SPORTS AND ENTERTAINMENT ARENA DESIGN

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ABSTRACT

The city of Binjai is considered to have a strategic position as a trading city because it is located on the cross-Sumatra route that connects Medan City, Langkat Regency, and the Province of the Special Region of Aceh. Observers consider that businessmen are looking at this city to invest their capital in various business opportunities that are open. The design of the Binjai Business Hotel is intended to fulfill the needs of business hotels to anticipate the arrival of domestic and foreign tourists to Binjai City, for business activities. The Business Hotel in East Binjai consists of rooms equipped with various facilities to accommodate the needs of business people including; business center, private meeting room, and convention hall. The building design is the embodiment of needs and location analysis which is a building located in the city center with a modern architectural theme.

Keywords: hotel; business; Binjai; invest; building design.

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INTRODUCTION

Advances in science and technology change the development of an increasingly advanced, modern and dynamic era. The life order of the people of Medan City has also undergone fundamental changes, as a result of the patterns and thoughts of human life. Technological modernization, which is marked by the development of computerized facilities, has and will lead to changes in the behavior of the people of Medan City, who were originally active in exercising and diligently moving, becoming passive and lazy to move.

Therefore, with the advancement of science and technology that is increasingly developing, it must be balanced with maintaining health and freshness both physically and spiritually.
Sport is an activity that serves to fill spare time with sports goals that aim to simply get pleasure, freshness, and physical and spiritual satisfaction.

Based on some of the descriptions above, Medan City will plan a Sports & Entertainment Facility which will be named "Sports & Entertainment Arena" with the concept of Futuristic Architecture.

The aims and objectives of the “Sports & Entertainment Arena” project are:
1. Provide a place to gather/play for friends and family.
2. Providing sports facilities as well as entertainment venues that provide games / rides that are indoor (indoor).
3. Increase the morning social activities of the visitors.
4. Improve physical and spiritual fitness.

The problems that arise from the "Sports & Entertainment Arena" project are as follows:
1. How to realize the building design in the title of this Entertainment Sports Arena project so that it is in accordance with the designation of the building function and the feasibility of the project study according to the needs at the project site.
2. How to apply the principles of the theme taken to be applied in the design of the building to suit the function of the building and the aesthetic principles in architectural theory.

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3. How to solve design problems such as accessibility, circulation, activity, function, comfort, utility, lighting, security, and space dimensions.

In designing a building, especially adjacent to the highway, please pay attention to many factors. Supporting factors so that the building can be occupied comfortably and safely. This includes a high level of comfort, namely being free from noise pollution, air pollution and free from flooding (Syaiful.S, Mudjanarko.S.W, 2019; Syaiful.S, Wahid.N, 2020). Researching from Some of the basic concepts of building planning is 15 meters from the highway. Because this position affects motorized vehicle traffic which will disturb the peace of the occupants of the building. This is important so that residents can calmly settle and inhabit this area. Comfort from noise is very important (Syaiful.S, 2020; Syaiful.S, Andana.R, 2021, Thamrin.T, 2016). In order for buildings to avoid noise, they must have good and clear quality raw materials. The noise of motorized vehicles is highly disliked by anyone, including residents of homes and places of exercise (Sulastiyono.A. 2007; Prastowo.I, 2020). The method used is the research method of taking data in the field (Purnomo.B, 2015).

RESEARCH METHODS

The framework of thinking in the design process of "Sports & Entertainment Arena" is as follows:

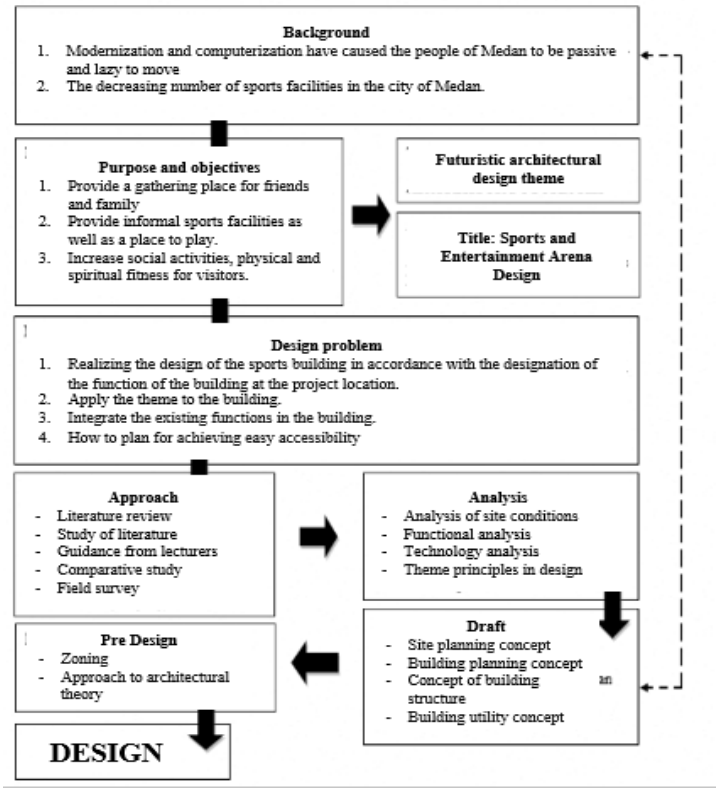

Figure 1. Thinking Framework

RESULTS AND DISCUSSION

Definition of Title

The title of this project is "Sports & Entertainment Arena" has the following meanings:

