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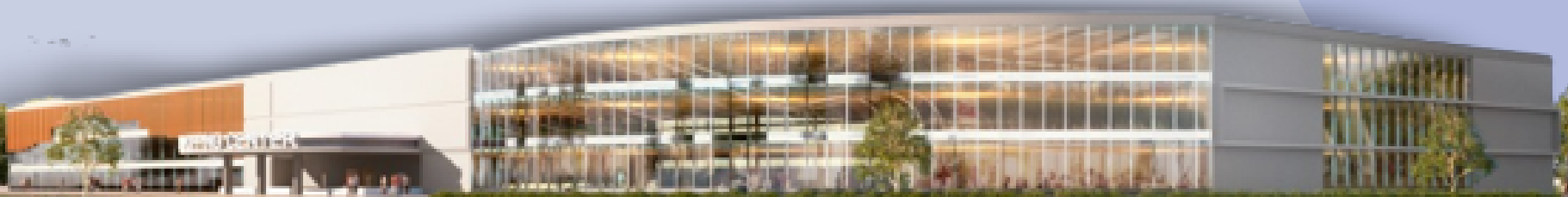
# **Tepian Waterfront Shopping Center**

Emphasizing Safety and Comfort for Disable People  
Using Inclusive Design Approach

Rohadatul 'Aisy Sumardhiya  
17512087

Supervisor:

Prof. Noor Cholis Idham, ST., M. Arch., Ph. D., IAI.



FINAL ARCHITECTURAL DESIGN STUDIO

**DESIGN OF WATERFRONT SHOPPING CENTER EMPHASIZING  
SAFETY AND COMFORT FOR DISABLED USING INCLUSIVE DESIGN  
APPROACH IN TEPIAN MAHAKAM SAMARINDA KALIMANTAN  
TIMUR**



Disusun oleh :

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**DEPARTMENT OF ARCHITECTURE  
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STUDIO AKHIR DESAIN ARSITEKTUR

**DESAIN PUSAT PERBELANJAAN WATERFRONT DENGAN ENJEKANAN  
KEAMANAN DAN KENYAMANAN BAGI PENYANDANG DISABILITAS  
DENGAN PENDEKATAN DESAIN INKLUSIF DI TEPIAN MAHAKAM  
SAMARINDA KALIMANTAN TIMUR**



Disusun oleh :

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UNIVERSITAS ISLAM INDONESIA**

## FOREWORD

Assalamu'alaikum Warahmatullahi Wabarakaatuh

Praise and gratitude I pray to Allah SWT because with the abundance of His grace, I was able to complete a Final Architectural Design Studio with title “ Design of Waterfront Shopping Center Emphasizing Safety and Comfort for Disable People Using Inclusive Design Approach In Tepian Mahakam, Samarinda, Kalimantan Timur”. This Final Architectural Design Studio was prepared and submitted as a condition for obtaining a Bachelor of Architecture (B.Arch) degree at the Faculty of Civil Engineering and Planning at the Universitas Islam Indonesia.

This Final Architectural Design Studio was completed through many difficulties, the completion of the Final Architectural Design Studio cannot be separated from the guidance, motivation, and material and non-material assistance from various parties.

Therefore, I do not forget to say thank you to:

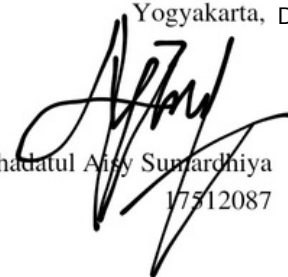
1. Allah SWT, who has given smoothness and health in the work of the Final Architectural Design Studio.
2. My Beloved Parents Mr. Suroto and Mrs. Eni Susilowati, S.Pd for the prayer, moral support and for the blessing that has been given to me. Also My Brother and my two little sisters for always cheering me up during the hard days.
3. Prof. Noor Cholis Idham, ST., M. Arch., Ph. D., IAI. as the supervisor for the Final Architectural Design Studio who has provided opportunities, helped and guided patiently so that Final Architectural Design Studio could be completed.
4. Yulianto Purwono Prihatmaji, ST. MT.,Dr. IAI and Putu Ayu Pramanasari Agustiananda,S.T.,MA., Dr-Ing. as the jury lecturers who has provided the opportunity, helped, guided and tested this Final Architectural Design Studio so that it could be completed.
5. My friends, who always give me enthusiasm in doing my Final Architectural Design Studio.
6. All my friends in Architecture 2017.
7. All parties who have helped me without being able to write one by one.

I realize that this Final Architectural Design Studio is still far from perfect and there are many shortcomings due to various limitations. For this reason, I will accept constructive criticism and suggestions afterwards. I hope that Final Architectural Design Studio can be useful for all those who read it. May Allah SWT always give mercy and guidance to all of us, Amin.

Wassalamu'alaikum Warahmatullahi Wabarakaatuh.

Yogyakarta, December 8, 2022

Rohadatul Aisy Sunardiya  
17512087





## ORIGINALITY STATEMENT

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I, state that this Final Architectural Design Studio Project that I write and work on is my own work, not the transfer of other people's writings or thoughts that I acknowledge as my own results or thoughts. As for the Final Architectural Design Studio work, there are parts of quotes from other people's work that I have written down according to the norms, rules, and ethics in writing.

If later it is proven or can be proven that this final architectural design studio is completely plagiarized, I am willing to accept the consequences.

Jakarta, December 8 2022



Rohadatul Aisy Gunardhiya  
17512087



# PAGE OF APPROVAL

## Final Architectural Design Studio Entitled:

### DESIGN OF WATERFRONT SHOPPING CENTER

EMPHASIZING SAFETY AND COMFORT FOR DISABLE PEOPLE USING INCLUSIVE DESIGN APPROACH IN  
TEPIAN MAHAKAM, SAMARINDA, KALIMANTAN TIMUR

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## **ABSTRACT**

The rapid growth of Commercial activity in Samarinda as the center of industries in East Kalimantan, giving impact of demand in constructing a commercial building such as Shopping mall. . The project is proposing a design of waterfront Shopping Center in Samarinda that well known as the 'Kota Tepian' which Means City on the riverbank. Despite of having main city attraction alongside the riverbank, Samarinda do not have any Shopping center that can be access from both water and land. besides that, Samarinda has been concern to provide adequate safety and acessibility for the disabled people in public spaces such as Shopping Center. The disabled people used to have difficulty to access a shopping center sinece many shopping center has not supported the facilities and suported design for them. The aim of this project is to design a shopping center that can show the image of the city as a waterfrfront city and also to provide a disabled friendly shopping center. to answer this, the design will integrated the access from the river and land by emphasizing the safety for the disabled people so that they can do activity and also using the facilities as other people.

***Key Words : Shopping Center, Waterfront, Safety and Acessibility, Mahakam Riverbank Samarinda***

**01**

Introduction

## 1.1. Background

The growth of industries in Samarinda City as the heart of East Kalimantan Province leading to high demands of commercial activities needs. The construction of commercial buildings rapidly built to provide the city demand. In the process, many of commercial buildings have less planning such as unreachable (far from the city center, or in flooding area, having small roads or not reachable by public transport), didn't have supporting facilities to attract more customers, and not well arranged. One of the most wanted commercial buildings is shopping malls since Samarinda always be a destination by the people in East Kalimantan to go shopping.

During the pandemic, many of shopping malls are collapsing. According to Asosiasi Pengelola Pusat Belanja Indonesia (APPBI), in 2020 only 50% activities going on shopping malls compared to the situation before pandemic. In 2021 to the percentage increased to 60%. In earlier 2022 APPBI recorded that the visit and activities in shopping centers has reached 70% and they are predicting it will reach 80% at the end of the year go along with the 'New Normal' where people are going back to be freely moving outside after being caged for over 2 years. This situation become a challenge and opportunity to shopping center business to renew their shopping malls.

Not like the cities in Java island, in East Kalimantan only Samarinda and Balikpapan have shopping malls and the amount of shopping malls is only a few. Some of the shopping malls in Samarinda is already old and need to be renewed such as Mesra Mall and Plaza Mulia. It become one of consideration to choose a building function.

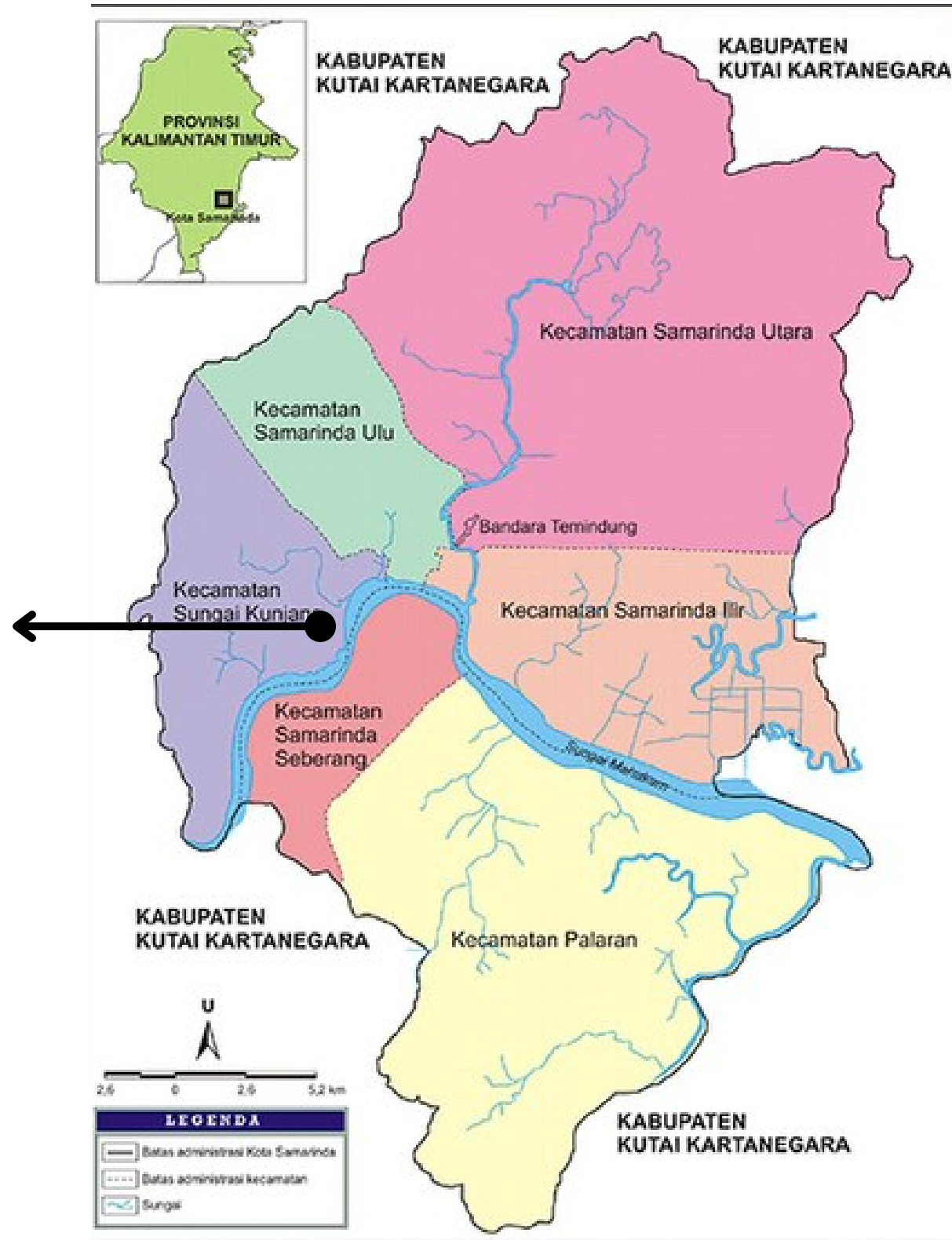
In Samarinda, most of shopping centers are not friendly for the disabled, some also lack of safety for several users such as children. Also many places haven't provide the facilities for the disabled. It become a concern to provide a shopping mall that can support the disabled people to do activities by implementing the principle of inclusive design about Safety and Accessibility for the disabled.

Samarinda city is the capital of East Kalimantan Province which is surrounded and directly adjacent to Kutai Kartanegara Regency. In the national urban system, the City of Samarinda has been designated as the National Activity Center (PKN). Samarinda City is also included in the National Strategic Areas of KAPET Samarinda, Sanga-Sanga, Muara Jawa and Balikpapan. The city of Samarinda has an area of 718 km<sup>2</sup> and is fed by the Mahakam River which is the 2nd largest river on the island of Borneo.

Mahakam river is the main attraction of Samarinda, the riverbank become a place for recreation, trading and transportation. Slamet Riyadi street is the primary arterial road in Samarinda which also the entrance road of Samarinda from Balikpapan. It connects directly to the Bridge of Mahakam. It is suitable with the concept of waterfront since it has direct border with Mahakam river. The project is proposing a design of waterfront shopping center in Samarinda that well known as the 'Kota Tepian' which means City on the riverbank. Despite of having main city attraction alongside the riverbank,

## 1.2 Site Location

Located in Kecamatan  
sei Kunjang,  
Samarinda City,  
East Kalimantan



**Figure 1.1** Maps Of East Kalimantan  
Source : Google



### 1.3 Problem Formulation

1. How to design Waterfront Shopping Center in Samarinda based on Inclusive Design Method?
2. How to integrate the safety and Accessibility for the disabled people on a shopping mall?

#### Aim

1. Design a waterfront Shopping center that built on riverbank which can supports the disabled people in Samarinda.
2. Design a Shopping center that applied the inclusive design for the safety and accessibility

### 1.4 Contextual Mapping

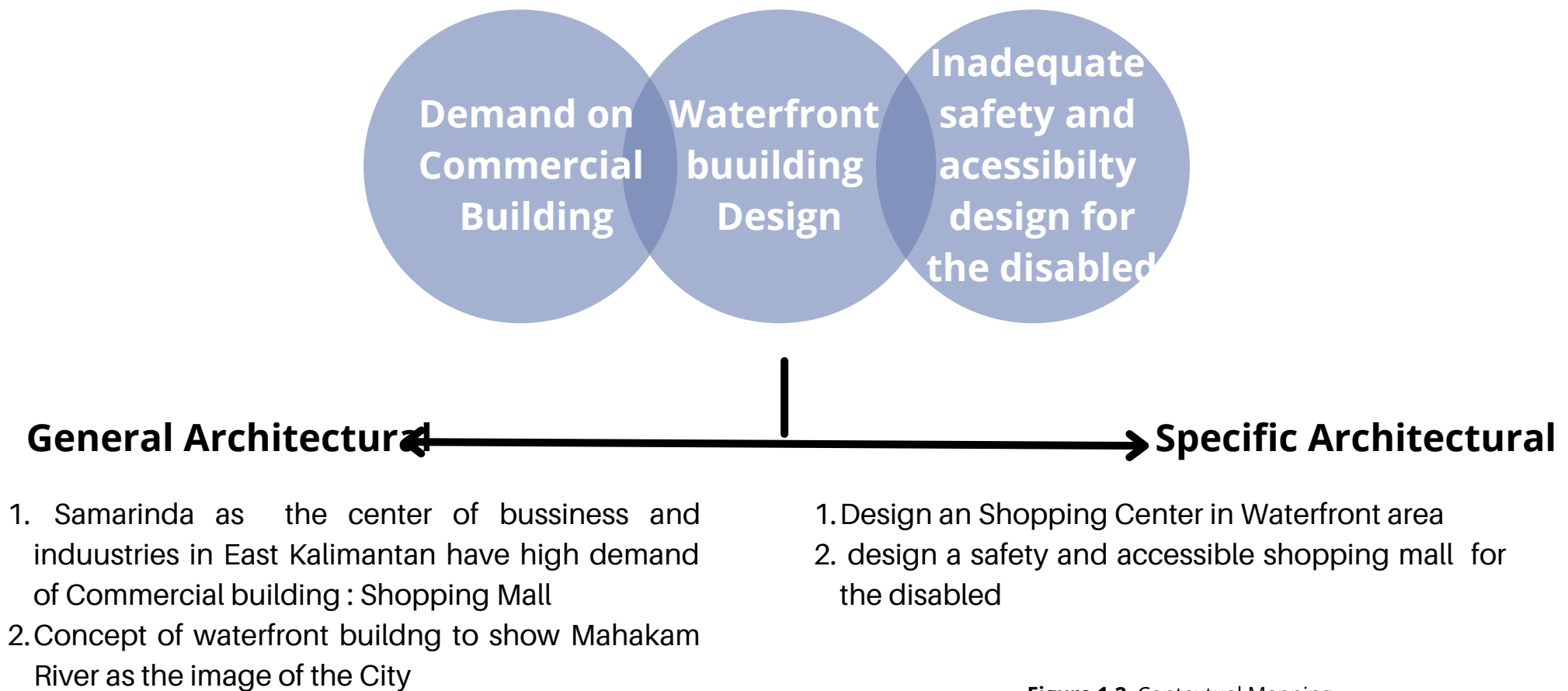


Figure 1.2 Contextual Mapping  
Source : Author

## **1.5. Design Method**

### **1. Finding Background and Issue**

Defining the problem that occurs in the area then finding the supporting data to find the cause of the issues.

### **2. Analysis**

Analysis done after defining the problem and background of the issues to find out the most relevant problem solving method.. in the case of the project the problem solving method is analyzed by studying the context behind the context. then defining the most relevant approach to solve the problem for the disabled in shopping center and building safety.

### **3. Design Problem**

After the analysis done, the problems derived into variables and parameters to guide the solving of the problems that relevant to the building design elements that will be concerned.

### **4. Design Concept**

The concept made as strategy implementation to solve the problem that has been studied before.. this will be in form of schematic design and sketches .

### **5, Design Development**

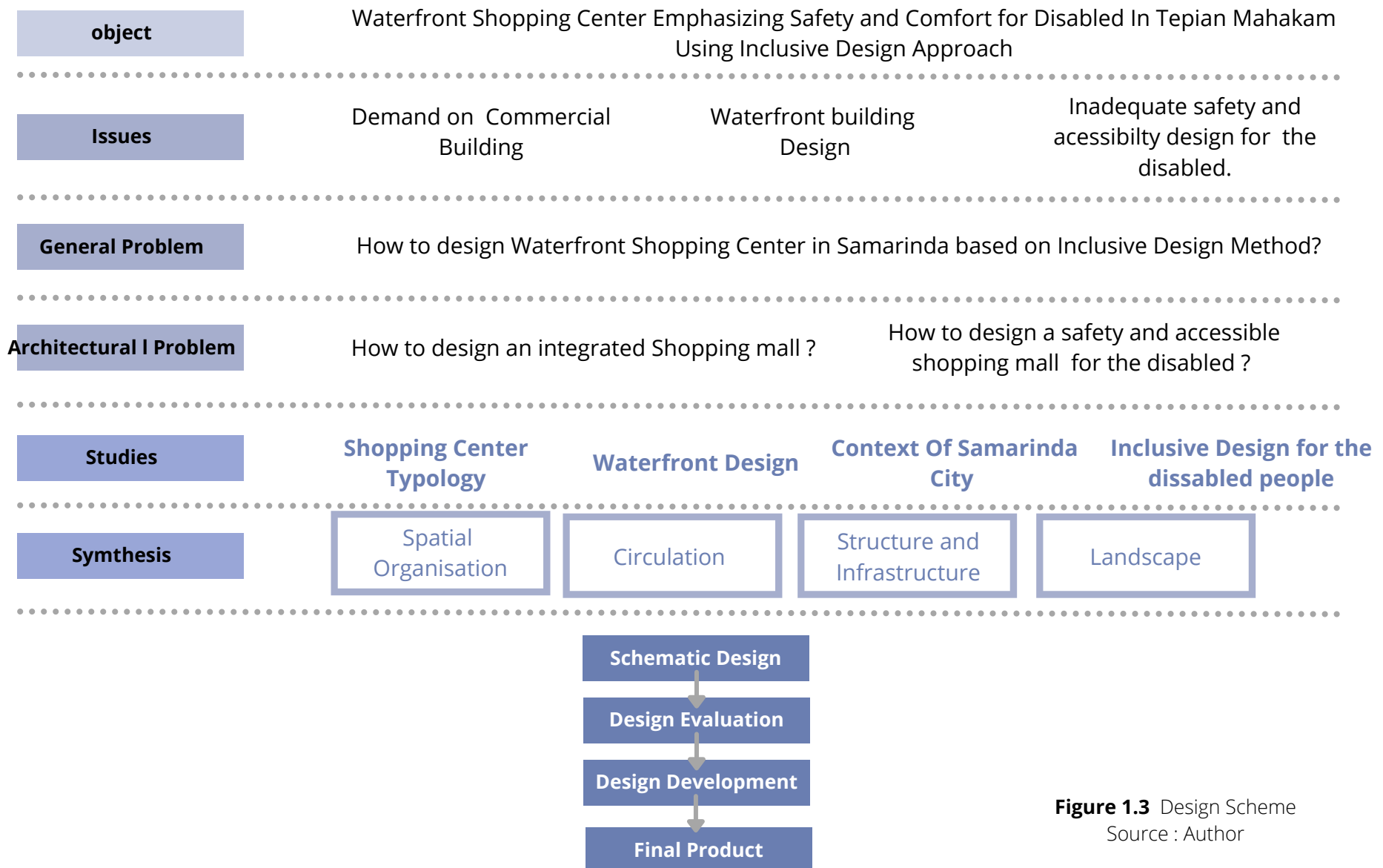
the next step is to develop the concept into real design. most likely in form of 3D, Plan and section.

### **6. Design Testing**

using variables and design testing tools to make sure that the design has solved the problem

## 1.6. Design Scheme

The design process begins with a problem description and determines the most important issues, events or needs in society. Formulate the problem and define design boundaries. We then determine indicators and parameters and design strategies based on the studies and typologies we have investigated. A strategy for designing and handling context must be developed in order to achieve the metric. The next step is to create a pre-design for the relevant analysis. The design is evaluated by design mtests to see if the success of the design can solve the problem. Scoring methods use simulation to show how the design works. Design development to improve design



**Figure 1.3** Design Scheme  
Source : Author

## 1.7. Originality and Novelty

This following table is consist of project with difference approach to show that the work that will be carried out through this proposal has originality or has never existed before

NO	NAME OF AUTHOR	TITLE	APPROACH	TIPOLOGY	LOCATION	YEAR	DIFFERENCES
1	<u>Rachmat Ramadhan</u>	Banjarmasin Shopping Mall	<u>Vernakuler architecture</u>	Waterfront Shopping Mall	Banjarmasin	2012	Design focusing on Vernacular Architecture approach
2	<u>Rauza</u>	<u>Perancangan Recreational Waterfront Di Pesisir Pantai Ulee Lheue</u>	Disaster Mitigation	Waterfront Recreational Facilities	Banda Aceh	2020	Designing focusing on disaster mitigation and urban planning
3	<u>Muhammad Rizky Suhri</u>	<u>Seturan Midtown Plaza</u>	City Walk Approach	Shopping Center	Yogyakarta	2018	Design using City walk approach
4	<u>Ilfa Khaizum R</u>	<u>Waterfront Resort Hotel Di Tanjung Bunga</u>	Waterfront Building	Waterfront Hotel	Makassar	2019	The building Tipology is a Hotel
5	Gabriella Saskia Amanda Salim	<u>Redesain Metropolis Town Square Sebagai Pusat Perbelanjaan Dengan Pendekatan Inclusive Design</u>	Inclusive Design	Shopping Center	<u>Tangerang</u>	2020	Focus to re-desain and improving the existence building

**Table 1.1** Originality and Novelty  
Source : Author

**02**

Design Studies

## 2.1 Theme Study Review

### 2.1.1. Waterfront Area

Waterfront is parts of cities bordering water, harbor areas (Echols,2003), Waterfront can also be interpreted as result of design that has visual and physically close to the water where the city's image is oriented towards the water. From this understanding we can conclude that a city or area that has direct border to water (sea, river, lake,etc) can be called a waterfront area or waterfront city.

#### Types of Waterfront

Based on its function, waterfront is divided into 2 types, namely:

##### a. Mixed-Used Waterfront

Is a waterfront which is a combination of housing,offices, restaurants, markets, hospitals, and/or cultural places.

##### b. Recreational waterfront

Are all waterfront areas that provide facilities and infrastructure for recreational activities, such as parks, playgrounds,fishing and facilities for cruise ships.



**Figure 2.1** Mahakam River in Samarinda East Kaltim  
Source : Google

### **2.1.2 Inclusive Design : Safety and Aecessibility for the Disabled**

Inclusiveness contains configurations for various sides. Design considerations can have a "doorway" to each person in different contexts. Similarly, a design can have different "handles" for different people and contexts for different purposes. The design constraints of inclusive design are very different from the concept of universal design. Universal design aims to create a generic design that fits everyone, whereas integrated design techniques include designs that can be customized, modified, or extended to suit any individual's needs. Feel free to create your own. In this case, the boundaries of design are communities rather than individuals.. (CABE, 2006)

Inclusive design aims to enable accessibility by providing a framework for the safety, health, productivity, enjoyment, and autonomy of site and building users. Evaluating alternative strategies for site design, spatial organization and navigation, individual spatial design, and environmental control and facility selection The empathy used in this method is to look at the exclusive elements of each user community. Understand their specific needs and behaviors and how comfortable they feel (user experience). Inclusive design is about empowering users, not imposing personal beliefs.(CABE, 2006)

According to (Haryanti & Sari, 2017), accessibility is one of the rights for people with disabilities. There are several principles that must be considered in physical accessibility, namely safety, convenience and independence. This accessibility is divided into two types, namely:

a. Physical accessibility, includes services related to the planning of buildings and urban areas as well as public facilities.

b. Non-physical accessibility includes the right for citizens to obtain equal opportunities both in education and work.

