DESIGN OF PONTIANAK CITY WALK CENTER AS NEW SHOPPING CENTER WITH CITY WALK APPROACH ON WATERFRONT AREA PONTIANAK

Keyword: City Walk, Shopping Center, Waterfront, TRIZ

Final Architectural
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DESIGN OF PONTIANAK CITY WALK CENTER

as New Shopping Center with City Walk Approach on Waterfront Area Pontianak

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Herein, I declare the originality of thesis; I have not presented anyone else's work to obtain my university degree, nor have I presented anyone else's words, idea, or expression without acknowledgement. All quotation are cited and listed in the bibliography of the thesis. If in the future this thesis statement is proven false, I am willing to accept any sanction complying with the determined regulation or its consequence.

Yogyakarta, 16 July 2021

Joana Novarinda Carissa

PREFACE

Assalamu'alaikum Wr. Wb.

Praise the presence of Allah SWT, The One and Only God for the abundance of grace, His gift, and His power so the preparation of the final architectural design studio report titled "**Design of Pontianak City Walk Center as New Shopping Center with City Walk Approach on Waterfront Area Pontianak**" can be completed. The author realizes that the process of drafting and implementing of this report can be done inseparable from the support of many parties, therefore the author wants to express appreciation and gratitude to:

1. Allah SWT., who has given His gifts, instructions, ease, and power in every research process and the preparation of the final project report so that the author can complete it.
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7. All parties who have given their support and prayers to the author.
8. *Last but not least, I wanna thank me, I wanna thank me for believing in me, I wanna thank me for doing all this hard work, I wanna thank me for having no days off, I wanna thank me for never quitting, for just being me at all times*.

The author realizes that in the preparation of this report is far from perfection, in terms of language, drafting, and writing. Therefore, the author expects constructive criticism and suggestions that will later become a provision of experience for the author to be better in the future. Hopefully this report is useful for all who read it, as well as the author in particular.

Wassalamu'alaikum Wr. Wb.

Yogyakarta, 16 July 2021

Joana Novarinda Carissa

LIST OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABSTRACT

Pontianak City Walk Center design strives to accommodate the needs of space that accommodates buying and selling transactions and also serves as a public space in the waterfront of Melayu Laut Village 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 poor urban space arrangement by adopting the concept of city walk, so that in the building visitors can feel the nuances and atmosphere as found in the city space. But in the application of the concept of city walk there are some contradictions considering having to adjust to post-pandemic conditions. This contradiction arises because the concept of city walk itself tends to create more interaction space but post-pandemic conditions demand social restrictions. TRIZ will be a design method that will solve the problem with 40 inventive principles. After the study and analysis was found 4 main solutions, namely: Taking Out, Another Dimension, Inert Atmosphere, and Mechanical Vibration.

Keyword: City Walk, Shopping Center, Waterfront, TRIZ

01 INTRODUCTION

CHAPTER I
INTRODUCTION

1.1 Title

Design of Pontianak City Walk Center as New Shopping Center with City Walk Approach on Waterfront Area Pontianak

Pontianak

Pontianak is the capital city of West Kalimantan province in Indonesia. The city is known as the Equator as zero degrees latitude traversed the earth. In the north side of the city, at Siantan, there is Equator monument built there and spaced in traversed zero degrees latitude of the earth. In addition, Pontianak also passed by Kapuas River, the longest river in Indonesia and Landak River. Kapuas River and Landak River which divides the city symbolized in Pontianak city logo.

City Walk

City walk literally consists of 2 words, city and walk. City means city, inner city, while walk means lane, road. So abstractly, City walk means a pedestrian path within the city. The path can be formed due to a row of buildings or landscaping in the form of plants, City walk is a pedestrian with complete shopping facilities, and managed by a business developer, so that it can survive and develop (Asterie, 2004).

Shopping Center

Shopping Center (UK and Europe), Shopping Mall (America) or terminology that is often used by Americans refer to a large shopping center or shopping center is a term used to identify a shopping center that basically has the form of a building or a collection of several buildings in one location (Waskita, 2009).

Waterfront

According to Cambridge Dictionary Online, waterfront is a part of a town next to an area of water such as a lake, a river, or the ocean.

1.2 Premise Design

Mall is a shopping center that pioneered one or several large department stores as an attraction with small retails and restaurants with building typology such as shops overlooking the main corridor of the mall or has a pedestrian that is the main element and a shopping mall, with a function as a circulation and as a communal space for the implementation of interaction between visitors and traders (Maitland, 1985).

The selected site area is on Jl. Tanjungpura, Benua Melayu Laut Village, South Pontianak District is a Trade and Services Allocation Area. It was stated in the Pontianak City Regulation No. 2 on RTRW Year 2013-2033. In addition to trade and services areas, Benua Melayu Laut village is also an area that is directly adjacent and the banks of the Kapuas River which is one of the icons in Pontianak city.

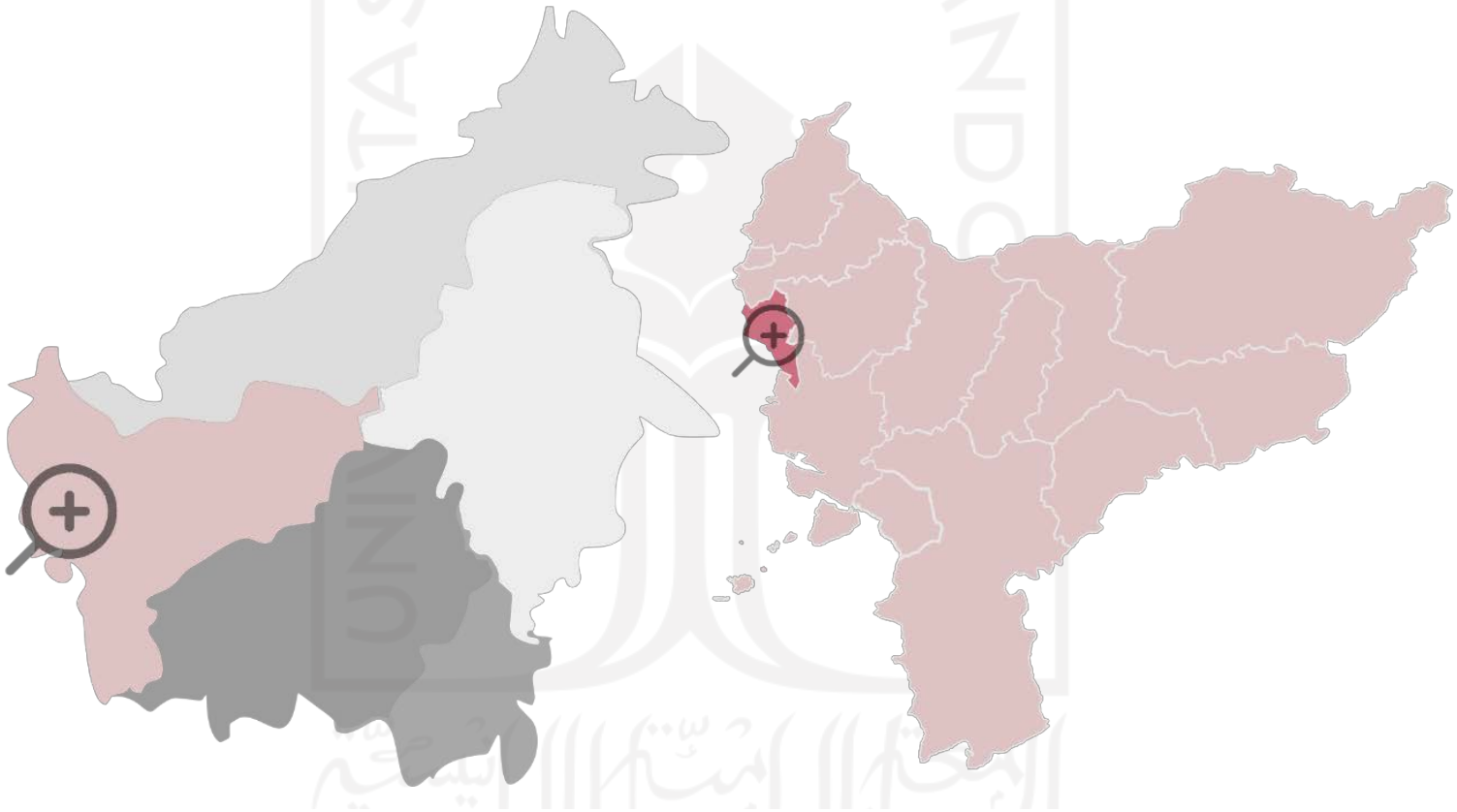


Figure 1.1 Geographic Location
Source: Author (2021)

The existence of shopping centers in the post-COVID-19 pandemic era can help economic activities in Pontianak city but on the one hand also has some problems and contradictions related to interactions between visitors and traders that must be resolved. Therefore Pontianak City Walk Center emerged by carrying the concept of city walk that is adapted to post-COVID-19 conditions in which a pedestrian-oriented city as well as open space as a public space.

Based on the concept of city walk, shopping centers must not only act as shopping centers that accommodate trade transactions but also serve as public spaces. Therefore, the need for the development of Pontianak City Walk Center is

expected to establish the concentration of tourism in the city of Pontianak, especially in the Tanjungpura area that is directly connected to the river bank, as well as shopping alternatives that are able to accommodate a variety of demands of flexible modern society activities, where shopping centers are no longer just shopping, but as a place of recreation and unwind after daily routines.

Designing Pontianak City Walk Center which is an urban retail, food, and beverage area in the center of Pontianak with hundreds of exclusive shops, restaurants, and recreational activities located in the heritage area among low-rise residential buildings, overlooking the waterfront area is expected to become an urban space and a new open economic area, eliminating the opportunity of "infection" after the COVID-19 pandemic, which is also expected to become a new tourism icon.

Later this building also applies the concept of city walk to respond to the lack of urban spatial arrangement. So that the fulfillment of pedestrian space in Pontianak city can be fulfilled. The application of waterfront design approach and city walk concept will affect the mass order, façade, sanitation, and building footprint. It is expected that by applying this concept will be a building advantage and can attract investors and tourists to visit to help the post-COVID-19 economy in Pontianak.

1.3 Background

1.3.1 Post COVID-19 Pandemic Economy in Pontianak

Pontianak city which is the capital of West Kalimantan which has an area of 107 km² and is one of the capitals in Indonesia whose economic sector is growing. Pontianak's economic growth is dominated by the government sector (20.73 %), the trade and services sector (20.41 %), and financial institutions (17.94 %). It is seen that trade and services play a fairly important role to the economy of Pontianak. However, along with their development, Pontianak city's economy in trade and services has not increased significantly due to COVID-19 pandemic. The condition restricts the activities of people outside the home to have a weakening economic impact. The state of economic opportunity continues to decline over time.

South Pontianak area is the most crucial area in the trade sector in Pontianak City. In the administrative map of Pontianak City. This area is included in the trade and services area. So it will have a significant impact. Developed as a strategic area of trade and services with the supporting capacity of infrastructure in the form of national roads.

According to BPS Pontianak economy in the category of trade and services from 2016-2020 has the following figures:

	Lapangan Usaha/*Industry*	2017	2018	2019*	2020**
	(1)	(2)	(3)	(4)	(5)
A	Pertanian, Kehutanan, dan Perikanan/*Agriculture, Forestry, and Fishing*	4,44	3,37	4,04	5,75
B	Pertambangan dan Penggalian/ *Mining and Quarrying*				
C	Industri Pengolahan/*Manufacturing*	4,36	2,51	7,15	-2,12
D	Pengadaan Listrik dan Gas/ *Electricity and Gas*	4,54	5,14	5,36	25,56
E	Pengadaan Air; Pengelolaan Sampah, Limbah, dan Daur Ulang/ *Water Supply; Sewerage, Waste Management, and Remediation Activities*	3,87	3,19	2,47	8,54
F	Konstruksi/*Construction*	6,19	1,13	0,92	-4,31
G	Perdagangan Besar dan Eceran; Reparasi Mobil dan Sepeda Motor/ *Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles*	3,52	3,40	1,75	-13,50
H	Transportasi dan Pergudangan/ *Transportation and Storage*	2,53	3,30	6,46	-14,36
I	Penyediaan Akomodasi dan Makan Minum/*Accommodation and Food Service Activities*	2,94	7,61	6,52	-20,11
J	Informasi dan Komunikasi/ *Information and Communication*	19,62	10,26	10,23	17,11
K	Jasa Keuangan dan Asuransi/ *Financial and Insurance Activities*	6,04	10,51	-2,56	0,97
L	Real Estat/*Real Estate Activities*	3,27	1,48	1,54	0,69
M,N	Jasa Perusahaan/*Business Activities*	3,91	5,36	6,17	-5,16
O	Administrasi Pemerintahan, Pertahanan, dan Jaminan Sosial Wajib/*Public Administration and Defence; Compulsory Social Security*	5,60	8,79	8,91	5,26
P	Jasa Pendidikan/*Education*	1,06	1,37	3,39	-5,53
Q	Jasa Kesehatan dan Kegiatan Sosial/*Human Health and Social Work Activities*	3,37	5,16	8,42	38,29
R,S,T,U	Jasa Lainnya/*Other Services Activities*	4,50	5,09	8,47	-13,36
	Produk Domestik Regional Bruto/*Gross Regional Domestic Product*	**4,96**	**4,21**	**4,04**	**-3,97**

Catatan/*Notes*: * Angka sementara
** Angka sangat sementara
Sumber/*Source*: BPS, berbagai sensus, survei dan sumber lain/*BPS-Statistics Indonesia, various census, survey, and other sources*

Figure 1.2 Growth Rate of Gross Regional Domestic Product at 2020 Constant Market Prices by Industry
Source: BPS Pontianak (2021)

According to the data, The PDRB of Pontianak City according to the 2010 ADHK business field reached 37.63 trillion rupiah. It can be concluded that the economic development of Pontianak City in the trade sector is not very significant, because from year to year (2016-2020) economic growth figures continue to decline especially during the pandemic, whereas trade and service factors play an important role in Pontianak city. **To help improve the economy in Pontianak City, it can be done by designing a modern shopping center**. Because it will not only improve the economy of Pontianak City but will also absorb a higher workforce, thus opening up jobs, to cope with the economic impact of the decline.

1.3.2 Pontianak as Waterfront City

Pontianak city grew from the existence of the river as a source of urban life and has experienced development and growth in its urban spatial pattern and will continue to grow in line with the population growth and the demands of the community's needs for more modern city facilities. The Kapuas River is an icon for the city of Pontianak where the area has a special attraction for local and outside communities. Up to this time, the existence of the Kapuas River remains a special attraction for the people of Pontianak so that several public spaces were built and as a form of real appreciation of the natural wealth of Pontianak city. (Lesil, 2016)

Andrasmoro (2018) states that the development concept of Pontianak as waterfront city in accordance with the master plan that is integrated with the concept of Kapuas River where the Kapuas River is the longest river in Indonesia that reaches 1,143 km and is an economic and socio-cultural development area. In accordance with the Pontianak City Government Regulation Number 2 of 2013 concerning Spatial Plan of Pontianak City Region year 2013-2033 in Article 4 which reads:

> “Developing tourism activities, recreation and natural protection in the suburbs and bodies of the Kapuas River with the concept of waterfront city and become one of the attractions of the city.”

From the quote above, it can be concluded that **there is planning about the waterfront area by directing the orientation of the building to the river and making the area a public open space to improve the accessibility of the community**, so that by developing a modern shopping center with the emphasis of public open space on the outskirts of the Kapuas River can improve the economy of Pontianak City, not only in trade and service factors but also in tourism factors so as **to significantly improve the average economy**, because with this kind of emphasis can invite more visitors to the location.

1.3.3 Poor Quality of Urban Spatial Arrangement

It is undeniable that nowadays many of the quality of city space is decreasing and still far from the minimum standard of a comfortable city, especially in the creation and utilization of adequate open space (Aditya, 2007). The decrease in quality is influenced by the lack of structuring and maintenance of pedestrian space. Based on the study conducted by Mayonna (2013) on the observation and perception of the preferences of the people of Pontianak City there is only one study area from 7 areas where pedestrian facilities meet all aspects, aspects of comfort, safety, and security aspects**. This shows that the pedestrian facilities in Pontianak city have not fully accommodated the pedestrian activity as the main user**.

No wonder now many commercial buildings such as malls or shopping centers are filled with city residents even if it is just a walk or strolling around. Although the growth in the number of malls or trade centers has been felt to the point of saturation, it is still filled with visitors. This is because of the lack of space for residents to simply remove fatigue from the chaos of city roads.

The developers finally raced to capture this need in the commercial space to be presented. One of them is by creating an open space that is passed in the middle of retail in a shopping mall. This concept also developed and is known as City Walk. No wonder that nowadays many shopping centers adopt the concept of City Walk then applied to a commercial building.

1.3.4 Urgency of City Walk in Commercial Building

"Something good for people, good for business," is the motto for designers in this era. So that a shopping center is also not only as a shopping center but can also serve as a public space (gathering space). When meeting space is available, then indirectly a variety of interactions and activities will appear. That's where the market will form by itself and the space is often called "market space". To achieve both of them of course it takes proper access to connect between the elements in it. Such are the 3 traditional functions of public space according to Jan Gehl. This theory developed and eventually thought to recognize a city walk approach in the discipline of urban planning. City Walk is nothing more than a corridor surrounded by shopping malls in the form of kiosks. The corridor not only serves as circulation access but can be used for other activities (meeting, market). At each intersection of corridors there is usually a public space in the form of a plaza.