1. Arena: Arena, a field where competition is held, an open-air performance arena in the middle of the auditorium (according to KBBI).
2. Sports: activities that involve the physical and skills of individuals or teams, carried out for entertainment (according to KBBI).
3. Entertainment: something or action that can entertain the heart (according to KBBI)

So if it is interpreted in general terms Sports & entertainment arena is a place or field that becomes a place of physical activity that aims to improve social relations, obtain pleasure, and physical and spiritual health.

Definition of Sport

The sport comes from two words, namely sports and sports. Olah means cultivating, working, working on something to make it different or more perfect, and raga means body or body. Some definitions of sports include:

1. Sport, derived from English, namely sport which means that it requires physical abilities such as speed, strength, agility to be carried out in competitions. Sports & entertainment are more fun to fill spare time.
2. Sport is a form of physical activity contained in the game in order to obtain recreation, victory, and high achievement.
3. Sport is doing fun activities/activities with effort that pays attention to body temperature and body resistance in playing games using a tool.

From several definitions of sport that have been described, it can be concluded that sport is a series of regular and planned movements to stimulate physical, spiritual and social growth and development of humans in the form of games, competitions, and intensive physical activities to obtain recreation and achievement.

Definition of Gymnastics

Gymnastics comes from English called "Gymnastic" which comes from the word "gymnos" doing gymnastic exercises in a special room called "Gymnasium" or "Gymnasium".

Gymnastics is a sport that involves the performance of movements that require strength, speed and harmony of regular physical movements. Gymnastics is commonly used by people for recreation, relaxation or calming the mind, usually there are those who do it at home, at the fitness center, in the gymnasium or at school.

Sports Building

The process of designing and planning a sports building has conditions that must be considered. Government sports agencies determine the size or dimensions for international and national sports standards, as well as those of an entertainment or recreational nature for the construction of sports buildings.

The main considerations in designing sports buildings or other sports facilities, including:
1. Location supported by means of transportation
2. Parking area that can accommodate vehicles to the maximum
3. Integration of sports room and sports facilities
4. Linkage to the environment

Requirements in the construction of an indoor sports building must have several facilities, including:
1. Main sports area: consists of sports field, gym equipment room, changing room, bathroom, toilet, janitor, and so on.

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2. Administration area: includes reception room, management office, management meeting room, warehouse, archive room, and so on.
3. Reception area: includes front office, ticket sales counter, membership registration and rental counter, entrance hall, lobby, public toilets, and so on.
4. Recreational area: cafe, park, sport shop/retail, jogging track, and so on.
5. Safety: safety factor from fire (fire hydrant, sprinkler, etc.), safety factor from accidents, commotion, and so on.
6. Worship area: prayer room and ablution

Definition of Entertainment

Entertainment is anything – whether in the form of words, places, objects, behaviors – that can be comfort or consolation for a difficult or sad heart.

In general, entertainment can be in the form of music, films, opera, drama, or in the form of games and even sports. Traveling can also be regarded as an entertainment effort by exploring nature or studying culture. Filling free time activities such as making crafts, skills, reading can also be categorized as entertainment.

Definition of Entertainment

The game area is a place specifically designed so that visitors can play there. While the playgrounds are usually aimed at children, some target other age groups.

The game in this review is in the concept of a game as an activity. The game is a form of fun activity that is carried out solely for the activity itself, not because they want to get something that results from the activity (Desmita, Developmental Psychology, 2005). There are several theories that explain the game, namely:

1. According to Gross, the game should be viewed as an exercise in functions that are very important in adult life.
2. According to Hall, the game is a remnant of the period of human development in the past but which is now necessary as a transitional stage in individual development.

From some of the definitions above, it can be concluded that playing or playing is an activity that creates preoccupation and pleasure to release energy that is carried out voluntarily without coercion and a sense of responsibility, and without considering the final result that serves as the development of children's potential and creativity.

Special Overview

The theme that is planned to be applied to the Sports & Entertainment Arena building is Futuristic Architecture.

Definition of Theme

Futuristic is an attempt to create something that will help or have an impact on a better future. Almost the same as technology, it produces creative and innovative ideas in the future for futuristic developments.

Futurism from French, futur or English, future which both mean "future" is a science that studies the future. In addition, this genre is also an avant-garde or precocious art genre, especially in 1909. This flow is especially strong in Italy, although there are also followers in Great Britain and Russia.