PUPR Ministerial Decree No. 14/PRT/M/2017 article 8 states that all buildings must meet the requirements of accessibility, which consist of easy connection to the building, from the building as well as inside the building. And also the completeness of facilities and infrastructure in the building.

Therefore, shopping center buildings must also provide infrastructure and facilities that provide convenience, security and comfort for building users and visitors.

According To Center for Universal Design in NCSU. There are 7 Principles of Inclusive Design. the Principles may be applied to evaluate existing designs, guide the design process and educate both designers and consumers about the characteristics of more usable products and environments.

Universal Design have to fulfill 7 principles, which are :

- a. Equitable Use
- b. Flexibility in Use
- c. Simple, Intuitive use
- d. Perceptible Information
- e. Tolerance For Error
- f. Low Physical Effort
- g. Size and Space for Approach and Use



### 2.1.3 Disable People In Samarinda

According to the Badan Pusat Statistik East Kalimantan, There are 7331 disable people are recorded living in East Kalimantan. over 2000 lived in Samarinda. The number recorded is not a final result due to the minimum access to reach small area in East Kalimantan. Approximately there are more than 10.000 disable people in Samarinda. it is about 3% From the total citizen of Kalimantan.

Dissability divide into several types :

- vision Impairment

Vision impairment refers to people who are blind or who have partial vision, Low Vision due to age or biological Condition, and they who color blind fully or partially.

- deaf or hard of hearing

Hearing impairments can range from mild to profound. People who are hard of hearing may use a range of strategies and equipment including speech, lip-reading, writing notes, hearing aids or sign language interpreters.

- mental health conditions

Mental illness is a general term for a group of illnesses that affect the mind or brain. These illnesses, which include bipolar disorder, depression, schizophrenia, anxiety and personality disorders, affect the way a person thinks, feels and acts.

- intellectual disability

A person with an intellectual disability may have significant limitations in the skills needed to live and work in the community, including difficulties with communication, self-care, social skills, safety and self-direction.

- physical disability.

The common characteristic in physical disability is that some aspect of a person's physical functioning, usually either their mobility, dexterity, or stamina, is affected. People with physical disability are usually experts in their own needs, and will understand the impact of their disability.

The Design Will focus on **Physical Dissability, Low Vision/Partial vision, and the deaf**

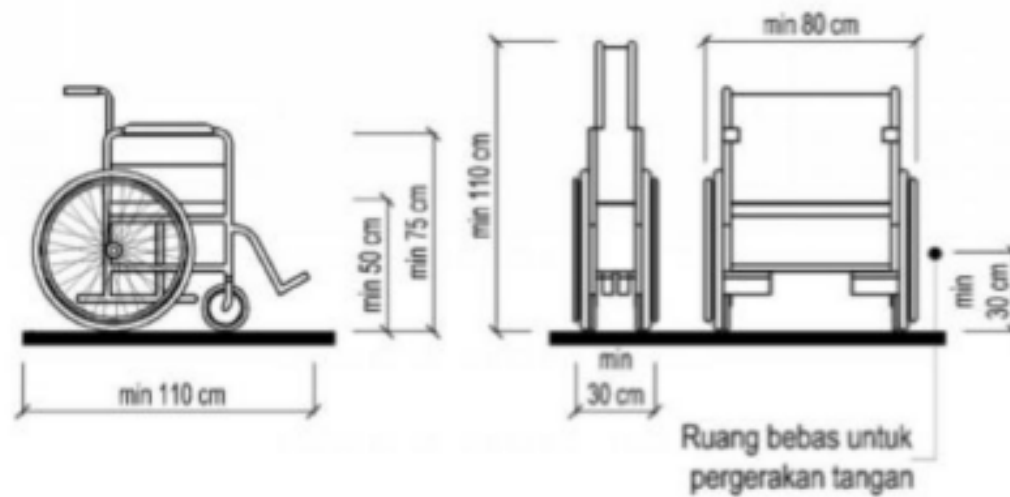


**Figure 2.2** Disable people Condition In Samarinda, East Kalimantan  
Source : Google

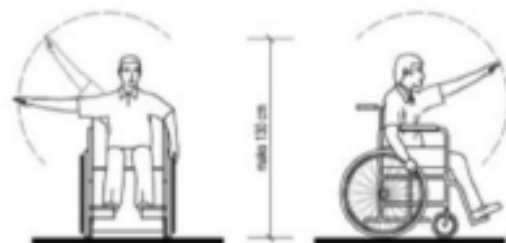
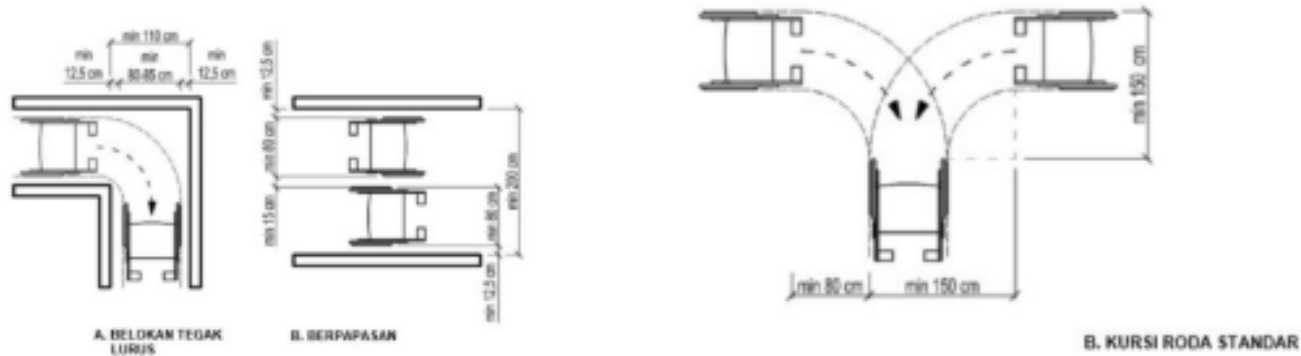


## 2.1.4 Requirements for Disabled Accessibility

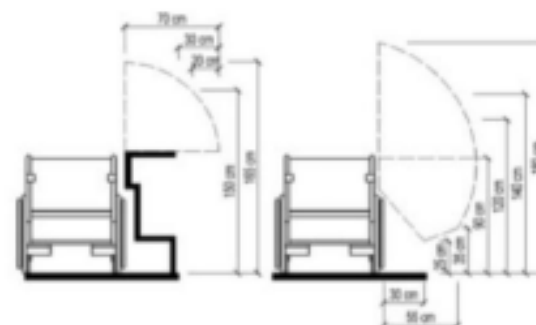
### 1. Min. need of space for difable person (wheelchair)



GAMBAR A-6  
UKURAN KURSI RODA



GAMBAR A-9  
RATA-RATA BATAS JANGKAUAN  
PENGGUNA KURSI RODA



### 2. Parking Area (difabel)

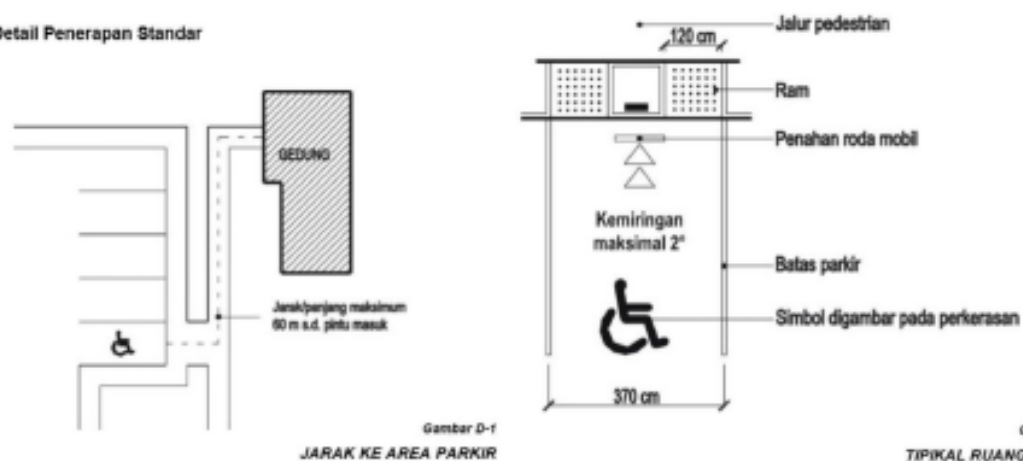
- From entrance max.60 m
- Have a difable symbol
- Parking area have a width 370cm for a single parking or 620cm for doble parking and already connected to the ramp that access to other facilities.

Figure 2.3 wheel chir requirement  
Source : Peraturan pemerintah

Tabel jumlah tempat parkir yang aksesibel yang harus disediakan pada setiap pelataran parkir umum:

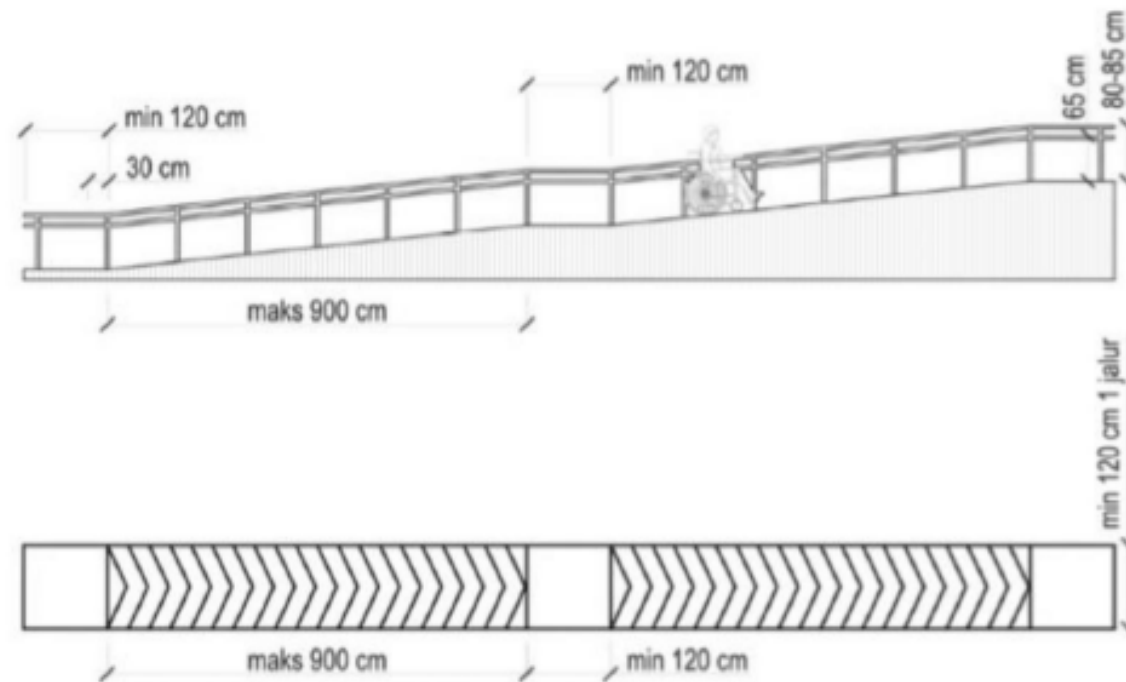
JUMLAH TEMPAT PARKIR YANG TERSEDIA	JUMLAH TEMPAT PARKIR YANG AKSESIBEL
1-25	1
26-50	2
51-75	3
76-100	4
101-150	5
151-200	6
201-300	7
301-400	8
401-500	9
501-1000	2% dari total
1001-dst	20 (+1 untuk setiap ratusan)

### 3. Ukuran dan Detail Penerapan Standar



**Figure 2.4** Parking disabled requirement  
Source : Peraturan pemerintah

### 3. Ramp



Gambar F-3

### KEMIRINGAN RAM

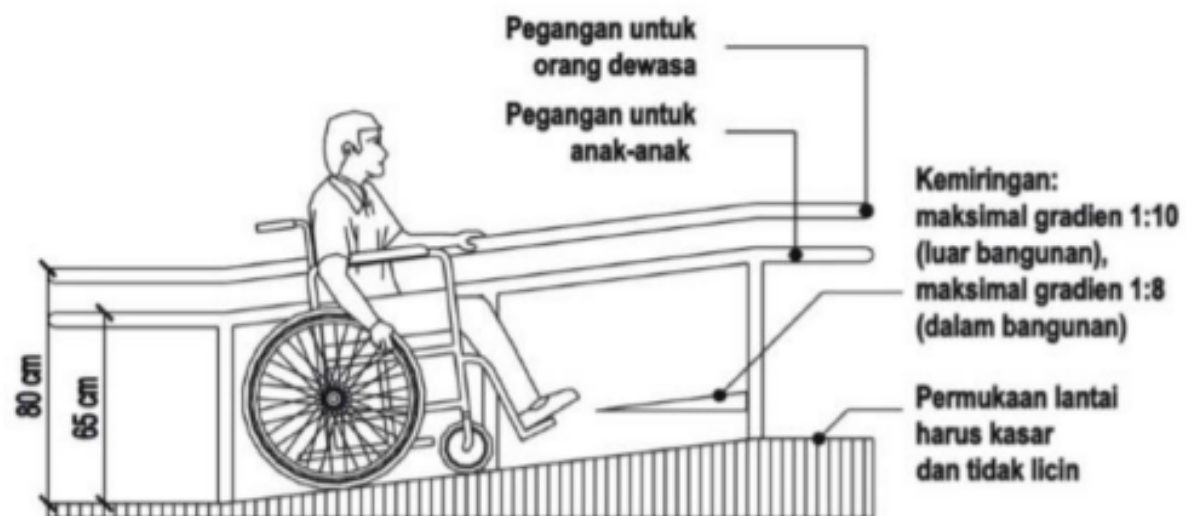
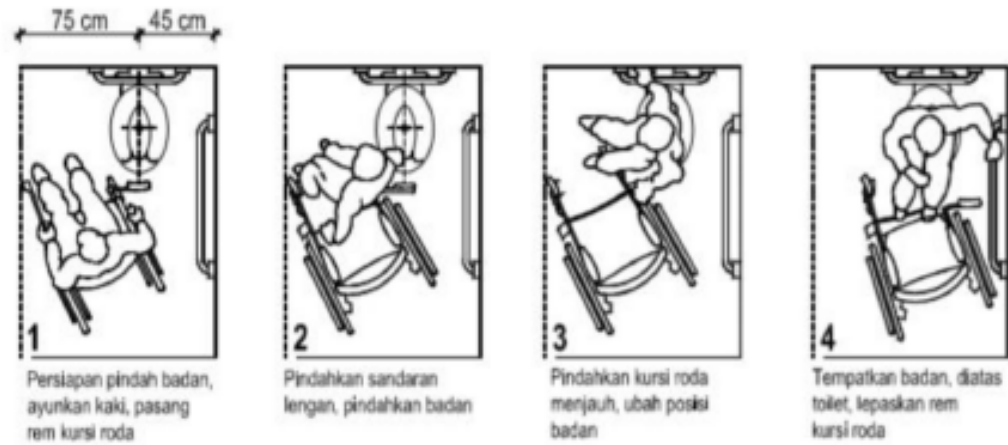
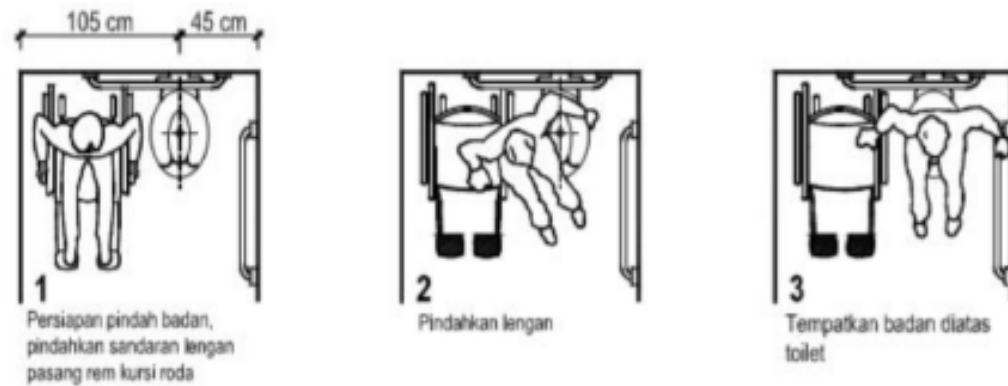


Figure 2.5 Ramp requirements  
Source : Peraturan pemerintah

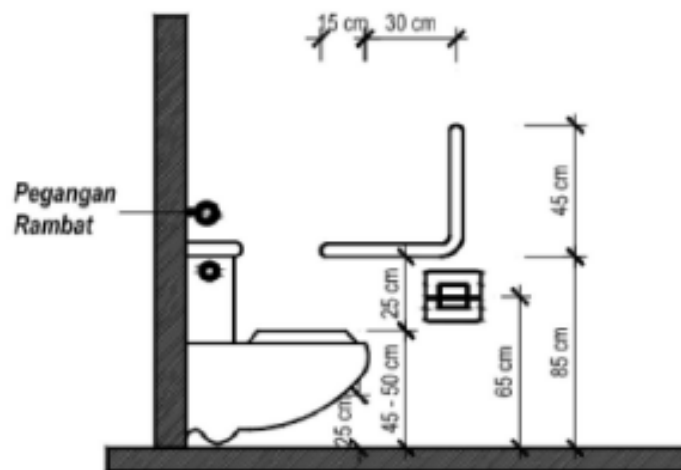
#### 4. Toilet



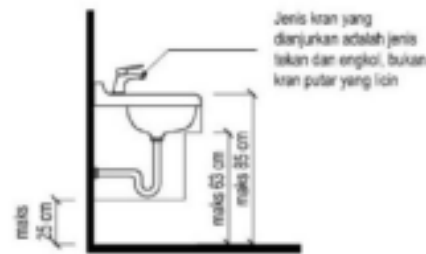
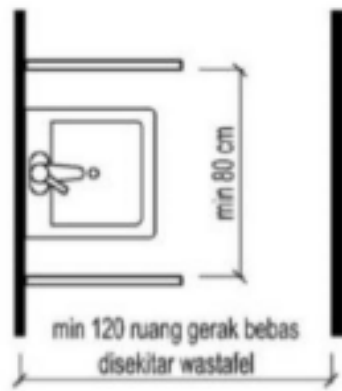
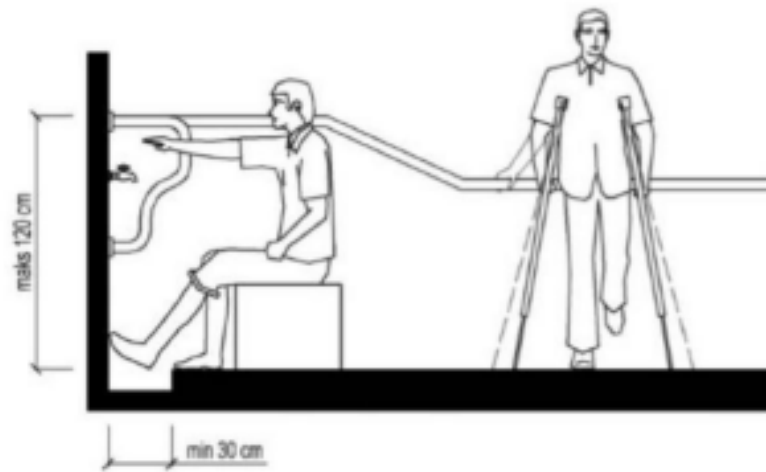
##### A. PENDEKATAN DIAGONAL



##### B. PENDEKATAN SAMPING



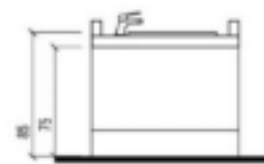
**Figure 2.6** Disabled Toilet requirement  
Source : Peraturan pemerintah



GAMBAR L-2  
KETINGGIAN WASTAFEL WASTAFEL



GAMBAR L-3  
TIPE WASTAFEL DENGAN PENUTUP BAWAH



Penempatan kran alternatif di samping, memudahkan dijangkau dari kursi roda

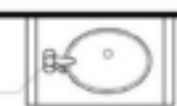


Figure 2..7 Disaabled Toilet requirement  
Source : Peraturan pemerintah

## 2.2 Typology Review

### 2.2.1. Shopping Mall

Shopping Mall is an area of commercial activities that consist of many commercial activities and categories. The concept of Commercial park is combining the communal space, green space and commercial buildings in one area to support the commercial activity but also the communal and environmental needs.

Commercial activity refers to the process of trading or buying/selling goods and services for profit through commerce, as well as all related activities such as transportation, communication, and banking commercial activities in the form of shops are broadly divided into five categories: convenience shops, where consumers buy goods regularly, shopping shops, where consumers buy goods on a less regular basis, specialty shops, where consumers buy goods at a long interval and the interval is not clear, department and multiple stores, and department and multiple stores. Wardhana, I.W. & Haryanto, R., (2016)

In Modern Shopping Center, the trading activity are not accompanied bargaining as in traditional markets. Modern shopping center is a shopping center with a self-service system or serviced clerk, selling various types of goods in retail. shopping center Modern technology usually consists of tenants who are rented out to business actors and there are anchor tenants in the form of department stores or supermarkets. (Francisca, 2014)

The term of ShoppingMall has several meanings, including:

1. Individual businesses carried out collectively through capital pooling with the aim of commercialeffectiveness
2. A place for exchange and distribution of goods / services with characteristics of commercial, involving proper planning and designing because it aims to gain as much profit as possible
3. Apart from functioning as a place for activities shopping or buying and selling transactions, alsoserves as a place for gathering or recreation(Beddington, Design for Shopping Center).

## 2.2.2. Shopping mall Classification

### a. Open Shopping Center

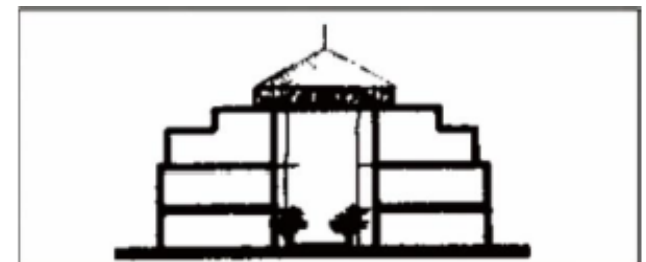
The shopping center directly accessed by the sunlight because it has no enclosure, with weather protection provided by a continuous canopy along the front of the store. The benefits are broad-based impressions and lower costs in terms of technical ease of implementation, but the drawbacks are limited control restrictions that affect usability among retailers.



Sumber: Rubeinstein, H. M., Central City (1978)

### b. Closed Shopping Center

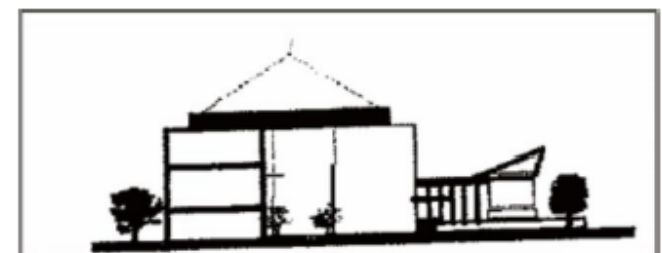
this type of hoping center has enclosed so that the space protected from the direct sunlight. This type has advandtage in comfort aspect because it possible to control the climatic parameters.



Sumber: Rubeinstein, H. M., Central City (1978)

### c. Integrated Shopping Center

This type is a combination between opn and closed shoping mall. it provide where the visitors can enjoy the outdoor ambiance while the weather is supporting but also give comfort space inside closed building. Besides, this shopping center aims to concentrate the attraction of shopping center visitors with closed parts placed.



Sumber: Rubeinstein, H. M., Central City (1978)

**Figure 2.8** Shopping mall Classification  
Source :Rubeinstein, H.M., Central City (1978)

### 2.2.3. Shopping Center Circulation

According to Avriansyah (2010), various circulation systems in modern shopping malls:

#### A. Multi-corridor system

Characteristics of shopping malls with many corridor systems:

- There are many corridors whose orientation is neither described nor highlighted, so they are all considered the same. • Very efficient space utilization.
- There is a shop in Indonesia that was built around the 1960s.
- 

#### B. Plaza System Shopping malls with

Plaza System are characterized by:

has a large plaza/area that serves as an orientation center for indoor activities and utilizes a corridor pattern for spatial efficiency. Starting with a hierarchy of store locations, we began to see a pattern of strategic locations close to squares, bidets and mezzanines.

Examples:

Plaza Indonesia, Gajah Mada Plaza, Glodok Plaza, Ratu Plaza, Plaza Semanggi, ITC, Cempaka Mas, etc.

#### C. Mall System

Features of a shopping mall with a plaza system:

Concentrate on a main axis facing two or more magnet shops, becoming a mass axis and developing into a large dimensional atrium. A path is a main circuit because it connects two magnetic points or anchors that form a main circuit.

Example:

Pondoh Indah Mall, Blok M, Atrium Senen, Mall Kelapa Gading 1-2, Ciputra Mall. This is to increase mall visitor mobility and facilitate a visual view of the retail spaces within the building.

### 2.3 Guidelines and Requirement For Shopping Mall

Following The Design Guidline in Samarinda City by Peraturan Daerah Kota Samarinda Tentang Rencana Tata Ruang Wilayah nomor 2 tahun 20214 for the building codes and building requirements.