The application is intended for integrated areas (not for single building), but **to produce shopping centers that respond strongly to public needs and the market** will certainly be very interesting if implemented. But engineering is also needed in its application such as space-related adjustments to the current pandemic COVID-19 conditions, in addition to the transformation to proportions so that the element of efficiency is not eliminated, because considering shopping centers are commercial buildings where each dimension must certainly be of economic value. Of course, the application of urban-nuanced city walk elements will be interesting if blended into shopping centers (single buildings) that have an image as a commercial building.

1.4 Formulation of Problem

Based on the background of the problem that has been explained, the problem formulation is as follows:

1.4.1 General Problem

How to design a shopping center in the waterfront area of Pontianak city that can increase the potential of economic transactions and recreation but minimal infection in post covid-19 pandemic era by applying walkable-city concept?

1.4.2 Specific Problem

1. How to design a city walk-inspired shopping center that can reduce direct physical contact between visitors?
2. How to design corridors in shopping center that applying city walk concept but still maximize the rentable space?
3. How to design landscape in shopping center space organization that can support waterfront recreation towards the shopping center?

1.5 Aim and Objective

1.5.1 Aim

Designing a new shopping center in waterfront area Pontianak as a solution of needs space where people can enjoy the trading activities while also maintain the recreation activities with city walk approach in post covid-19 pandemic era.

1.5.2 Objective

New shopping center design in waterfront area Pontianak as a solution of needs space where shopping centers are no longer just shopping, but as a place of recreation with city walk approach in post covid-19 pandemic era.

1.6 Scope of Limitation

1. The research was carried out by taking a concentration on the urban riverbank recreation space, specifically the front area of Pontianak Waterfront. This place was chosen because it is a space open to the public that is quite

attractive to residents, also strategic for trade and services building development with a dominant function as a recreation area with a different type and character of space.

2. This study focuses on three basic theories namely 1) Shopping Center; 2) City Walk; and 3) Waterfront Design
3. City walk in design scheme aimed at reduce dependence on the use of vehicles and more prioritizing walking. Elements of city walk include open space, pedestrian, and retail.
4. City walk concept focuses on the implementation in commercial building design, while waterfront design itself focuses on the design of open public space as recreation area.
5. Scope of problems and solutions based on TRIZ method that has been determined.

1.7 Map of Issue/Problem

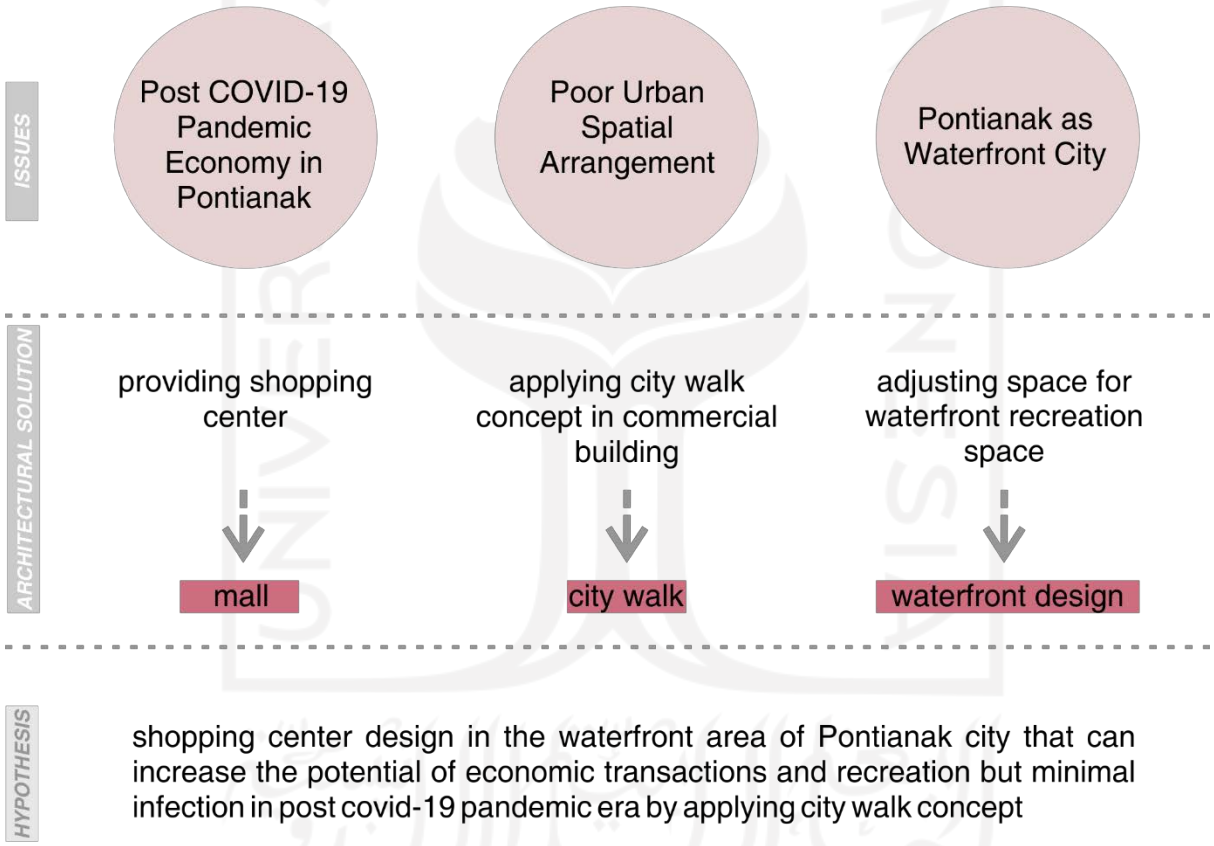


Figure 1.3 Map of Issue/Problem
Source: Author (2021)

1.8 Method

The design method used to achieve predetermined goals and objectives includes problem identification methods, data collection, analysis methods, and design testing methods.

1.8.1 Problem Identification Methods

Identify the issues (architectural and non-architectural) that exist in the waterfront area Pontianak and its surroundings so that problems are found to be addressed. The problems at hand can result in a design theme and function.

1.8.2 Data Collection Method

1. Primary Data

   Data collected directly by the author by collecting context data of existing location site design Pontianak City Walk Center through the results of the survey at the time of writing a paper in the course Breadth on Place Making. The data collected such as:

   a. Observation

   The author conducts observations directly and using Google Satelite on the selected site that is the area of Waterfront Pontianak.

   b. Documentation

   Figures related to the site and the conditions around the site.

2. Secondary Data

   It is the data that is already available so that the author only needs to collect the data. Secondary Data, such as:

   a. RDTR Pontianak Selatan District, SIMTARU Pontianak and other related regulations.
   b. Theoritical review
   c. Precedent
   d. Figures and supporting information from the internet.

1.8.3 Design Method

TRIZ (Theory of Inventive Problem Solving) is a Russian method (Teorija Resenija Isobretatelskih Zadac) created in 1946 by Genrich Saulovich Altshuller. This method is very useful for obtaining engineering and science ideas that are sourced from the process of finding alternatives and solutions. TRIZ is one of the methods of problem solving based on logic and data, which accelerates the team's ability to solve problems creatively. As the definition, TRIZ's goal is to create problems creatively.

The basic concept itself consists of contradictions, idealistics, and a level of invention. Contradiction means opposition. This usually appears when we upgrade one parameter, but causes the other parameter to drop. The contradictions themselves are divided into 2, namely technical contradictions and physical contradictions. Technical contradictions are contradictions that address the process of a system. A physical contradiction is a

contradiction that addresses the form of an element of the system. Idealistic means, the ideal end result is achieved after the contradiction is resolved.

The “Theory of Inventive Problem Solving” method is basically intended for technicians and scientists to solve their technical problems by developing related options so that the problem can be lost and the positive impact can still be felt. TRIZ has 39 types of parameters and 40 inventive principles and in general there are a maximum of 4 inventive problem solving that can be used depending on the case of problems and contradictions. (Asyraf et al., 2019).

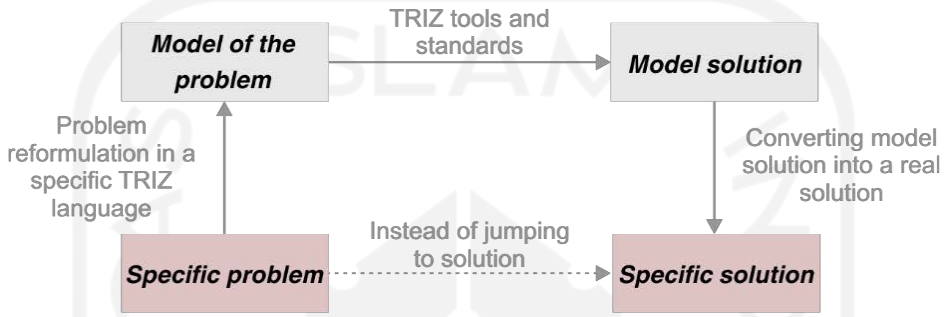


Figure 1.4 TRIZ Method Framework
Source: Author 2021

Figure 1.5 TRIZ Method Framework
Source: Author (2021)

1.8.4 Design Testing Method

Testing that will be carried out, such as:

a. Active Frontage Guidelines on retail façade that emphasizes its approach to city walk elements. Using this strategy can see how much influence shopping center presence to create interaction by following the grade “A” guidelines.

1.9 Excellency, Originality & Novelty

Title	Author	Problem	Similarities	Differences
Mall Design with Green Building Approach at Waterfront Area Pontianak City	Malikul Ashtar/ 16512122/ TA UII/ 2020	How to design a mall with a green building approach in the waterfront area of Pontianak City	How to present a shopping center that also serves as a public space in the waterfront area of Pontianak City.	• The approach is based on aspects of the Green Building approach, while Pontianak city Walk Center uses City Walk approach. • The embodiment of the form will be different because Pontianak City Walk Center is influenced by the existence of City Walk elements so that it will be in the form of separate compositions but connected by the core corridors.
Kuantan Riverwalk (K-Walk) Shopping Center	Imammul Izzah/ 14512154/ TA UII/ 2018	How to design Kuantan Riverwalk Shopping Center as a supporter of Pacu Jalur festival by maximizing the potential of Kuantan River?	Presenting a Shopping Center that maximizes visuals towards the river while paying attention to spatial planning, circulation, recreative areas that support commercial functions and riverside recreation functions.	• Different location • The approach method used are recreative and waterfront design, while Pontianak City Walk Center uses a city walk approach with TRIZ method as problem solving method.
SETURAN MIDTOWN PLAZA: Shopping Center Design With City Walk Approach	M.Rizky Suhri/ 12512004/ TA UII/ 2018	How to present the nuances of City Walk in shopping center building (as a commercial building that is efficient in spatial planning and has a high selling value)?	Application of city walk elements in the design process.	• Different location • Pontianak City Walk Center design uses TRIZ method to solve the contradiction problem

Table 1. 1 Excellency, Originality, & Novelty

Source: Author (2021)

1.10 Design Thinking

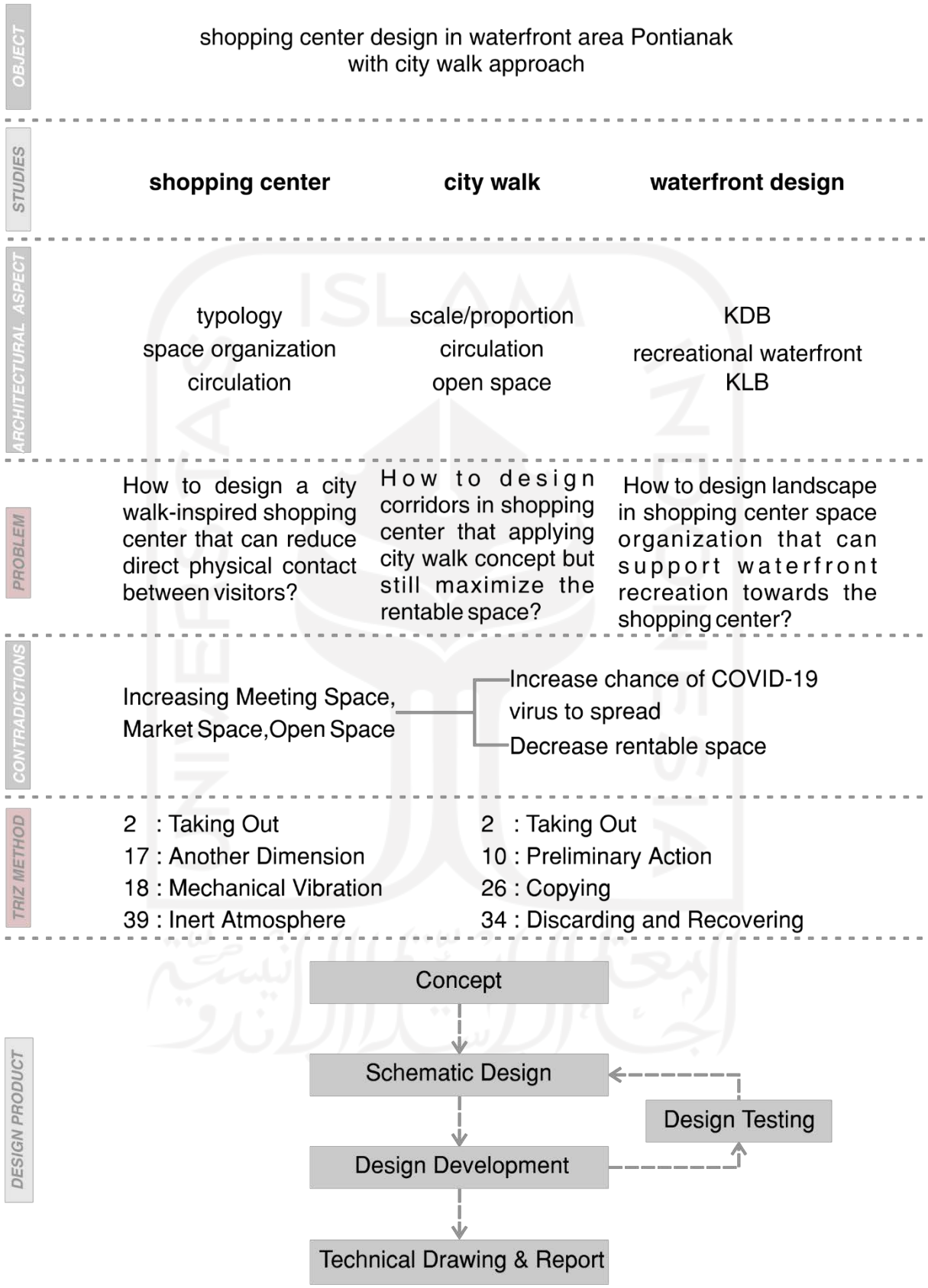


Figure 1.6 Design Thinking
Source: Author (2021)

02 LOCATION STUDIES

CHAPTER II
LOCATION STUDIES

2.1 Geographic Data

Pontianak city is located in the Kapuas River Delta with a relatively flat topographic contour with a land surface height ranging from 0.1 to 1.5 meters above sea level. With the surface height of the area, the city of Pontianak is strongly influenced by the tides of the river so it is easily inundated.

Figure 2. 1 Pontianak Maps
Source: Google Maps (2021)

The water level from ground level at the time of flooding in the city area averages 50 cm. On tidal observation through measuring instruments (at coordinates 0000'5" LU and 109002'20" BT) obtained the highest tidal point of 2.42 meters, the lowest tidal point of 0.07 meters and the average sea level of 0.89 meters).

Pontianak city is split into three lands separated by Kapuas Besar River, Kapuas Kecil River and Landak River with a width of 400 meters, a depth of between 12 to 16 meters, while the branch has a width of 250 meters. This river in addition to dividing the physical area of the city also serves as a barrier to the development of areas that have different characteristics. The lack of connecting networks that can connect between the three parts of Pontianak City causes the city area to be boxed with different functions and developments so that supporting infrastructure such as road and bridge networks play a role in keeping pace with the development of the city area.

2.2 Climate Data

Pontianak has almost the same climate as other regions in Indonesia. 'Mean Daily Maximum' (solid red line) shows the average maximum temperature per day for one month. While 'Mean Daily Minimum' (solid blue line) shows the average minimum temperature per day for a month. 'Hot Days' and 'Cold nights' show the average hottest days and coldest nights every month in the last 30 years.

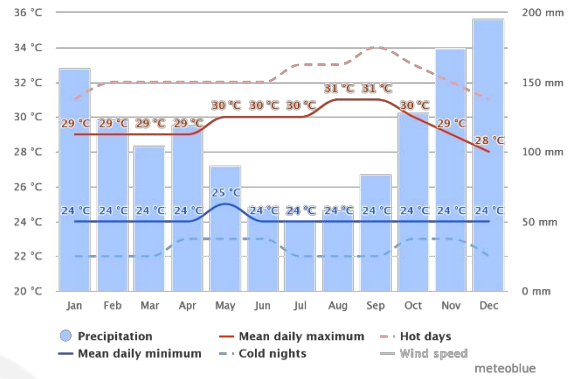


Figure 2. 2 Average temperatures and precipitation
Source: meteoblue.com

The graph above shows the quantity when the hot day is sunny, partly cloudy, overcast and precipitation. 20-80% of clouds are considered partly cloudy and more than 80% are considered overcast. Pontianak city is dominated by days with partly cloudy conditions.

