means the art and science of designing and making buildings; a style in a building.

Green Architectural Principles

The application of the Green Architecture theme to the designed building can be done in various ways as follows:

1. Realizing an area with a comparison between the area of green land and built-up land
   In accordance with the Regulation of the Minister of Public Works No.06/PRT/M/2007 concerning General Guidelines for Building and Environmental Planning, it is explained that the ratio between green land and built-up land is 40%: 60%. This is stated in the KDH (Green Area Coefficient), which is the percentage ratio between the total area of open space outside the

building designated for landscaping/greening and the area of plotted land/planning area controlled. With such planning, it is hoped that the quality of the air and the environment created will be beautiful and healthy for building users.

2. Develop good vegetation management

   The vegetation arrangement of an area also greatly affects the environmental conditions of the buildings in the area. With a good vegetation arrangement, it is hoped that it can improve the microclimate and reduce air pollution, especially in buildings where humans are active. With good vegetation management, it can reduce carbon dioxide gas emissions which will reduce the impact of global warming.

3. Developing green buildings
   In the concept of Green Building there are several things that need to be considered, namely:

   a. Integrated with nature.
   b. Pay attention to local ecosystems with long-term planning.
   c. The product of human actions by considering the quality of the environment, both physical and social.
   d. Meets LEED (Leadership in Energy and Environmental Design) criteria.
   e. Save energy while meeting needs.

4. Carry out the Recycle and Reuse Process for water and waste

   To realize the concept of green architecture, it is necessary to recycle and reuse water and waste. Water used in buildings will be recycled again through the water treatment process and reused so that we do not need to use clean water in large quantities. Likewise with waste. Wastewater from building waste can be re-treated and used for garden purposes.

The strategy in applying the green building concept to building design is as follows:

a. sustainable use of materials,
b. Links to local ecology,
c. The link between transit and residence, work and recreation,
d. water use efficiency,
e. Prioritizing local conditions, both physically and socially,
f. Sustainability education through design,
g. Strengthening the connection with nature, and
h. Building reuse/renovation Building resilience through flexible layouts.

Conceptualized by Terrapin Bright Green (a multi-disciplinary consulting company), the Biophilia Hypothesis proposed by Wilson is divided into 3 main concepts, namely:

1. Nature in the Space

   Refers to the direct presence of natural elements that can be seen in their form and nature in a room or place. These elements include plants, water, breezes, sounds, smells, and other natural elements. Other common examples are potted plants, butterfly gardens, fountains, aquariums, vertical wall plants, and roof gardens.

2. Natural Analogues

   Can be interpreted as the use of something organic, non-living, and

3. Nature of the Space

   Discusses the spatial configuration that exists in nature in a room, including innate traits from birth and the desire to learn so that we can see more of our surroundings, amazement at dangerous or unknown things, sights that cannot be seen clearly and awakening moments. someone over something that is known beforehand, and sometimes things that can give rise to a phobia.

pISSN 2302-4240
eISSN 2655-2086

Volume 10, No. 2, December 2021, pp.373-392
DOI: http://dx.doi.org/10.32832/astonjadro.v10i2

Benefits of Applying Green Architecture

Here are the benefits of implementing a biophilic design:

1. Health Aspect
   Catherine Ryan found that elements such as nature sounds improved mental health by 37% faster than regular urban sounds after exposure to a stressor, the same study found that when patients undergoing surgery were given aromatherapy, 45% of those patients used lower doses of morphine and 56 % of patients using less painkillers. Another study conducted by Kaitlyn Gillis and Brigitta Gatersleben found that the presence of plants in a room or building can reduce stress levels and increase pain tolerance, the use of the element of water and incorporating natural scenery in it also restores the mentality of building users. When examining the effects of biophilia on hospitalized patients, Peter Newman and Jana Soderlund found that by improving the quality of hospital rooms, depression and pain were reduced in patients, which resulted in shorter hospital stays from 3.67 days to 2.6 days.
2. Environmental Aspect

   Some experts argue that by adding natural elements such as plants, rain gardens (gardens with vegetation that can temporarily withstand the flow of rainwater from roofs, roads, terraces, and courtyards), and green roofs, to the artificial, building and urban environment so that they can regulate the flow of water. rainwater is better. Adding greenery also reduces carbon emissions, heat island effect (urban areas are warmer than the surrounding area due to human activities), and increases biodiversity. Greenery on facades and shade plants on roads can reduce the amount of heat absorbed by asphalt or other dark colored surfaces can reduce heat by up to 25% and reduce temperature fluctuations by up to 50%.
3. Economic Aspect

   The biophilic design may cost more due to the addition of natural elements that require maintenance, the higher the price of organic plants, etc. However, the health and environmental benefits will be worth the cost. Research shows that stores that use vegetation on their facades increase the number of store visitors and are willing to shop 25% more. Properties with biophilic designs also have the advantage that they can be sold at a higher price of around 16% than conventional buildings.