Peraturan Menteri Pekerjaan Umum dan Perumahan Rakyat Republik Indonesia Nomor 14/PRT/M/2017 tentang Persyaratan Kemudahan Bangunan Gedung. 2017. as guidline for universal design, free barrie design, and building infrastructure for safety

According to Gibbert (1959), based on the area of the building, the type of mall as follows:

1. Regional Mall is a mall that has an area between 32,000 - 95,000 m<sup>2</sup> with a visitor scale of 150,000 - 400,000 people.
2. Mall District is a mall that has an area between 10,000 - 30,000 m<sup>2</sup> with a visitor range of 40,000 - 150,000 people.

Considering the area of the site and the facilities and services provided in the mall, the type of mall that will be designed is the **District Mall**, because it has an area between 10,000 - 30,000 m<sup>2</sup>. and will accomodate At least 4.000 people

#### C. By Transaction System

According to Marlina (2008), mall transakasi system can be distinguished as follows:

1. Wholesale is a system of stores that sell goods by displaying only sample goods, for the original goods stored in a storage room or warehouse.

#### 2. Retail is a

zsystem of stores that sell small and varied goods and directly so that it requires a large display area. Therefore, this store system attracts more buyers because the goods are available directly.

Based on the above sources, it can be concluded that retail stores require a large display area, while grocery stores are the opposite. Retail system is more recommended for sellers so it is easier to get consumers because of the goods that are directly sold.



## 2.2.4 Design Criteria for Shopping mall using precedents comparisons

Aspects (From Urban Mobility Theory)	Design Typology (Comparing design characteristics of the Precedents)	Criteria (Formulation from the similarities)
<i>A. Walkability</i>  How to design appropriately public pedestrian space in the shopping center?	<b>1) Functionality.</b> The public pedestrian space is formed as the gap space between building masses (Ex: Namba Parks); open terraces; hardscape garden (Ex: Kuta Beachwalk); Green landscape on the rooftop; outdoor plaza surrounded by building masses (Ex: Meydan Retail Complex). It is aimed to make open space that allows mobility for public pedestrians to cross over	The building mass is divided to be a complex of buildings (compound buildings).
	<b>2) Aesthetic.</b> The aesthetic concept is the analogy of natural form or character such as the gap space of canyon (Ex: Namba Parks); the landscape of hills (Ex: Meydan Retail Complex); and organic terraces (Ex. Kuta Beachwalk). It is aimed to balance the urban environment around that is crowded and rigid, so that could be attractive for public pedestrians.	The character of building form or façade is the analogy of natural characters.
	<b>3) Safety and Security.</b> An accident could be prevented by curving or aerodynamic patterns at the corner of intersections (Ex: Kuta Beachwalk, Namba Parks) or with plaza space (Ex: Meydan Retail Complex). It is aimed to allow a wide view for pedestrians so they could anticipate something ahead and avoid any accident.	Intersections with a curving pattern or with plaza space.
	<b>4) Practice.</b> There is no special room for the lobby. The complex of buildings could be entered from several entrance spots spread away (Ex: Kuta Beachwalk, Namba Parks, Meydan Retail Complex). It is aimed to be accessed by public pedestrians so they could utilize the site area as their mobility space to across.	There are several entrance spots spread out to many sides.
<i>B. Multi-Modal Mobility Option</i>  How to plan mobility options that support walking activity?	<b>1) Walking Urban Fabric.</b> Providing several entrances spread out and pedestrian ways to connect any surrounding area to another across, for example between offices and station (Ex: Namba Parks); between city and beach (Ex: Kuta Beachwalk); and between two settlements (Ex: Meydan Retail Complex). It is aimed to provide space for public pedestrians walking from one important location to another.	The pedestrian space in the shopping centers connects important surrounding areas.
	<b>2) Transit Urban Fabric.</b> Providing circulation ways that are directly connected to existing station building (Ex: Namba Parks). Providing off-street transit space such as bus stop in the basement (Ex: Namba Parks); drop-off space for the bus (Ex: Kuta Beachwalk); or providing parking lot for a taxi (Ex: Meydan Retail Complex). It is aimed to support walking activity and also to maintain regularity on the traffic road	Providing off-street transit space. It could be designed as a bus stop inside the building site, drop-off area, basement, or parking lot.

Aspects (From Urban Mobility Theory)	Design Typology (Comparing design characteristics of the Precedents)	Criteria (Formulation from the similarities)
	<p><b>3) Automobile Urban Fabric.</b> Providing drop-off area at the furthest side from the main road (Ex: Kuta Beachwalk and Meydan Retail Complex). Providing parking lot integrated to one provided by another building beside (Ex: Kuta Beachwalk, Namba Parks, Meydan Retail Complex). It is aimed to reduce the dense of automobile activity in one site.</p>	<p>Providing a shared parking space if the shopping center is developed by the same owner with another building beside.</p>
<p><i>C. Mixed-Use Development</i></p> <p>How is the shopping center able to accommodate another use such as public pedestrian space?</p>	<p><b>1) Market Area Classification.</b> Developed as the Community Centres which have between 20 until 70 commercial rooms (Ex: Kuta Beachwalk, Namba Parks, and Meydan Retail Complex) or the Neighbourhood Centre which is close to settlements (Ex: Kuta Beachwalk), or Regional Centre which gains visitors from wide range of surround area (Ex: Meydan Retail Complex).</p>	<p>Developed as the Community Centre which provides between 20 to 70 commercial rooms and other uses.</p>
	<p><b>2) Pattern Classification.</b> The shop rooms are arranged following the pattern of the main circulation or pedestrian way that is connected to the other building by U-shaped pattern (Kuta Beachwalk), Double L-Shaped (Ex: Meydan Retail Complex), or Dumbbell (Ex: Namba Parks).</p>	<p>The arrangement of shop rooms is following the pattern of the public pedestrian space or the main circulation that is integrated into the other building.</p>
	<p><b>3) Owner Classification.</b> Two complexes of the building are owned by the same company (Ex: Kuta Beachwalk) or some companies are cooperating to develop one complex of the building (Ex: Namba Parks, Meydan Retail Complex). It is useful to make the buildings supporting each other to gain visitors and provide parking areas.</p>	<p>The single ownership with another building beside.</p>
	<p><b>4) Merchandising Classification.</b> Developed as the Outlet Centres which provide room for big tenants and famous brands (Ex: Kuta Beachwalk and Meydan Retail Complex) or the Theme/Festival Centres which apply a certain recreational theme (Ex: Kuta Beachwalk, Namba Parks, and Meydan Retail Complex)</p>	<p>Developed as the Theme/Festival Centre which bases on any recreational theme.</p>
<p><i>D. Ecological Awareness</i></p> <p>How to present a natural</p>	<p>Providing green landscape on the rooftops (Ex: Namba Parks, Meydan Retail Complex) or arranging the building masses to around the green landscape in the center (Ex: Kuta Beachwalk). It is aimed to balance the dense</p>	<p>Providing green landscape accompanying the main circulation/ pedestrian space.</p>

The following are

the explanations from the design criteria expected to be applied as the standards for the future projects of a shopping center based on public pedestrian space in Indonesian cities:

1. The building site should be located between important existing areas so that pedestrian space provided by the shopping center can contribute mobility for public pedestrians, for example from settlements to offices, settlements to existing commercial places, offices to the local station, and so on.

2. The building mass of the shopping center is divided to be a complex of buildings to create public open space between the masses that allows mobility for people walking across the site area. There should be several entrance spots spread out to give access to public pedestrians, so they could utilize the site area as their mobility space to cross from one surrounding area to another.

3. The shopping center needs to be developed as the Community Centre which provides 20 to 70 stores including a supermarket, department store, and other commercial rooms because it could attract people from a wide range.

4. Walking activity in an urban environment needs to be supported by a transit system or public transport system. Providing off-street transit space in the site area can support walking activity and also maintain regularity on the traffic road outside. It could be designed as a shaded bus-stop, drop-off area, basement, or parking lot.

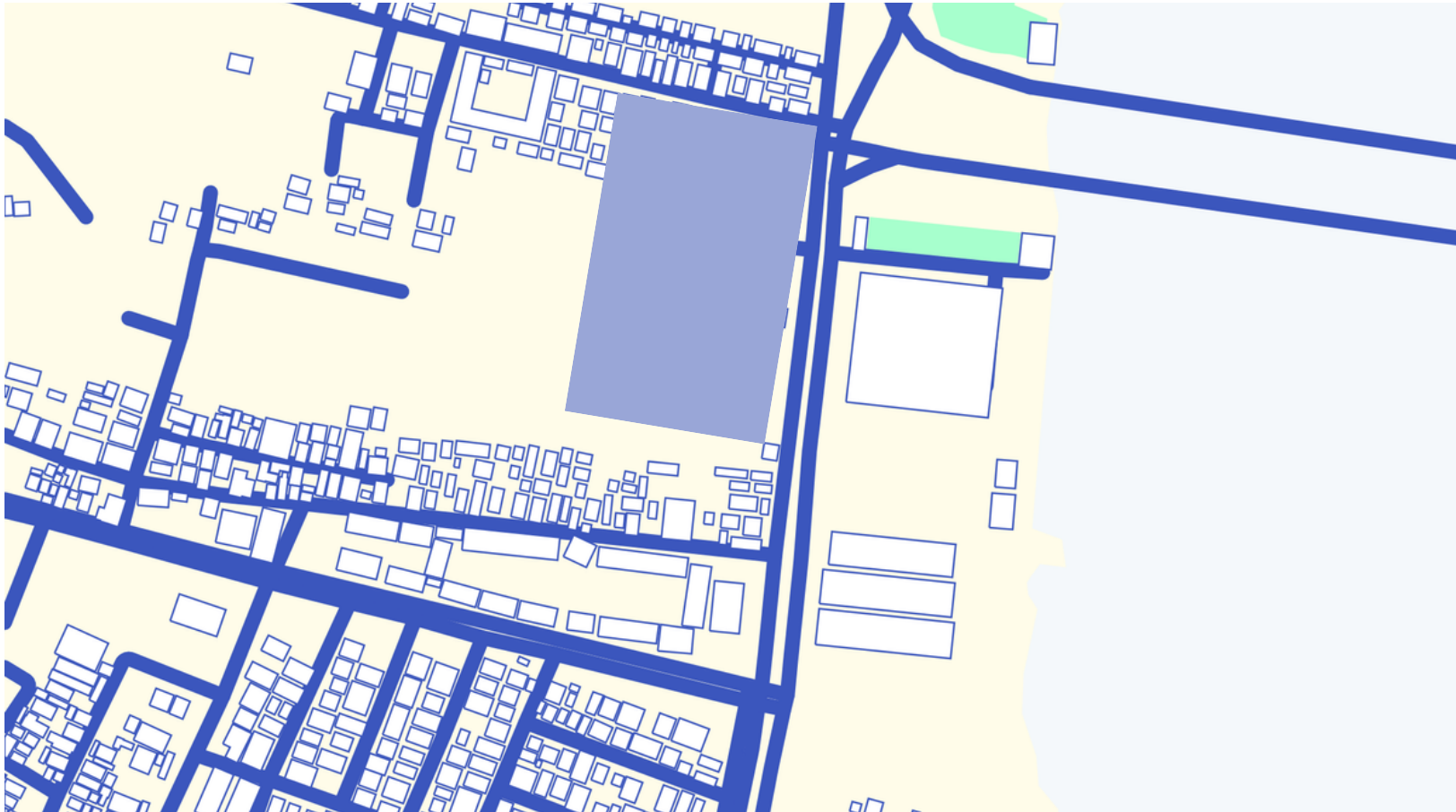
5. In any situation where the shopping center and another building beside are developed by the same owner, any integrated circulation is needed to support each other for gaining visitors and providing mobility for public pedestrians.

6. The character of building form or façade needs to balance the character of the urban environment around that is rigid, crowded, and polluted. Therefore analogy of natural characters could be applied such as organic shaped or natural materials, so it would be attractive to gain visitors.

7. The organic form or curving-shaped pattern is also needed to be applied in intersections of circulation to allow a wide view for pedestrians, so they could anticipate something ahead and avoid any accident.

## 2.3. Location Studies

### 2.3.1 Site Selection



Location :

Jl. untung surapati, Sei Kunjang, Samarinda

**Figure 2.9** Site Situation  
Source : Author

Based on, Peraturan Daerah Kota Samarinda Tentang Rencana Tata Ruang Wilayah nomor 2 tahun 2014, it can be seen that the selected site has the following spatial regulation/ building codes:

Total Area : 10500 M2

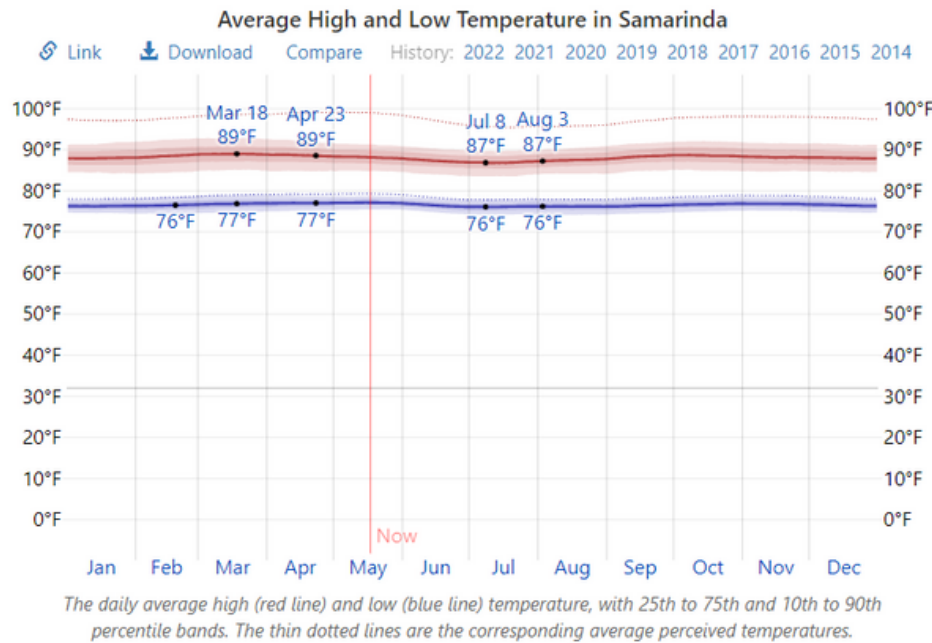
KDB : 40% (4200m2)

KLB : 4.5 (21000m2)

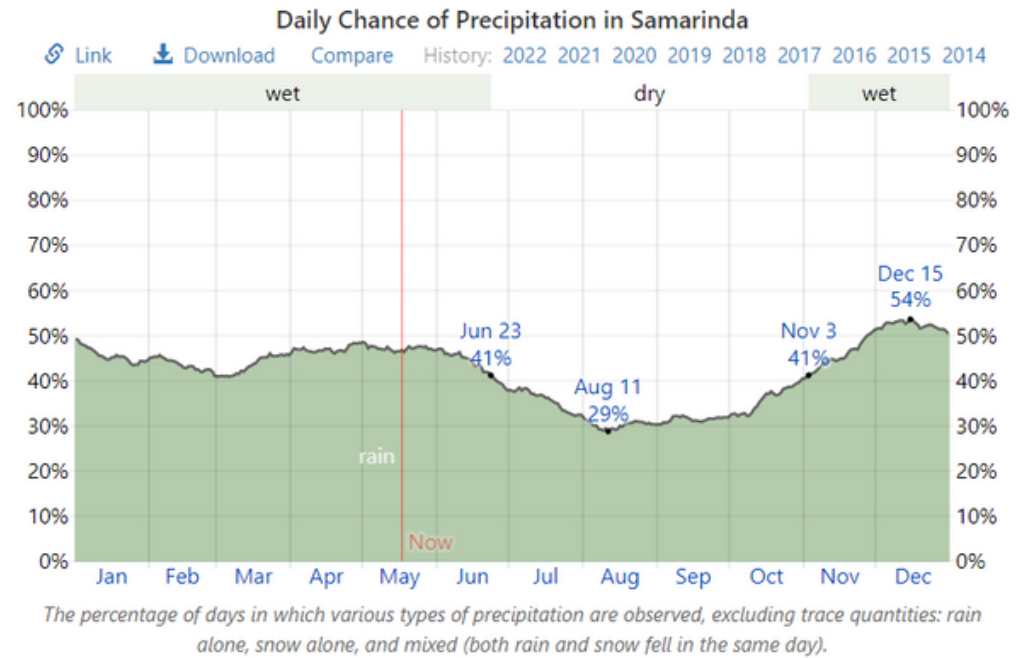
KDH 20% (2100m2)

Site Boundaries : 15 m from Mahakam River

## 2.3.2 Site Analysis



The "mean daily maximum" (solid red line) shows the maximum temperature of an average day for every month for Samarinda City. Likewise, "mean daily minimum" (solid blue line) shows the average minimum temperature. Hot days and cold nights (dashed red and blue lines) show the average of the hottest day and coldest night of each month (weatherspark, 2022).

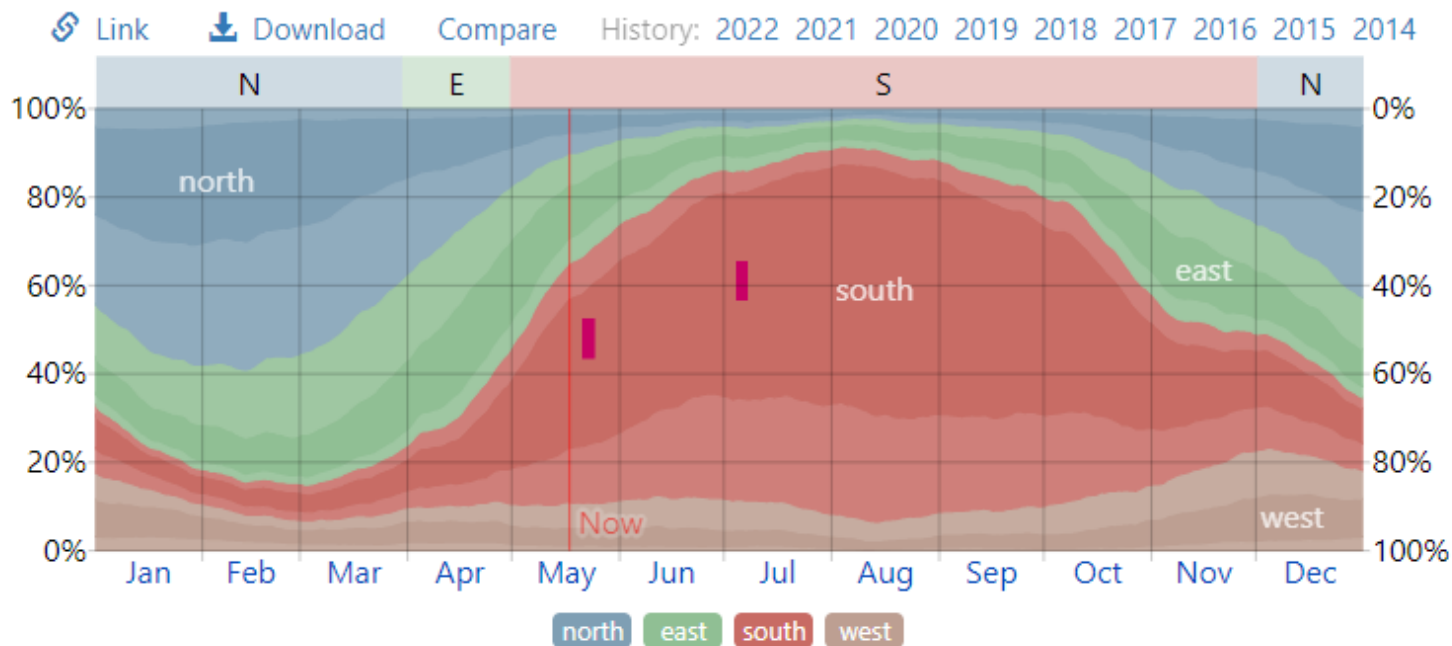


The precipitation diagram for Kecamatan Temon shows on how many days per month, certain precipitation amounts are reached. In tropical and monsoon climates, the amounts may be underestimated (weatherspark, 2022).

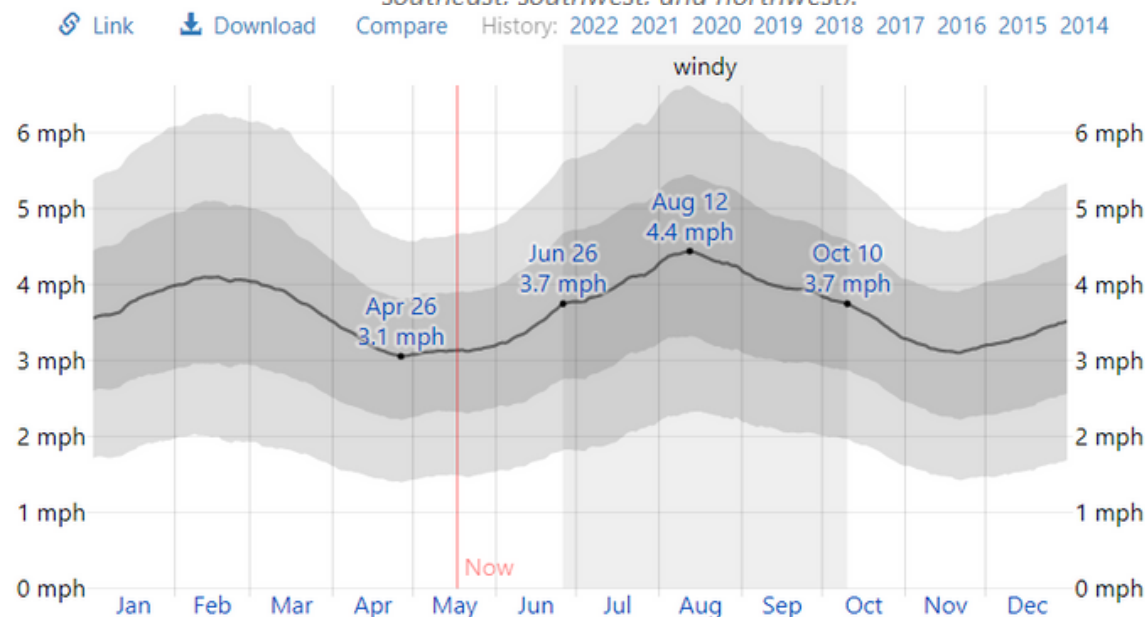
From the Data we can see that the raining season is happening from December to May and the dry season is from June to November.



## Wind Direction in Samarinda



The percentage of hours in which the mean wind direction is from each of the four cardinal wind directions, excluding hours in which the mean wind speed is less than 1.0 mph. The lightly tinted areas at the boundaries are the percentage of hours spent in the implied intermediate directions (northeast, southeast, southwest, and northwest).

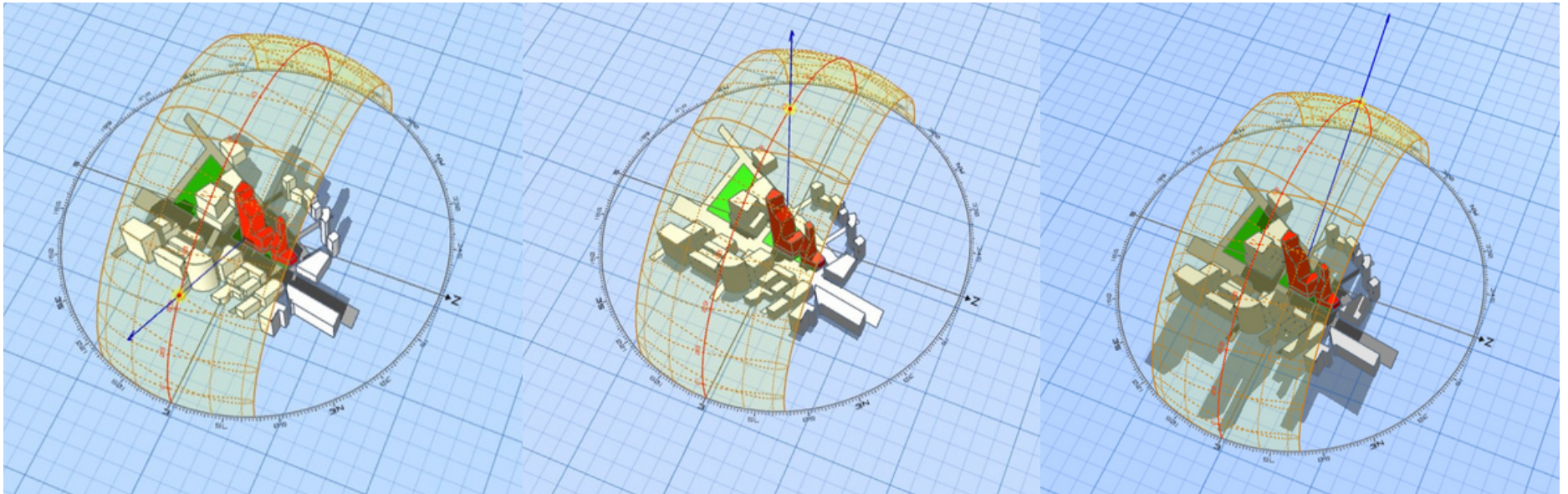


The average of mean hourly wind speeds (dark gray line), with 25th to 75th and 10th to 90th percentile bands.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Wind Speed (mph)	3.8	4.1	3.8	3.2	3.1	3.5	4.0	4.3	4.0	3.6	3.2	3.4

The Wind Direction Diagram is showing the wind flow in Samarinda over the year. we can see that most of the wind flow from the south. from the wind speed diagram we knew that the most windy month is on feb and august.