Futuristic Architecture

Futuristic Design Characteristics, Future Interior Design Styles because good buildings have beauty because they are located in the future not the present and the past, also futuristic design styles offer and display the new and unusual into futuristic residential designs, ranging from beautiful structures and building structures in the form of furniture, interior and exterior that adorn and exude beauty.

The futuristic design style is also complemented by furniture, to the point that the atmosphere presented is very different from the style of interior design, exterior in general, although in fact the

futuristic design style is the result of a high-level modification of several design styles that are popular in today's world. This is very complete with decorative knick-knacks, abstracts, led lights, paintings and good lighting.

Quality minimalism

Domain form

1. The combination of 2 colors that produce a contrast
2. Use of led lights for futuristic design lighting
3. Futuristic with dynamic aero design
4. The use of materials with a smooth and shiny structure
5. Pampering hi-tech technology

Site Selection Criteria

The location criteria are based on general site requirements and comparative studies of similar projects that can be used as standard benchmarks that can be taken into consideration for choosing the location for the Sports & Entertainment Arena in Medan Tembung, namely:

1. Overview of the city's architecture, the location chosen was in the city center with commercial and city-scale considerations.
2. Circulation of vehicles around smoothly.
3. Directly connected to the main road so that the achievement / accessibility is easy to reach, either by public transportation, private vehicles, or pedestrians.
4. The size of the land is sufficient for the physical program and the function of the building.
5. The site is located in an environment with building functions that are still in harmony
6. View orientation that benefits the site
7. Availability of infrastructure in the form of clean water, dirty water, electricity and telephone networks.
8. Strategic and reach daily necessities, such as shopping facilities
9. Site location is not noisy
10. Located according to the Medan City Spatial Plan (RUTRK)

Alternative Site Selection

The selection of the location of the Binjai Business Hotel which is engaged in trade and services based on the Regional Spatial Plan (RTRW) is included in the trade and service zoning with the following alternative locations:

1. Alternative 1

Figure 2. Jalan Cemara, Indra Kasih sub-district, Medan Tembung sub-district.

2. Alternative II

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Figure 3. Bhayangkara Street, Indra Kasih sub-district, Medan Tembung sub-district.

3. Alternative III

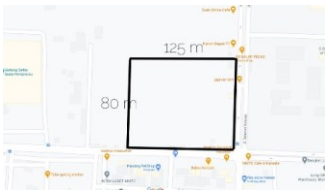

Figure 4. Jalan Selamat Ketaren, urban village of Bandar Selamat, sub-district of Medan Tembung.

Location Strengths and Weaknesses
Alternative

Table 1. Assessment of site location strengths and weaknesses Source: self-processed, May 2019

Location Criteria	Mawar street	Bhayangkara street	Selamat ketaren street
Overview of the city's architecture, the location chosen was in the center of the city with commercial and city-scale considerations	**(2)** (quite far)	**(2)** (quite far)	**(2)** (quite far)
Directly connected to the main road so that achievement/accessibility is easy to achieve	**(3)** (near)	**(3)** (near)	**(2)** (near)
Smooth circulation of vehicles around	**(3)** (fluent)	**(2)** (a bit stuck)	**(3)** (fluent)
The size of the land is sufficient for the physical program and the function of the building	**(3)** (Enough)	**(3)** (Enough)	**(3)** (Enough)
The site is in an environment with functions that are still in harmony.	**(3)** (Being in a sports environment)	**(2)** (Being in a sports environment)	**(1)** (Being in a sports environment)
View orientation that benefits the site	**(1)**	**(2)**	**(3)**
Availability of infrastructure in the form of clean water, dirty water, electricity and telephone networks.	**(3)**	**(3)**	**(3)**
Strategic	**(1)** (there is a beautiful cypress complex around it)	**(1)**	**(2)** (located close to the MMTC complex and

			Mutiara Palace and close to UNIMED)
The location of the site is not noisy	**(1)**	**(2)**	**(3)**
Located in accordance with the RUTRK of the city of Medan	**(3)**	**(3)**	**(3)**
Score	**25**	**25**	**29**

Information:
1 = Less
2 = Medium
3 = Fine

Based on the results of the calculation of the criteria above, the most suitable site for the construction of the Sports & Entertainment Arena is Jalan Selamat Ketaren, Medan Tembung sub-district.

Project Description

This Sports & Entertainment Arena project is located on Jalan Selamat Ketaren, Medan Tembung District. This project is located at the intersection between Jalan Selamat Ketaren and Jalan William Iskandar ps.5. The Building Border Line (GSB) on Jalan Selamat Ketaren is 8 meters and the GSB on Jalan Willem Iskandar Ps.5 is 9 meters. The site area is estimated to be ± 1 hectare and the basic building coefficient (KDB) is 60%.