Project Description

The Mother and Child Hospital Project is a class C special hospital that provides services in the health sector specifically for the musculoskeletal system and injuries due to accidents and violence, located in the city of Medan. This hospital can be used as a reference for patients who experience birth problems or accident victims who are mothers and children.

Project location

The Orthopedic and Traumatology Specialist Hospital Project is located on Jalan Gagak Hitam, Medan Sunggal District, Medan, Indonesia. The project will be built on an area of 15,430m2. The width of Jalan Gagak Hitam is 33m, Jalan Belibis is 4m.

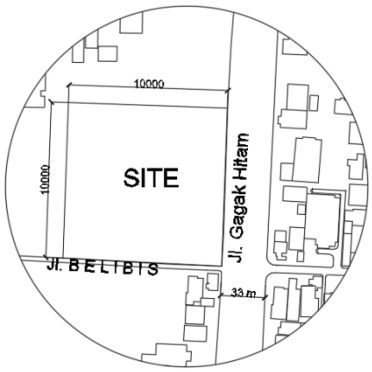

Figure 2. Project Location

Based on the Medan City Spatial Layout Plan, the site used for the planning and design of the Orthopedic and Traumatology Specialist Hospital project belongs to the SBWP zone, a High Density Housing sub-zone (which includes land assignments for hospitals). With the High Density Housing sub zone, the site has a maximum Building Basic Coefficient (KDB) of 80%, Green Open Space (RTH) a maximum of 15% and a maximum Building Floor Coefficient (KLB) of 3.2. Maximum building height limit is 4 (three) floors/ 18 (eighteen) meters. The minimum building width is 5m and the minimum building length is 6m or the ground floor area of the building is at least 36m2 with a minimum side and rear border of 1.5m.

Site Potential

The potential site is concluded from the suitability of the project site selection criteria for the Orthopedic and Traumatology Specialist Hospital, namely:

1. The project location is on the primary Gatot Subroto arterial road which is prone to accidents and the location is easily accessible to the public.
2. The project location is directly connected to a 2-way highway so that it is easily accessible by private or public transportation.
3. Located in a densely populated residential area so that it is easily accessible to the surrounding community.
4. Supported by infrastructure such as pedestrians in front of the site and utilities such as PLN, PAM, and drainage.
5. The area of the site that supports project activities is 1.54ha.

Actors and Program Activities

The perpetrators of activities at the Orthopedic and Traumatology Specialist Hospital are broadly divided into:

1. Patients, consisting of:
    a. Outpatient
    b. Patients who visit the hospital for a short period of time to consult a doctor, have regular health checks, undergo radiodiagnostic examinations, carry out laboratory checks, or undergo medical rehabilitation programs.
    c. Inpatients
    d. Patients who undergo treatment and stay in the hospital for a certain period of time.

2. Medical staff, consisting of:
    a. Polyclinic doctor
    b. Medical staff who examine patients.
    c. Emergency Room Doctor

pISSN 2302-4240
eISSN 2655-2086
Volume 10, No. 2, December 2021, pp.373-392
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d. Medical staff who take action on emergency patients.
e. Nutritionist
f. Medical staff who regulate and control the nutrition of inpatients.
g. Orthopedic specialist
h. Medical staff with special expertise in orthopedics and traumatology.
i. Surgeon
j. Medical staff who treat patients who require surgery.
k. Nurse
l. Medical staff who serve patients at the hospital.

3. Non-medical staff, consisting of:

a. Laboratory analyst

   Staff who conduct examinations of blood, urine, and stool samples.
b. Pharmacist
   Staff who mix, distribute drugs, and provide information about drugs.
c. Radiographer
   Staff who direct the patient when performing radiodiagnostic examinations.
d. Physiotherapist
   Staff who provide physiotherapy services to patients.
e. MEP staff
   Staff who are experts in the field of water, electricity, and plumbing systems in charge of conducting periodic checks and repairing MEP damage.
f. Security staff
   Staff who maintain security in the hospital environment.
g. Cleaning staff
   Staff in charge of maintaining the cleanliness of the hospital area.
h. laundry staff
   Staff in charge of washing used linen and distributing cleaned linen.
i. CSSD Staff
   Staff responsible for cleaning and sterilizing used instruments.
j. Clinical nutrition staff
   Staff in charge of cooking and distributing food to cafeterias and inpatients.
k. Driver
   Staff in charge of picking up patients and taking and delivering blood specimens.