### 2,3.3 Mass Simulation with The Sun Path



The Simulation Done to know the Existing Site Situation so that the design could give the best response according to the sun simulation. From the Simulation done, known that the the building facing the east side and will get sun penetration from 9AM to - 13 PM then the sun move to the other side and penetrate the west side of the building. The east side of the side is facing directly to the Mahkam river which will be the main concern of the design as Waterfront Shopping Center.

## 2.4 Space Need Analysis

After study about the activities of the user, each activity is then analyzed according to the space requirements for each function. Each function has specific rooms needed to support the success and comfort of the activities in each of these functions. Some of the space required for each function along with the analysis of its magnitude is as follows:

Space Type	Needs	Area	No. Unit	Total Area
Shopping Area	Receptionist		5	5
	Lobby		25	25
	Retail Type 1	496	10	4960
	Retail Type 2	288	20	5760
	Retail Type 3	144	10	1440
	Department Store	3600	1	3600
	Supermarket	5000	1	5000
	Food Court	1226	1	1226
Management Area	Office	108	1	108
	Pantry	7	1	7
	Lavatory	10	4	40
Service Area	Security	36	1	36
	Storage	300	1	300
	Loading area	300	1	300
	Control Room	10	1	10
	Generator room	6	1	6
	Water pump Room	12	1	12
	Server Room	10	1	10
	Emergency Stair	24	3	72
	Freight Elevator	12	1	12
	Passenger Elevator	14	3	42
	Nursery Room	10	3	30
	ATM Center	30	1	30
	Praying Room	40	1	40
Parking	Car	1.4	1000	1400
	Motorbike	12.5	250	3125
			<b>Total Area</b>	<b>27596</b>



## 2.5 Precedent Studies

### Vancouver Convention Centre West



Vancouver Convention Center West is designed to bring together natural ecology, a vibrant local culture, and the built environment, highlighting their interrelationships through architecture. The Convention Center West expansion, which opened in April 2009, tripled total square footage and functional capacity and completed the development of waterfront public spaces.

#### Lesson Learnt :

- Supporting underwater habitat skirt or artificial reef that is part of the centre's foundation, providing new habitat for barnacles, mussels, seaweed, starfish, crabs and various marine species. (developing the water conservation through architecture)
- Design strategies that achieve a 73% reduction in potable water consumption by low-volume flush and flow fixtures and zero potable water use for irrigation due to an onsite wastewater treatment plant that treats 100% of the greywater and blackwater
- also, the choosing of building material and design to achieve the sustainability. reduce insulation, contributes to the building's stormwater utilization, and integrates with the waterfront landscape ecosystem.

## Segreen Business Park



Segreen Business Park is the result of transforming an inefficient and energy-consuming building into a complex that meets the needs of the most innovative and demanding businesses.

Lessont Learnt :

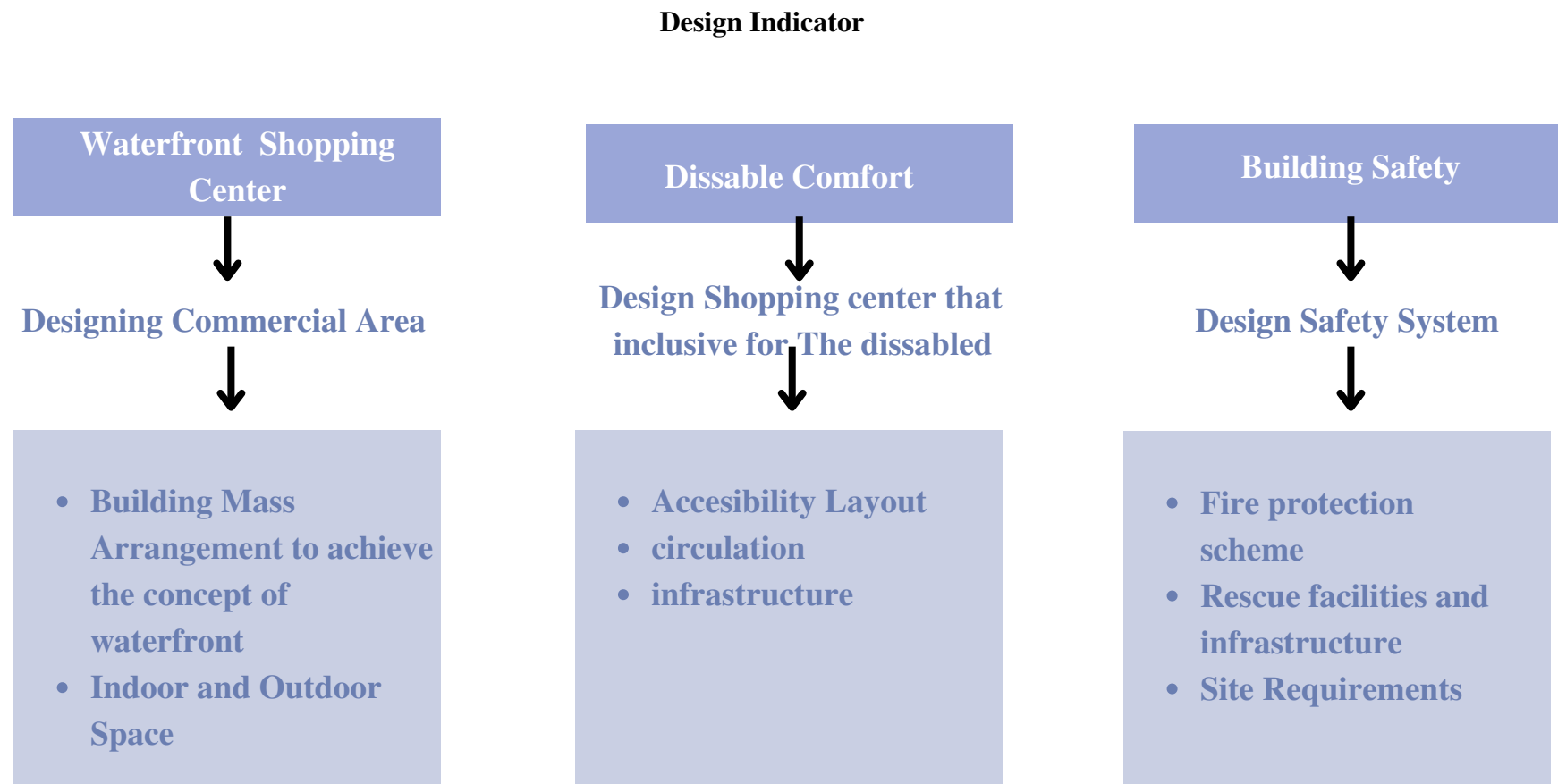
- Workspaces are comfortable, dynamic and pleasant. Large glasswindows allow transparency and permeability, hence helping to bring the outdoors intothe offices. The “piazza” directly interacts with the surrounding green space and createspleasing pedestrian paths. The green is carefully integrated with the urban furniture andlighting systems create paths and accents.
- the way they mass arrangement. Buildings vary in height and size, giving rhythm and dynamism to the complex: theirindividual character allows for integration with the companies brand, a balance ofvisibility and consistency with the overall image. Segreen Business Park is in line withthe sustainable construction parameters and will obtain Leed-Gold certification.

**03**

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Design Concept

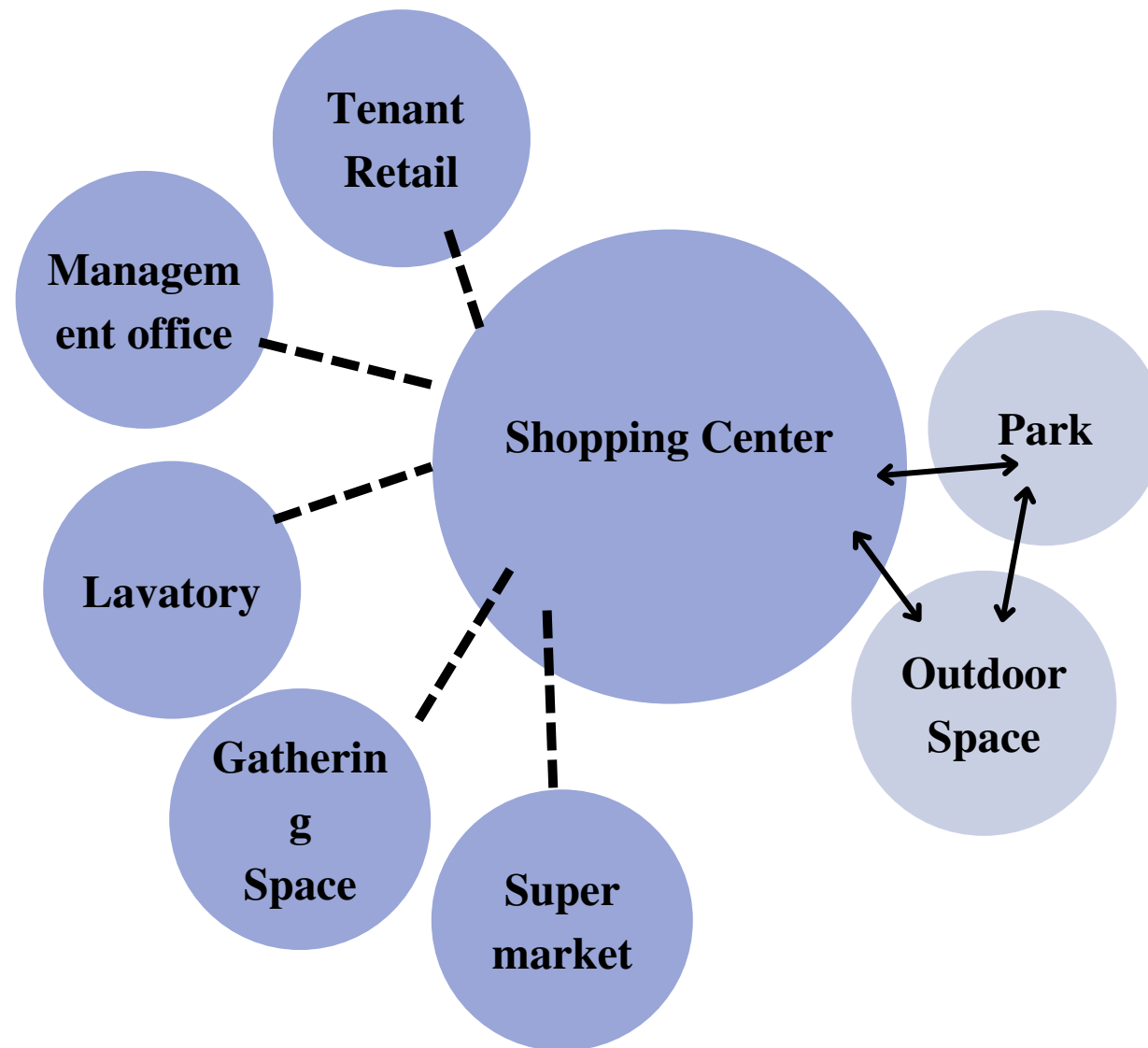
### 3.1. Shopping Mall Typology Concept



This shopping center strives to accommodate the needs of space that accommodates buying and selling transactions and also serves as a public space in the waterfront of *Tepian Mahakam* by paying attention to post-pandemic conditions. Then after being able to accommodate the activities of buying and selling transactions, the design of this shopping center seeks to overcome the problem of innadequated dissabled safety, comfort and acessibility in a shopping mallby adopting the concept of Inclusive Design. So that, the users could access and enjoying the shopping experience without and burden.

- Shopping Center as it main function, the building typology concept will be develop to have comfort for the user by considering some aspects such as Accesibility, general safety for shoping Center, climatic control for indoor and outdoor Comfort.
- Disabled Friendly  
Specifically for the disabled users needs the typology will be design to have special support for dissability access,
- Building Safety  
Most concern in building safety especially for fire prevention since the building is commercial use and specifically designed for dissable people so it require a safety.

### 3.1.1 Accommodated Function in Shopping Center programming Concept



The shopping center divided in to two types of space. as the concept of interated shoping mall it reuired to have outdoor and indoor spaces. Indoor spaces will be have accomodation for shoping and common activity such as tenant and retail spaces, gathering spaces, supermarket, food court, lavatory and management office including safety and engineering system.

outdoor space will be form as communal space and park that can be accessed directly by users from the indoor activity, also can be accesed without entering indoor spaces



### 3.2. Accesibilty Concept

#### 3.2.1. User Activity Circulation to define Accessibility Need

##### A. Visitors

The main activities of visitors in shopping centers are 2:

- Consuming routine or repetitive shopping needs e.g. food shopping needs
- Compare goods based on quality, variety, design, price, service etc. before making a decision on the goods to be purchased.

##### B. Tenant

Tenants are people or groups of people who rent and use the space and facilities provided in conducting buying and selling activities

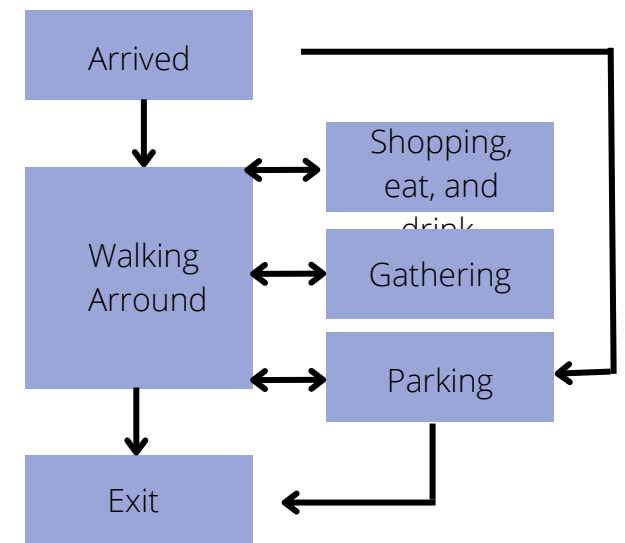
##### C. Manager

The manager is an individual who is a business entity that is fully responsible for all management activities contained in the shopping center. Shopping center managers only cover and relate to managed buildings that do not include managers in the each outlet consists of:

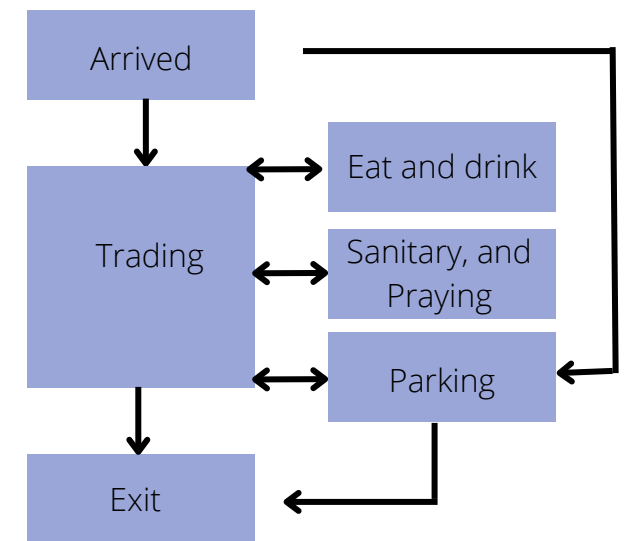
- Manager (chairman)
- Administration
- Marketing Team
- Cleaning Service
- Maintenance Building Service
- Security

##### D. Owner

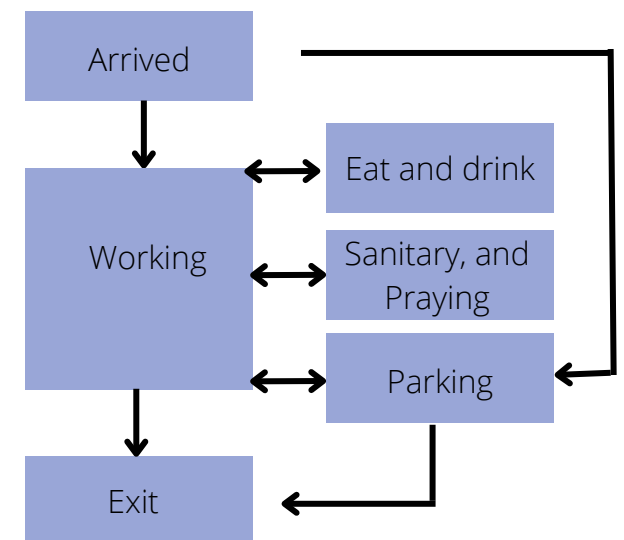
Namely the party most interested in the commercial value of shopping center. The main target of investors is the merchants or tenants of the store and the indirect target is the visitors.



User Activity Flow



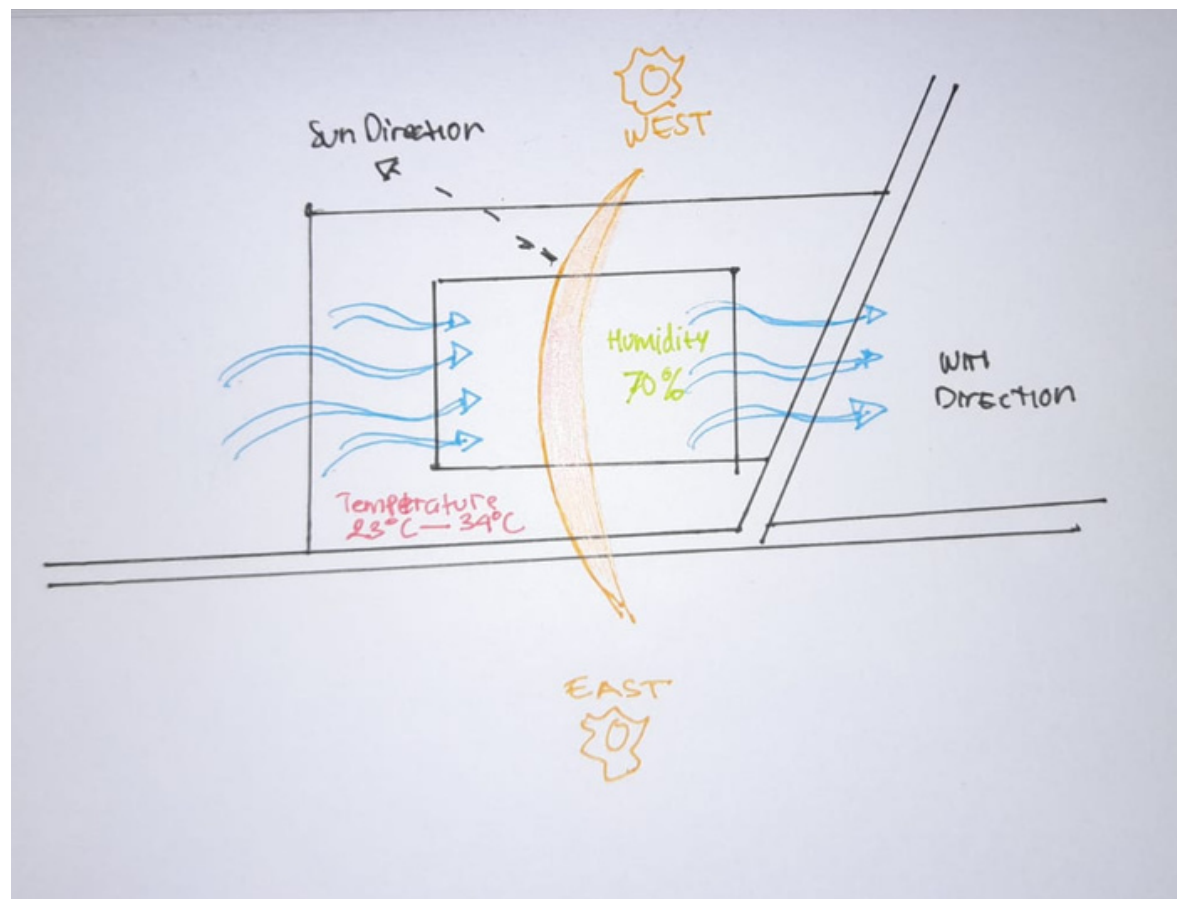
Tenant Activity Flow



Manager and owner Activity Flow

### 3.3. Mass Consideration

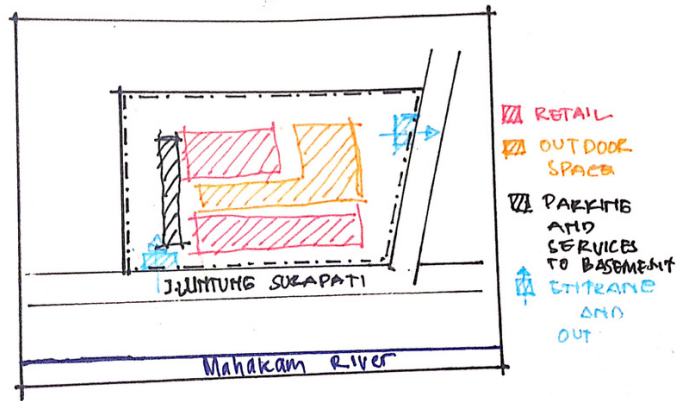
#### 3.3.1 Site Situation



From the data analysis done on previous chapter we could see how the climate is affecting the site from the illustration. The sun comes from the front and wider (east) side of the site which also will bordered with the main road. while the wind move from the short side of the site. the temperature average in Samarinda is between 23 to 34 degree celcius with average humidity around 70%. From that the design of the building should respon how to get the natural air going through the building and minimize the teperature but still getting enough sun light for the building.

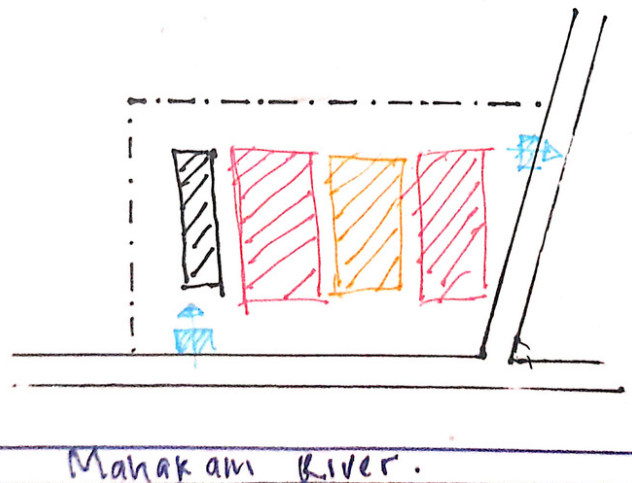
### 3.3.2 Building Mass Organisation based on its function response For Waterfront Concept

#### Alternative 1



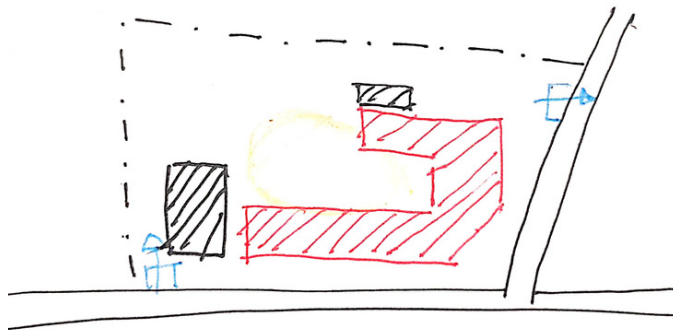
The function of the building is for shopping center. Alternative 1 using the irregular placement on the building mass but facing the main road so that its largest facade could be seen from the road. Also, it faces directly to the Mahakam River. This arrangement is suitable with the Waterfront Concept, but the disadvantage is that it faces to the east side, which means it will get penetrated by direct sunlight and will have overheat possibility.

#### Alternative 2



Alternative 2 has repetitive mass and equal size to both masses. Since its largest facade didn't face the main road, it gives the look of twin buildings from the main road. It can still be considered as waterfront even though the wide facade is facing another side. It can be done by creating an attractive facade on the side that faces the river.

#### Alternative 3

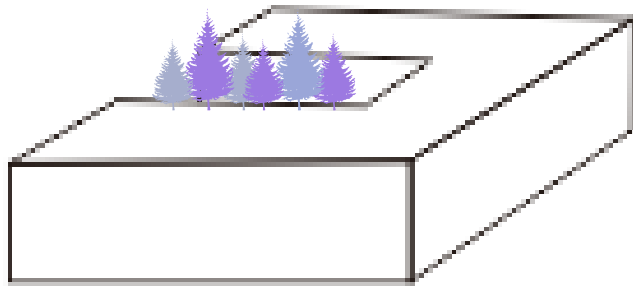


Alternative 3 only has one single mass that is almost similar to the alternative one that has the widest facade facing the main road and the river. It suits the concept of waterfront shopping mall, and one single building will give an advantage for not moving to another building. The disadvantage is that the building will be so huge.

From the three considerations, both have advantages and disadvantages for the waterfront-facing concept. Both can be chosen and have no problem for the waterfront concept. For that, more analysis about another aspect is needed to decide which arrangement is more suitable.

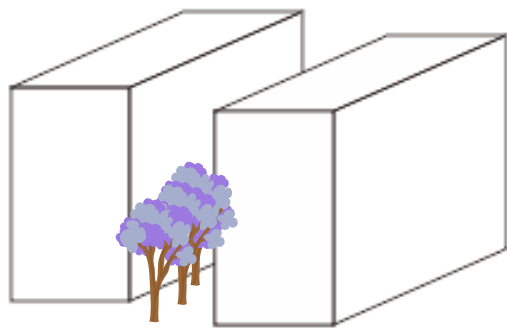


### 3.3.3 Mass Organisation based on Climate response for comfort



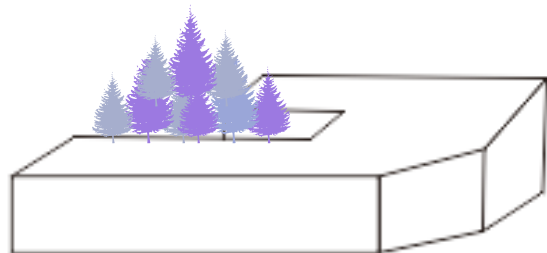
#### Alternative 1

From the Climate analysis, seen that the alternative 1 largerst side facing the east and west which is the sun path movement that can cause heat. but also the mass arrangment on the south side cath the most wind. so that it is really good for natural air ventilation.