This Sports & Entertainment Arena project is intended for all circles of society with the aim of adding sports and game areas in Medan City. With this sports venue, it can be an option to exercise / play games, as well as a gathering place for family, friends and relatives.

The facilities provided by the Sports & Entertainment Arena will provide sports game facilities for both children and adults such as roller skating, trampoline, slam dunk, bubble bath, wall climbing, fitness, yoga, and aerobics.

Sports & entertainment arena is a sports venue that gives a new color to the city of Medan in the form of a truly futuristic building and exterior style. Development with this futuristic concept will show something new.

Site Condition

Figure 5. Location overview map Source: Personal preparation

Table 2. Site site conditions

Project Title	Sports & Entertainment Arena
Theme	Futuristic Architecture
Project Status	Fictitious.
Project owner	Private
Location	Selamat Ketaren Road
districts	Medan Tembung
City	Medan

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Description of Planning on Building

Based on the futuristic characteristics that have been described, the main concept in the construction of this Sports & Entertainment Arena is comfort as a place to play as well as a place to relieve stress by

Land area	1 Ha
The width of the road	Willem Iskandar Road Ps.5 = 16 M, Veteran Road = 15 M
Site restrictions: 1. To the north: Mutiara Palace housing complex 2. East side: University of Medan Area 3. To the south: Willem Iskandar Street Ps.5, MMTC Complex 4. To the west: vacant land, multipurpose building for the provincial government	
GSB	= ½ x road area + 1 = ½ x 16 + 1 = 9 m
KLB	2
KDB	60 %
Topography	Relatively flat
Vegetation	Landscape Arrangement
Site Potential: • The site is close to the Medan Area University, MMTC Complex, and Mutiara Palace Housing Complex • The site is in accordance with the needs of the community in the field of sports services	

exercising/gathering with family. The concept of comfort is applied with a building approach, so that the first thing to think about is how to design a building that is unique, simple and uses building materials that have a futuristic impression, are modern and still have interesting nuances so that they are liked by all ages.

The more the building looks simple with harmonious color play, the use of glossy textured building materials and sophisticated structural play, the more luxurious the building will look and highlight the notion of Futuristics.

Building Facilities

Main Facilities

1. Counter.
    a. Lobby.
    b. Receiving Plaza
    c. Front desk and guest information center
2. Player room
    a. Changing room
    b. Player's toilet
3. Public toilets
4. Control room
5. Children's Sports & Game Room: Trampoline, slam dunk, wall climbing, bubble bath, slide, ninja area.
6. Sports & adult games room: rollerblading, jogging, yoga, fitness, aerobics

Complementary Facilities

1. Parking Lot
2. Garden
3. Retail
4. Café
5. Places of worship

Management facilities

1. R. Director.
2. R. Deputy Director.
3. R. Secretary.
4. R. Manager

5. R. Meeting.
6. R. Resources.
    a. Bid. Finance.
    b. Bid. Marketing.
    c. Bid. Cleanliness.
    d. Bid. Mechanical & Electrical.
    e. Bid. Security.
7. R. Staff.
8. Toilets.

Service Facilities

1. R. Mechanical & Electrical.
    a. R. AHU & Chiller.
    b. R. Genset, R. panel.
    c. R. Shaft
2. R. Employees.
    a. R. Rest.
    b. R. janitor
    c. R. Locker.
3. R. Security.
4. Medical room/first aid kit
5. Warehouse.
6. Loading dock.
7. R. Worship
8. R.atm
9. Café
10. Sports shop
11. Retail

Structure and Organization

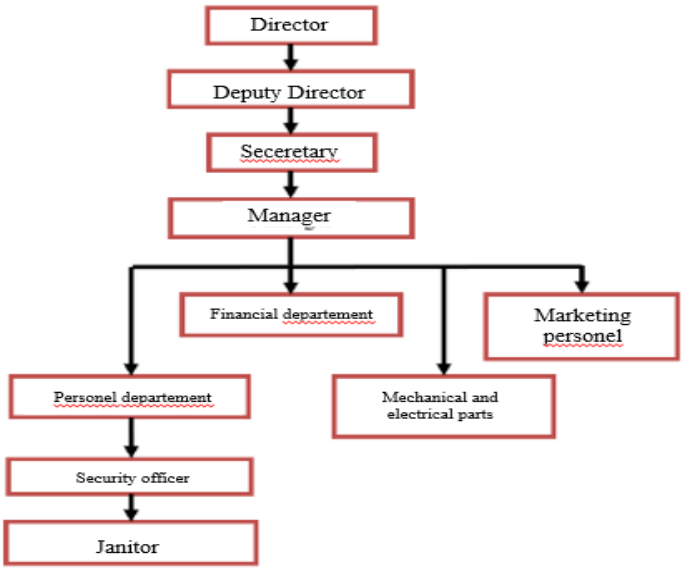

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Figure 6. Organizational structure