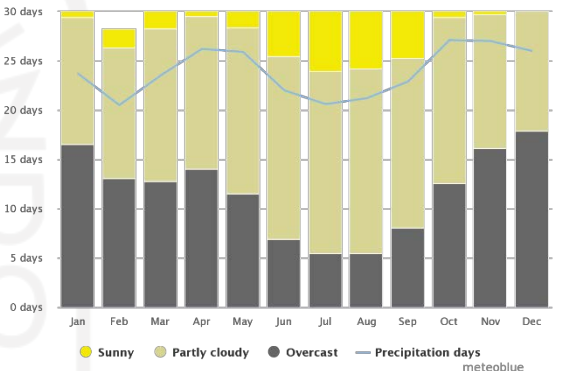


Figure 2. 3 Cloudy, sunny, and precipitation days
Source: meteoblue.com

The graph above shows the number of days when it touches 30 and 25 during the month. The days in Pontianak mostly touch 25 except in October which is only 13.5 days and in September which is only 15.2 days. This is different for the United Arab Emirates in Dubai, one of the hottest cities in the world. Dubai barely had a day of temperatures of less than 40° in July. While in Moscow, Russia when winter the hottest temperature is only -10.

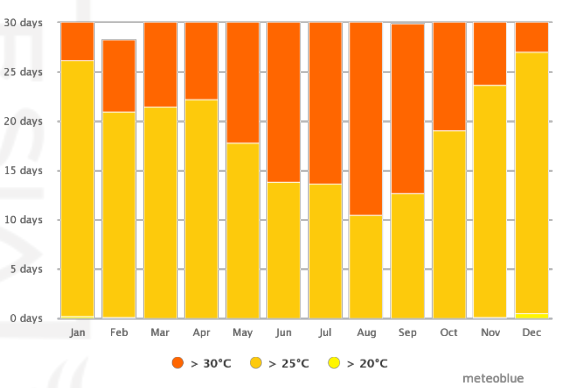


Figure 2. 4 Maximum temperatures
Source: meteoblue.com

The precipitation diagram for Pontianak shows on how many days per month, certain precipitation amounts are reached. In tropical and monsoon climates, the amounts may be underestimated.

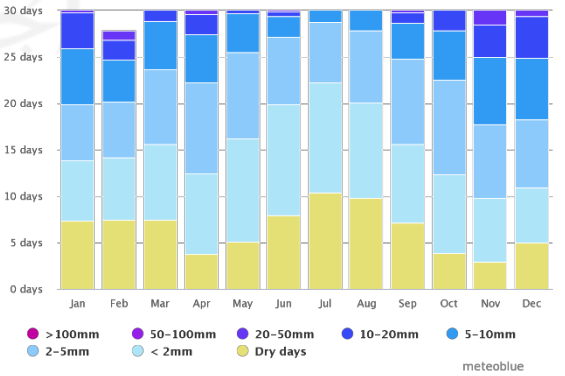


Figure 2. 5 Precipitation amounts
Source: meteoblue.com

The diagram for Pontianak shows the days per month, during which the wind reaches a certain speed.

The wind rose for Pontianak shows how many hours per year the wind blows from the indicated direction.

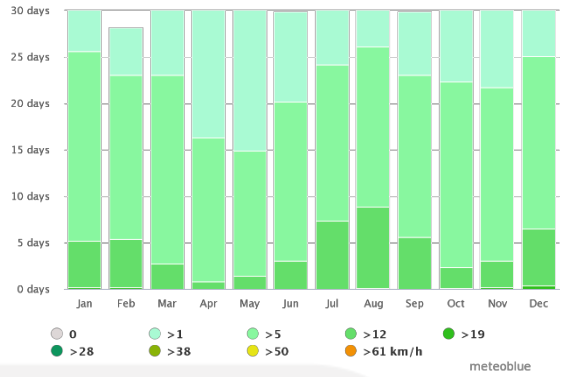


Figure 2. 7 Wind speed
Source: meteoblue.com

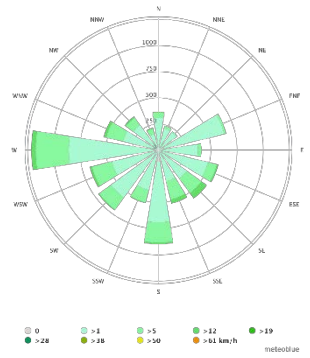
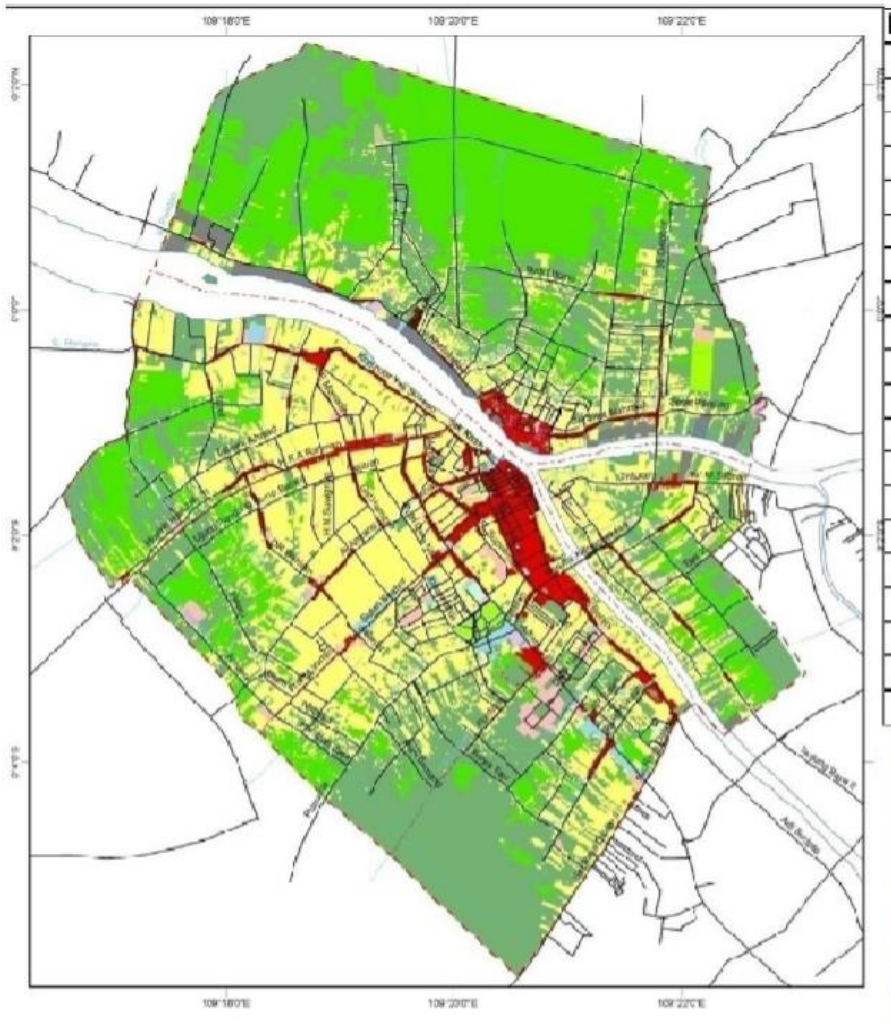


Figure 2. 6 Wind rose
Source: meteoblue.com

2.3 RTRW (Spatial Plan of Pontianak City Area)

Benua Melayu Laut in Pontianak City Regulation No. 2 of 2013 concerning Spatial Plan of Pontianak City In 2013-2033 is focused on becoming a strategic area to be developed in the trade sector that supports tourism.



No	Jenis Penggunaan Lahan	Luas (Ha)	%
1	Permukiman	3685,72	34,2
2	Perkantoran	39,74	0,4
3	Fasilitas Kesehatan	22,69	0,2
4	Fasilitas Pendidikan	195,18	1,8
5	Fasilitas Kesenian	0,79	0,0
6	Faslitas Olahraga	68,24	0,6
7	Militer	17,04	0,2
8	Tempat Peribadatan	27,23	0,3
9	Perdagangan dan Jasa	458,4	4,3
10	Industri dan Pergudangan	156,46	1,5
11	Pariwisata	9,62	0,1
12	Pembangkit Listrik	6,05	0,1
13	Prasarana Transportasi	10,85	0,1
14	SPBU	4,41	0,0
15	Taman	19,39	0,2
16	TPU	35,71	0,3
17	TPA	4,22	0,0
18	Lahan Pertanian	5375,26	49,9
19	Sungai	645	6,0
	Jumlah	10782,00	100,0

Figure 2. 8 Spatial Plan of Pontianak City
Source: Bappeda Pontianak

2.4 Proposed Site

Site Location : Jl. Tanjungpura, Benua Melayu Laut, Kec. Pontianak Sel., Kota Pontianak, Kalimantan Barat 78243

Size : 12.900 m²

Zone : Trade and Services

Status : Hak Guna Bangunan (empty land)

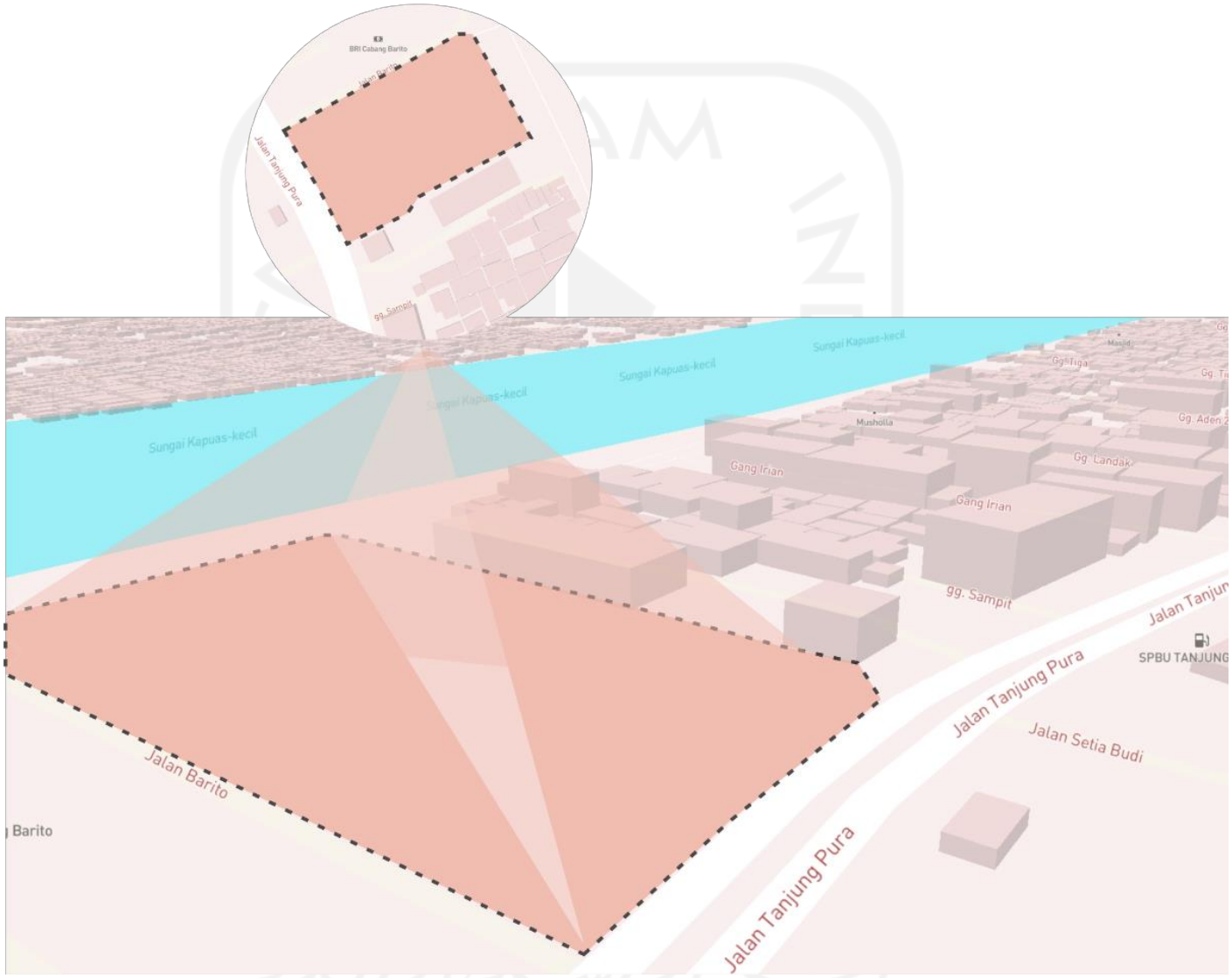


Figure 2. 9 Proposed site
Source: Author (2021)

The picture above shows the limitations of the site that will be used as a shopping center development area. The site is located in trade and services area and directly adjacent to the waterfront and has an area of about 12.900 m². The location is surrounded by shops.

2.4.1 Site Border

The table below shows the site border to its surrounding area.

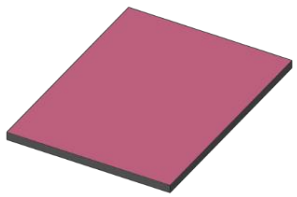
Site Border		Description
	North	On the east side of the site is directly adjacent to the shop houses and Barito Street. The road has a width of about 10 meters and the community shop houses here are quite dense.
	East	The boundary on the east side is a waterfront area that has a direct view to the Kapuas River, has a height difference of about 1.5 meters with the proposed site
	South	On the north side of the site is directly adjacent to the moat and also shop houses and people's houses.
	West	On the east side of the site is directly adjacent to Tanjungpura Street. The road has a width of about 12 meters and the traffic is quite heavy.

Table 2. 1 Site border
Source: Author (2021)

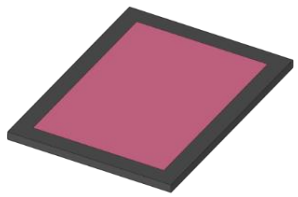
2.4.2 Building Regulation

According to Local Regulation Article 53 Paragraph 2 about Site Regulations in Trade and Service Areas are as follows:

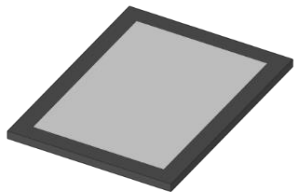
1. The highest KDB or Building Coverage Ratio (BCR) is 80%
2. The highest KLB or Floor Area Ratio (FAR) is 8
3. KDH is at least or Green Covered Ratio (GCR) 10%
4. Road Border is 10 meters
5. River Border is 15 meters



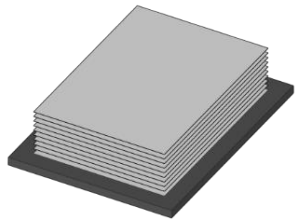
Site Area
12.900 sqm



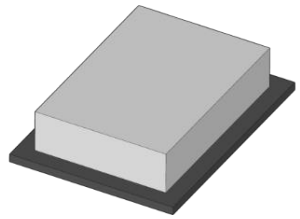
Border
10 m each side



BCR
12.900 x 80%
= 10.320 sqm



FAR
12.900 x 8 =
103.200 sqm



Building Height
Max 10 floors

Site Area			12.900
Development Site			12.900
FAR	8		
		Floor Area Max	103.200
BCR	80%		
		Ground Coverage Max	10.320
GCR	10%		
		Green Coverage Min	1.290
Construction Area Max			114.810

Table 2. 2 Building regulation calculation
Source: Author (2021)

2.5 Distribution of Facilities

There are about 7 public facilities in Kelurahan Melayu Laut, namely Plaza Khatulistiwa is a trade, Kharitas Bakti Pontianak Hospital which is a health service, Baiturrahman Mosque which is spiritual, Senghie Port Pontianak which is a connecting infrastructures, Bank BRI Pontianak Branch Office which is financial services and Waterfront City Pontianak which is a tourism area.

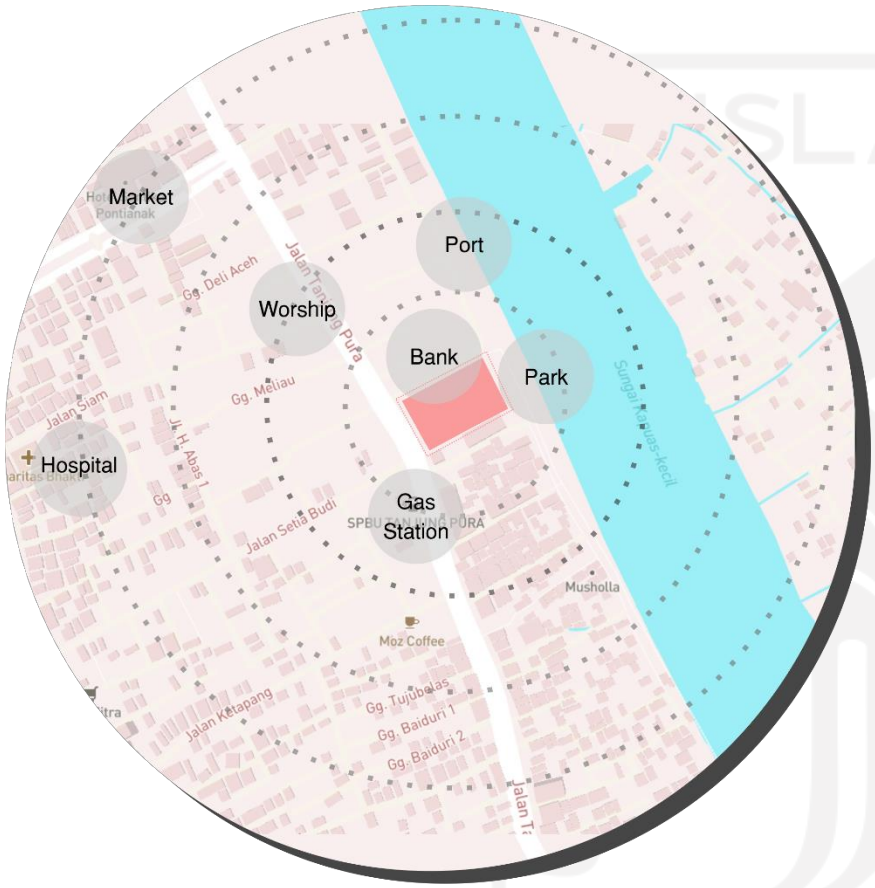


Figure 2. 10 Distribution of facilities
Source: Author (2021)

Type of Public Facilities	Distance	Public Facilities
Hospital	1100 m	Rumah Sakit Kharitas Bakti Pontianak
Market	600 m	Khatulistiwa Plaza
Worship	850 m	Masjid Baiturrahman
Gas Station	1200 m	Pusat Pengisian Bahan Bakar (SPBU)
Port	500 m	Senghie Port Pontianak
Bank	130 m	Bank BRI Kantor Cabang Pontianak
Park	50 m	Waterfront City Pontianak

Table 2. 3 Distribution of public facilities near the site
Source: Author (2021)

03 THEORITICAL STUDIES

CHAPTER III
THEORITICAL STUDIES

3.1 Shopping Center

3.1.1 Shopping Definition

According to the International Council of Shopping centers or ICSC (2013), the mall is a building that has several retail and commercial activities planned and developed, and has a parking lot for building users. Moreover according to the Presidential Regulation of the Republic of Indonesia Number 112 of 2007, Concerning the Arrangement and Construction of Traditional Markets of Shopping Centers and Modern Stores that shopping centers are one (1) or many buildings designed vertically and/or horizontally. The building has a place that is rented or sold to people who have businesses in the mall so that they can conduct trade activities to the visitors.