#### Alternative 2

the building in 2nd alternative arrangement are good in avoiding sun light, as it has open space in the middle of the building it can stillcatch enough light for natural lighting. but on the one side the mass blocking the wind for the other building.

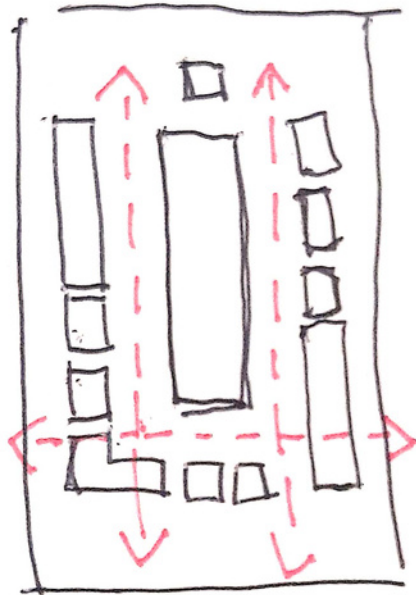


#### Alternative 3

The third alternative is havingthe same concept as the first alternative. but have shorter building on the back to give more spaces for outdoor area . it has corner also so that it could shown the facade to the road even more at the junction to attract visitors.

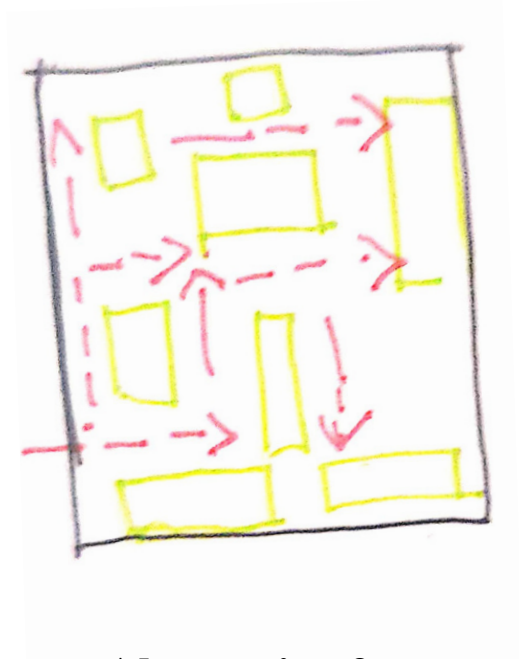
Based on the positive and negative aspects of the three alternatives, alternative 3 has a positive impact that is more promising than alternative 1 and 2. This is shown from the better accessibility in mass arrangement that it faciing the main road. also it has good wind catching. However, alternative A still has a negative aspect, since it is facing the sun directly. to overcome this it is needed to design the building envelope properly to avoid overheating.

### 3.4 Space Arrangement For Dissable Accesibility Comfort Concept



**Alternative 1**

The Space Arrangement in this alternative designed to have linear Corridor. this give benefits for the disable people especially the low vision to understand the pathway clearly and less confusion. for the wheelchair user to have less effort to visit all store. but with this arrangement meand that the middle part of the mall cant be use for retail area. So the shopping area will be less.

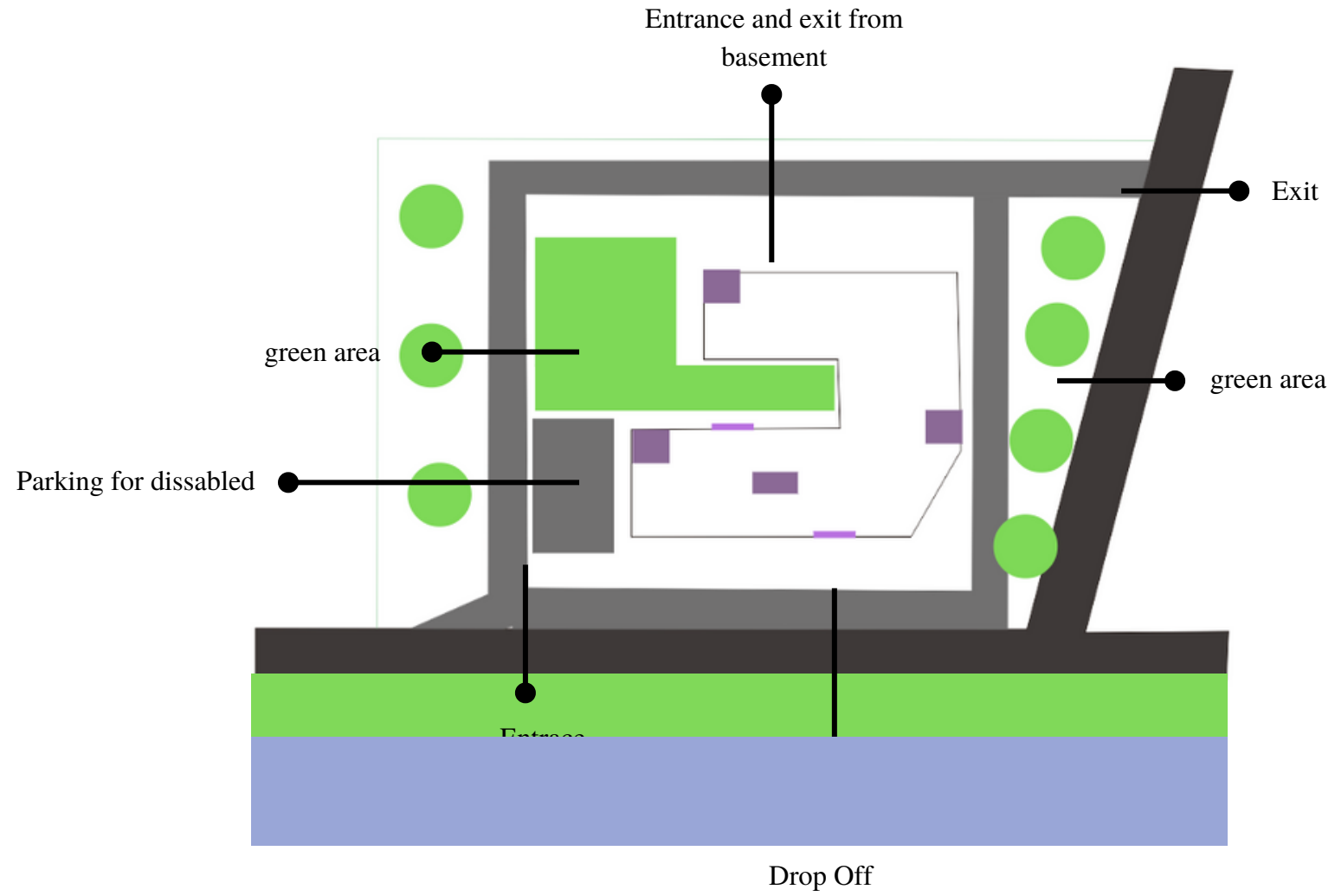


**Alternative 2**

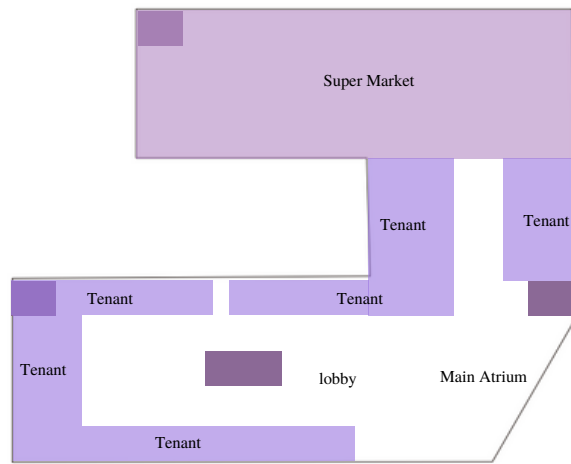
The Space Arrangement in this alternative designed to have multiple corridor. this type of mall arrangement give advantage to have as much tenants . but it will have more junction so that require more energy for the wheel chair to be access here and there. also not all ppart of the building can be seen at once.

### 3.5 Schematic Design

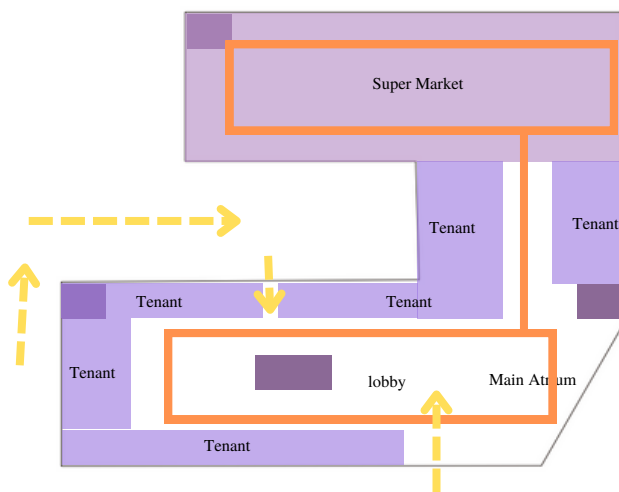
#### Siteplan Schematic



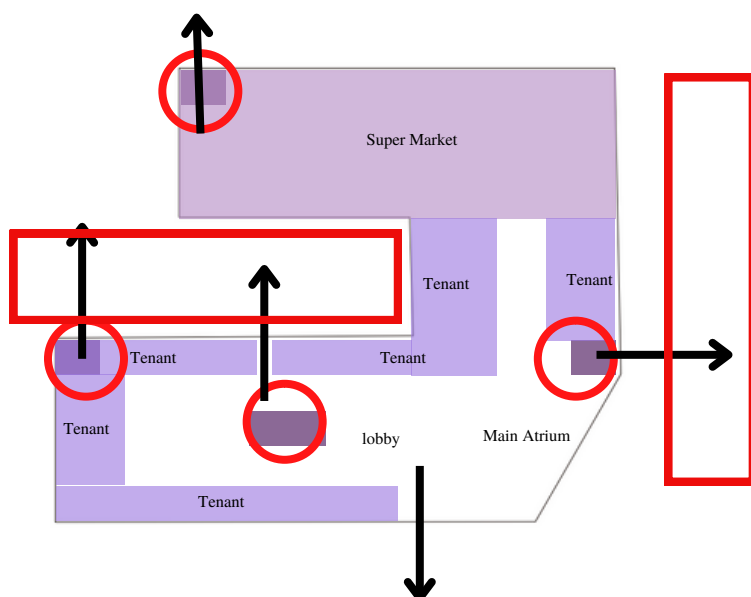
## Ground Floor Plan



The Schematic Floorplan Shows the divisions of main building functions as Shopping center. There will be Shops in all Floors. The ground floor will be space for lobby and main hall as multipurpose area. also spaces for the office andn management. the ground floor connected directly to the outdoor spaces that possibility accessed by the dissabled. also outdoor space functioned as assembly area for safety. it should have direct connection to the eemergency door.

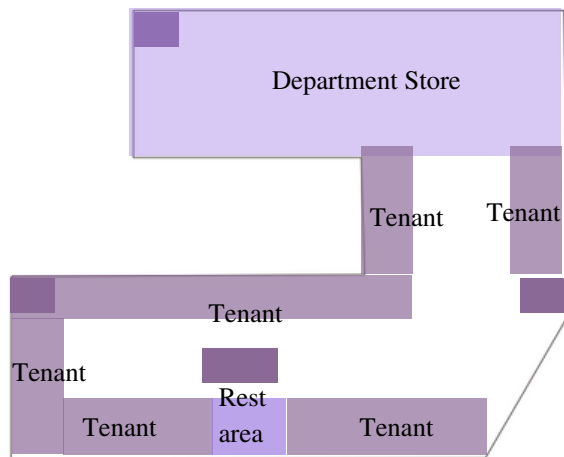


This is the scheme for the accesibiiti. the yellow line shows how the dissable could enter the building from the parking lot and drop off area. then the orange line show the accesibility movemen inside the building.

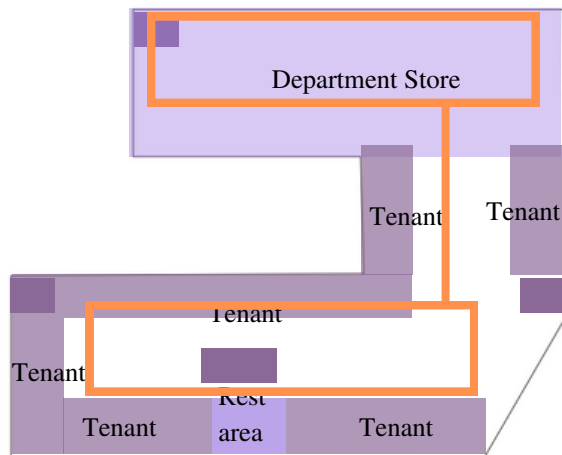


This is the scheme for the safety inside the building. the red circle shows the location of the emergency stairs and emergency lift that can be used by the dissable. the black arrow is showing the exit routes. And the red rectangular is for the assembly area location.

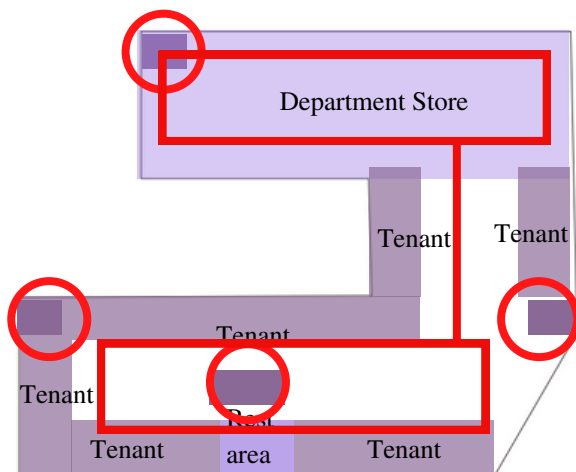
## 1st Floor plan



the first Floor will be filled with variety shops such as, clothing, electronics, department store, and etc.

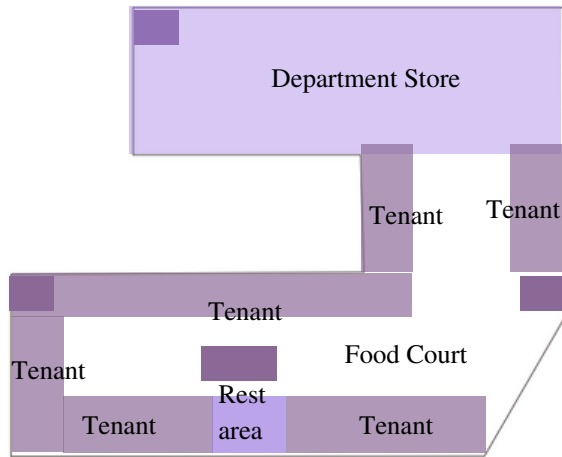


This is the scheme for the accessibility. The orange line shows the accessibility movement inside the building.

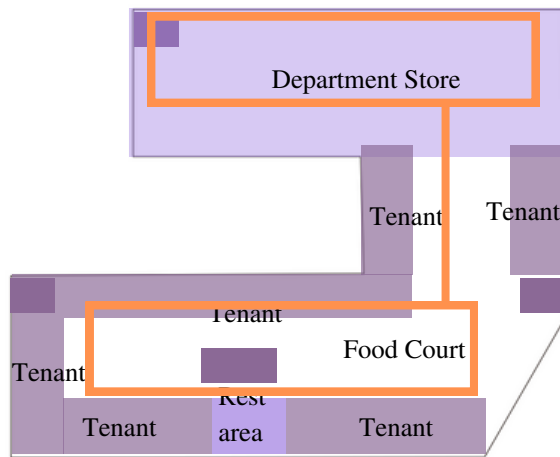


This is the scheme for the safety inside the building. The red circle shows the location of the emergency stairs and emergency lift that can be used by the disabled. The red lines show the route for escape.

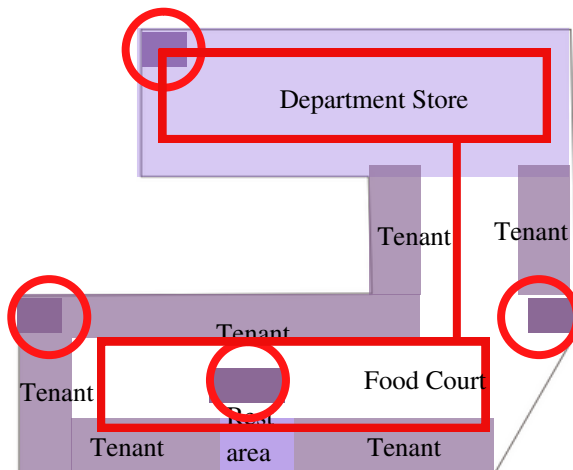
## 2nd Floor plan



The second floor will be filled with Food and beverage tenant and food court. the arrangement of the food court and food stall in the most upper floor is because this type of tenant have high risk of fire chance. so it gathered together in upper floor. when fire happened the building will have more chance to make the first two floor empty before fire spread away.

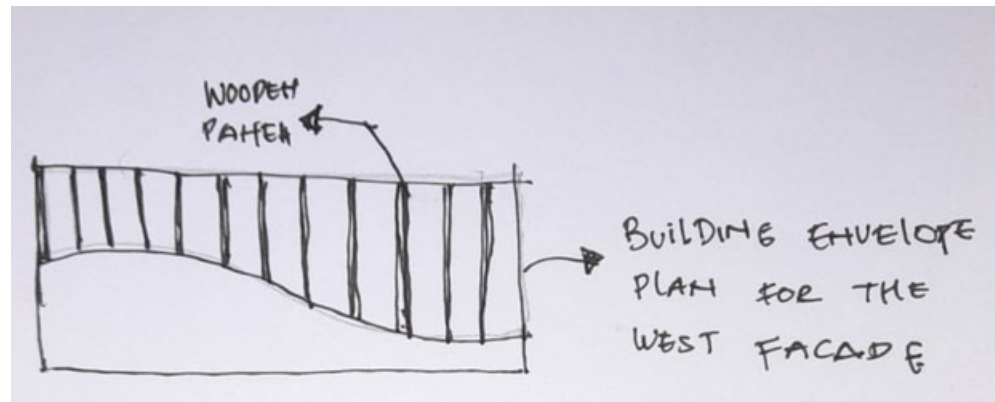


Same with the first floor This is the scheme for the accesibiity. t the orange line show the accesibility movemen inside the building.



Not So different from previous floors, This is the scheme for the safety insde the building. the red circle shows the location of the emergency stairs and emergency lift that can be used by the dissable. the red lines shows the route for escape

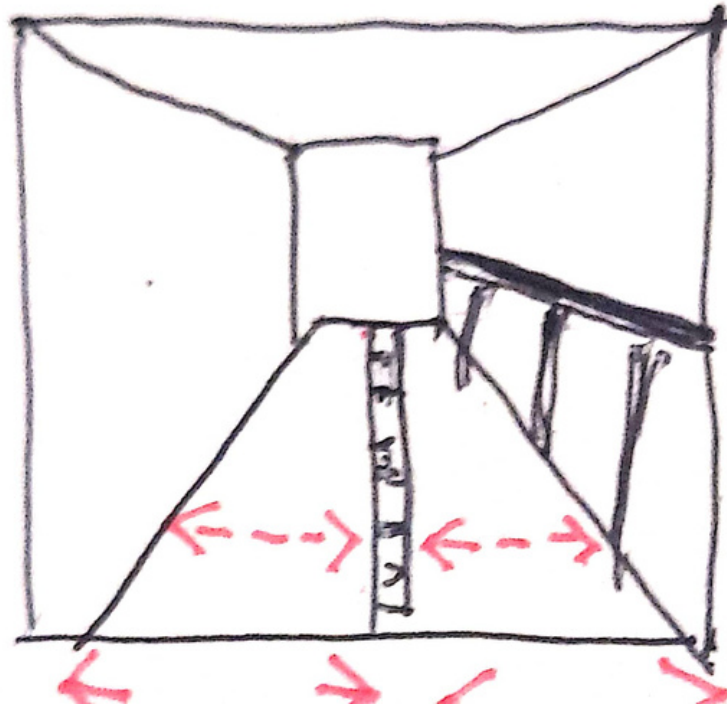
### 3.6 Exterior Architectural Concept



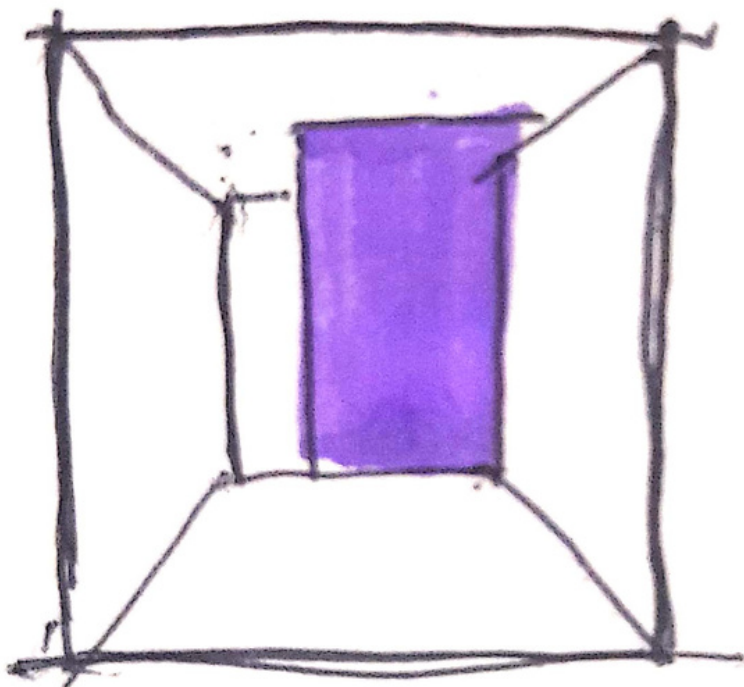
The building skin in this building is not only used for daylight control but is also designed to support the concept of cross ventilation in the building, so the building skin in this building is designed like a lattice with more holes as a way for wind to enter the building.

### 3.7 Interior Architectural Concept

#### Disabled Friendly Architectural Element interior



Indoor Tactile pathway in some area of the building as a sign path for them who has limited sight. also some railing and bench to help elderly sit and up. the corridor has wide that can be accessed by two wheel chair in a way. and has the guiding path in the middle.



Indoor Tactile pathway in some area of the building as a sign path for them who has limited sight. also some railing and bench to help elderly sit and up. the corridor has wide that can be accessed by two wheel chair in a way. and has the guiding path in the middle.