Planning Analysis
Location and Tread Analysis
Analysis of the Sun and Wind

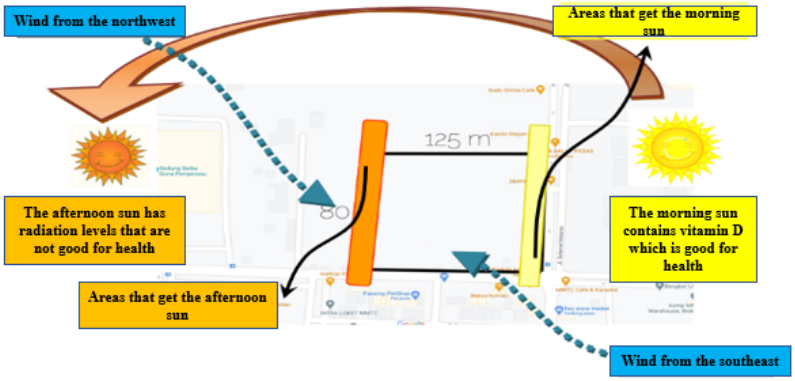

Figure 7. Analysis of the sun and wind Source: Personal Analysis, 2020

1. To reduce the level of incoming lighting can be done by:
   a. Buffer usage (filter system)
   b. The use of drains
   c. Building orientation setting
   d. Use of certain building materials
2. Alternatives that can be used to mitigate wind intensity are:
   a. Square building shape
   b. Elliptical building shape
3. Conclusion From the results of the existing analysis, to reduce the heat of the sun, namely:
   a. Precise orientation setting.
   b. Use of grids as buffers in areas that get a lot of sunlight
   c. The use of aluminum composite materials and glass materials.

Noise and dust analysis

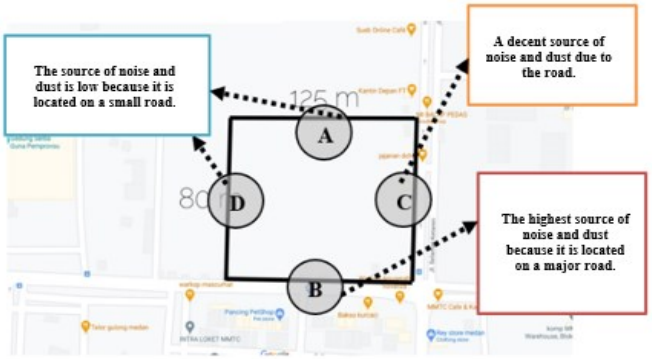

Figure 8. Noise and dust analysis Source: Personal Analysis, 2020

1. To reduce noise and dust can be done by -Giving distance between buildings with sources of noise and dust.
   a. Providing distance between buildings with sources of noise and dust.
   b. Giving elevation
2. Conclusion From the results of the existing analysis, the most optimal solution for the site is to:
   a. Gives a little elevation to the building.
   b. Provide distance between buildings with sources of noise and dust where the distance can be used as a parking lot.

AnalyzeView
Analysis View inside

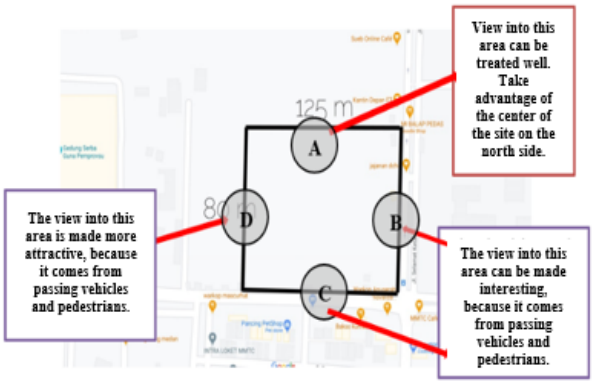

Figure 9. View Analysis into Source: Personal Analysis, 2020

1. View View B , C and D need to be made more attractive. The solutions that can be done are:
   a. Orient the building across the view inward so that the perspective of the building is more visible.
   b. Creates a more attractive open area on the site.
3. Conclusion Based on the results of the existing analysis, the most optimal solution for an inward view so that it can be used to attract visitors is to:
   a. Gives perspective of the building from the east and northeast side.
   b. For the view from the North and West sides, it can be maximized by giving small gardens.
   c. For the view from the North and East sides, it must be maximized with plants without covering the view of the building.