Based on the above sources, it can be concluded that the mall is one or many mass buildings that are erected vertically or horizontally with an architectural form in the form of a recreation room that is arranged in such a way as to connect two or more crowded points surrounded by retail or sales places of various needs aimed at commercial activities. In the mall visitors do recreation by walking around and seeing the goods sold by retail before deciding to enter the retails.

3.1.2 Shopping Center Function

According to Maitland (1985), shopping center has an economic function, namely as a supporter of the city's economy and shelter and distribution of production from producers for the needs of the community (consumers).

3.1.3 Shopping Center Classification

According to some sources, the classification of malls as follows:

A. Retail Type

According to Gibbert (1959), there are three types of goods sold in malls and there are in the types of stores that are as follows:

1. Convenience Shop is a retail that provides and sells daily necessities.
2. Demand Store is a retail that provides and sells certain goods needed by consumers.
3. Impulse Store is a retail that sells high or luxury goods to consumers.

B. By Area

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 m2 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 m2 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 m2.

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 system 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.

D. By Location Element

According to Marlina (2008), the characteristic that distinguishes the mall from other shopping centers is the generator that is a line that connects the mall with the center of the crowd.

Based on the study, the **generator mall is a line that connects with the waterfront area** which is one of the center of the crowd.

3.1.4 Shopping Center Elements

According to Aji Bangun and Harvey M. Rubenstein in Nurrachman (2011), the mall has the following elements:

A. Atrium

The atrium is an empty space (void) from the first floor to the roof, this room is a space that receives sunlight directly into the building and is the orientation center of the building.

B. Primary magnets

The main magnet in the mall has a function that serves as the main point that becomes the center of attention in the mall or can be called a landmark. The effective location of the primary magnet or anchor is located at each end of the corridor because it requires a large area.

C. Secondary Magnets

Secondary magnets or retail-retail is one of the important parts of the mall that so that the mall can be referred to as a shopping center. The placement of secondary magnets takes into account the location of the primary magnet which is the main attraction in the center of the mall.

D. Corridors

Corridor is a space for the circulation of mall users. Corridors in the mall are divided into two kinds, namely as follows;

1. The Main Corridor is a corridor that is disorientated from shops, the main corridor has a width of approximately 15 meters
2. Additional Corridor (Secondary) is a corridor located along the main corridor. The secondary corridor has a width of at least 6 meters.

E. Street Furniture

Street Furniture is a design that complements the street that integrates with trees. Street furniture can be in the form of street lamps, statues, ponds, seating, garden pots, trash cans, and others.

Based on the above study, the shopping center design uses **atrium elements with voids to get natural lighting on the building, with the placement of anchor tenants at the end of the corridor as their primary magnet. Mall landscaping design also adopts street furniture elements as a complement to the site plan that can beautify and comfort the atmosphere of the mall to visitors.**

3.1.5 Shopping Center Typologies

According to Rubenstein (1978), various typology of shopping centers:

A. Open Shopping Center

Open directly to sunlight, is a shopping center without cover, weather protection is done through the use of a continuous canopy along the shop front. The advantage is a broad impression, in terms of easy technical implementation so that the cost is cheaper but the disadvantages are on the constraints of climate control so as to affect the comfort between separate retail.

Figure 3. 1 Open Mall
Source: Rubeinstein, H. M., Central City (1978)

B. Enclosed Shopping Center

Protected from the weather, it is a mall with roof protectors. The advantage is climatic control (comfort). While the losses are in terms of financing that is relatively expensive.

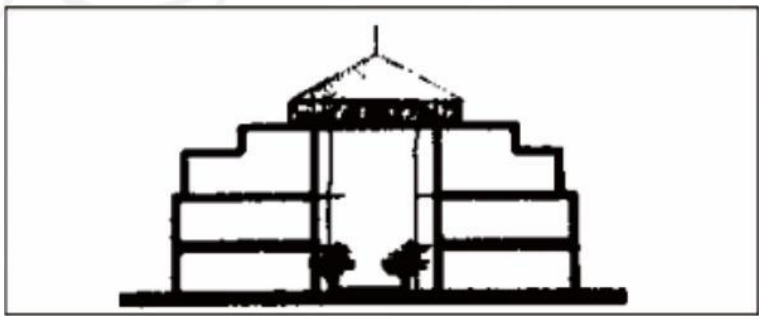


Figure 3. 2 Enclosed Shopping Center
Source: Rubeinstein, H. M., Central City (1978)

C. Integrated Shopping Center

It is a combination between an open shopping mall and an enclosed shopping mall. The emergence of this form is an anticipation of energy waste for control as well as the high technical costs of manufacturing and maintenance in closed shopping centers. In addition, this shopping center aims to concentrate the attractiveness of shopping center visitors with a closed section placed in the middle as a center and magnets that can attract visitors.

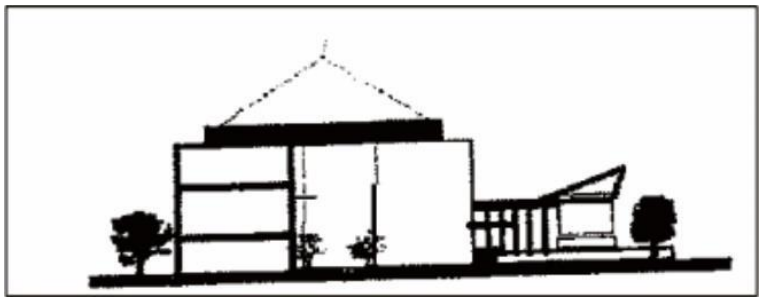


Figure 3. 3 Integrated Shopping Center
Source: Rubeinstein, H. M., Central City (1978)

Based on this source information, the most answered form of mall space solution is **integrated (semi-open) mall**, because it can provide a more dynamic choice of space between the inner and outer space, but will require a larger footprint area than closed mall.

3.1.6 Shopping Center Circulation

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

A. Multi-corridor System

Characteristics of shopping centers with a system of many corridors:

- There are many corridors without orientation explanation, without any emphasis, so all are considered the same, which is strategic only the front / near the entrance only.
- The effectiveness of the use of space is very high.
- There are shops built around the 1960s in Indonesia.

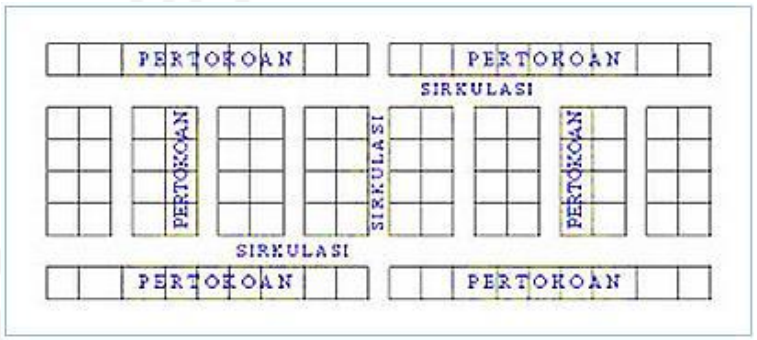


Figure 3. 4 Multi-Corridor Circulation System
Source: Rubeinstein, H. M., Central City (1978)

B. Plaza System

Characteristics of shopping centers with plaza system:

- There is a large-scale plaza / space that becomes the orientation center of indoor activities and still uses corridor patterns for space efficiency.
- Starting there is a hierarchy of the location of each store, strategic location near the plaza, and began to recognize the pattern of vide and mezanin.

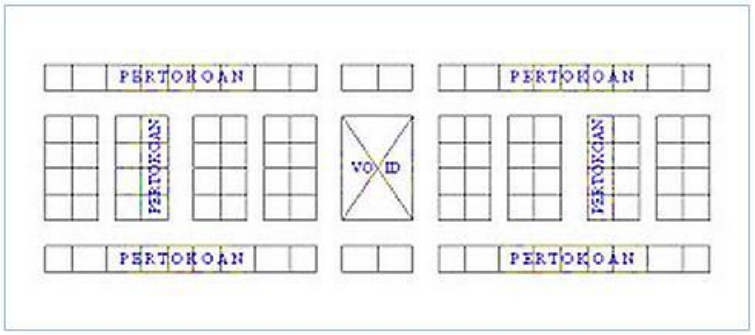


Figure 3. 5 Plaza Circulation System
Source: Avriansyah, R (2010)

Examples: Plaza Indonesia, Gajah Mada plaza, Glodok Plaza, Ratu Plaza, Plaza Semanggi, ITC Cempaka Mas, and others.

C. Mall System

Characteristics of shopping centers with plaza system:

- Concentrated on a main line facing two or more magnet shops can be a mass axis, and in large sizes can develop into an atrium. The path will be the main circulation, as it connects the two magnetic points or anchors that make up the main circulation.

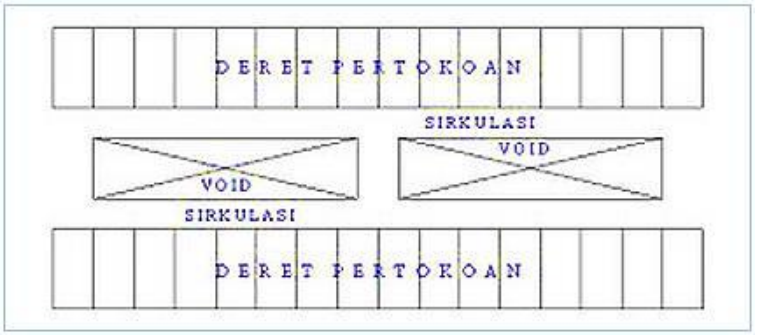


Figure 3. 6 Mall Circulation System
Source: Avriansyah, R (2010)

Example: Pondoh Indah Mall, Blok M, Atrium Senen, Mall Kelapa Gading 1-2, Ciputra Mall.

Based on the above study the most optimal system in the layout is to use the **mall corridor system**, because it can provide efficiency for mall visitors in traveling around and facilitate visual views of retail space in the building.

3.1.7 Shopping Center Pattern

Mall patterns should have a good visual space to avoid boring impressions for consumers. According to Darlow (1972), the pattern of mall space arrangement is as follows:

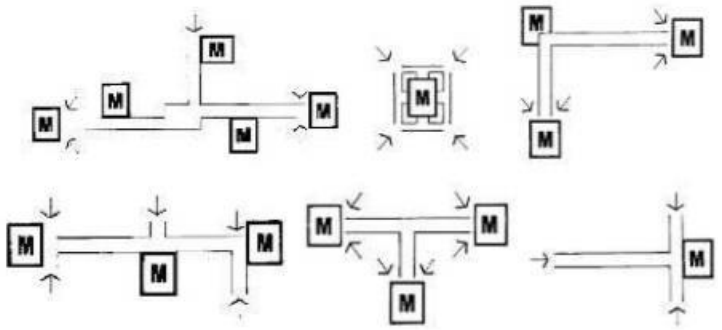


Figure 3. 7 Mall Generator Layout Pattern
Source: Darlow (1972)

"M" or magnet or generator mall is an anchor tenant. Anchor tenant is a retail that sells famous brands. Anchor tenants attract more visitors and become retail centers in the mall compared to other retail so anchor tenants need a large space.

Based on the study, **the mall's primary magnets in the form of anchor brands will be given more space** than secondary magnets that are ordinary retail, because primary magnets are often the center of attention of mall visitors.

3.1.8 Variety of Multi Level Arrangement of Shopping Mall Pieces

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

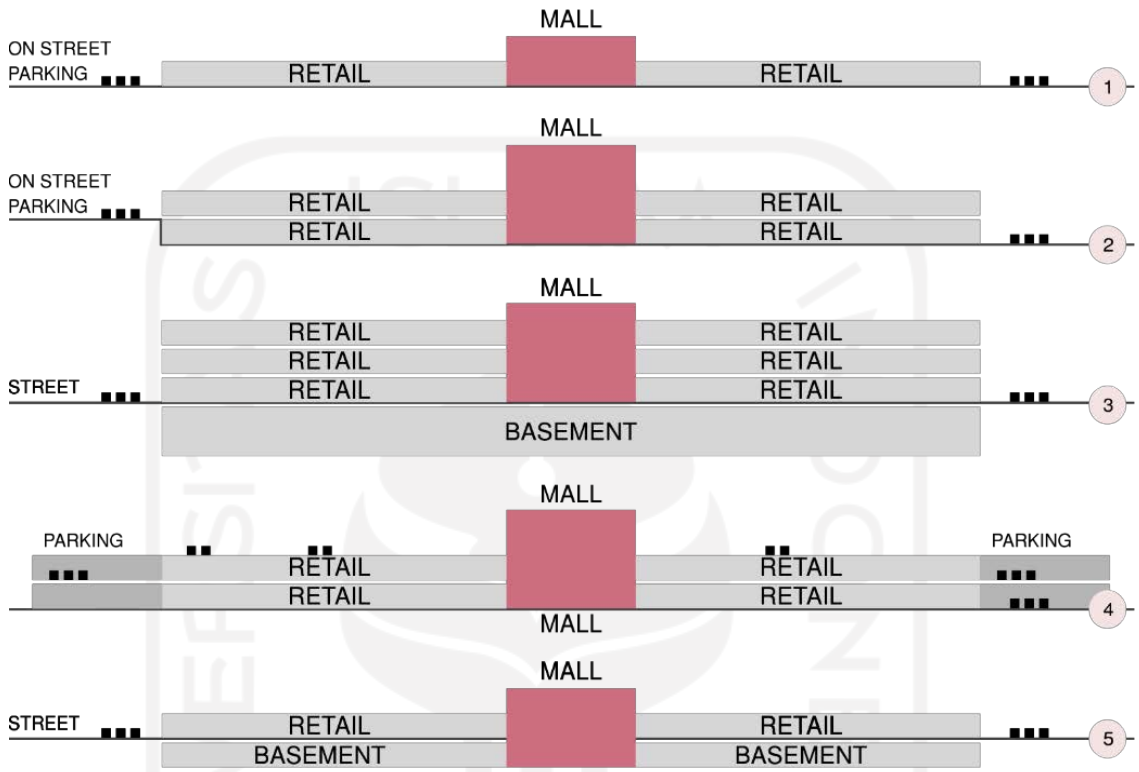


Figure 3. 8 Multi-Level Arrangement of Shopping Mall Pieces
Source: Chiara, J. D. & Crosbie , M. J., Author (2001, 2021)

1. One level mall and retail with grade parking
2. Two level mall and retail with grade parking feeding each level
3. Three level mall and retail ini CBD with basement parking
4. Two level mall and retail in sub urban CBD with multi-deck contiguous parking feeding each level
5. One level mall and retail with leasable basements and truck service tunnel: Ground level for sales basement only for service.

3.2 City Walk

3.2.1 City Walk Definition

According to Astarie (2004), city walk literally consists of 2 words, city and walk. City means city, inside city, while walk means lane, road. So abstractly, city walk means a pedestrian path within the city. The path can be formed due to a row of buildings or landscaping in the form of plants, city walk is a pedestrian with complete shopping facilities, and managed by a business developer, so that it can survive and develop.

City walk has 3 forming elements, namely open space, meeting space (corridor), and market place (retail). Of those three elements, the most important role in strengthening their character is pedestrian. The pedestrian is an elongated corridor surrounded by kiosks or buildings. In addition to walking access, corridors measuring no less than 5 meters can also be used for other activities. While at each intersection there is an open space that is usually used for public functions.

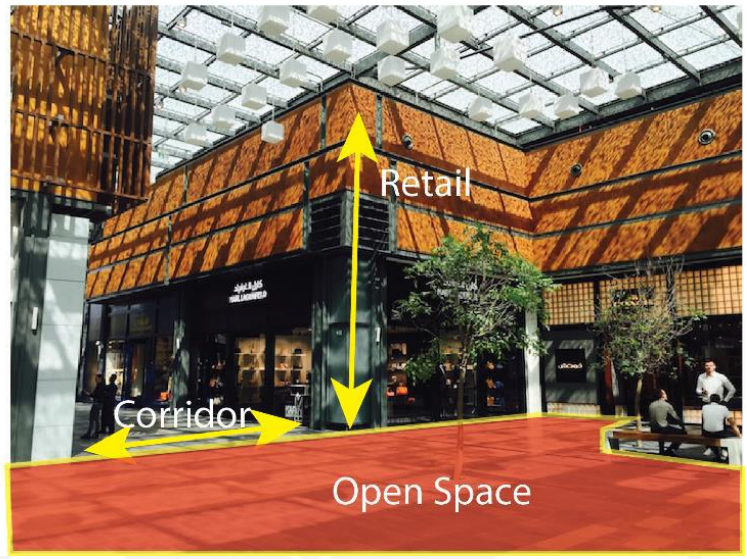


Figure 3. 9 City Walk Elements
Source: Suhri (2018)

To fulfill one of the elements of the concept of city walk in the form of providing corridors that are quite space consuming was done. But if presenting a shopping center that in fact is a commercial building where every square meter is of economic value by melting elements of city walk will certainly cause a new conflict in design. How to design a commercial building that can maximize the rental area but also meet the needs of users of wide corridors is a challenge in this design.