4. Manager, consisting of:

a. Director and deputy director

   In charge of planning the program and hospital management.
b. medical committe
   Assigned to implement clinical governance so that hospital professionalism is maintained.
c. Internal Supervisory Unit
   Responsible for supervising and evaluating the hospital management control system.
d. Financial staff
   Responsible for managing hospital finances and financial reports.
e. Administrative staff
   In charge of the hospital administrative system.
f. Service staff
   In charge of serving, providing information, and dealing directly with patients.
g. HR staff
   Assigned to recruit, manage, and develop employees at the hospital.

Organizational Structure at Maternal and Child Hospital

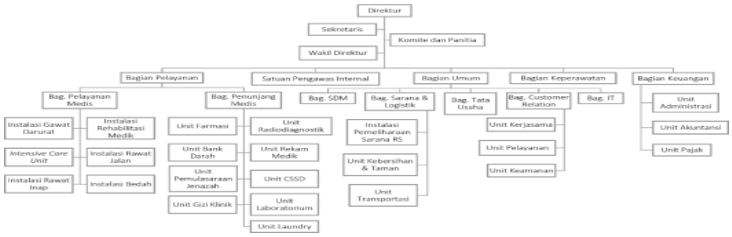

Figure 3. Maternal and Child Hospital Organizational Structure Source: Personal Analysis, 2019

RESULTS AND DISCUSSION

Project Analysis

Analysis of Buildings Around the Site

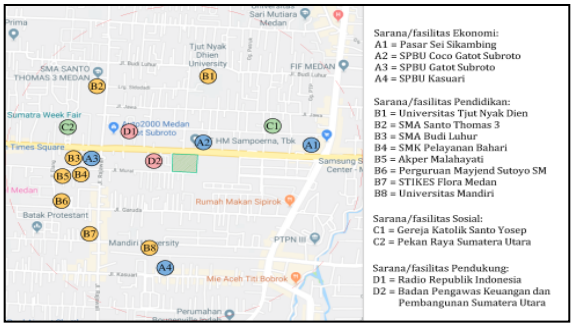

Figure 4. Analysis of buildings around the site within a radius of 1km Source: Personal Analysis, 2019

The location of the site is easily accessible from the city center and is in a strategic area with various types of facilities/facilities around the site.

Project Entrance Analysis

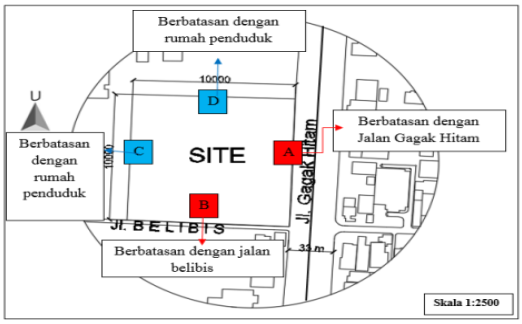

Figure 5. Analysis of alternative entrances Source: Personal Analysis, 2019

Table 1. Road characteristics

No.	Entrance Criteria	A	B	C
1.	Ease of access by motorized vehicle	3	3	2
2.	Passed by public transport	3	1	1
3.	Located on the main road	3	2	1
4.	Does not cause traffic jams	3	2	2

pISSN 2302-4240
eISSN 2655-2086

Volume 10, No. 2, December 2021, pp.373-392
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Total	12	8	6

Table 2. Selection of entrance

	A **Gagak Hitam Street**	**B** **Belibis Street**
The width of the road	33 m	4 m
Vehicle intensity	High	Low
Traffic lane	Two-way	Two-way
Road conditions	Good	Good

Description: 3=Good, 2=Enough, 1=Poor
Conclusion:
Based on the results of the entrance selection criteria in table 4.2, the Black Crow road was chosen as the main entry and exit route to the site,

Analysis of the Sun and Wind

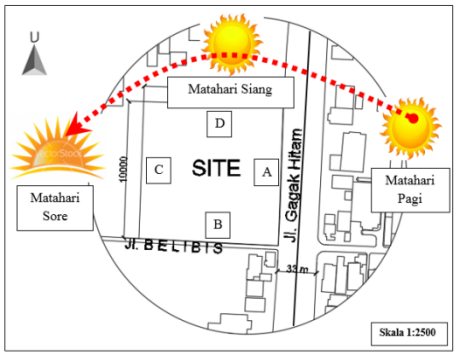

Figure 6. Solar and wind analysis Source: Personal Analysis, 2019

The location of the site is in Indonesia, which is a tropical country with year-round sunshine. Sunlight can be used as a source of natural lighting in the room and a source of vitamin D for patients. However, continuous sun exposure can cause discomfort. Some ways that can be done to reduce the intensity of sunlight are:

1. Utilize vegetation as a filter for sunlight and shade.

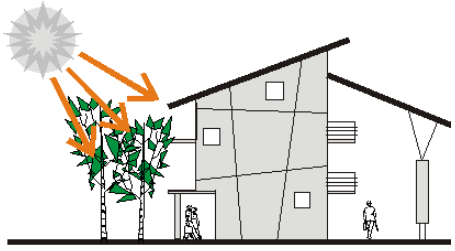

Figure 7. Full sun utilization

2. The use of sun shading such as lattices, trellis or canopies on the facade of the building.

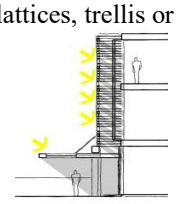

Figure 8. Utilization of sun shading

3. Adjust the orientation of the building so that sunlight is used optimally.

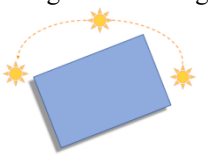

Figure 9. Utilization of building orientation

4. Application of openings such as skylights and clerestory windows so that not all sun exposure enters the room.

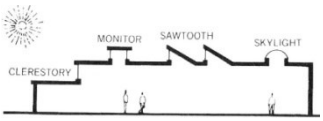

Figure 10. Utilization of skylisht and clerestory windows

5. Using materials such as low e glass and aluminum foil insulation which can reduce heat entering the building.

Figure 11. Reducing the use of low glass and aluminum foil insulation materials

The wind blows from the northwest to the southeast of the site and vice versa. The intensity of the wind gusts from the southwest has the potential to be higher than the southeast wind because the existing condition of the site on the northwest-southwest side is directly adjacent to the highway, while on the southeast side it is bordered by vacant land. To maximize the wind entering the site can be done by:

1. Regulating the intensity of the wind entering the site with a vegetation filter.
2. Orient the building in such a way that wind passing through the site can be utilized.

Conclusion:

From the results of the analysis above, the methods that will be used to limit excessive sunlight and wind on the site are as follows:

1. The north and west sides are planted with vegetation that can break the wind and provide shade.
2. Adjust the orientation of the building so that sunlight and wind can be utilized optimally.
3. Using low e glass to reduce heat entering the building and the canopy as sun shading.

Noise and Dust Analysis

ASTONJADRO: Jurnal Rekayasa Sipil

pISSN 2302-4240
eISSN 2655-2086

Volume 10, No. 2, December 2021, pp.373-392
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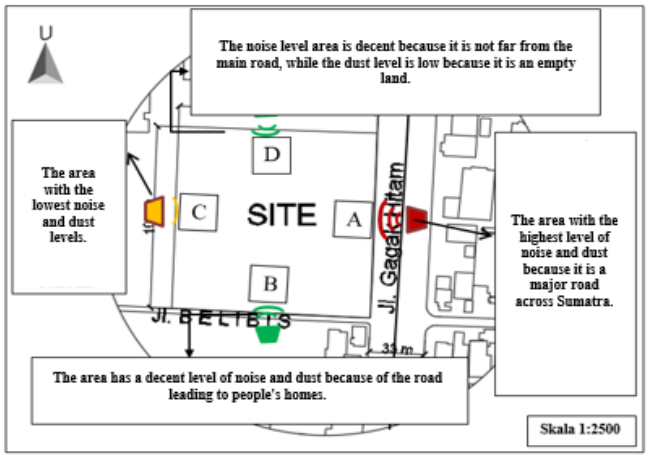

Figure 12. Noise and Dust Analysis Source: Personal Analysis, 2019

Side A has high noise and dust levels because it is the main road that is always passed by vehicles both day and night and activities around the site which also cause noise pollution to the surrounding environment.

Side B has moderate levels of noise and dust caused by the fairly high activity of two-wheeled vehicles, especially during the day.

Side C has low noise and dust levels because vehicles are rarely passed.
Side D has low noise and dust levels because it borders on vacant land.
Here are some alternatives to minimize noise and dust:

1. Provide distance between buildings and sources of noise and dust.
2. Using vegetation or fences as a buffer.
3. Elevate the tread elevation.
4. Using building materials that can muffle the sound.

Conclusion:

Based on the results of the analysis, the following methods will be applied to reduce noise and dust:

1. Provide distance between buildings and sources of noise and dust, where the empty area can be used as a parking lot or park.
2. Planting vegetation that can have the ability to reduce noise and absorb dust.
3. Using materials that can muffle the sound in the building.