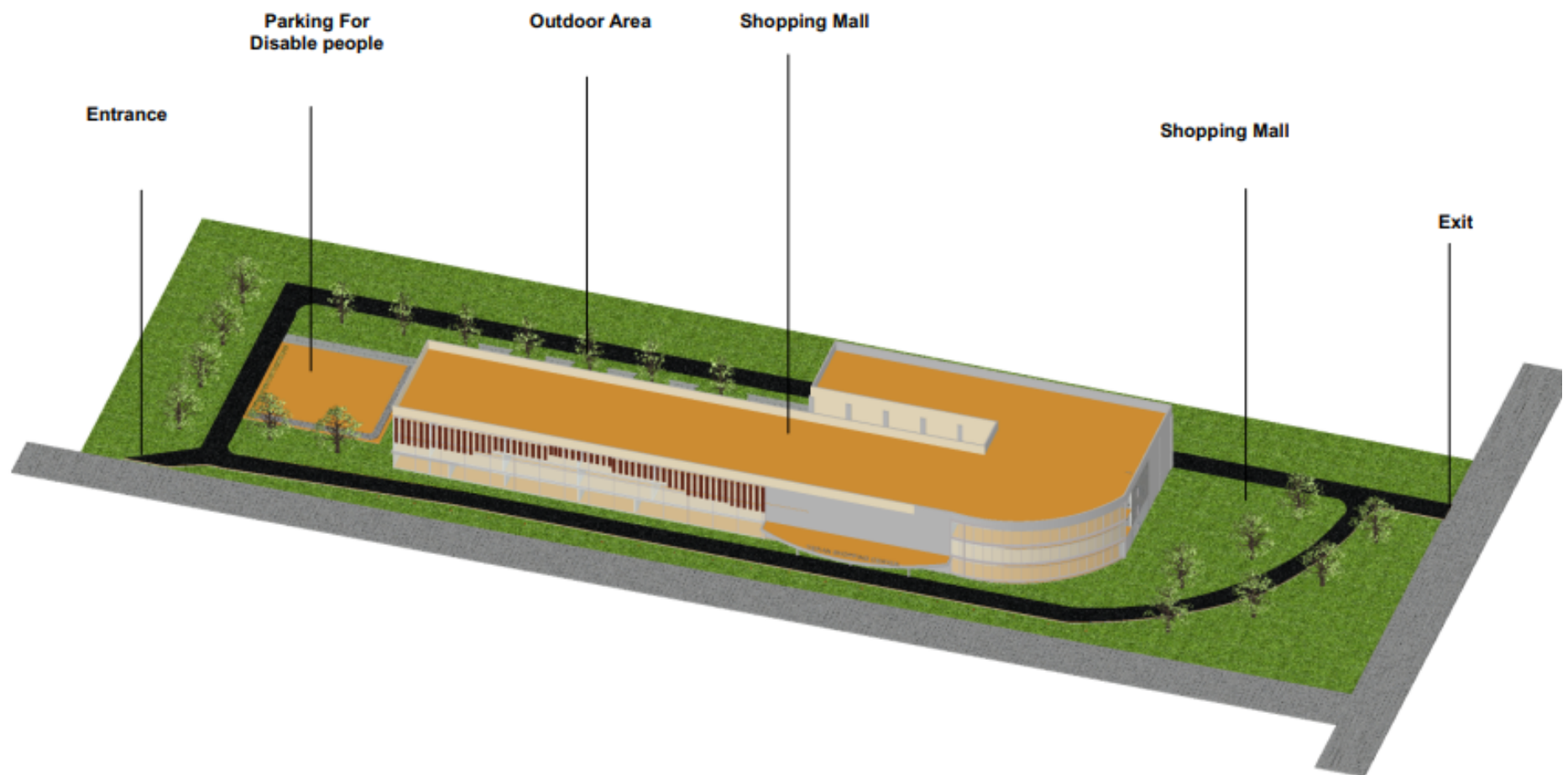


04

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Design  
Development

## 4.1 Siteplan

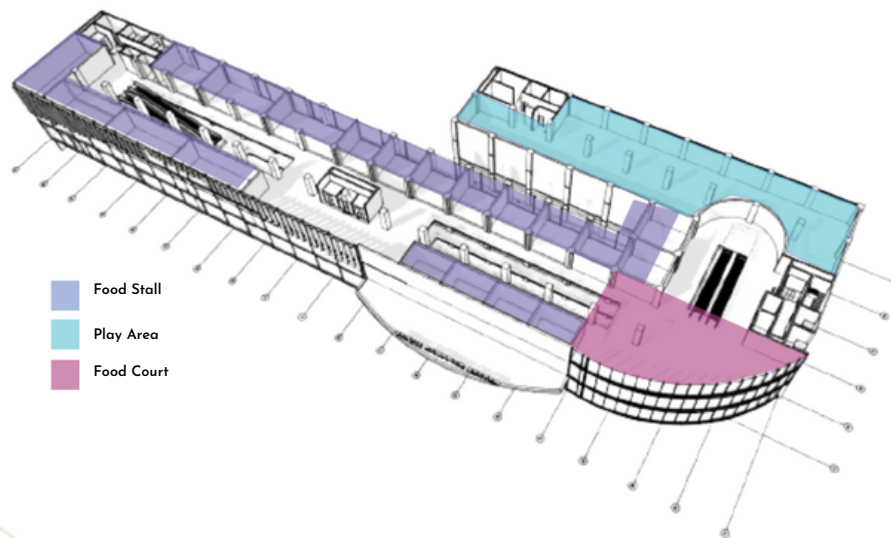
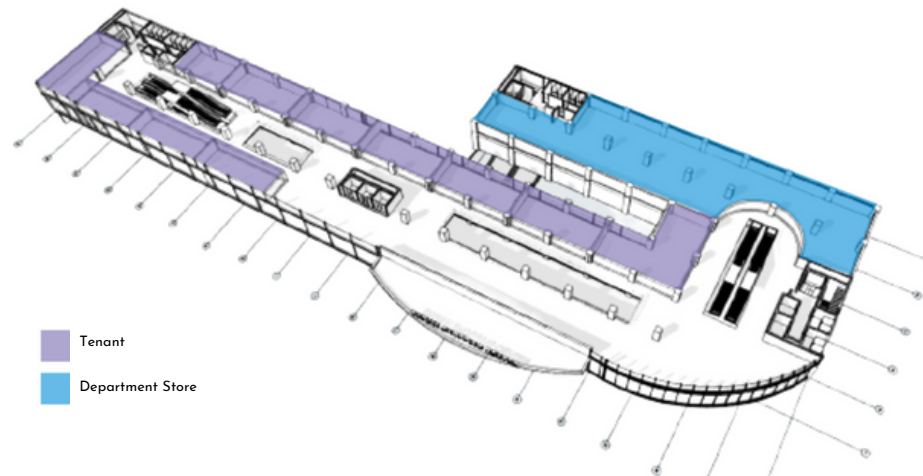
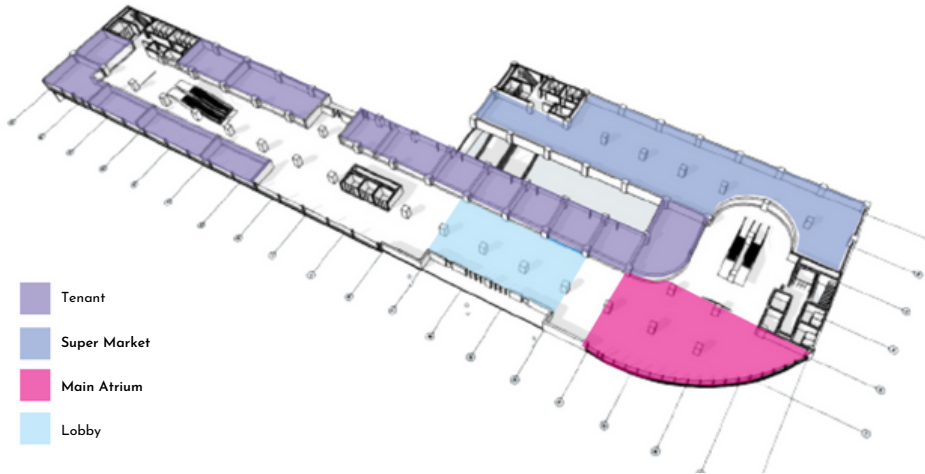


The Siteplan Arranged to fulfill the requirements and the concept of the project. it has Parking for disabled so that they can easily access the building through the outdoor space to the second entrance. for them who want to drop off they can go through the front building and go inside from the main entrance.

The side also Provide Route that go through all the side of the building in purpose of safety so that the fire truck can Go easily to the side in case of fire. also it purposely arranged for the shopping Center loading activity.

The Entrance can be access from Untung Surapati Street and to avoid traffic jam since the other side is a three junction the exit route will be out on Ir.Sutami street.

## 4.2 Shopping Mall Arrangement

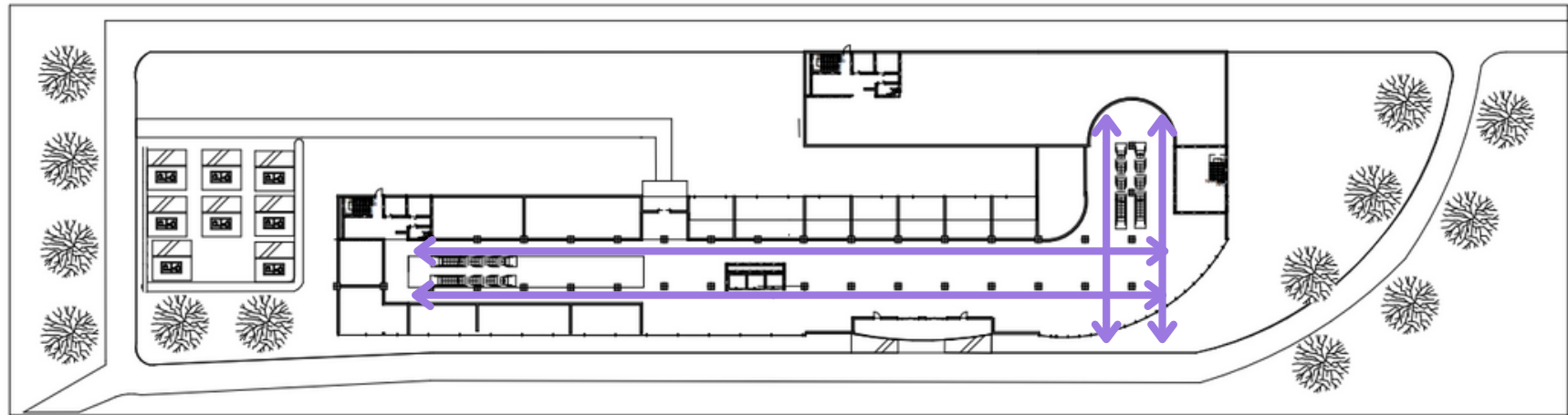


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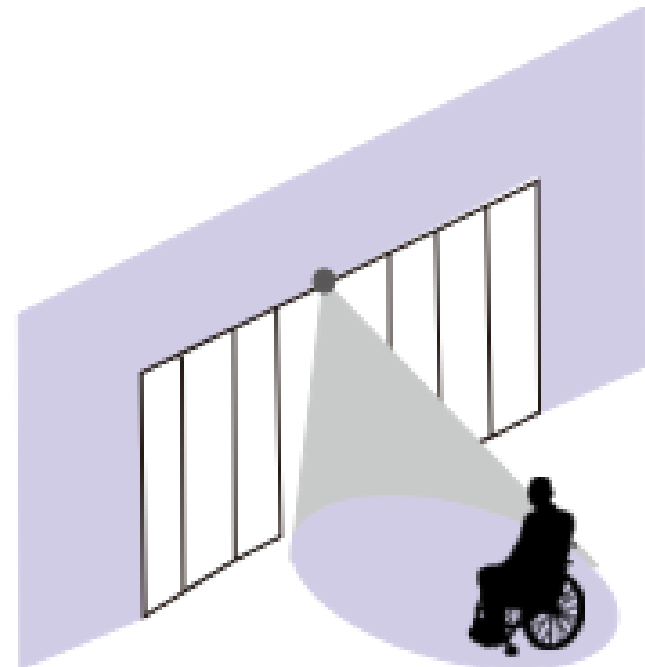
The Entrance can be accesse from Untung Surapati Street and to avoid traffic jam since the other side is a three junction the exit route wil be out on Ir.Sutami street.

### 4.3 Accessibility For the Dissable people

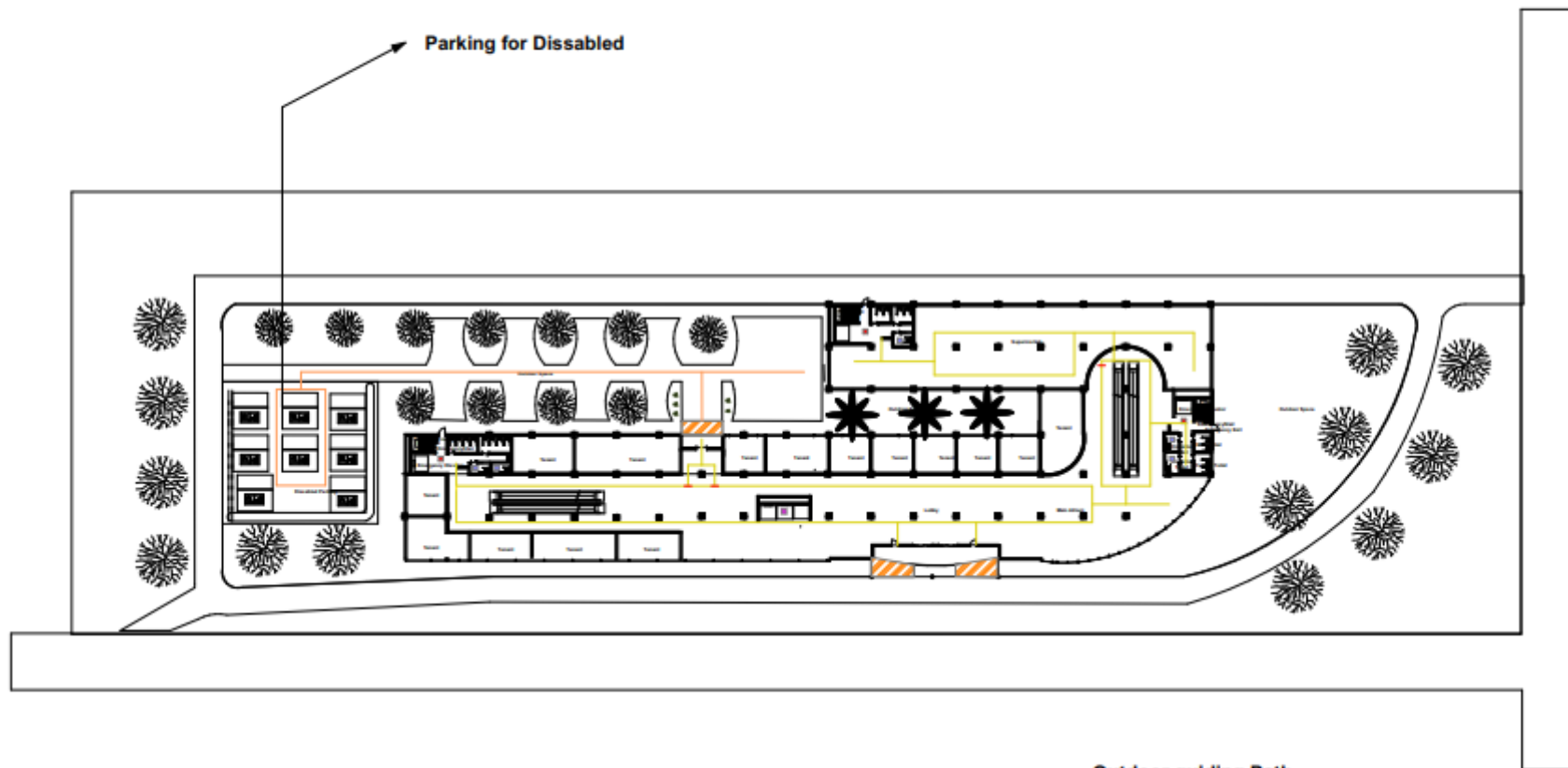


The Corridor design as linear with less junction. This is to create clear vision for the users from one edge to the other edge to create less confusion for the low vision people. for the wheelchairer the linear corridor arrangement gave them less effort accessibility to explore all area of the building.

the entrance door using automatic door so that it will be effortless for the dissable people to use and prevent them from hitting the entrance.



### 4.3 Barrier free Scheme

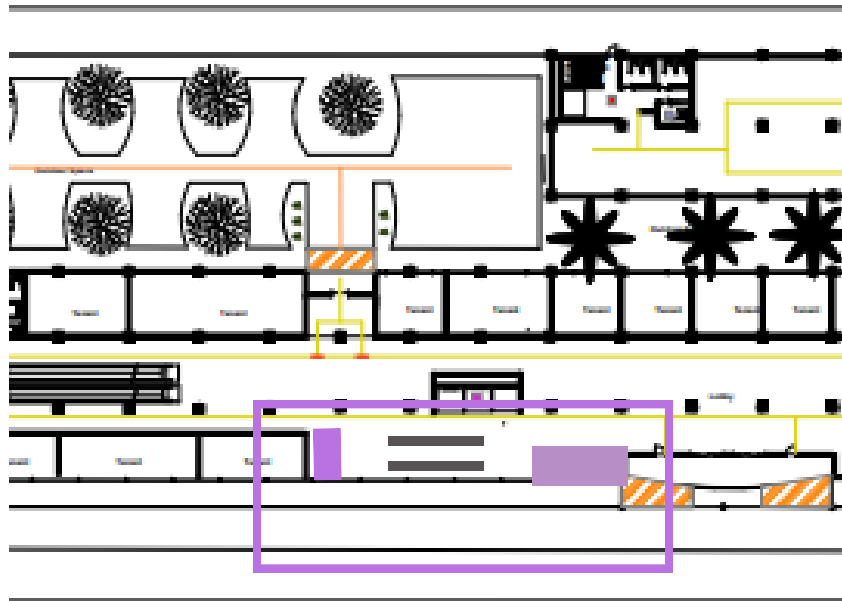
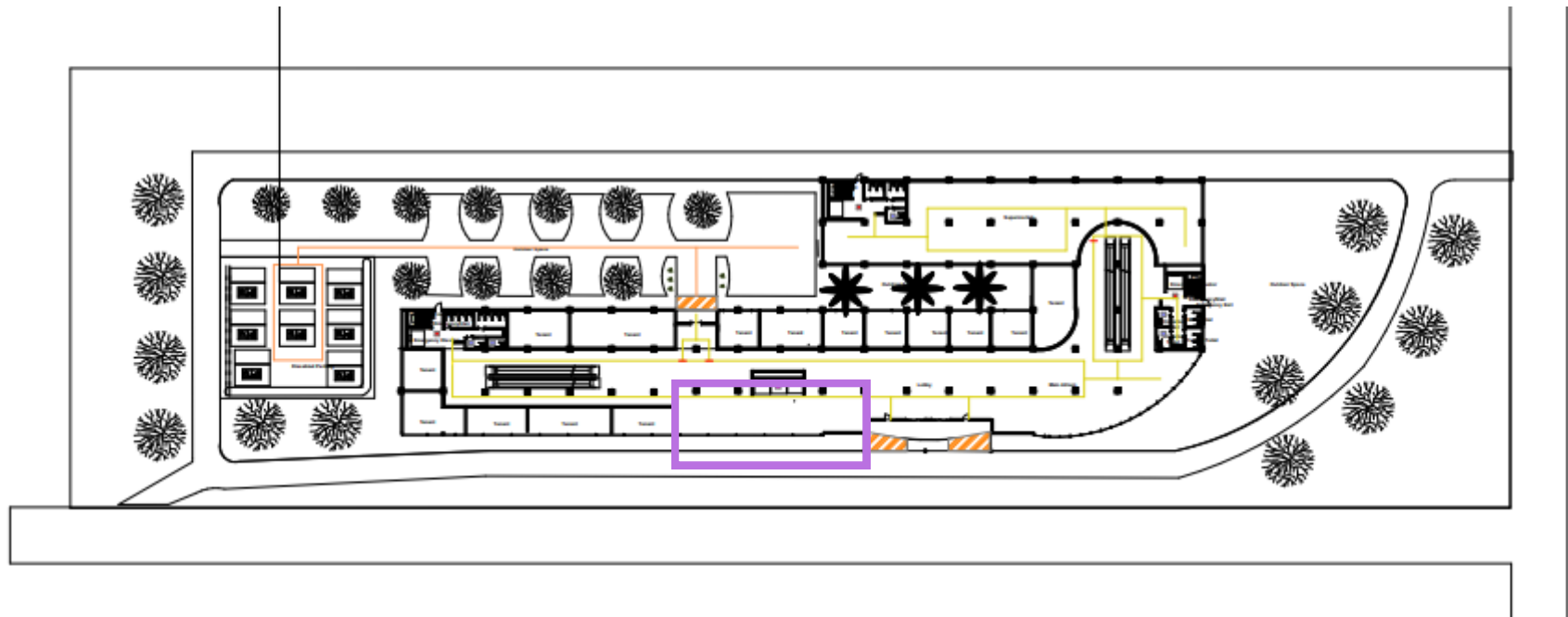


This Scheme showing The barrier Free design scheme inside the building. For the dissabled The parking is located on the side of the building no more than 60meters from the nearest entrance (second entrance) that conected directly to the outdoor Space. Along the way to the entrance the dissabled with low vision problem are guided by the outdoor guiding path.




Ramp are Available in every Entrance for the wheelchairer to get inside the building. on the inside of the building there are indooere guiding path for the low vision people so that they can explore the whole shopping center.

- Outdoor guiding Path
- Outdoor guiding Path
- ▨ Ramp
- Dissabled Toilet
- Emergency Lift
- Dissabled Lift

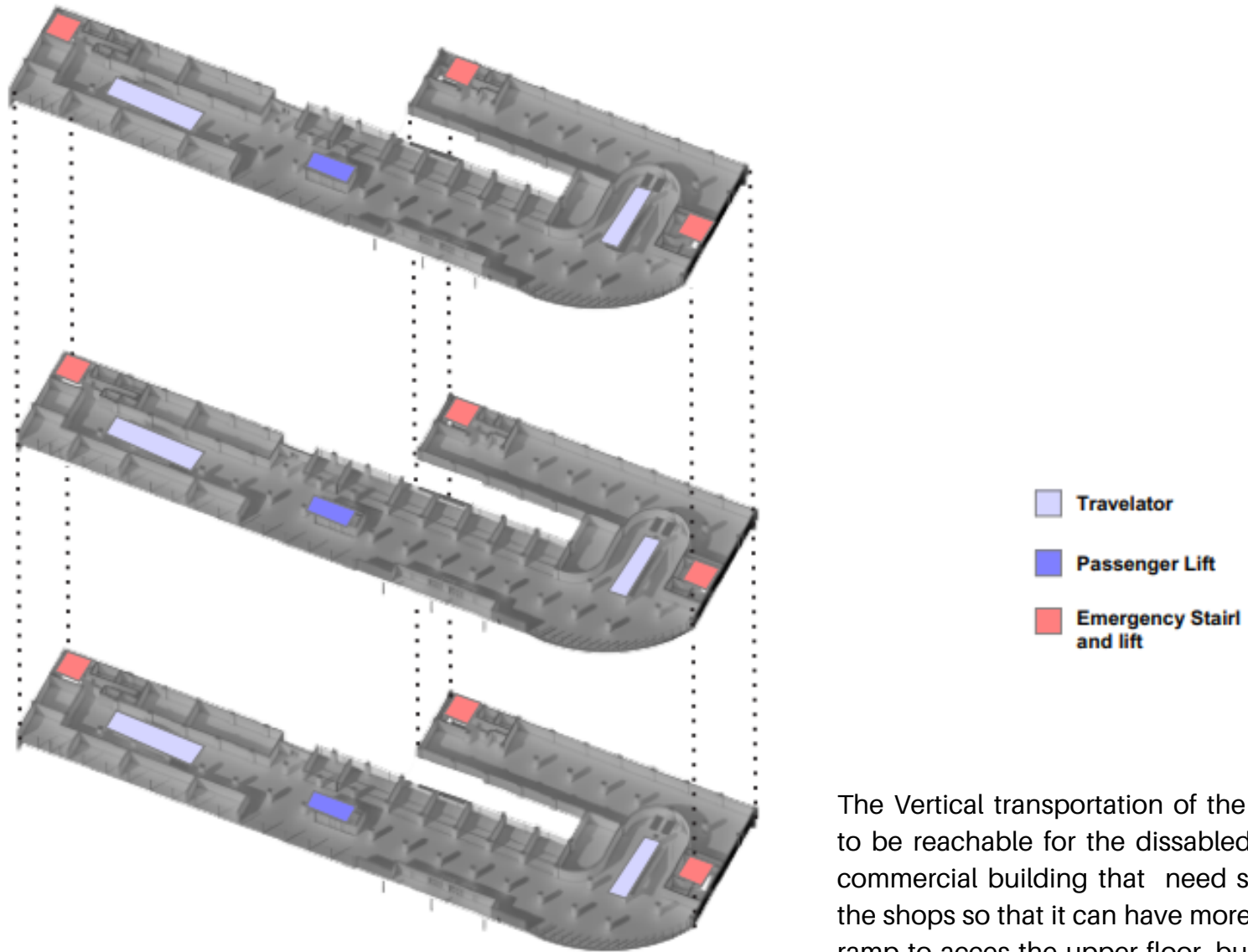
### 4.3.1 Resting Place For The Dissable



As the building has wide for 100 meters it will give a long journey for the dissable to reach out all the areas of the building. so the building designed to have resting area and also area for sigh seeing the rivers on the east side near the passeger elevator. That area also accomodate with small shops so that people that enjoying the view could have some more activity such as having food and beverages.

-  Coffe Shops, And Snacks area
-  bookstore, kids toy shops
-  Sitting zone

#### 4.4 Vertical Transportation for the dissable people

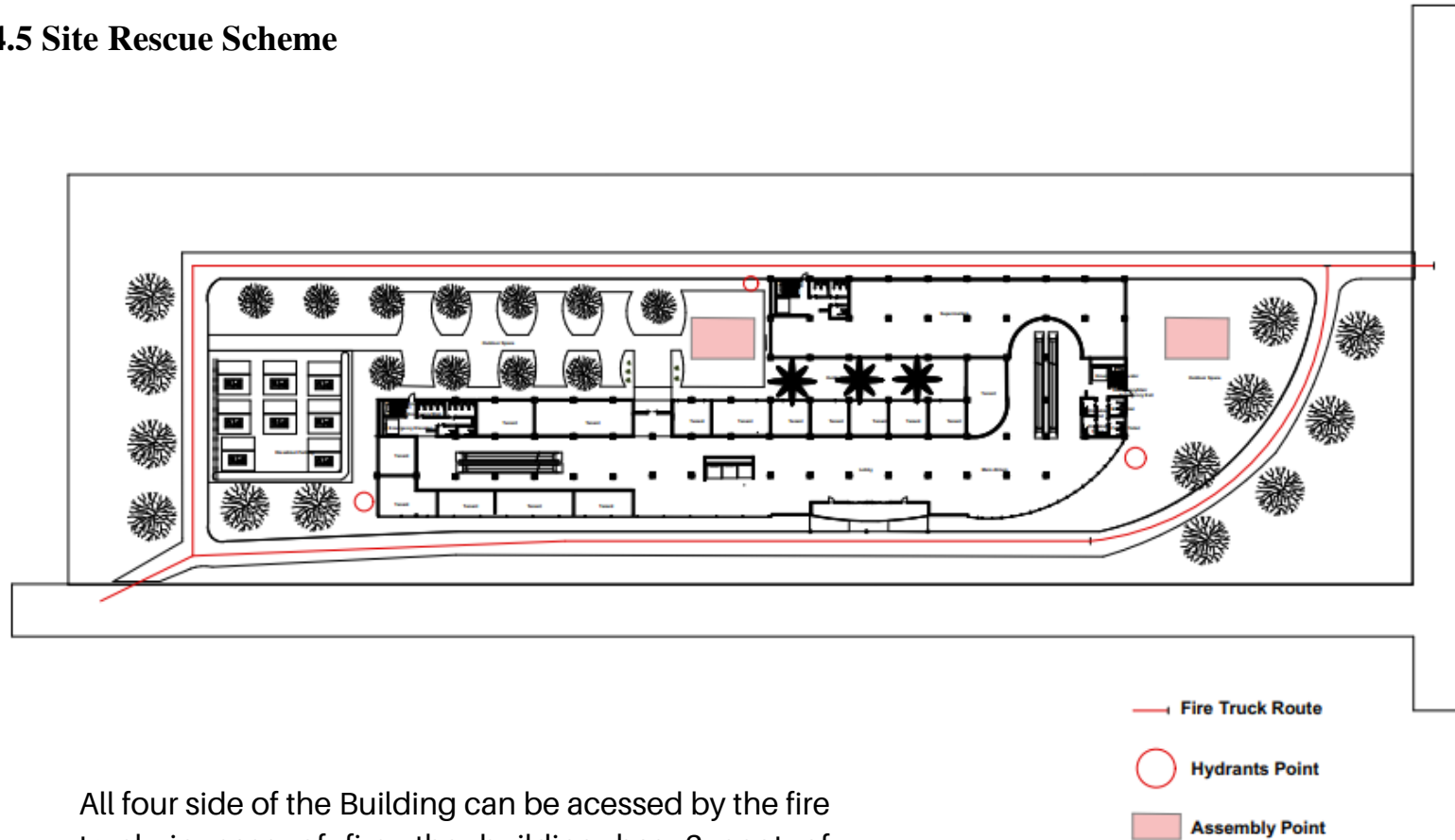


The Vertical transportation of the building is design to be reachable for the dissabled people. since it a commercial building that need space efficiency for the shops so that it can have more shop. there are no ramp to acces the upper floor. but it using travelator instead of escalator to makesure the wheelchair people can access, also for shopping cart. The building also accomodate with Dissable Lift.