3.2.2 City Walk Concept in Modern Shopping Center

According to Restiyanti (2007), the emergence of the concept of city walk restores the essence of an open space in the era of classical architecture. City walk is a concept where a city is oriented towards pedestrians as well as open space as a public space.

The concept of city walk is actually a concept where a city is oriented towards pedestrians as well as open space as a public space. City walk outside a modern shopping center is a publicly owned area while the City walk in a modern shopping center is bringing the concept of the actual inner city walk into a smaller scale, which is a container / place to renovate as well as shopping and is on the land of private developer property intended as a public space. (Francisca, 2014)

According to Aditya W. Fitrianto in IAI's article 2006, City walk is actually nothing more than a street corridor devoted to a row of shops. The difference is that these streets are on property land owned by private developers or the management can be said to be under one roof and the streets are intended as public spaces. City walk comes in the form of a pedestrian corridor that connects several existing commercial and retail functions. This corridor is open (without air conditioning) and wide enough, ranging from 6 to 12 meters, depending on the type of activity to be created.

Figure 3. 10 Corridor in City Walk
Source: Suhri (2018)

In addition, he also suggested the City walk as a commercial corridor should be able to provide a sense of comfort from the tropical climate in Indonesia such as heat and rain for example. Activities in the city walk are usually more towards the lifestyle that is developing today. And places to hang out in cafes and restaurants to shops that sell trinkets related to lifestyle, such as tech goods, children's playgrounds, sports, cinemas, to handicrafts. The intersection of City walk corridors in a shopping mall is often used as an open space for stage performances. This space also serves as a liaison or mass of buildings that are usually divided. The function of this activity is very helpful in inviting visitors at certain times such as weekends.

3.2.3 City Walk Elements in Shopping Center

From the understanding of the concept of city walk above can be drawn conclusions about the main elements of City walk formation, namely open space, pedestrian, and retail (building).

A. Open Space in Shopping Center

The intersection of city walk corridors in a shopping mall is often used as an open space for stage performances. This space also serves as a liaison or mass of buildings that are usually divided.

Open space function on city walk:

- Used for stage / entertainment venue
- As a connecting room or mass buildings that are usually separated.

B. Pedestrian in Shopping Center

Pedestrian is derived from the word *pedos* (Greek) meaning foot. So that pedestrians can be interpreted as pedestrians or people who walk, while the road is a medium on earth that facilitates humans in the purpose of embroidery. Thus, pedestrian in this case has the meaning of movement or movement of people or people from one place as a starting point to another as a destination by using the mode of walking.

The most important feature on open-air shopping mall pedestrians is the shady pedestrian. The form of pedestrian cover can be provided through 2 ways, namely:

- By reversing the shops/retail from the main building upstairs.
- By adding a canopy.

Pedestrian Zone in a shopping mall with city walk concept according to Portland Pedestrian Design Guide (1998):

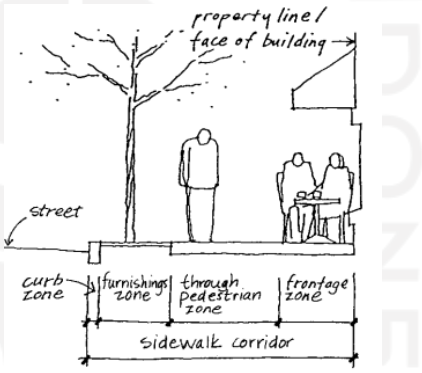


Figure 3. 11 Typical section of pavement in commercial areas Source: Portland Pedestrian Design Guide (1998)

- Curb Zone

  Curb zone prevents water from entering the pedestrian area. The width of the curb zone is at least 150 mm and the height is 175 mm for commercial areas.

- Furnishing Zone

  The furnishing zone functions as a buffer area pedestrian as well as a laying area for elements such as trees, signage, trash cans, and other street furniture

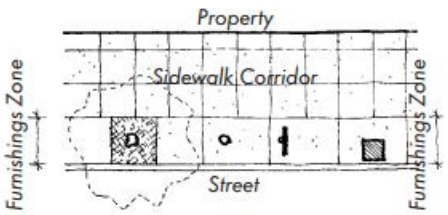


Figure 3. 12 Typical furnishings zone on pedestrians
Source: Portland Pedestrian Design Guide (1998)

- Through Pedestrian Zone

  In the pedestrian zone of the commercial area the addition of paving is necessary to look more attractive. The width of the pedestrian zone is according to the needs, with a minimum human space of 60 cm. In the pedestrian area in general, the width of the pedestrian zone is at least 2.5 m. In the City walk area of a city the width of the pedestrian zone is at least 1.9 m. In the local area the width of the pedestrian zone is at least 1.5 m. The pedestrian area should be robustly and stable, slip-proof and accessible for wheelchair users and other assistive transport models.

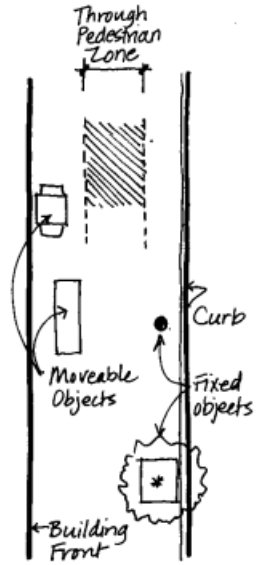


Figure 3. 13 Typical pedestrian zone on sidewalk corridor
Source: Portland Pedestrian Design Guide (1998)

The comfortable slope of the pedestrian ramp is with a ratio of 1:12 for furnoshing zone, 1:50 for pedestrian zone, and 1:12 for frontage zone.

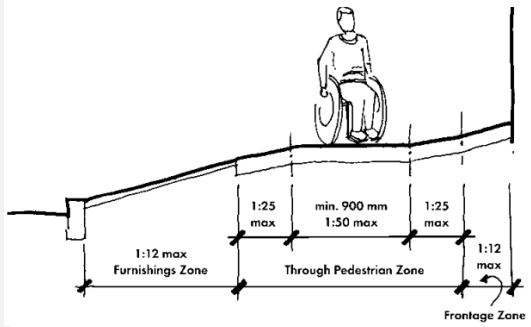


Figure 3. 14 Convenient pedestrian slope comparison Source: Portland Pedestrian Design Guide (1998)

- Frontage zone

  The frontage zone is a transition zone between the pedestrian area and the building line, to provide pedestrian comfort distance to the frontage of the building. In this zone are elements placed such as chairs, public telephones, guide poles and utility poles.

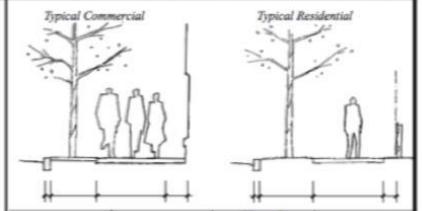
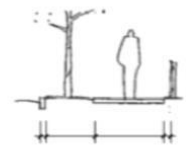
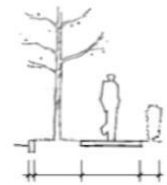
Sidewalk Corridor	Application	Recommended Configuration
4.6 m (15' - 0")	**Recommended** in Pedestrian Districts, especially for arterial streets or where ROW width is 24.5 m (80'-0").	 Curb Zone: 150 mm (0' - 6") Furnishings Zone: 1.2 m (4' - 0") Through Pedestrian Zone: 2.5 m (8' - 0") Frontage Zone: 750 mm (2' - 6")
3.7 m 12' - 0"	**Recommended** for City Walkways, for local streets in Pedestrian Districts, and for streets where ROW width is 18.2 m (60'-0").	 *Typical Commercial* *Typical Residential* Curb Zone: 150 mm (0' - 6") Furnishings Zone: 1.2 m (4' - 0") Through Pedestrian Zone: 1.9 m (6' - 0") Frontage Zone: 450 mm (1' - 6")
3.4 m 11' - 0"	**Recommended** for Local Service Walkways where ROW width is 15.2 m (50'-0"). **Accepted** for City Walkways where ROW width is 15.2 m (50'-0") provided Through Pedestrian Zone is 1.9 m (6'-0").	 Curb Zone: 150 mm (0' - 6") Furnishings Zone: 1.2 m (4' - 0") Through Pedestrian Zone: 1.9 m (6' - 0") Frontage Zone: 150 mm (0' - 6")
3.0 m (10' - 0")	**Recommended** for Local Service Walkways in residential zones of R-7 or less dense where ROW width is less than 15.25 m (50'-0").	 Curb Zone: 150 mm (0' - 6") Furnishings Zone: 1.2 m (4' - 0") Through Pedestrian Zone: 1.5 m (5' - 0") Frontage Zone: 150 mm (0' - 6")

Figure 3. 15 Standard Proportions on Sidewalks
Source: Portland Pedestrian Design Guide (1998)

From the table above can be concluded that the first option about the dimensions of sidewalk corridor; Corridors that are 4.6 meters wide and have a minimum length of 24.5 meters are well worth applying (recommended).

C. Retail in Shopping Center

Building on the concept of city walk is one of the city walk forming elements in modern shopping centers. Because of its function as a commercial place, the building must exist to fulfill the commercial function in the form of this modern shopping center.

1. Pattern of Shopping Center Buildings

According to ULI (1985) the pattern of building configuration in shopping centers is an important part of the site planning process for tenants and developers. The consideration of the developer is to determine the pattern of the building and place the main tenant.

These tenants are arranged in such a way that it creates a shopping traffic lane between the main tenant and the other tenant.

Based on these configurations, there are various and pattern buildings and configurations:

- The linear shape is a row of shops with a straight line united by canopies and pedestrians along the front of the shops. Buildings of this type are usually backdated from the road boundary and most of the parkites are located between roads and buildings. This type of arrangement is most often applied to neigbourhood shopping centers with the laying of the main tenants at the end.
- L and U form is a development of a large linear form of shopping centers and small money community shopping centers, while the U-shape corresponds to a large shopping center community.

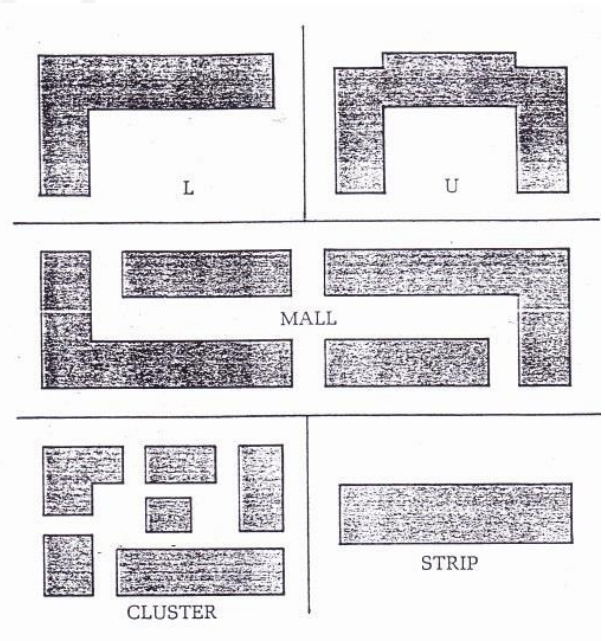
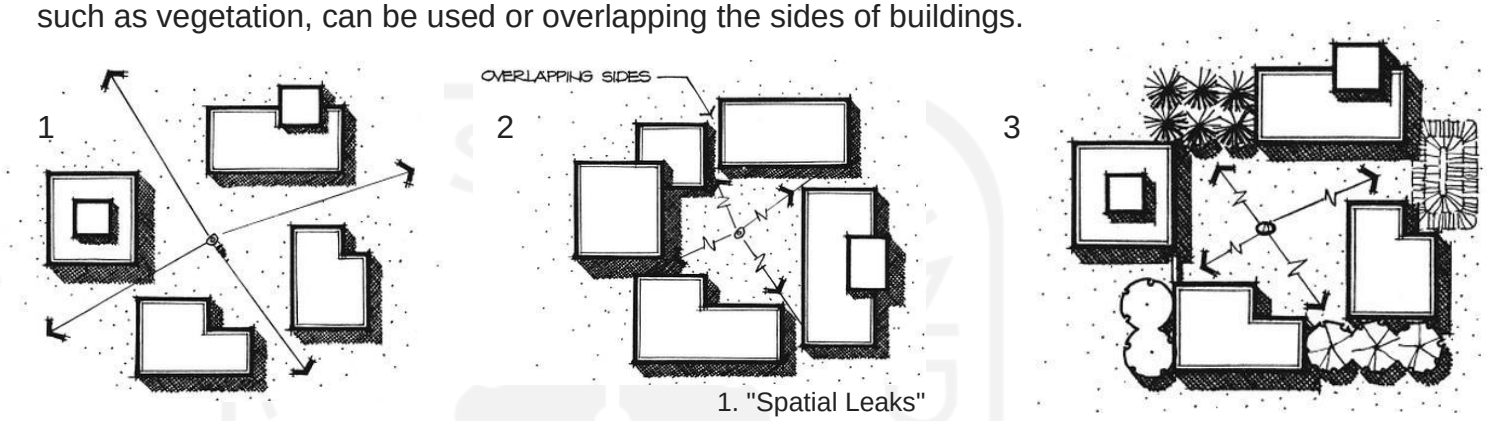


Figure 3. 16 Shopping Centre Building Configuratio
Source:: Uli- The Urban Land Institude, (1985)

- Mall, is an area for pedestrians located between linear buildings facing, then the mall becomes an area for pedestrians to go downstream in shopping. The mall has become a regional shopping center standard and is also being applied to the community shopping center.
- Cluster, is a development of the concept of malls, but on the application of clusters is more emphasized on the use of several masses of stand-alone buildings, separated by a path for pedestrians or parks in the regional shopping center. Cluster shapes vary by using forms from the letters X, Y, and halter.

2. Building Layout

According to Booth & Norman. K (1983) the high level of enclosure is obtained from the existing or not boundaries, as is the wall in the building. When clusters form a space in the middle, but it is still possible to look out of the area, so-called "spatial leaks" are formed. To improve the enclosure, other elements, such as vegetation, can be used or overlapping the sides of buildings.



1. "Spatial Leaks"

2. Overlapping the sides of buildings minimizes "spatial leaks"

3. Other landscape elements minimize "spatial leaks"

Figure 3. 17 Spatial Leaks
Source: Booth, Norman. K. (1983)

A group of buildings arranged to form a line will not create a clear enclosure, so it does not form a space. So is the case with randomly arranged groups of buildings, with no designed arrangements.

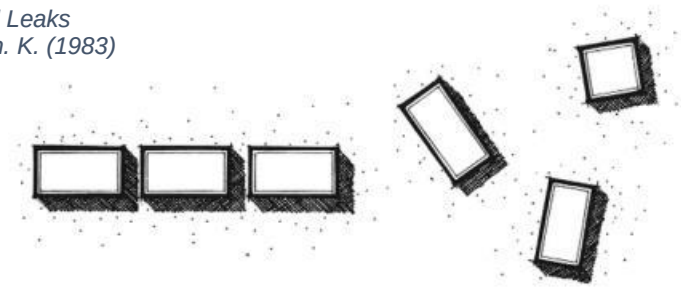


Figure 3. 18 Building setup that does not create enclosures
Source: Booth, Norman. K. (1983)

The easiest technique to organize a group of buildings to create a space is to form a continuous surrounded façade wall, because the middle room will be easily felt. But the resulting space will feel static and difficult to move.

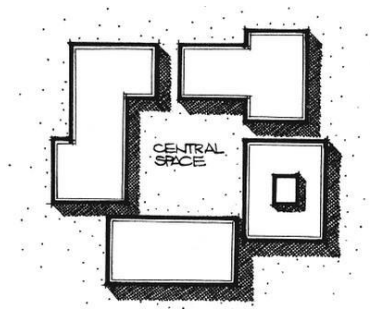


Figure 3. 19 Central space
Source: Booth, Norman. K. (1983)

By creating a central space created has a parallel hierarchy. In the composition of the created space, there is no focus. To create focus in space, a main space can be created with sub-spaces around it.

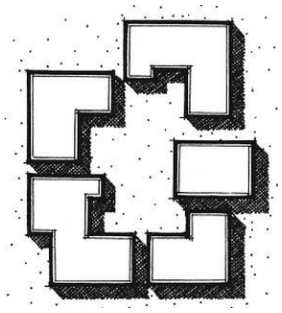


Figure 3. 20 The main and subspaces create focus
Source: Booth, Norman. K. (1983)

3. Building Character

   According to Booth & Norman.K (1983) the character of the building affects the quality of the space created. The character of the building includes the color, texture, detail, and proportion of the façade of the building that affects the personality of the outside space around the building. The façade of the building can give the impression of cold or warm in the surrounding environment.

4. Types of Building Groups and Spaces Formed

   - Centerlized Open Space

     The basic concept of this type is to arrange groups of buildings around a centerlized open space that connects the entire building. The disadvantage of this type of space is that the space formed has a strong enclosure level, so that a dead end is formed. Humans are forced into this space, not through this space.