View Analysis

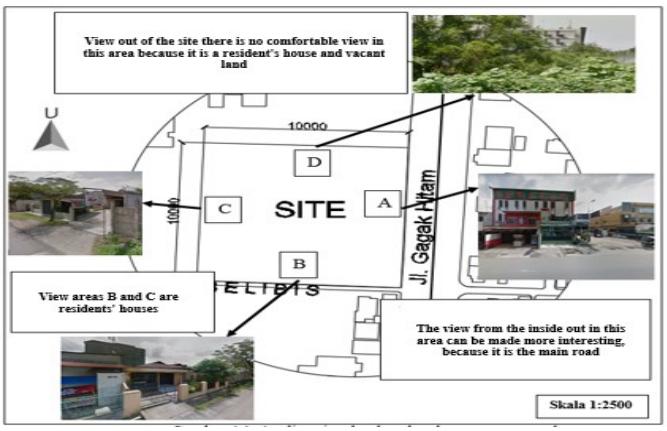

Figure 13. Analysis of views into the site Source: Personal Analysis, 2019

Views A, B, and C show vacant land on the site bordered by brick walls.
View D shows residential houses and vacant land.
View A and B can be seen clearly because they are directly adjacent to the highway so that it can be made more attractive in the following ways:

1. Orient the building across the direction of the view inward so that the perspective of the building is more visible.
2. Create a more attractive open area on the site.
3. Limiting the view by making massive fences and hedges.

Conclusion:

1. Provide a perspective view of the building by orienting the building to side view A.
2. View A, B, and C are maximized with appropriate vegetation without covering the view of the building.
3. To maximize attractive views around the site, especially for views A and B, it is done by increasing the openings towards the Grand Jamee Syariah Hotel.
4. Limiting the view on the West and North sides by reducing the aperture. As for the south side, it is limited by making an artificial garden and parking for B view

Parking Analysis
Parking is a basic facility for the convenience of managers and visitors. The criteria in designing a parking lot are:

1. Capacity according to need.
2. Clear circulation.
3. Easily accessible from outside and from inside the site.
4. Do not interfere with other ongoing activities on the site.
5. Clear circulation and achievement.
6. Do not interfere with other activities.
7. Get an open and comfortable space, supported by greenery.
8. Capacity as needed.

Commonly used vehicle parking systems include:
1. Car park

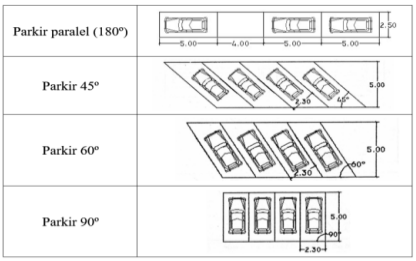

Figure 14. Types of car parking

2.. Motorcycle parking

ASTONJADRO: Jurnal Rekayasa Sipil

pISSN 2302-4240
eISSN 2655-2086

Volume 10, No. 2, December 2021, pp.373-392
DOI: http://dx.doi.org/10.32832/astonjadro.v10i2

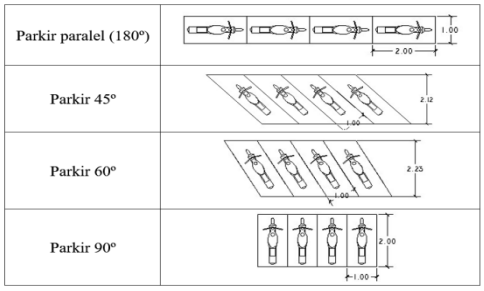

Figure 15. Types of motorcycle parking

Conclusion:

Based on the vehicle parking type table above, the parking system that will be used for cars is 90º and 45 parking. For motorcycle parking that will be used is 90º parking.

The special parking area for visitors is located on the east side, while in front of the building lobby there is a doctor and ambulance parking area. The most ideal for use in this building is for motorcycles and cars to use a 90° parking system with due regard to the suitability of the site.

Draft
Entrance Concept

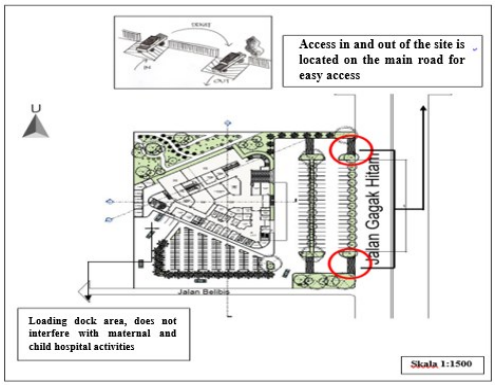

Figure 16. Site entrance concept Source: Personal Analysis, 2019

The separation of the main entrance from the ambulance entrance is intended so that the ambulance is not hampered when it will pick up or take patients to the hospital. Entrance and exit services are planned from the Village Hall road so as not to interfere with the main circulation route and ambulance.