For safety the building has 3 location of Emergency exit. with emergency stairs and emergency lift for the fire fighter and the dissable people.



## 4.5 Site Rescue Scheme



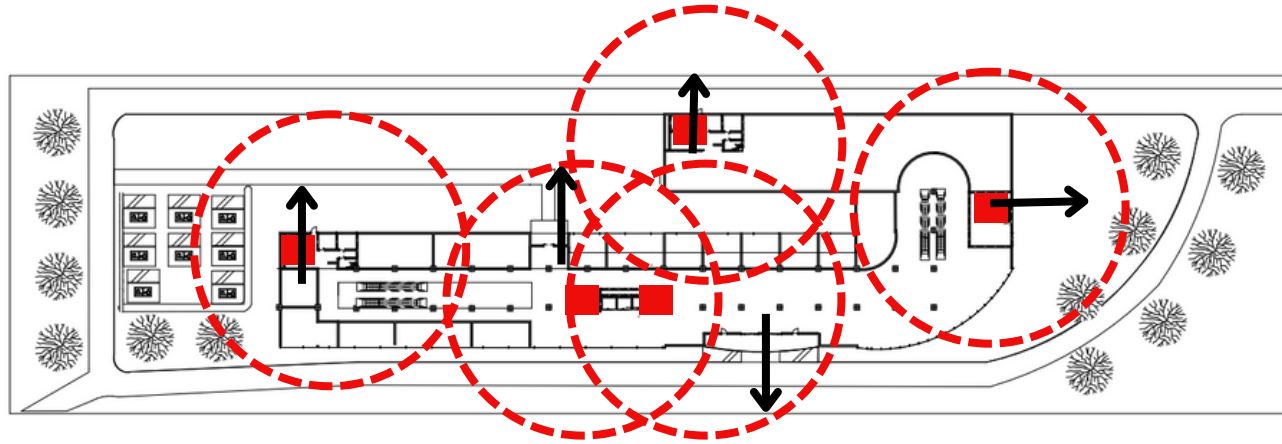
All four side of the Building can be accessed by the fire truck in case of fire. the building has 3 spot of hydrants to connect to the fire truck. it also has 2 assembly area in outdoor soace that connect directly by the emergency exit from the building as shown on the scheme.

iThere is a color block wall in the building to mark emergency area. the purposed is to be easily seen by the low vision and also by the deaf that posiibility cant hear the emergency announcement. and all the exit located in the building anchor to make it easy to be noticed.

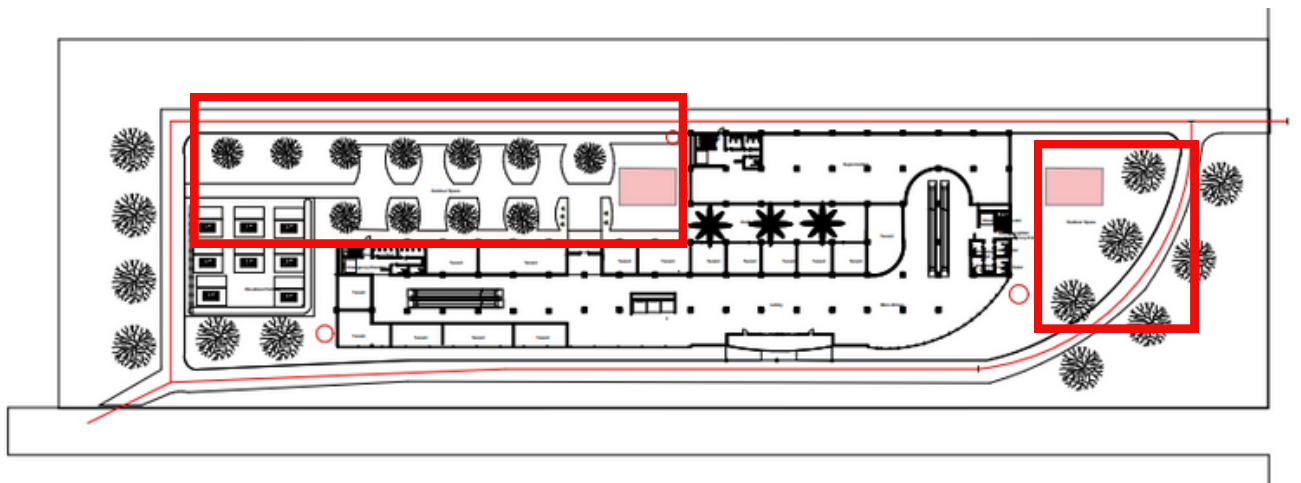




### 4.5.1 Rescue Plan

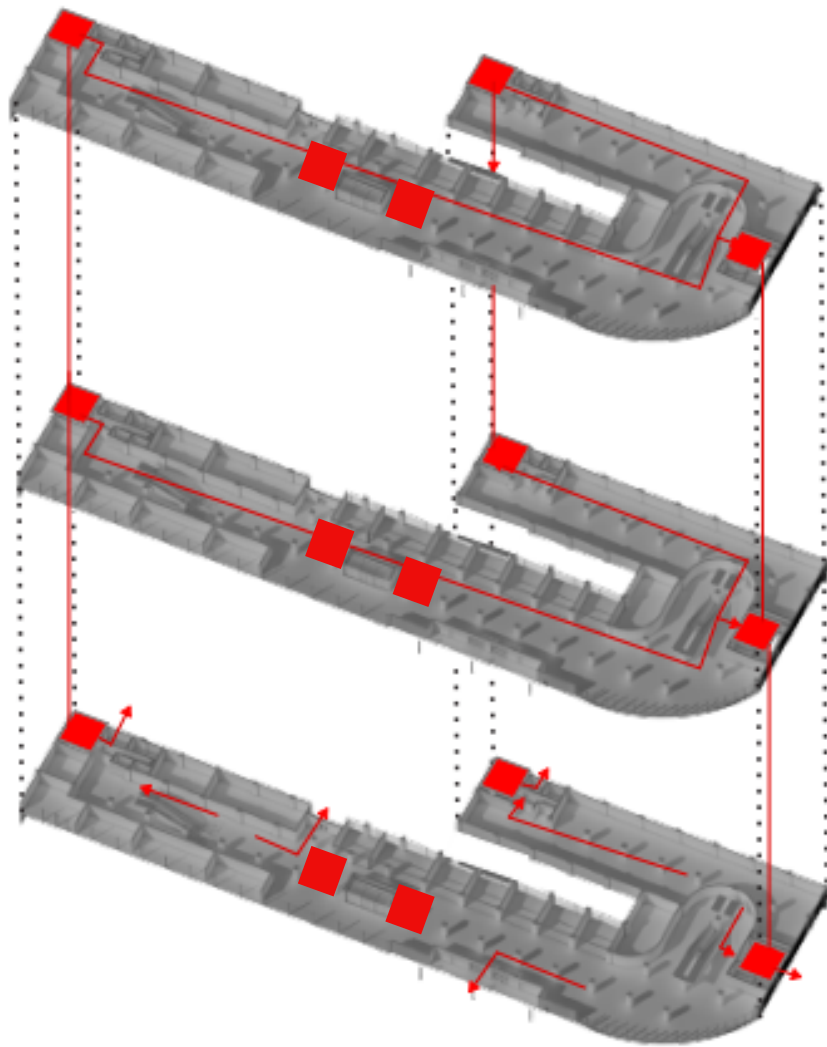


The building are complete with 5 emergency stair and lift area that located in no more than 25 meters to meet the requirement of the safety criteria in multiple stories building. it connected directly to the exit door and located in visible and reachable area in the building to maksure that everyone can acces it during the fire condition.



the building is designed to as integrated shopping mall which mean it should be connected to outdoor spaces. the building has two outdoor spaces area in the back of the building (west side) and north side of the building. not only as the completion of the design concept of the shopping mall the outdoor area also has function term of safety aas assembly point during the disaster. All of the outdoor area connected directly to the emergency exits.

#### 4.5.2 Vertical Rescue Scheme

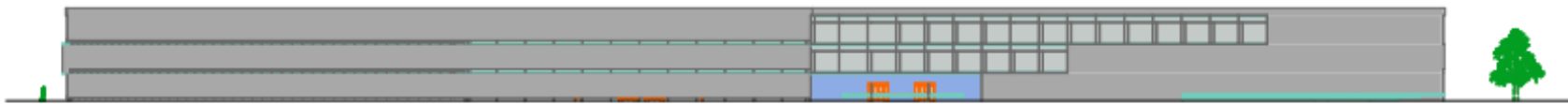


This Scheme showing the vertical evacuation road in the building. it has three points of emergency exit. each of it has emergency stair and emergency elevator for the dissable. it located inde the core with fire protection wall.

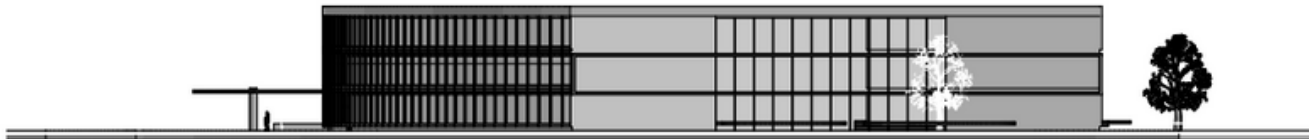
## 4.6 Facade Design as Waterfront Shopping Center



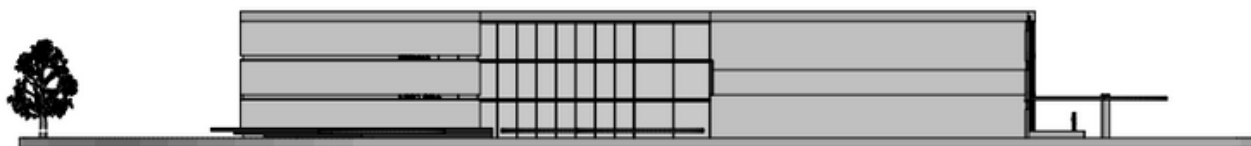
The East Elevation is the main facade of the building facing the Mahakam river, but it needed to add barrier on the building facade (secondary Skin) that shade the sun since it facing the East but still visible to see the river view as the main attraction of the city



Most of the West Elevation will be covered by concrete wall since the function inside do not required openings also to avoid the sun heat.

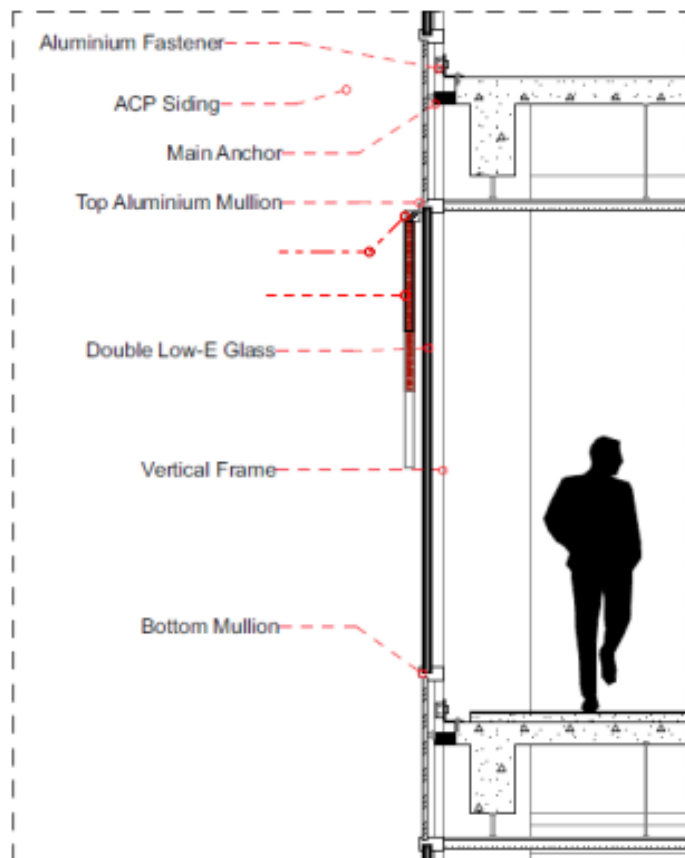
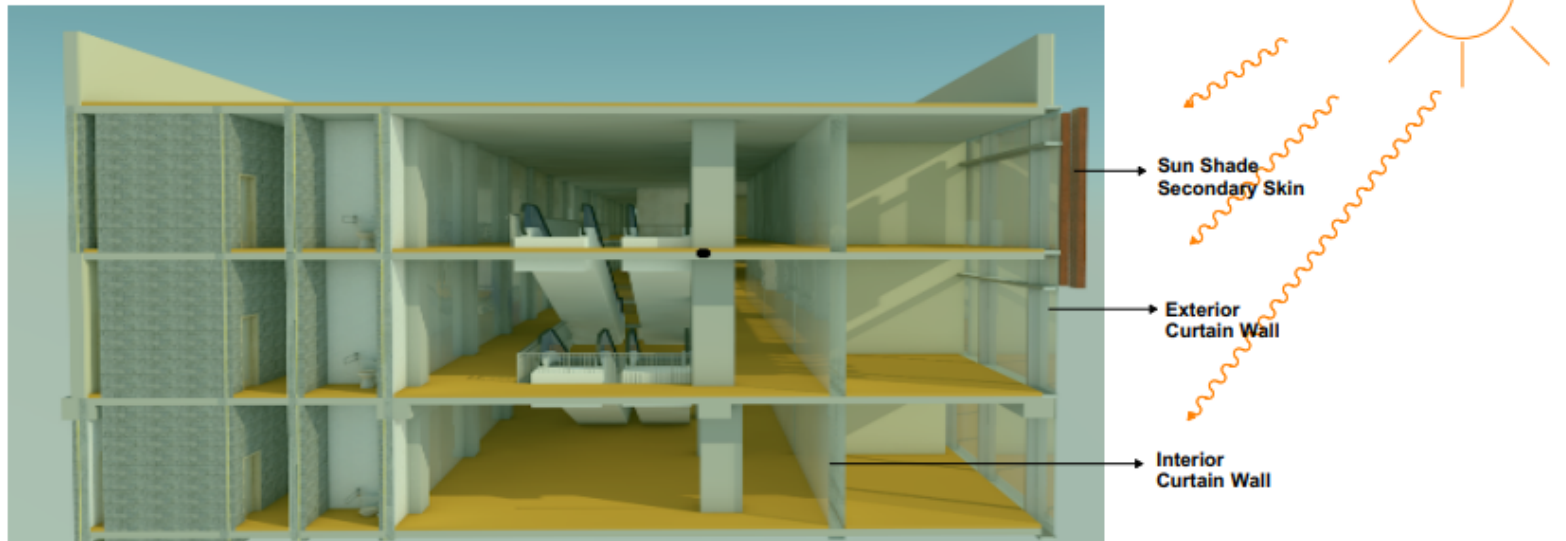


The south Elevation mostly with concrete wall except on the middle of the building. the purpose is to catch the wind for the building,



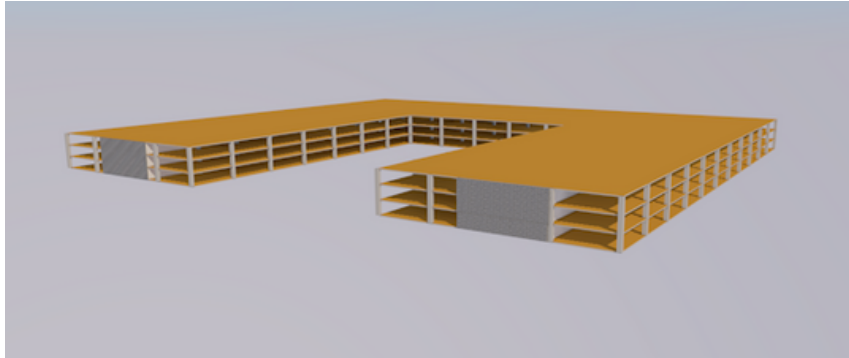
The North Elevation is facing the Ir. Sutami Road. even though it not the main road but the facade design to have openings so that to attract people passing the road.

### 4.6.1 Response To Front Facade



To answer the east facade problem that got penetrate directly by the sun, it using secondary skin from conwood that arranged vertically along the facade especially the third floor to shade the sun but still give chance to the users to have sightseeing the river.

#### **4.7 Building Mass Safety**



#### **Structure Type**

Using frame structure using column and beam. The grid span each column is 6 meters with main column dimension is 60cm x 60 cm.

#### **Grid of column create modular space**

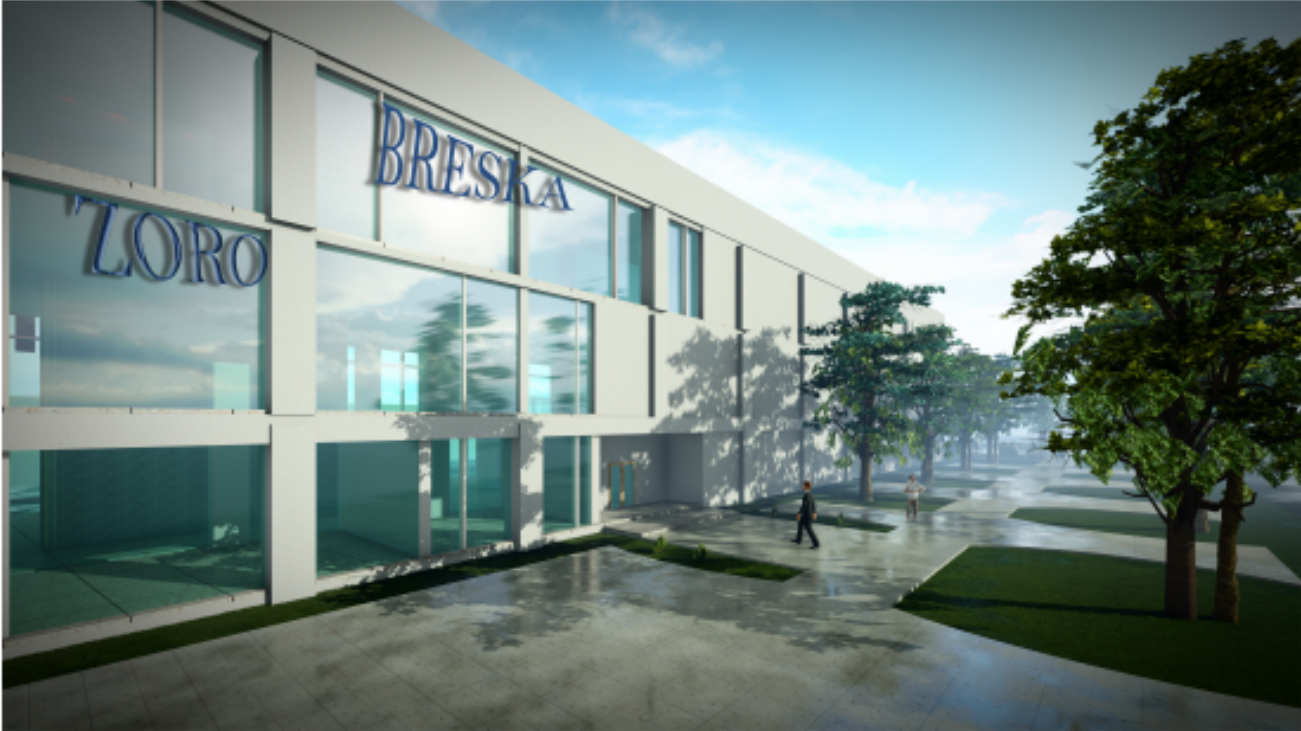
The design try to create modular space inside as many as possible for host the activity that require flexible space. The grid structure makes it easier for users to divide their respective spaces. This community center can be used by more than one party or if there is an exhibition held where participants are allocated a place, by using a grid structure the distribution of the functions of the place can be more evenly distributed.



**Exterior Perspective**

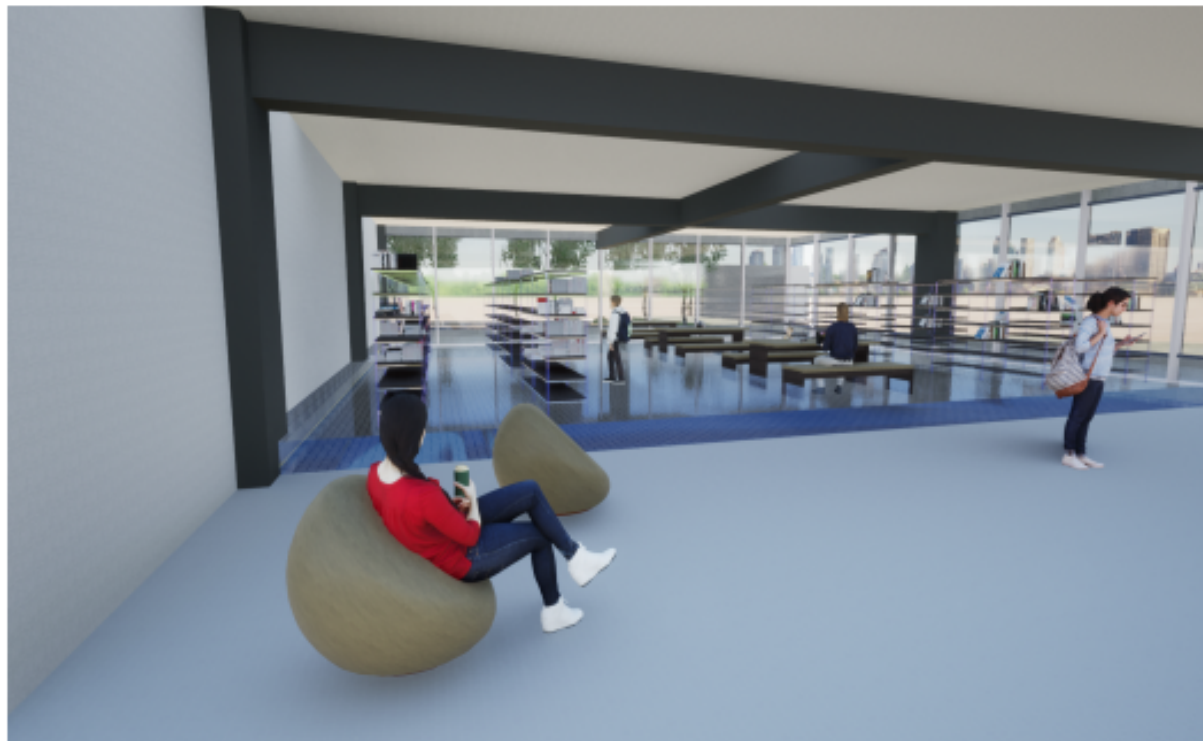


**Exterior Perspective**





## Interior Perspective



**05**

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Design Testing

## 5.1 Inclusive Design Principles in the design Check

PRINCIPLES	DESCRIPTION	CHECK	THE DESIGN
<b>Equitable Use</b>	The design is useful and marketable to people with diverse abilities.	<input checked="" type="checkbox"/>	All element in the building can be access by the users.
<b>Flexibility in Use</b>	The design accommodates a wide range of individual preferences and abilities.	<input checked="" type="checkbox"/>	Giving spaces for rest and stop for the users in the long hallway. Building size range are not too wide as normal Shopping center considering the physical limitations of the users.
<b>Perceptible Information</b>	The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.	<input checked="" type="checkbox"/>	Using Contrast color in the exit way Wall and toilet so that can be easily noticed by the users.
<b>Tolerance for Error</b>	The design minimizes hazards and the adverse consequences of accidental or unintended actions.	<input checked="" type="checkbox"/>	The design provide safety system for the disable users such as indoor tactile pathway for the low visions, emergency fire lift, railings, and signage for important parts.
<b>Low Physical Effort</b>	The design can be used efficiently and comfortably and with a minimum of fatigue.	<input checked="" type="checkbox"/>	Using <u>Standad</u> Travelator and elevator for vertical movement. Also avoid too many leveling on the floor so that the wheelchair users could access all part of the mall smoothly.
<b>Size and Space for Approach and Use</b>	Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.	<input checked="" type="checkbox"/>	The shopping mall corridors designed as linear arrangement to provide clear line of sight from one corner to another.
<b>Simple and Intuitive Use</b>	Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.	<input checked="" type="checkbox"/>	The Shopping center purposely designed for the disable people : Low Vision, wheel chair users, and physical limitation.