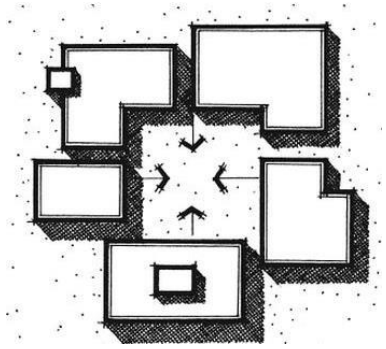


Figure 3. 21 Centerlized open space
Source: Booth, Norman. K. (1983)

   - Focused Open Space

     The concept of this type of space is to form an open space as a focus by opening one side, thus allowing a view towards that side. But to keep creating enclosures, other landscape elements can be used.

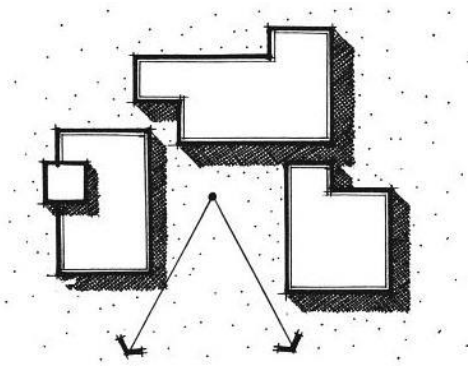


Figure 3. 22 Focused open space
Source: Booth, Norman. K. (1983)

- Linear Space

  An elongated space formed from the arrangement of an elongated building and creates space at one or both ends.

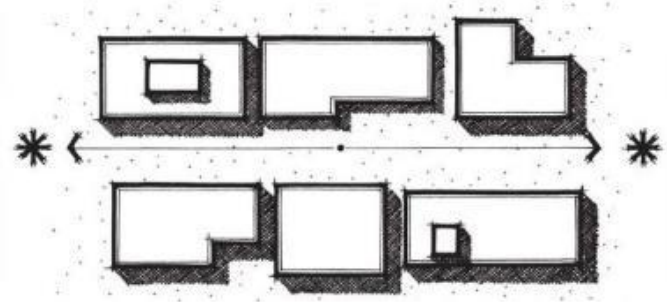


Figure 3. 23 Linear space
Source: Booth, Norman. K. (1983)

- Organic Linear Space

  An elongated space formed from the arrangement of an elongated building and creates space at one or both ends, but has a path that is not simple. For example it has an angle at any given distance.

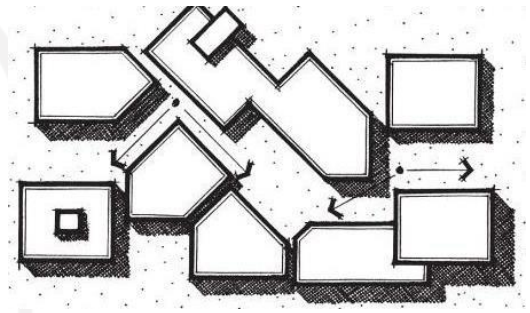


Figure 3. 24 Organic linear space
Source: Booth, Norman. K. (1983)

3.3 Waterfront Design

3.3.1 Waterfront Definition

Waterfront definition is literally a riverside area, a part of the city bordering the water. Waterfront definitions include the dynamic area of the cities and towns where land and water meet (Breen, 1994); and Interface between land and water (Wrenn, 1983). The term waterfront has actually long been used for the development of several urban areas located near the water's edge.

3.3.2 Waterfront Types

According to Breen (1994) based on its function, waterfront can be distinguished into seven types, namely:

1. **Cultural Waterfront** which is a waterside area that has a function as an activity in the field of education and cultural fields. The trick is to make use of the waterside area as a place of culture and knowledge.
2. **Environmental Waterfront** which is a waterside area that utilizes the potential of the environment in full so as to improve the quality of the environment.
3. **Historical Waterfront** is a waterside area that has historical buildings in the area.
4. **Mixed-Used Waterfront** is a waterside area that has a combination of various building functions such as commercial, health, culture, education, and others.
5. **Recreational Waterfront** is a waterside area that provides facilities and infrastructure for various recreational activities. Recreational activities can include walks or breaks in parks, playgrounds, fishing grounds, and other waterside facilities.
6. **Residential Waterfront** is a waterside area that has a function as a resident in the category of residential buildings, such as apartments, hotels and resorts.

7. **Working Waterfront** is a waterside area that serves as a place for fishing, ship repair, and port.

It can be concluded that according to Breen (1994), there are seven (7) types of waterfront areas namely cultural waterfront, environment waterfront, historical waterfront, mixed-use waterfront, recreational waterfront, residential waterfront, and working waterfront.

Based on the description above, the design of waterfront suitable to support the mall is **recreational waterfront** because it alludes to The Pontianak City Regulation No. 2 of 2013 concerning Spatial Plan of Pontianak City Region year 2013-2033 Article 1 paragraph 13 to optimize the waterfront Kapuas River as a recreational facility for tourists.

3.3.3 Waterfront Criteria

According to Prabudiantoro (1997), the general criteria of waterfront arrangement and design are:

1. Located and located on the edge of a large area of water (sea, lake, river, and so on).
2. Usually a port area, trade, settlement, or tourism.
3. Has the main functions as a place of recreation, settlement, industry, or port.
4. Dominant with scenery and orientation towards the water.
5. The construction is done in the vertical and horizontal direction.

3.3.4 Recreational Waterfront

According to Imammul Izzah (2018), the criteria of recreation areas in cities that have rivers are:

6.13.1 It has a river that can be used for activities with enclosed or open space.

6.13.2 Development is oriented towards the aquatic area by maintaining open space.

6.13.3 Tread differences are used to develop tourism activities.

6.13.4 Utilization of the river as a means of river tourism.

3.3.5 Waterfront Tourism Aspects

Tourism has been a growing idea since 1811. According to the Law. No. 9 year 1990 article 1, tourism is an activity or part of activities that are done voluntarily and are temporary to enjoy the attractions and attractions. Tourism has a function other than economics, namely the interaction of fellow users so as to cause sociological, political, psychological, and ecological factors. The type of tourism is basically to show the development of the modern economy today, namely:

1. Shopping Tourism is people who have the purpose to visit commercial places, so that it becomes an attraction for visitors who have an impact on the needs of facilities and infrastructure.
2. Marine Tourism is people who visit places that have activities in the water such as fishing, sailing, swimming.

These tourist activities will lead to the development of commercial places as one of the tourist attractions. For the convenience of visitors, commercial spatial places are divided into:

a. Shopping center is a centralized shopping area
b. Shopping strips are shopping areas that are on the edge of the main road.
c. Shopping street is a shopping area that is on the road that is still passed by vehicles, usually has a linear pattern.
d. Pedestrian Shopping is a shopping area that has retails with roads that can only be passed by pedestrians.

3.4 Precedents

3.4.1 Inventive Principles Precedents

(2) Taking Out

Project Name: City Walk Dubai **Location:** Dubai, UAE

Architect: Dewan Architects and Engineers **Year:** 2016

City Walk is a three-phase mixed-use regeneration of the beachside Jumeirah district. City Walk is located on Safa Road between Al Wasl Road and Sheikh Zayed Road at the Dubai Mall interchange.

Problem: Taking out the 'virus transmitter' out of the building. Visitors have an important role in the building but may have a risk that they will transmit the virus inside. So it takes effort to get the 'troublemakers' out of the building. For this purpose it needs larger space.

Taking Out aspect **can be show in this precedent by the existing corridor that creates big number of space between shops**. City Walk Dubai is non-motorized development and it's fully walkable within its boundaries, this can implemented to the design for help to prevent the virus transmitting by provide more open space. But also have to make sure that the inside part of the building connected with the outside part of the building.

Figure 3. 25 City Walk Dubai
Source: https://propsearch.ae/dubai/city-walk

Paper: Architectural design strategies for infection prevention and control (IPC) in health-care facilities: towards curbing the spread of Covid-19

Author: Udomiaye Emmanue, Eze Desy Osondu, & Kalu Cheche Kalu

Year: 2020

Guidelines: Provide adequate spacing in waiting areas, corridors, hallways, stair and entrance lobby to support social distancing of at least 1000 mm apart. This will not only reduce contact transmission but will create safe distancing. Corridors should be designed to discourage informal conversations by eliminating nook with bench or ledge as shown in image 1.13.

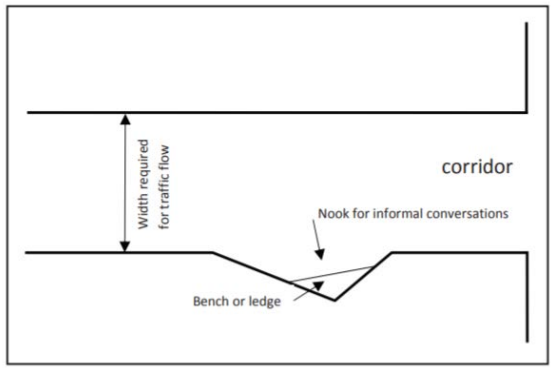


Figure 3. 26 Example of corridor nook earlier proposed and being use by some hospitals
Source: Jane Carthey (2008)

(39) Inert Atmosphere

Project Name: Asmacati Shopping Center **Location:** Izmir, Turkey

Architect: Tabanlioglu Architects **Year:** 2009

Asmacati Shopping and Meeting Point is located in the city of Izmir. The center appreciates and joins the lifestyle of Izmir where people prefer to spend time outdoors with respect to warm climate.

Problem: Find atmosphere situation that can reduced any possible virus transmission.

Inert Atmosphere aspect can be show by the semi-open shopping facility naturally creates leisure zones between shops. **Open air patios that offer sun exposure (not fully) which can significantly correlated with recovery from Covid-19 patients.** Although, sun exposure is not significantly correlated with the occurrence and death due to Covid-19. It also give relaxing feeling under the shadow and glitters of the bower made up of contemporary material, the design imitates grape leaves of the local landscape.

Figure 3. 27 Asmacati Shopping Center
Source: https://www.archdaily.com

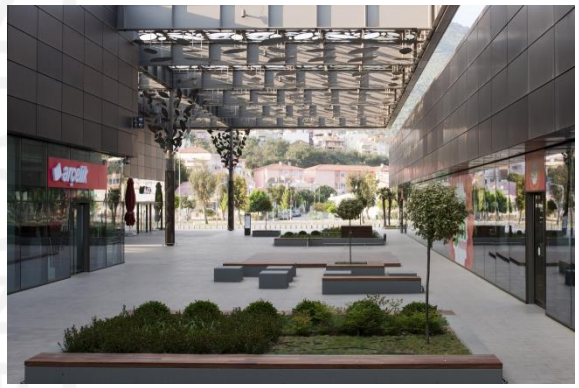


Figure 3. 28 Asmacati Shopping Center
Source: https://www.archdaily.com

(17) Another Dimension

Project Name: Cihampelas Walk **Location:** Bandung, West Java

Architect: Fauzan Noe'man **Year:** 2004

Cihampelas Walk is a shopping mall located at Jalan Cihampelas 160 Bandung. The concept adopted by Cihampelas Walk is city walk which is the amount of open space rather than built space that functioned as a commercial building.

Figure 3. 29 Cihampelas Walk
Source: https://panasonic.net/

Problem: moving objects in two or three-dimensional spaces. In this case the object of contradiction is a corridor that allows to cause a lot of direct interaction so as to have an impact on the increasing spread of the COVID-19 virus.

Figure 3. 30 Cihampelas Walk Plan
Source: http://eprints.itenas.ac.id/

Another Dimension aspect **can be show by pedestrian circulation in ciwalk that is divided into three so that visitors can experience presenting different space**, this can be applied in Pontianak City Walk Center in an effort to reduce the spread of the COVID-19 virus.

3.4.2 Waterfront Design Precedents

Open Space

Project Name: Cincinnati Riverwalk **Location:** Ohio, US

Architect: Chris Precht **Year:** 2020

Figure 3. 31 Cincinnati Riverwalk
Source: https://pinterest.com/

The Cincinnati Riverwalk is a waterside area located in Ohio, United States. A recreational waterfront that has a space for recreation with facilities for activities such as exercise, social, and for education. Cincinnati Gateaway is a "welcome" monument to visitors and the Riverwalk is a 400-foot promenade area.

Figure 3. 32 Cincinnati Riverwalk
Source: https://sasaki.com/

The waterfront is a venue for local events. There is a plaza in the waterfront area that can serve as a space to put outlets and exhibition items when there is an event in progress. There is an open area which is a public area for activities such as picnics and hosting major festivals. For activities such as music performances and other creative events, there is a Procter and Gamble Performance Pavilion building that is specially functioned to accommodate these activities.

The most prominent architectural design on this waterfront is the design of the Gateway Structure. The structure among others are carvings contained on fences, roads, places used to see the view. The structure material on the waterfront is taken from local materials that have a local history. There is a pedestrian path called Serpent Step which has a visually informative design related to local history. For example, the carvings and writings listed along the pedestrian path. Overall, the

waterfront carries a "round" concept inspired by the curved shape of the coastline located from the masses as well as the space on the waterfront such as the shapes of overlooks, boathouses, ice-skating rinks and plazas.

Cincinnati Gateway, Riverwalk Pete Rose and Bicentennail Commons installations and facilities are as follows;

1. Riverwalk
2. Food stall / café
3. Marine tourism (fishing, boat rental)
4. Amphitheater
5. Sports arena – tennis, volleyball, fitness, ice-skating, fitness
6. Event Pavilion
7. Overlook

From the study can be known some facilities and installations that can be applied to a waterfront, especially the recreative aspect. Then culinary spaces such as cafes, food stalls and restaurants are also provided as part of activity support in the waterfront area. Spaces such as promenades and riverwalk can also be used as a space for exercise such as jogging. These facilities and installations have an important role to play when reviewed from the number of visitors coming to the waterfront area. With these facilities and installations, the waterfront provides a variety of activities options that can be done by the public in the waterfront area.

04

CONCEPTUAL EXPLORATION

CHAPTER IV
CONCEPTUAL EXPLORATION

4.1 Design Concept

Explicitly the concept has been mentioned in the title of this report. 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 Melayu Laut Village by paying attention to post-pandemic conditions.

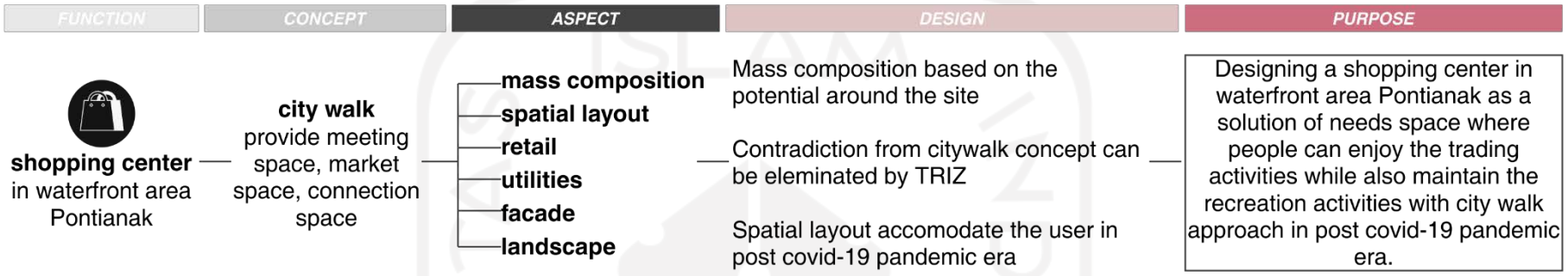


Figure 4. 1 Design Concept
Source: Author (2021)

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 poor urban space arrangement by adopting the concept of city walk, so that in the building visitors can feel the nuances and atmosphere as found in the city space.

4.2 TRIZ

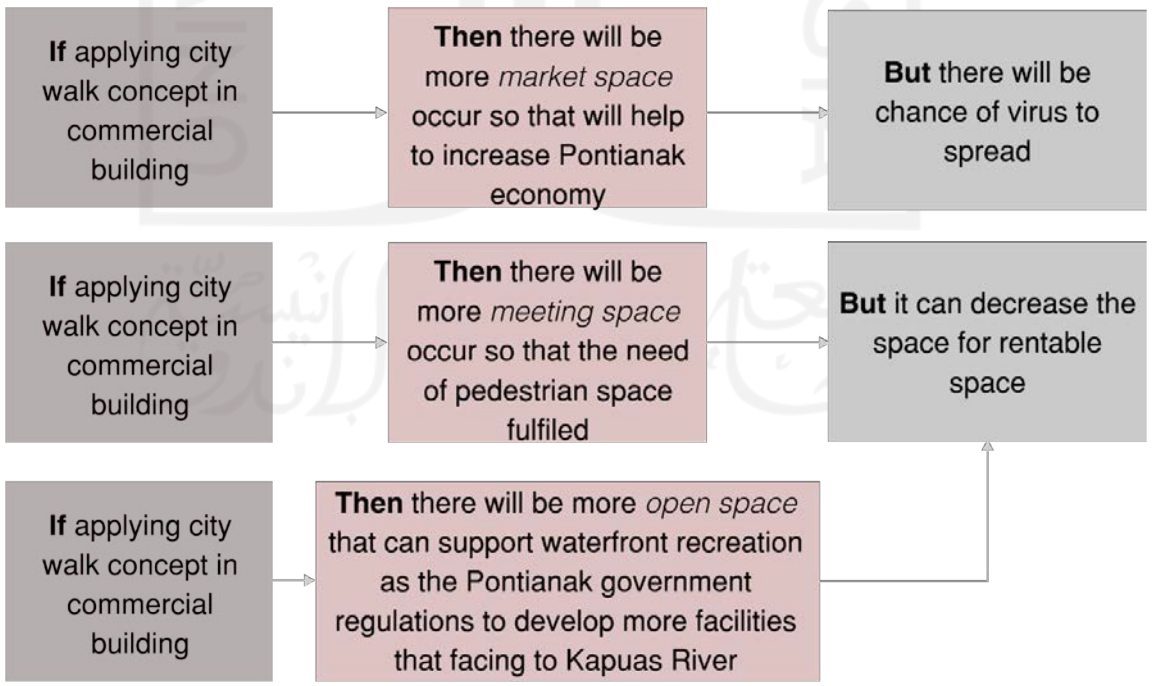


Figure 4. 2 Contradiction Framework
Source: Author (2021)

The issues in this project are the state of economic opportunity that continues to decline in the post COVID-19 pandemic era, it is able to be solve by applying city walk concept in commercial building, however the worsening features that might happen is increasing chance of virus spreading. Another issues even if city walk concept applied in commercial building there are still problem that occur by providing big number of meeting space. Therefore other improving features is to provide a sufficient pedestrian space, however the worsening features that might happen is there would be more space use for their movement.