Analysis of the view outside the site

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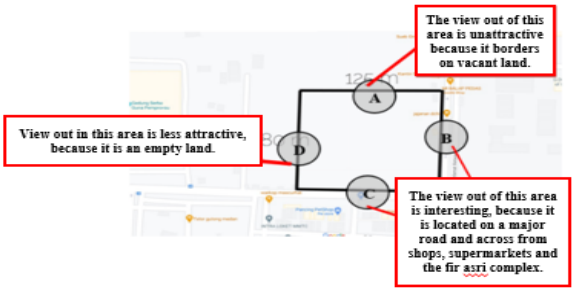

Figure 10. External View Analysis Source: Personal Analysis, 2020

4. View A is attractive to be used as a front side view of the exterior, lobby, reception, restaurant and cafe. While View D and C can be used as service areas, parking lots and others.
   a. Unattractive views can be minimized with several alternative solutions, namely:
   b. Create an artificial view on the site, either in the form of a garden or an open area.
   c. Reduced the opening in the area.
   d. Make hedges.
5. Conclusion To maximize the attractive scenery around the site, especially for view A, it is done by increasing the openings towards the Cemara road. Limits the view on the east side by reducing the aperture. Meanwhile, on the south side, it is limited by making parking lots.

Entrance Analysis

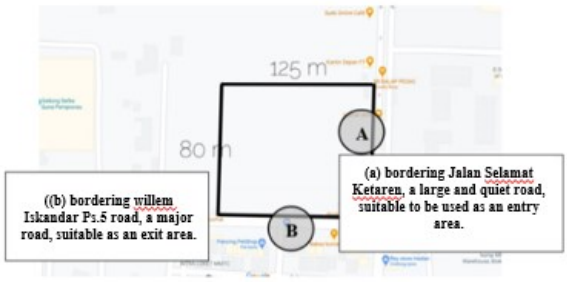

Figure 11. Entrance Analysis Source: Personal Analysis, 2020

1. Entrance selection criteria:
   a. Entrance is located on the main road for easy identification.
   b. Easily accessible by motorized vehicles, especially four-wheeled vehicles.
   c. Does not interfere with traffic flow (does not cause congestion).
2. Conclusion Based on the existing rating results, the road to the east (Jalan Selamat Ketaren) is the main entrance and vehicle exit access on Jalan Williem Iskandar Ps.5 to the south.

Parking Analysis

The criteria that must be considered in parking are: adjusted to the grouping of users (private, public and goods/services), capacity as needed, not disturbing other activities, easily accessible both from outside and inside, getting open and comfortable space, circulation and achievement clear.

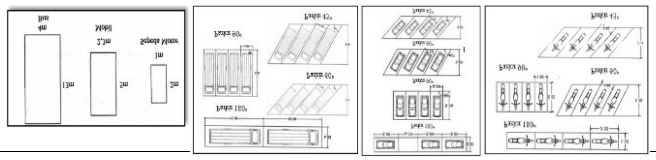

Figure 12. Vehicle Module

Conclusion: The parking area for management and service cars uses 45º, 90º and 180 parking lots, motorbikes for visitors and managers use 90º and 180 parking lots, visitor cars use 90º and 180, while for large vehicles is 60º parking.

Building Analysis
Mass Form Analysis

The analysis of the shape of the mass is considered for: the nature of the activities in it, adjustments to the shape of the site, demands for space efficiency and flexibility. There are 3 basic shapes namely square, triangle, and circle.

Conclusion: The shape of the building mass is a combination of basic geometric shapes, namely circular and square shapes that visitors must understand and like. Furthermore, the basic geometric shapes will get additions and changes in shape and arranged in such a way.

Structural Analysis

Building Material Analysis

Building materials consist of concrete, steel, glass, aluminum composites, hole plates, marble and ceramics.

Building Structure Analysis

The structure of the building is the distribution of building loads evenly to the ground, providing protection against natural hazards, earthquakes and rain. Basic criteria: according to the local situation and conditions such as geographical, geological, climatic conditions, a stable, strong, efficient structural system and easy to implement and maintain, fire resistance.

The structure consists of an upper structure consisting of a roof structure, a concrete slab, a space frame and a hanging structure. The structure of the building body consisting of structural bearing walls, steel frames, main and subsidiary beams. The floor structure of the building consists of a floor plate, a waffle floor plate. The substructure consists of pile foundation, tread foundation and bore pile foundation.
The conclusion of the analysis, the appropriate structural and construction systems are: The building materials are dominated by concrete, steel, glass, aluminum composites. The upper structure uses a floor plate. The lower structure uses a bore pile foundation.

Circulation Analysis

Horizontal Circulation Analysis

The spatial pattern consists of a centralized spatial pattern, a linear layout pattern, a cluster spatial pattern, and a grid layout pattern

Conclusion The spatial pattern used in the Sports & Entertainment Arena building is a safe and dynamic spatial pattern, namely central, cluster and radial.

Vertical Circulation Analysis

Vertical circulation consists of lifts, stair escalators, strollers, and ramps. Conclusion: Vertical circulation is used in the form of lifts/elevators and stairs (emergency stairs) to reach the top floor of the building.

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Utility Analysis
Lighting System Analysis

The lighting system consists of natural and artificial lighting systems. This Sports & Entertainment Arena building will use both types of lighting so that they complement each other and can be used according to needs and used in all weather conditions.