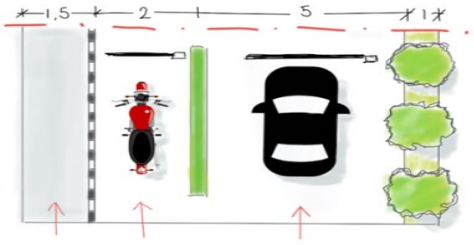

Figure 17. Main entrance concept Source: Personal Analysis, 2019

Sun and Wind Concept

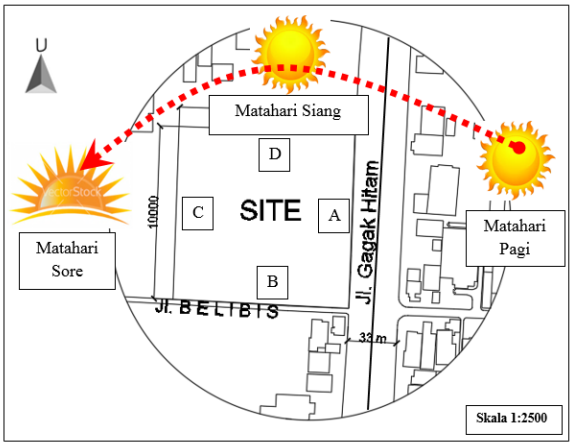

Figure 18. The concept of sun and wind Source: Personal Analysis, 2019

The East, North, and West sides are the sides that get a lot of sun exposure so that shade is needed to prevent excess heat from entering the building. In addition to shade, windbreaks are also needed.

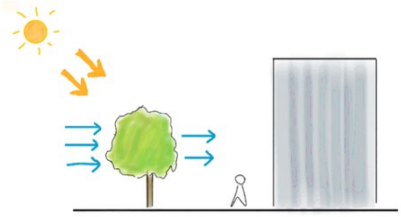

Figure 19. Vegetation as shade and windbreak at the site Source: Personal Analysis, 2019

Make sun shading windows so that light entering the building does not cause discomfort.

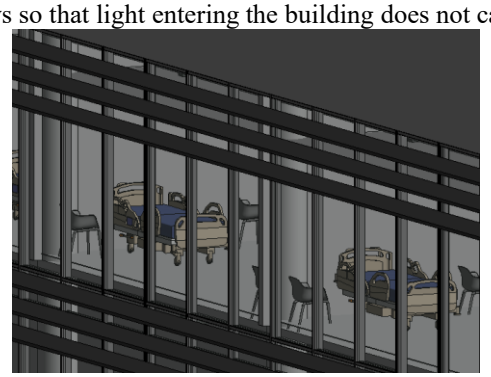

Figure 20. Sun shading on the facade of the building Source: Personal Analysis, 2019

The Concept of Noise, and Dust

ASTONJADRO: Jurnal Rekayasa Sipil

pISSN 2302-4240
eISSN 2655-2086

Volume 10, No. 2, December 2021, pp.373-392
DOI: http://dx.doi.org/10.32832/astonjadro.v10i2