The inventive principles resulting from the matrix are:

City Walk concept to create more market space that will help to increase Pontianak economy but also creating chance for virus spreading →
2 : Taking Out
17 : Another Dimension
18 : Mechanical Vibration
39 : Inert Atmosphere

City Walk concept to create more meeting space that will fulfiled the need of pedestrian space and Pontianak government regulations to develop more facilities that facing to Kapuas River, but also decrease the rentable space in commercial building →
2 : Taking Out
10 : Preliminary Action
26 : Copying
34 : Discarding and Recovering

4.3 Analysis

4.3.1 Site Analysis

1. Site Orientation & View

   View analysis is used to get the orientation direction of the façade, as well as the layout of the building that leads to a positive and negative view of the surrounding existing conditions. Here's a view analysis for this plan.

2. Sun Orientation

   Solar analysis is used to determine the direction of sunlight into and out of the building, this analysis aims to data the process of determining the layout of the room, mass orientation and the need for indoor openings.

3. Wind Direction

   Wind analysis is used to determine the direction of wind inside and outside the building, this analysis aims to data the process of determining the mass layout, mass orientation of buildings.

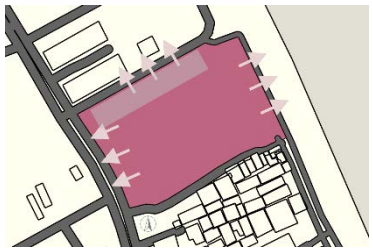
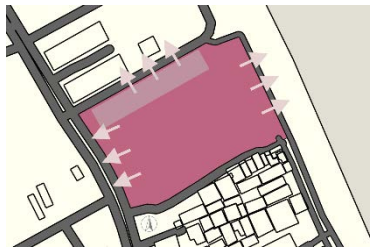
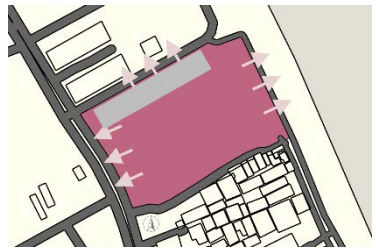
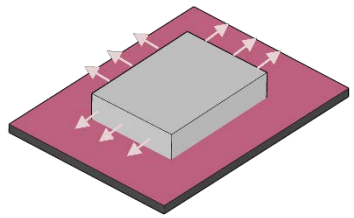
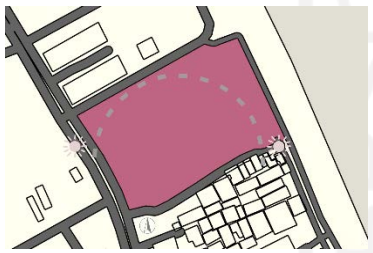
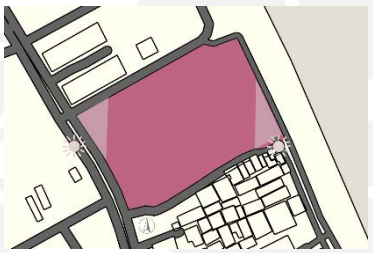
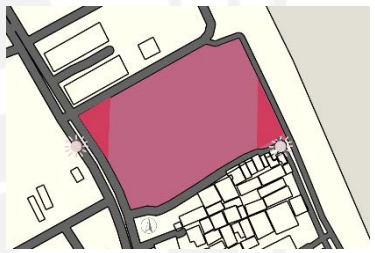
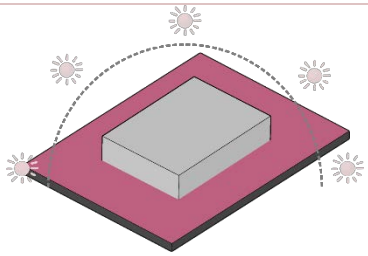
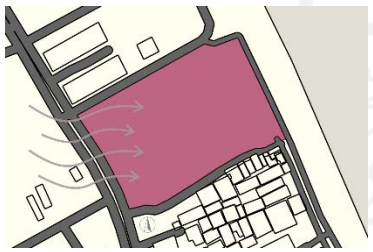
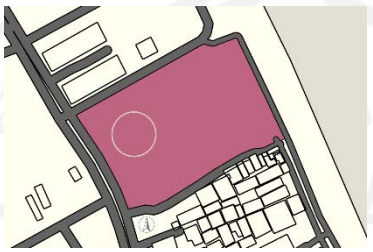
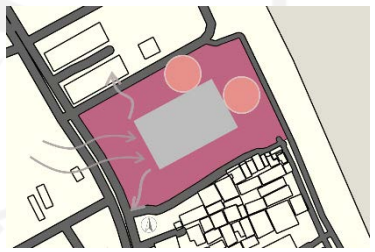
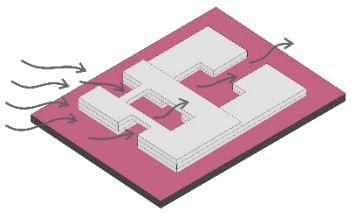
Analysis	Data	Potency	Obstacle	Response
1. Site Orientation	 The site orientation faces directly to Tanjungpura street, Barito street, and Sungai Kapuas	 Has a view facing direct to Tanjungpura street, Barito street, and Sungai Kapuas	 Part of the site has existing building with height approximately 9 meter	 Demolished the exsting building and make façade and shape adjusting the view
2. Sun Orientation	 The sun moves from the east to the west of the site	 The west and east of the site receive plenty of sunlight	 Incoming sunlight could bring heat to enter the building	 The location of the building faced between north and south. The openings will be along the North and South sides.
3. Wind Direction	 The biggest wind direction is moving from West to the East	 The West side of site receives sufficient wind for air exchange	 If a mass placed then the wind will be blocked throughout the site	 Forming wind circulation path so that the wind can still enter the back of the site

Table 4. 1 Site Analysis
Source: Author (2021)

4.3.2 User Analysis

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.

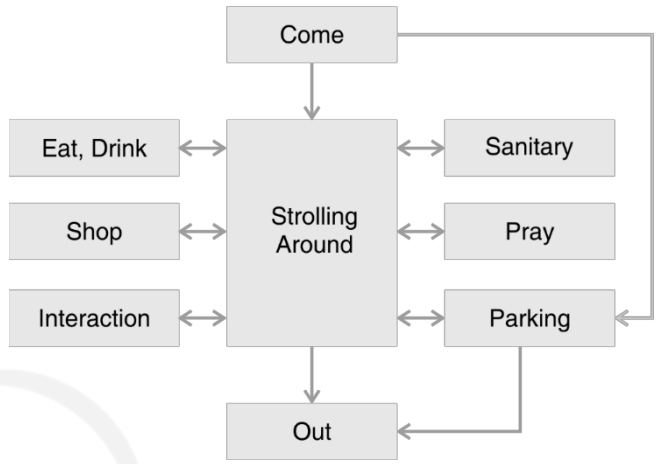


Figure 4. 3 Visitors flow activities
Source: Author (2021)

B. Tenant

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

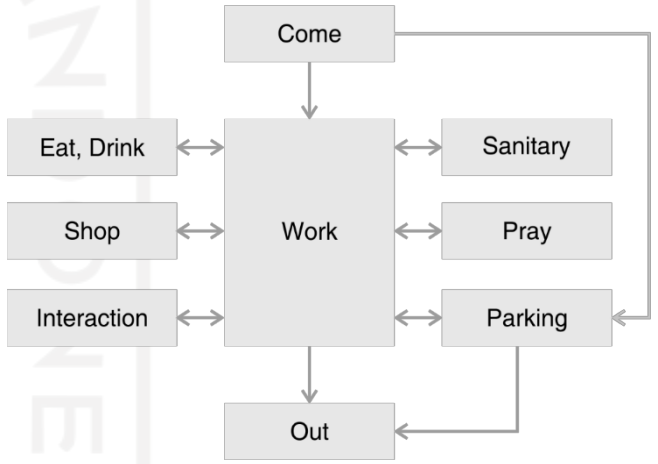


Figure 4. 4 Tenant flow activities
Source: Author (2021)

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

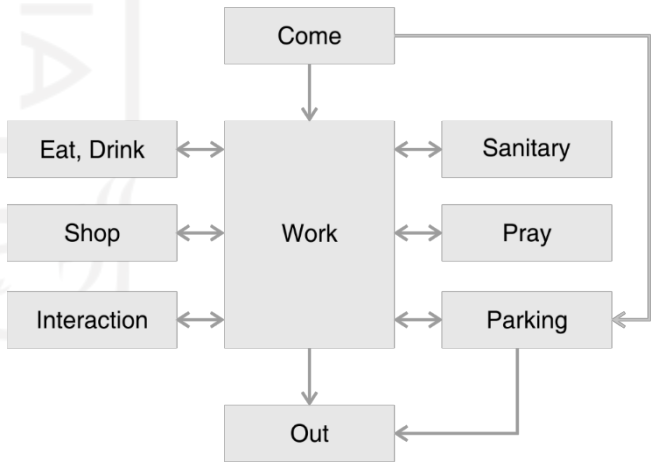


Figure 4. 5 Manager flow activities
Source: Author (2021)

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.

4.3.3 Space Need Analysis

Table below shows the space need analysis especially on the functions, activities, properties, and the need of space.

Function		Activities	Properties	Space
	Visitors			
Shopping		Searching for information, waiting	Public, Crowded	Lobby
		Walking	Public, Crowded	Corridor
		Shopping	Public, Crowded	Shop
		Seeing examples of items	Attractive, Communicative	Showcase
		Rest, eat, drink, interaction	Public, Non Formal	Restaurant, Cafe
		Play, relax	Public, Non Formal	Park
		Sanitary	Non Formal, Private	Toilet
		Pray	Non Formal, Private	Mushola
		Bank Transaction	Semi-Formal	ATM
		Parking	Non Formal, Controlled	Parking Lot
		Loading	Non Formal, Private	Loading Dock
	Tenant			
Tenant		Display items	Attractive, Communicative	Showcase
		Negotiation	Semi-Formal, Interactive	Negotiation Space
		Payment	Semi-Formal	Payment Space
		Store Goods	Non Formal, Controlled	Storage
		Sanitary	Non Formal, Private	Toilet
		Pray	Non Formal, Private	Mushola
		Parking	Non Formal, Controlled	Parking Lot
	Service & Manager			
Management		Coordination	Semi-Formal, Interactive	Meeting Room
		Work, manage	Private, Dicipline	Manager Room
		Administration	Semi-Formal, Interactive	Administration Room
		Work, manage	Semi-Formal, Interactive	Worker Room
		Store Goods	Non Formal, Controlled	Storage
		Security Service	Non Formal, Controlled	Security
		Monitoring, controlling	Non Formal, Controlled	Control Room
		Maintenance, service	Non Formal, Controlled	MEE Room
		Eat, drink, rest, interaction	Non Formal, Recreative	Cafetaria
		Sanitary	Non Formal, Private	Toilet
		Pray	Non Formal, Private	Mushola
		Parking	Non Formal, Controlled	Parking Lot

Table 4. 2 Space need
Source: Author (2021)

4.3.4 Scale Related Space Analysis – Proportion of City Walk and Comfort

1) Corridor

Corridors are the most important part of the circulation space because it becomes a link between the spaces inside and outside the building. Corridors are also the most used space by all users. The time of use of the corridor begins when before the shopping center operates until the time of operation is completed.

Referring to the conception of city walk which can be efficiently interpreted as a long corridor surrounded by shops, there is certainly a special emphasis on corridors as the main elements. Corridors here not only serve as the main access but for other activities, as well as corridors in the city where there are usually people sitting, selling, interacting and so on.

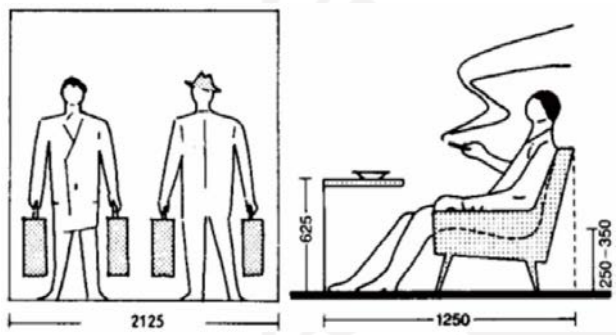


Figure 4. 7 Dimensions, and space requirements
Source: Architect Data

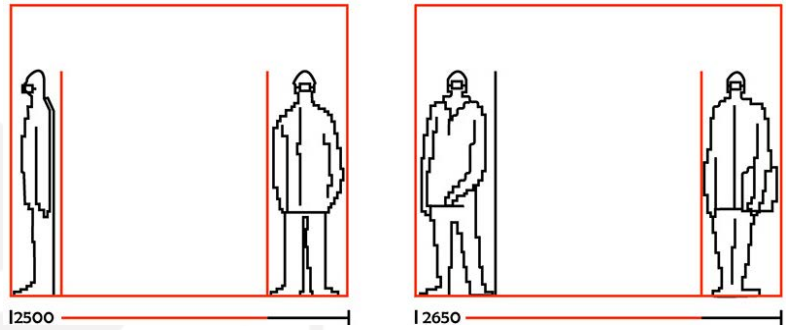


Figure 4. 6 Dimensions, social distancing space
Source: Architect Data

The average width of a human being is 60 cm, under normal conditions the standard corridor width for one person is 120 cm. As a corridor to pass through all building users, difable access and additional roads, the need for the main corridor in the shopping center building is a minimum of 4 meters. But the condition after the pandemic has undergone little change where there should be social distancing between users resulting in the need for more space.

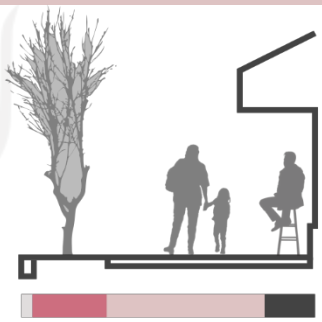
Sidewalk Corridor	Application	Recommended Configuration			
4.6 m (15’ – 0”)	Recommended in Pedestrian Districts, especially for arterial streets or where ROW width is 24.5 m (80’ – 0”)				
		Curb Zone	Furnishing Zone	Through Pedestrian Zone	Frontage Zone
		150 mm (0’-6’’)	1.2 mm (4’-0”)	2.5 mm (8’-0”)	750 mm (2’-6”)

Table 4. 3 Recommended sidewalk corridor configuration
Source: Portland Pedestrian Design Guide, Author (1998, 2021)

Based on the standards contained in the study of city walk corridors, the minimum width dimension of corridors on city walk is 4.6 meters with a corridor length of 24.6 meters. Because of pandemic effect, adjustment is needed by adding 2 meters more on width and length. So the minimum dimension of corridors on city walk is approximately 6.6 meters with a corridor length of 26.6 meters.

2) Retail

In general retail or stores are often called tenants, because the space is rented for the purposes of selling. Tenant itself is divided into two namely; anchor tenant and secondary tenant. The width and height of the space are also adjusted to the character of city walk which has been explained in the previous chapter. But there is a difference between anchor tenant and secondary tenant, considering in terms of quantity of anchor tenant has a large area of secondary tenant. The height of the building here becomes important because to reach the city walk atmosphere in the building must be adjusted to the scale and proportions.

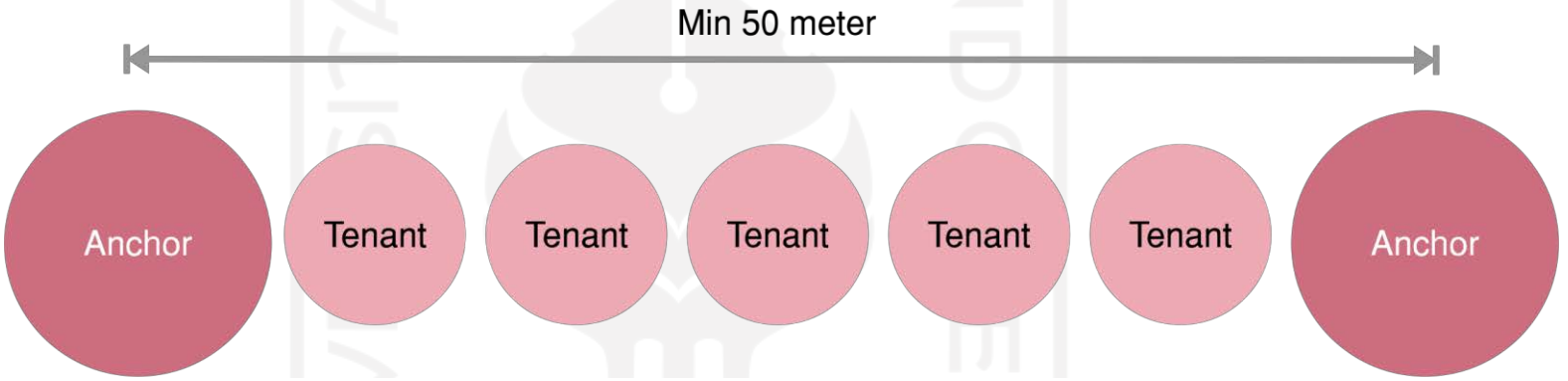


Figure 4. 8 Anchor tenant and secondary tenant
Source: Author (2021)

Anchor tenants who become the main magnets in a shopping center have a larger size than secondary tenants. When viewed from the goods sold, anchor tenant as the main magnet is more complex so it requires a larger space. The ratio of anchor tenant to secondary tenant is 1:3 and the distance between fellow anchor tenants is at least 50 meters.