Air Conditioning System Analysis

The ventilation system consists of natural and artificial ventilation systems. Artificial ventilation is more appropriate for this building because it is to provide comfort to visitors who come.

Electrical Installation System Analysis

Sources of electricity can come from PLN, generators, solar panels. The main source of the electrical installation system in buildings comes from PLN and generators as backup energy.

Clean Water Distribution Analysis

Sources of clean water can be obtained from PDAM. The clean water distribution system can be carried out in 2 ways, namely: downward water distribution and upward water distribution. This building uses a downward water distribution system because it is more efficient.

Dirty Water Drainage System Analysis

Dirty water comes from liquid dirty water, solid dirty water and rain water. In this building dirty water will be discharged to the city roil.

Waste Disposal System Analysis

Garbage can be grouped into 2 parts, dry waste (paper, dust and plastic) and wet waste (kitchen waste). Processing of waste can be done by pressing, crushing, burning, burning and disposal.

Conclusion : Garbage in buildings is divided into two types, namely dry waste in the form of paper and wet waste from the disposal of cafes and restaurants. Then the most appropriate disposal system is a temporary waste disposal system and then transported by the cleaning service.

Fire Suppression System Analysis

There are 2 systems commonly used in fire prevention, namely: active fire prevention (fire hydrant, portable chemical, pillar hydrant, sprinkler, smoke and heat detector) and passive fire prevention (fire stairs, corridors and exit distances, exit doors, compatibility systems, etc.) emergency power supply and communication systems). The fire prevention system in this building is active fire prevention devices and for passive prevention is applied appropriate countermeasures circulation for evacuation.

Security System Analysis

Security systems commonly used are CCTV systems, signal systems, direct security systems. The security system used in this building is a CCTV installation system in every public and semi-public area and guard by security officers.

Communication System Analysis

Communication systems that are commonly used are communication systems under normal circumstances for internal connections (microphone and intercom), external connections (telex, facsimile, telephone). Communication systems in an emergency can be in the form of an emergency telephone system and a centralized sound system.

The communication system used in this project is a normal and emergency communication system.

Draft
Tread Concept
Sun and Wind Concept

Figure 13. The concept of the sun and the wind Source: Personal Analysis, 2019

The building is given a secondary skin as a shadow area and shelter area, aesthetic enhancer and view barrier.
The use of Curtain Wall material from reflective glass / one way which can reduce heat and light up to 55% and gives a modern impression.

The Concept of Noise and Dust

Figure 14. Noise and dust concepts Source: Personal Analysis, 2019

The building will be moved back slightly to provide distance between buildings with noise sources by providing green open areas and parking lots.
Areas that are prioritized for the use of vegetation are in the south, west and then northwest and southeast directions because there are vehicles and residents' activities as well as dust buffers.
The vegetation used is pole glodokan, palms, cape trees and ornamental shrubs which can also add aesthetic value

Concept View

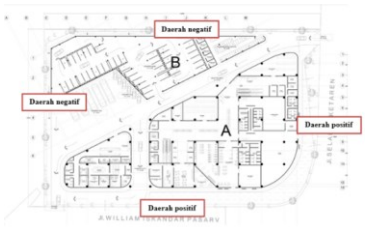

Figure 15. Concept View Source: Personal Analysis, 2020

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The view out of the site is prioritized on the east and north sides, has great potential because it is directly opposite the road, church, Binjai Supermall and LP3I. Can be given green open areas and aesthetic-enhancing vegetation to make it look more attractive.
On the south and west sides will be given vegetation and garden fences as a barrier to view because it is directly adjacent to an empty site on the south side and a small road on the west side.

Entrance Concept

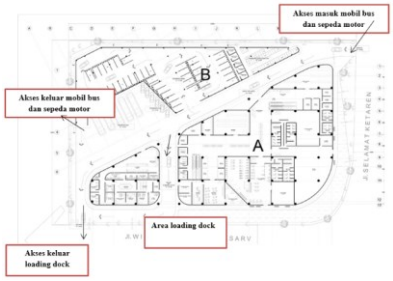

Figure 16. Concept of Vegetation Source: Personal Analysis, 2020

Main access to vehicles, buses and loading docks through the entrance on Jalan Selamat Ketaren and exit access via Jalan Williem Iskandar Ps.5.

Circulation Concept

Figure 17. Concept of Circulation Source: Personal Analysis, 2020

Circulation of 4-wheeled vehicles, 2-wheeled vehicles, buses are planned to enter from Jalan Selamat Ketaren to the entrance to the parking lot or to the exit access on Jalan Williem Iskandar Ps.5.