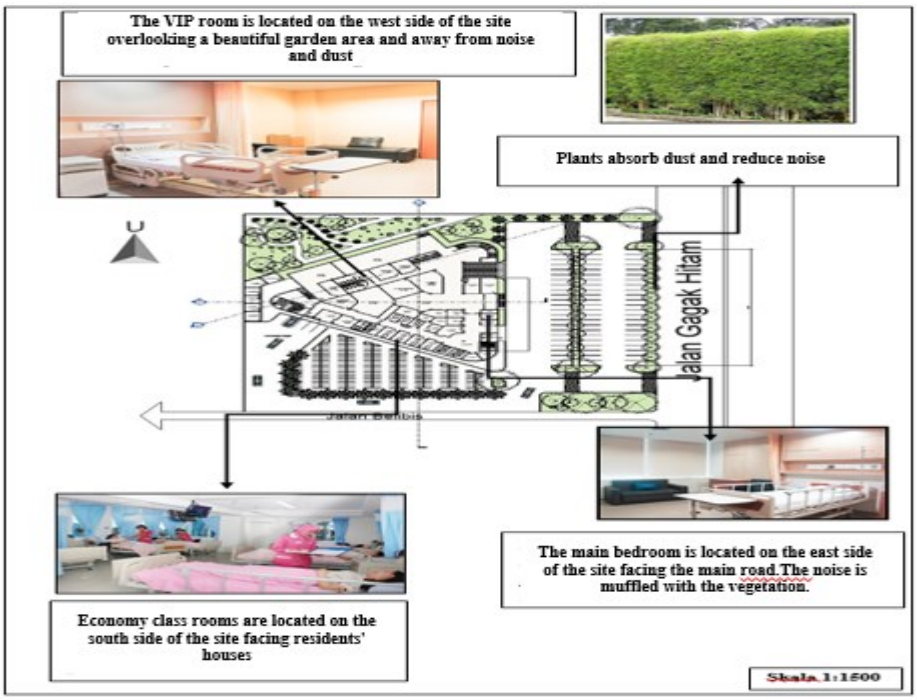

Figure 21. Noise and Dust Concepts Source: Personal Analysis, 2019

Provide distance between high-activity highways and the site so as to reduce dust and noise and use dust-filtering vegetation as a site barrier.

Concept View

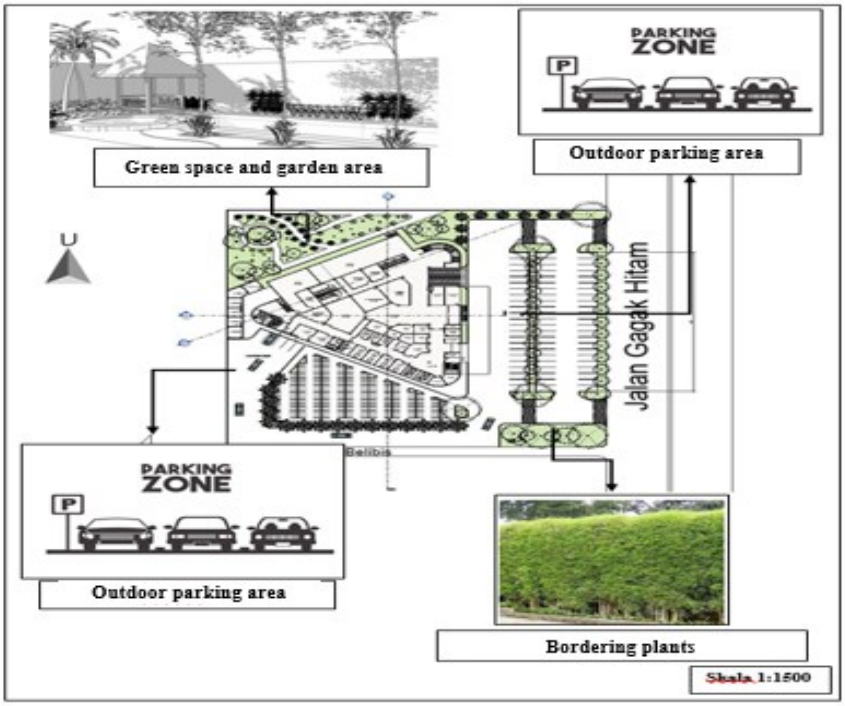

Figure 22. Concept view Source: Personal Analysis, 2019

Orient the building across the direction of the view into the site so that the shape and perspective of the building is more visible