## 5.2 Building Safety Test

There are standard criteria of building system of fire protection. To assess it, we need to check some parameters included Site Completeness, Rescue Facilities, Active Protection System, and Passive Protection System. Here it is tested by redeveloped assessment by: Prof. Noor Cholis Idham, Ph.D., I.A.I. based on Pd T-11-2005-C/BaLitBang PU

FORM PENILAIAN KEANDALAN BANGUNAN TERHADAP BAHAYA KEBAKARAN

No.	KSKB / SUB KSKB	Penilaian* B / C / K	Nilai Point	Bobot	Nilai Komponen	Jumlah Nilai
1	2	3	4	5	6	7
<b>I. Kelengkapan Tapak</b>						
1	Sumber Air	B	100	27	6.75	25
2	Jalan Lingkungan	B	100	25	6.25	
3	Jarak Antar Bangunan	B	100	23	5.75	
4	Hidran Halaman	B	100	25	6.25	
						<b>25</b>

No.	KSKB / SUB KSKB	Penilaian* B / C / K	Nilai Point	Bobot	Nilai Komponen	Jumlah Nilai
1	2	3	4	5	6	7
<b>II. Sarana Penyelamatan</b>						
1	Jalan Keluar	B	100	38	9.5	25
2	Konstruksi Jalan Keluar	B	100	35	8.75	
3	Landasan Helikopter	K	60	27	4.05	
						<b>22.3</b>

No.	KSKB / SUB KSKB	Penilaian* B / C / K	Nilai Point	Bobot	Nilai Komponen	Jumlah Nilai
1	2	3	4	5	6	7
<b>III. Proteksi Aktif</b>						
1	Deteksi dan Alarm	B	100	8	1.92	24
2	Siames Connection	B	100	8	1.92	
3	Pemadam api Ringan	B	100	8	1.92	
4	Hidran gedung	B	100	8	1.92	
5	Sprinkler	B	100	8	1.92	
6	Sistem Pemadam luapan	B	100	7	1.68	
7	Pengendali Asap	B	100	8	1.92	
8	Deteksi Asap	B	100	8	1.92	
9	Pembuangan asap	K	60	7	1.008	
10	Lift Kebakaran	B	100	7	1.68	
11	Cahaya darurat	B	100	8	1.92	
12	Listrik darurat	B	100	8	1.92	
13	Ruang pengendali Operasional	B	100	7	1.68	
						<b>24</b>

No.	KSKB / SUB KSKB	Penilaian* B / C / K	Nilai Point	Bobot	Nilai Komponen	Jumlah Nilai
1	2	3	4	5	6	7
<b>IV. Proteksi Pasif</b>						
1	Ketahanan Api Strk. Bangunan	B	100	36	9.36	26
2	Kompartemerasi Ruang	B	100	32	8.32	
3	Perindungan Bukaan	B	100	32	8.32	
						<b>26</b>

\* Isilah hanya dengan:  
 B Baik  
 C Cukup  
 K Kurang

06

Evaluation

In this chapter will explain about the evaluation that has been done by the examiner to the design development and also the response to the evaluation, in the process of evaluation of the design, the design of shopping centers in the city of Pontianak Waterfront Shopping center in Tepian Mahakam Samarinda has been able to answer specific problems and major problems in handling the case of the application of the concept of Inclusive design in terms of review aspects of design that have been applied to the shopping center, there are several indicators and parameters that are key to other specific problems in which this parameter becomes a technical aspect that must be considered in the design. Here are the results of the evaluation of the response from the examiner to the design.

### **1. Missing of Design criteria for Shopping Center in Design**

Adding the design Criteria Detail of a Shopping center in Chapter as guidance for the design process along with the dissability criteria to create integrity between the building function and building concept.

### **2. The design Concept has not complete in explanation**

Double-checking and adding missed concepts then More Explanation of the design concept has been added to the chapter 3 to show the process before the design been answered in chapter 4.

### **3. Lacking in number of Emergency Stairs**

Adding two more emergency stairs meet the requirement of emergency stairs existency in every 25 meters. This can be shown in the safety drawing in chapter 4

### **4. The explanation of resting space in the building need to addeed to answer the problem of long shape of the building mass. also add some small shops near resting area.**

on chapter 4 the explanation of the resting area has beed added to the book so that reader could understand why there is empty space in the floorplan

### **5. Add more explanation in the concept of building facade**

the explanation about the building fcade alternative and the reason of coosing it has been added in chapter 3

**07**

Attachment



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*Bismillaahirrahmaanirrahiim*

*Assalamualaikum Wr. Wb.*

Dengan ini, menerangkan Bahwa:

Nama : Rohadatul 'Aisy Sumardhiya

Nomor Mahasiswa : 17512087

Pembimbing: -

Fakultas / Prodi : Teknik Sipil dan Perencanaan/ Arsitektur

Judul Karya Ilmiah : DESIGN OF WATERFRONT SHOPPING CENTERE EMPHASIZING  
SAFETY AND COMFORT FOR DISABLED IN TEPIAN MAHAKAM  
USING INCLUSIVE DESIGN APPROACH

Karya ilmiah yang bersangkutan di atas telah melalui proses cek plagiasTurnitin menggunakan dengan hasil kemiripan (*similarity*) sebesar 3 (Tiga)%.

Demikian Surat Keterangan ini dibuat untuk dapat dipergunakan sebagaimana

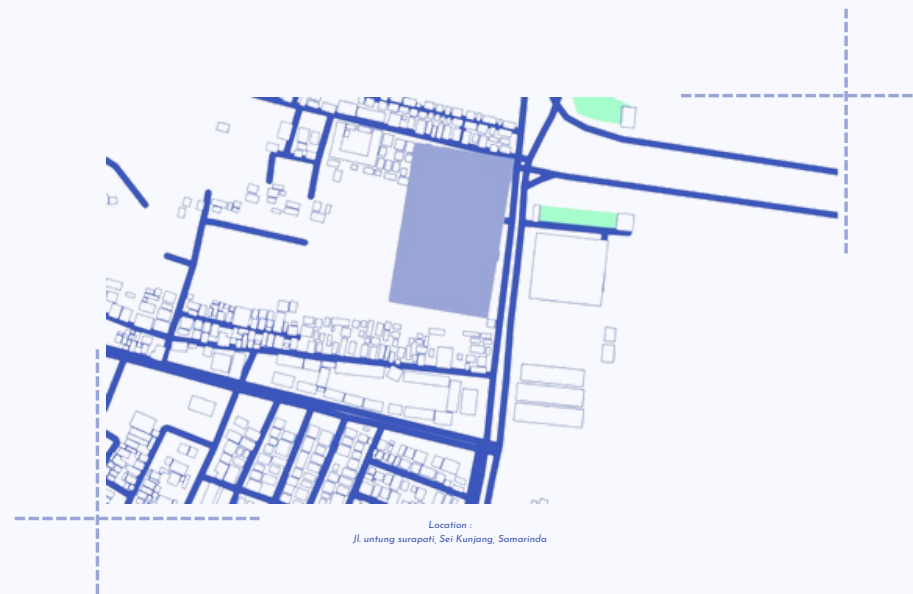
*Assalamualaikum Wr. Wb.*

Yogyakarta,  
10/20/2022 Direktur

Muhammad Jamil, SIP.

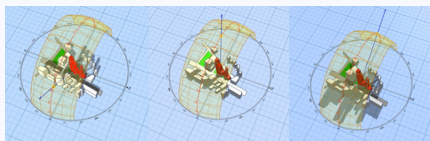
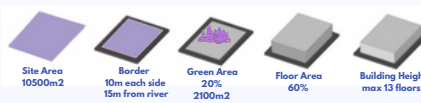
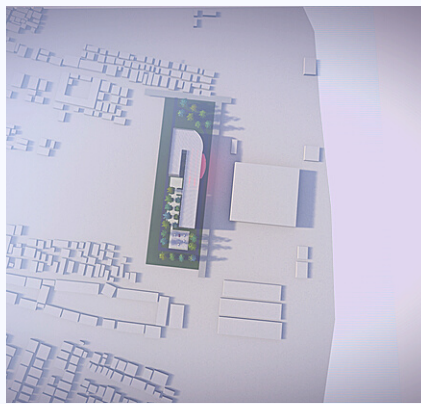
# Tepian Waterfront Shopping Center

Emphasizing Safety and Comfort for Disable People  
 Using Inclusive Design Approach

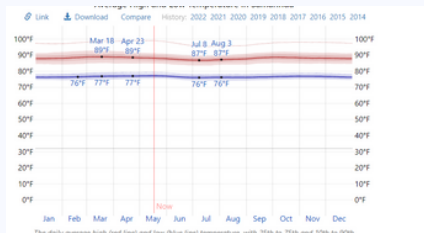


The rapid grow of Commercial activity in Samarinda as the center of industries in East Kalimantan, giving impact of demand in constructing a commercial building such as Shoping mall. . The project is proposing a design of waterfront Shopping Center in Samarinda that well known as the 'Kota Tepian' which Means City on the riverbank. Despite of having main city attraction alongside the riverbank, Samarinda do not have any Shopping center that purposely made for the dissable people. besides that, Samarinda has been concern to provide adequate safety and acessibilby for the disabled people in public spaces such as Shopping Center. The disabled people used to have dificulty to access a shopping center since many shopping center has not supported the facilities and suported design for them. The aim of this project is to design a shopping center that can show the image of the city as a waterfront city and also to provide a disabled friendly shopping center. to answer this, the design will integrated the access from the river and land by emphasizing the safety for the disabled people so that they can do activity and also using the facilities as other people.





The Simulation Done to know the Existing Site Situation so that the design could give the best response according to the sun simulation. From the Simulation done, known that the the building facing the east side and will get sun penetration from 9AM to - 13 PM then the sun move to the other side and penetrate the west side of the building. The east side of the side is facing directly to the Mahkam river which will be the main concern of the design as Waterfront Shopping Center.

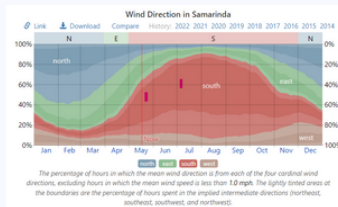


The "mean daily maximum" (solid red line) shows the maximum temperature of an average day for every month for Samarinda City. Likewise, "mean daily minimum" (solid blue line) shows the average minimum temperature. Hot days and cold nights (dashed red and blue lines) show the average of the hottest day and coldest night of each month (weatherspark, 2022).



The precipitation diagram for Kecamatan Temon shows on how many days per month, certain precipitation amounts are reached. In tropical and monsoon climates, the amounts may be underestimated (weatherspark, 2022).

From the Data we can see that the raining season is happening from December to May and the dry season is from June to November.



The Wind Direction Diagram is showing the wind flow in Samarinda over the year. we can see that most of the wind flow from the south. from the wind speed diagram we knew that the most windy month is on feb and august.

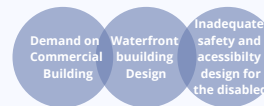
1. How to design Waterfront Shopping Center in Samarinda based on Inclusive Design Method?

2. How to integrate the safety and Accessibility for the disabled people on a shopping mall?

Aim

1. Design a waterfront Shopping center that built on riverbank which can supports the disabled people in Samarinda.

2. Design a Shopping center that applied the inclusive design for the safety and accessibility



General Architectural ← → Specific Architectural

1. Samarinda as the center of bussiness and industries in East Kalimantan have high demand of Commercial building : Shopping Mall  
2. Concept of waterfront building to show Mahakam River as the image of the City

1. Design an Shopping Center in Waterfront area  
2. design a safety and accessible shopping mall for the disabled

Design Scheme and Method

<b>object</b>	Waterfront Shopping Center Emphasizing Safety and Comfort for Disabled In Tepian Mahakam Using Inclusive Design Approach			
<b>issues</b>	Demand on Commercial Building	Waterfront building Design	Inadequate safety and accessibility design for the disabled.	
<b>General Problem</b>	How to design Waterfront Shopping Center in Samarinda based on Inclusive Design Method?			
<b>Architectural I Problem</b>	How to design an integrated Shopping mall ?		How to design a safety and accessible shopping mall for the disabled ?	
<b>Studies</b>	Shopping Center Typology	Waterfront Design	Context Of Samarinda City	Inclusive Design for the dissabled people
<b>Synthesis</b>	Spatial Organisation	Circulation	Structure and Infrastructure	Landscape
			Facade and building Mass	



1. Finding Background and Issue

Dfining the problem that occurs in the area then finding the supporting data to fnd the cause of the issues.

2. Analysis

BAnalysis done after defining the problem and background of the issues to find out the most relevant problem solving method.. in the case of the project the problem solving method is analyzed by studying the context behind the context. then defining the most relevant approach to solve the problem for the dissabled in shopping center and building safetiness.

3. Design Problem

After the analysis done, the problems derived into variables and parameters to guide the solving of the problems that relevant to the building design elements that will be concerned.

4. Design Concept

The concept made as strategy implementation to solve the problem that has been studied before.. this will be in form of schematic design and sketches .

5. Design Development

the next step is to develop the concept n to real design. most likely in form of 3D, Plan and section.

6. Design Testing

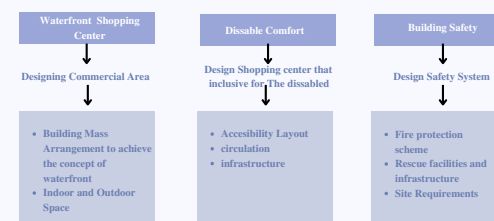
using variables and design testing tools to maksure that the design has solved the problem

Design Scheme and Method

Space Type	Needs	Area	No. Unit	Total Area	
Shopping Area	Receptionist		5	5	
	Lobby		25	25	
	Retail Type 1	496	10	4960	
	Retail Type 2	288	20	5760	
	Retail Type 3	144	10	1440	
	Department Store	3600	1	3600	
	Supermarket	5000	1	5000	
Management Area	Food Court	1226	1	1226	
	Office	108	1	108	
	Pantry	7	1	7	
	Lavatory	10	4	40	
	Security	36	1	36	
	Storage	300	1	300	
	Loading area	300	1	300	
	Control Room	10	1	10	
	Generator room	6	1	6	
	Service Area	Water pump Room	12	1	12
Server Room		10	1	10	
Emergency Stair		24	3	72	
Freight Elevator		12	1	12	
Passenger Elevator		14	3	42	
Nursery Room		10	3	30	
ATM Center		30	1	30	
Praying Room		40	1	40	
Parking		Car	1.4	1000	1400
		Motorbike	12.5	250	3125
			<b>Total Area</b>	<b>27596</b>	

This shopping center strives to accommodate the needs of space that accommodates buying and selling transactions and also serves as a public space in the waterfront of *Tepian Mahakam* by paying attention to post-pandemic conditions. Then after being able to accommodate the activities of buying and selling transactions, the design of this shopping center seeks to overcome the problem of innadequated disabled safety, comfort and accessibility in a shopping mallby adopting the concept of Inclusive Design. So that, the users could access and enjoying the shopping experience without and burden.

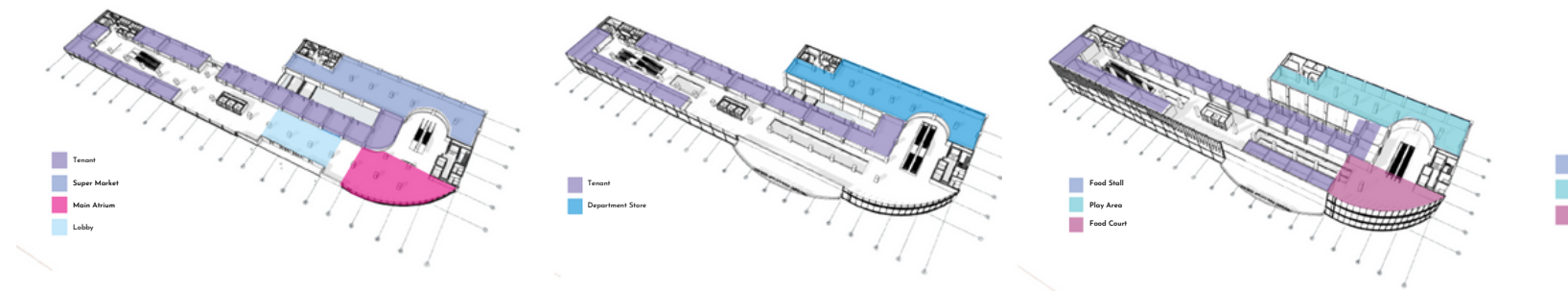
Design Scheme and Method



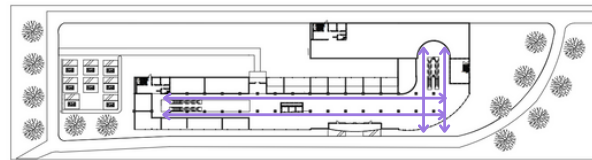
- Shopping Center as it main function, the building typology concept will be develop to have comfort for the user by considering some aspects such as Accesibility, general safety for shoping Center, climatic control for indoor and outdoor Comfort.
- Disabled Friendly Specifically for the disabled users needs the typology will be design to have special support for disability access,
- Building Safety Most concern in building safety especially for fire prevention since the building is commercial use and specifically designed for dissable people so it require a safety.



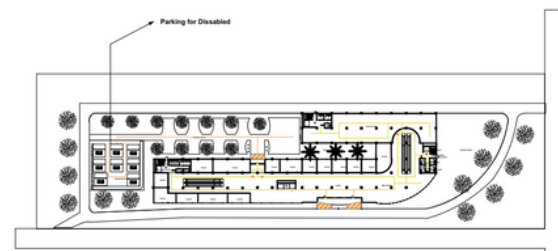
## Shopping Center Arrangement



## Barrier Free Answer

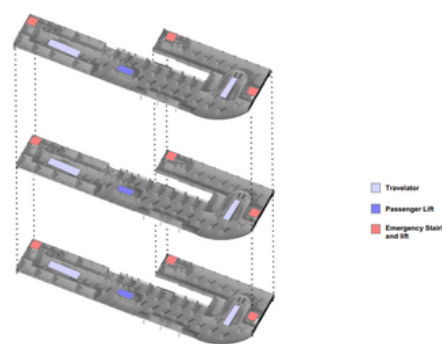


The Corridor design as linear with les junction. This is to create clear vision for thre users from one edge to the other edge to create less confusion for the low vision people. for the wheelchair the linear corridor arrangement gave them less effort accessibility to explore all area of the building.



This Scheme showing The barrier Free design scheme inside the building. For the dissabled The parking is located on the side of the building no more than 60meters from the nearest entrance (second entrance) that conected directly to the outdoor Space. Along the way to the entrance the dissabled with low vision problem are guided by the outdoor guiding path.

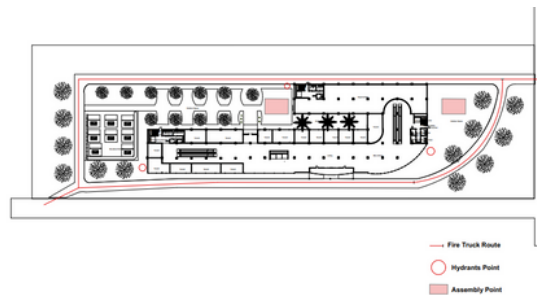
Ramp are Available in every Entrance for the wheelchair to get inside the building. on the inside of the building there are indooere guiding path for the low vision people so that they can explore the whole shopping center.



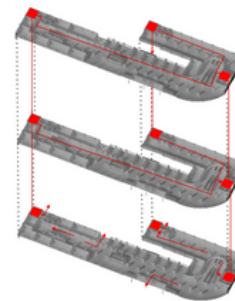
The Vertical transportation of the building is design to be reachable for the dissabled people. since it a commercial building that need space efficiency for the shops so that it can have more shop. there are no ramp to acces the upper floor. but it using travelator instead of escalator to makesure the wheelchair people can access, also for shopping cart. The building also accomodate with Dissable Lift.

For safety the building has 3 location of Emergency exit. with emergency stairs and emergency lift for the fire fighter and the dissable people.

## Design Scheme and Method



All four side of the Building can be accessed by the fire truck in case of fire. the building has 3 spot of hydrants to connect to the fire truck. it also has 2 assembly area in outdoor soace that connect directly by the emergency exit from the building as shown on the scheme.



This Scheme showing the vertical evacuation road in the building. it has three points of emergency exit. each of it has emergency stair and emergency elevator for the dissable. it located inde the core with fire protection wall.

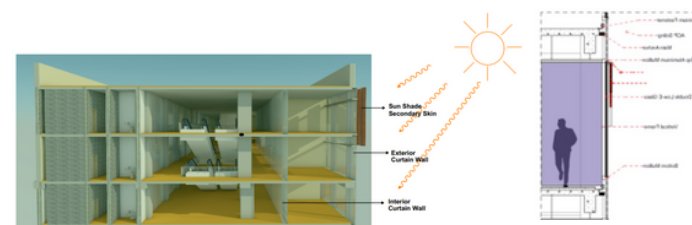
## Architectural Detail



ithe entrance door using automatic door so that it will be effortless for the dissable people to use and prevent them from hitting the entrance.



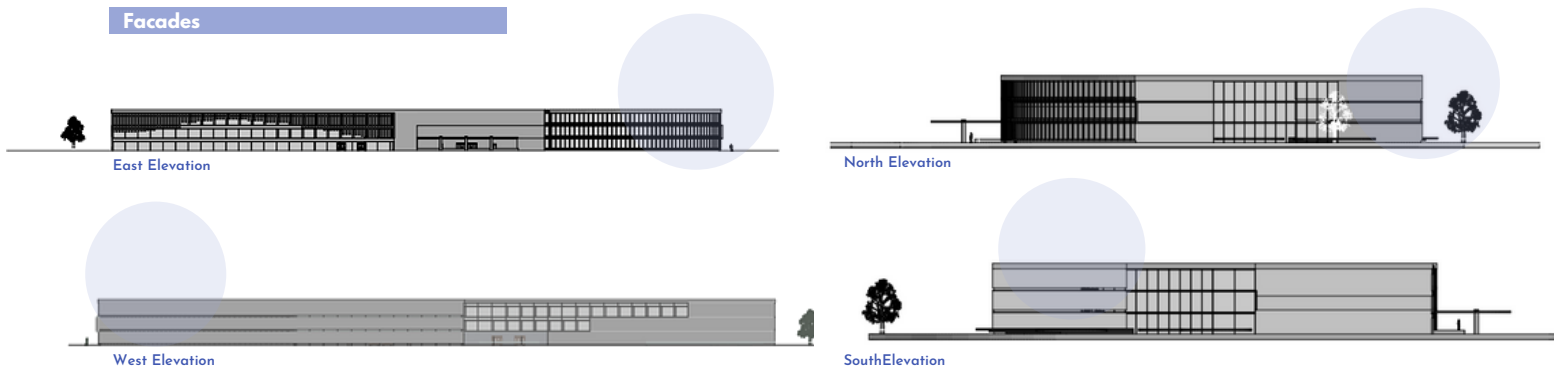
There is a color block wall in the building to mark emergency area. the purposed is to be easily seen by the low vision and also by the deaf that possibility cant hear the emergency announcement. and all the exit located in the building anchor to make it easy to be noticed.



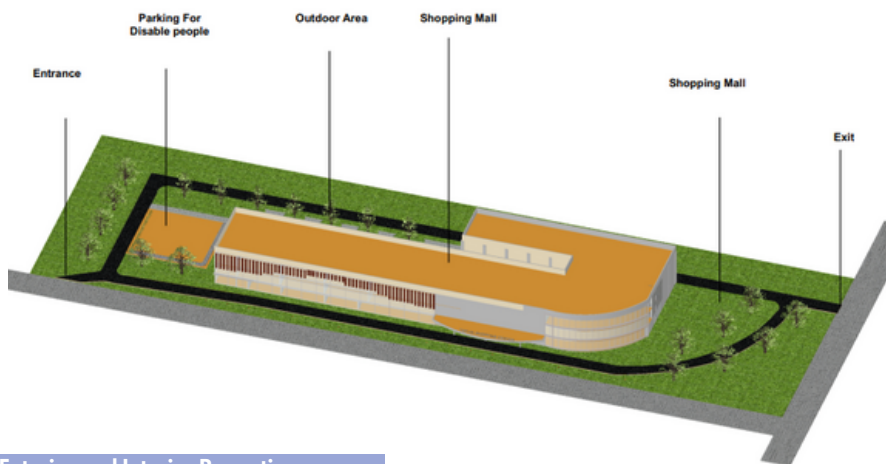
To answer the east facade problem that got penetrate directly by the sun, it using secondary skin from conewood that arranged vertically along the facade especially the third floor to shade the sun but still give chance to the users to have sightseeing the river.



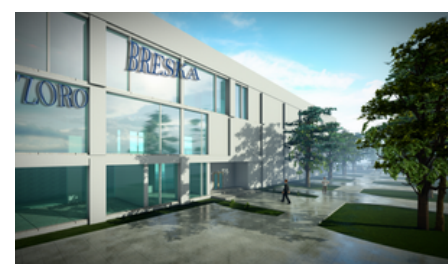
### Facades



### Axonometric



### Exterior and Interior Perspective





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