Building Parking Concept

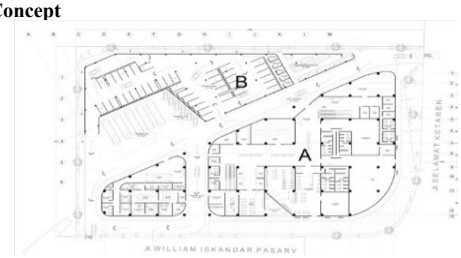

Figure 18. Building Parking Concept Source: Personal Analysis, 2020

The conventional car parking system is still being applied to take into account the factors of disability, unfamiliar visitors, and managers.
The 4-wheel parking system uses a 90º parking system and for buses with a 60º parking system.
Parking for cars and motorbikes is in the basement, cars and motorbikes use a 90º parking system.

The Concept of Building Form and Period

The basic concept of the shape of the building in this plan uses a square shape that is split into 2 triangles, and experiences a reduction in shape.

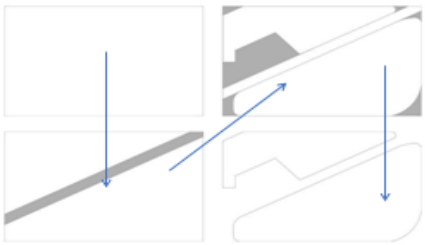

Figure 19. Concept of Building Form and Period Source: Personal Analysis, 2020

Space Size Concept

Table 3. Concept of Source Space Size: Personal Analysis, 2020

Room	Sub space	Units/capacity	Standard (m2)	Area (m2)	Data source
Cafe	bar and lounge	100	1,4	140	DA
	Kitchen		20%	28	DA
	Warehouse		50%	14	DA
	Cold storage		50%	4,2	DA
	Sub-toal Cafe			**186,2**	
	Circulation		30%	55,86	
	Sub-total circulation			**242,06**	
Yoga	locker room	15	1	15	DA
	staff room	8	2	16	DA
	Bathroom+shower+toilet	90	1	93	DA
	Warehouse	1	10	10	ASU
	Sub-total circulation			124	
Aerobics	Aerobic room	1	200	200	ASU
	Warehouse	1	25	25	ASU
	Bathroom	50	1	50	ASU
	Sub-total circulation			**275**	
fitness center	fitness room	1	300	300	ASU
	locker room	150	0,6	90	ASU
	Bathroom+shower+toilet	50	1	50	DA
	Cashier/ADM	5	1	5	ASU
	Manager room	10	2	20	DA
	Sub-total circulation			**465**	

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Roller skate area	Administration	1	50	50	ASU
	Equipment room	1	50	50	ASU
	Warehouse	1	25	25	ASU
	Bathroom+shower+toilet	50	1	50	ASU
	locker room	2	25	50	ASU
	Control room	1	30	30	ASU
	Skateboarding arena	1	500	500	ASU
	Sub-total circulation			**755**	
Game area	Administration	1	10	10	ASU
	locker room	2	25	50	ASU
	Control room	1	30	30	ASU
	Warehouse	1	25	25	ASU
	Trampoline and slam dunk area	1	700	700	ASU
	Wall climbing and foam pit area	1	800	800	ASU
	Slides and other games	1	1000	1000	ASU
	Sub-total game area			**2615**	
Retail	Retail	1	200	200	ASU
	Mini Market	2	197	197	ASU
	sports shop	1	38	38	ASU
	Sub-total retail			**436**	
Praying room	Pray	40	1	40	DA
	Sub-total praying room			**40**	
Manager room	Living room	1	74	74	ASU
	staff room	30	6	175	DA
	meeting money	48	2,4	117	DA
	Managing director	1	34	34	ASU
	GM	1	34	34	ASU
	duty manager	1	22	22	ASU
	HR Manager	1	22	22	ASU
	HR Cord security	1	22	22	ASU
	Finance room	1	33	33	ASU
	Security office	1	35	35	ASU
	Toilet	111	0,96	111	DA
	Sub-total manager room			**675**	
Recipient section	Lobby	530	1	500	ASU
	Receptionist	1	47	47	ASU
	Sub-total recipient section			**860**	
Utility area	Main panel room	1	32	32	ASU
	chiller room	1	32	32	ASU
	generator room	1	28	28	ASU
	Pump room	1	28	28	ASU
	Garbage room	1	28	28	ASU
	Warehouse	1	28	28	ASU
	Sub total area of utilities			**950**	
	TOTAL			7436	

CONCLUSION

The city of Binjai is considered to have a strategic position as a trading city because it is located on the cross-Sumatra route that connects Medan City, Langkat Regency, and the Province of the Special Region of Aceh. Observers consider that businessmen are looking at this city to invest their capital in various business opportunities that are open. The design of the Binjai Business Hotel is intended to fulfill the needs of business hotels to anticipate the arrival of domestic and foreign tourists to Binjai City, for business activities. The Business Hotel in East Binjai consists of rooms equipped with various facilities to accommodate the needs of business people including; business center, private meeting room, and convention hall. The building design is the embodiment of needs and location analysis which is a building located in the city center with a modern architectural theme.

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