Parking Concept

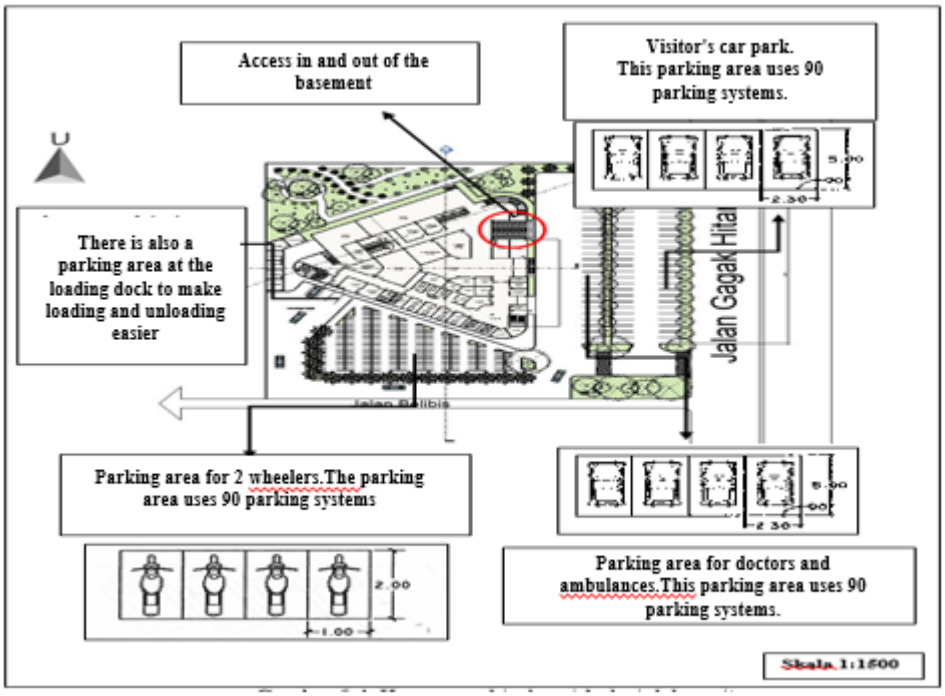

Figure 23. Parking Concept Source: Personal Analysis, 2019

Car parking used is 90º and 45º, motorbike parking used is 90º parking.

Building Concept
Building Form Concept

The concept of the basic form taken for the hospital building is a combination of circle and square shapes with consideration of easier room arrangement and dynamic shapes.

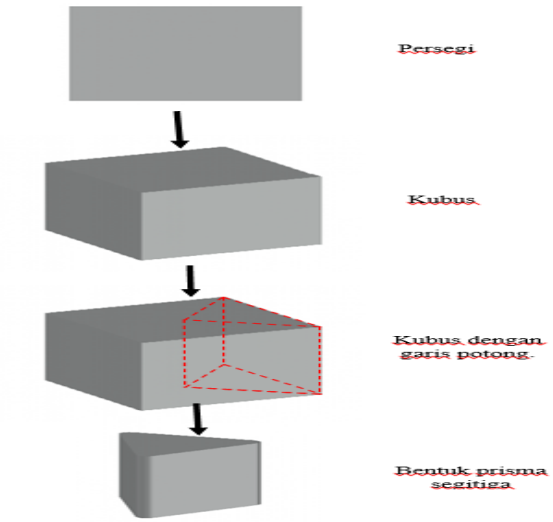

Figure 24. Concept of Building Form Source: Personal Analysis, 2019

Zoning Concept

ASTONJADRO: Jurnal Rekayasa Sipil

pISSN 2302-4240
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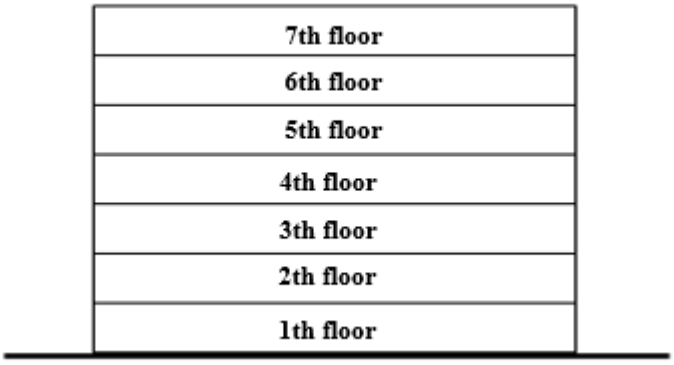

Figure 25. Zoning Concept Source: Personal Analysis, 2019

Basement:

1. Parking area

1st floor:

a. General Support
b. Outpatient Installation
c. Medical Rehabilitation Installation
d. Emergency departments
e. Radiodiagnostic Unit
f. Pharmacy Unit
g. Laboratory Unit
h. Body Retrieval Unit
i. WWTP
j. Incinerator
k. Parking

2nd Floor:

a. Laboratory Unit
b. Radiology Unit
c. Intensive Care Room
d. Maternal and Child Care Unit

3rd floor:

a. Inpatient Installation
b. Management and Management
c. Pregnant Gym
d. Multipurpose room
e. Management Room

4th floor:

a. Pregnant Gym
b. Multipurpose room
c. Green open space

Floors 5-8:

a. Pregnant Gym
b. Multipurpose room
c. Green open space
d. Children's Room
e. Mother's Room

CONCLUSION

Based on data from the Ministry of Health of the Republic of Indonesia, pregnant women do not have access to go to midwives or doctors in the regions. Suburban communities, especially in the Medan Sunggal area, do not get adequate services and facilities in terms of health, especially maternal and child health. So with that, the Mother and Child Hospital will be established in the Medan Sunggal area is expected to fullfill the necessities of the community in the suburbs of Medan. The Mother and Child Hospital was designed with the theme of Green Architecture so that the resulting building design is comfortable with an environmentally friendly atmosphere so that it can be considered to be the main destination for everyone who is pregnant and giving birth.

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pISSN 2302-4240
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