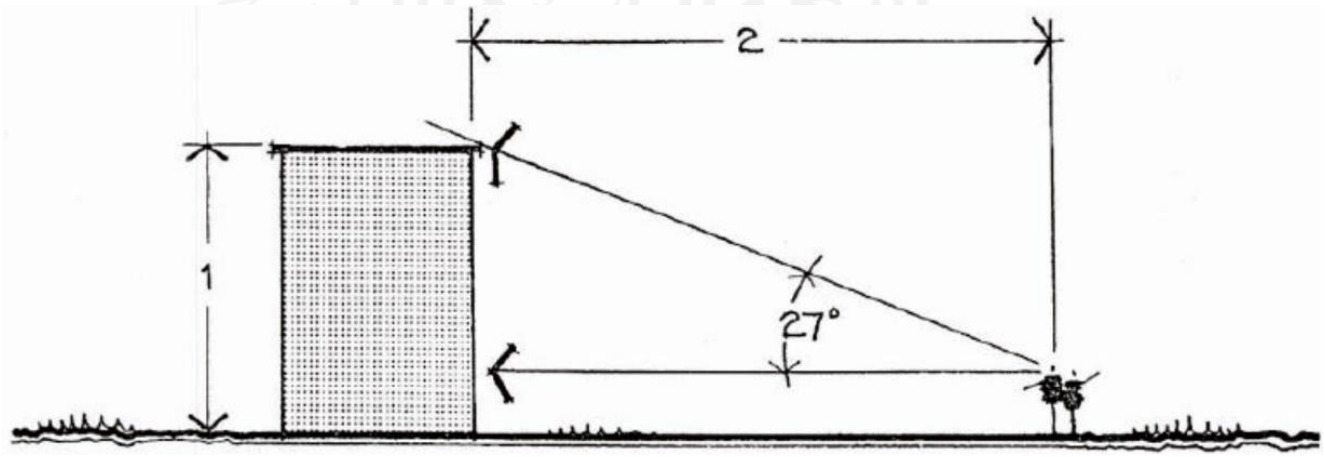


Figure 4. 9 Human visinility of objects
Source: Noman (1983)

Then to achieve the character of city walk, retail in shopping malls must adjust to the proportions that exist in urban spaces. For the outer space (around the shopping center) the ratio of height (H) and width (D) of a retail with the surrounding space (outer corridor) is D/H >1. The ratio also supports the visual aspect of the distance of observation (view) to an object. Then for the inner space, the 40 viewpoint is used to answer the visual challenges of city walk which will form a free view orientation just like in urban corridors.

3) Open Space

The open space in the conception of the city walk is at the intersection between corridors. The dimensions can adjust to the width of the corridor, in this case the width of the corridor after the adjustment of post-pandemic conditions used in Pontianak City Walk Center as a shopping center is 6.6 m (minimum).

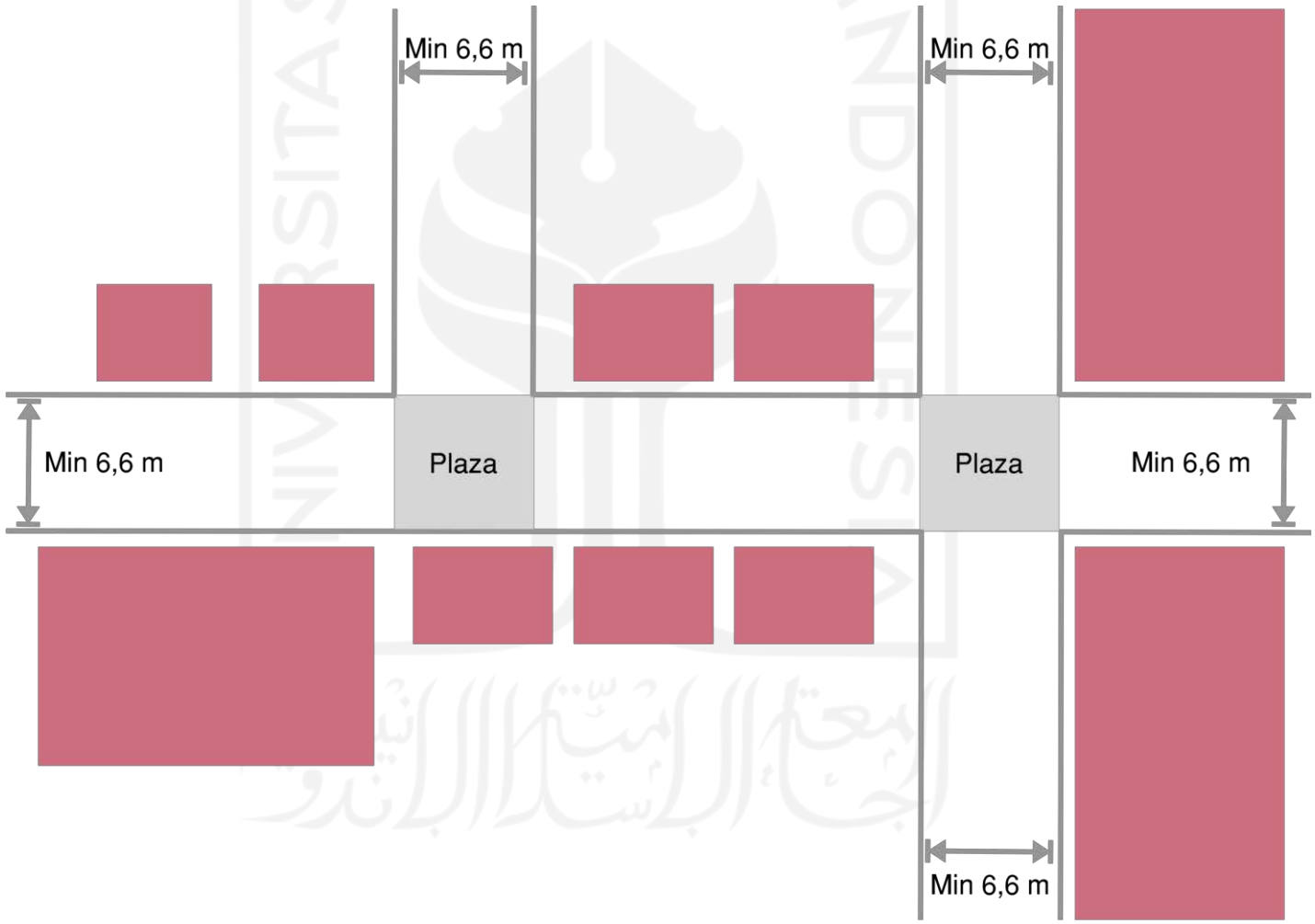


Figure 4. 10 Open space at the intersection of corridors
Source: Author (2021)

4.3.5 Space Programming Analysis

1) Corridor Analysis

The analysis of the amount of space in the corridor design refers to the user analysis and the standards that has been reviewed in the previous chapter. Corridors in this design are divided into two, namely corridors inside buildings (inner spaces) and corridors outside buildings (outer spaces). Then divided into 2 types based on the amount of space that is adjusted to the number of visitors and activities that occur.

Space Type	Space Need	Surface Area			Number of Space	Total Area
		Area (m2)	Reference	Capacity		
Interior	Major Corridor Secondary Corridor	120 32	Portland Portland		3 1	360 32
Exterior	Major Corridor Secondary Corridor	1000 300	Portland Portland		1 1	1000 300
					Total	1692

Table 4. 4 Size of Corridor Space
Source: Author (2021)

2) Retail Analysis

Analysis of the amount of retail space or shops tailored to the needs of visitors and tenants. Based on the pattern of laying and function, shops are divided into two, namely major units and small units. Major unit is the main part that becomes the magnet of this shopping center design. Major units consist of department stores, supermarkets, food court, retail type 1, as well as lobby.

Space Type	Space Need	Surface Area			Number of Space	Total Area
		Area (m2)	Reference	Capacity		
Major Unit	Receptionist / Information	5	Assumption	3	1	5
	Lobby	25	Architect Data	50	2	50
	Retail Type 1	496	White, Grey	40	10	4960
	Supermarket	5000	Norman	400	1	5000
	Department Store	3600	Norman	400	1	3600
	Food Court	1226,4	Norman	200	1	1226,4
Small Unit	Retail Type 2	288	White, Grey	20	30	8640
	Retail Type 3	124	White, Grey	10	20	2480
					Total	25961,4

Table 4. 5 Size of Retail Space
Source: Author (2021)

3) Open Space Analysis

This open space or public space is located at the intersection of corridors. Public space is divided into 3 types based on its area. Major Size or the largest public space is at the intersection of the main corridor. Medium for small and medium types are at each secondary corridor intersection.

Space Type	Space Need	Area (m2)	Surface Area Reference	Capacity	Number of Space	Total Area
Plaza	Major (inside)	200	AJM, NAD	25	3	600
	Minor (outside)	2400	AJM, NAD	100	2	4800
	Small Size	100		0	0	0
					Total	5400

Table 4. 6 Size of Open Space
Source: Author (2021)

4) Management, Service and Support Room Analysis

The amount of space for management, service, and support functions is adjusted to user reviews and data related to shopping centers. As for the following there is a management organizational structure in a shopping center.

Space Type	Space Need	Area (m2)	Surface Area Reference	Capacity	Number of Space	Total Area
Management Room	Main Director	9,1	Architect Data	3	1	9,1
	Direct. General OP	6,19	Architect Data	3	1	6,19
	Direct. Financial OP	6,19	Architect Data	3	1	6,19
	Production	39,85	Architect Data	12	1	39,85
	Marketing	39,85	Architect Data	12	1	39,85
	HRD	27,84	Architect Data	10	1	27,84
	Living Room	10,33	Assumption	5	2	20,66
	Pantry	6,29	Architect Data	2	1	6,29
	Lavatory	8,66	Architect Data	4	2	17,32
Service Room	Technician	5,56	Architect Data	4	1	5,56
	Security	36,21	Architect Data	12	1	36,21
	Cleaning Service	20	Assumption	10	1	20
	Office Boy/Girl	15	Architect Data	4	1	15
	Pantry	6,29	Architect Data	2	1	6,29
	Lavatory	8,66	Architect Data	4	2	17,32
	Supermarket Storage	300	Assumption	100	1	300
	Loading Dock	300	Assumption	100	1	300
	Control Room	9,8	Assumption	2	1	9,8
	Generator Room	5,66	Architect Data	2	2	11,32
	Water Pump Room	12	Architect Data	2	2	24
	AHU Room	5,79	Architect Data	2	2	11,58
	Server Room	9,8	Assumption	2	1	9,8
	Emergency Stair	24	Architect Data	6	3	72
	Freight Elevator	12	Architect Data	2	2	24
	Passenger Elevator	12,5	Architect Data	8	4	50
	Smoking Room	15	Assumption	10	2	30

Supporting Room	Baby Room	10	Assumption	8	4	40
	Health Clinic	21,17	Assumption	7	1	21,17
	Mushola	42,5	Assumption	25	1	42,5
	ATM Center	32,84	Assumption	15	1	32,84
					Total	1252,68

Table 4. 7 Size of Management, Service, and Supporting Space
Source: Author (2021)

5) Parking Space Needs Analysis

Space Type	Space Need	Area (m2)	Surface Area Reference	Capacity	Number of Space	Total Area
Parking	Motorcycle	1,4	TS	1	1000	1400
	Car	12,5	TS	1	250	3125
	Bus	36	TS	1	2	72
					Total	4597

Table 4. 8 Size of Parking Space
Source: Author (2021)

4.3.6 Space Classification

The space in this design can be classified by its hierarchy based on user patterns. This space classification will be used as the basis for circumcised space layout on the floor plan.

PRIVATE	PUBLIC
Lavatory	Plaza Major
Main Director	Plaza Minor
Direct. General OP	Major Corridor (ex)
Direct. Financial OP	Secondary Corridor (ex)
Production	Major Corridor (in)
Marketing	Secondary Corridor (in)
HRD	Lobby
Living Room	Retail I
Pantry	Retail II
Supermarket Storage	Retail II
Loading Dock	Supermarket
Control Room	Department Store
Generator Room	Food court
Water Pump Room	Emergency Stairs
AHU Room	Passenger Elevator
Server Room	Parking Lot
Freight Elevator	Baby Room
	Health Clinic
	Mushola

Table 4. 9 Space Hierarchy
Source: Author (2021)

4.3.7 Space Organization

From the space classification and organization that has been made, then it can be known the relationship between each room in the shopping center. The relationship of the space that has been made as a basis in making a layout in the shopping center. There is a mall attraction center that is anchor. This anchor can attract visitors to reach commercial space and other supporting facilities.

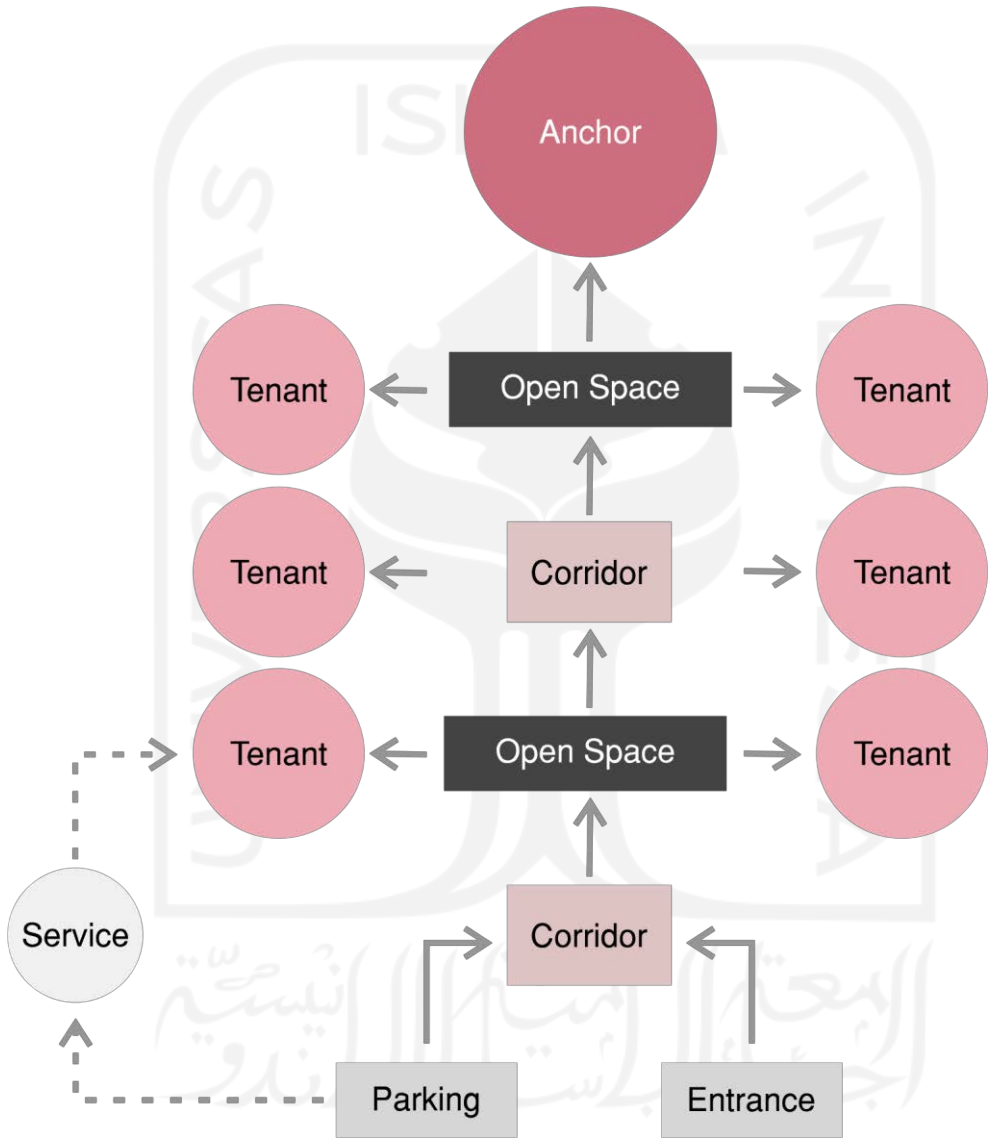


Figure 4. 11 Space Organization Diagram
Source: Author (2021)

4.3.8 Accessibility and Circulation Analysis to the Site

There are 6 circulation entrance areas connecting shopping malls, parking buildings and service areas. So to be able to go to the shopping center can certainly pass through the 6 accesses. In this design, the corridor that connects between buildings in the area will be used as the main corridor for access to shopping centers. Given

the need for new adjustments to post-pandemic conditions, the dimensions of the corridor will be widened slightly more than standard to provide comfort for space.

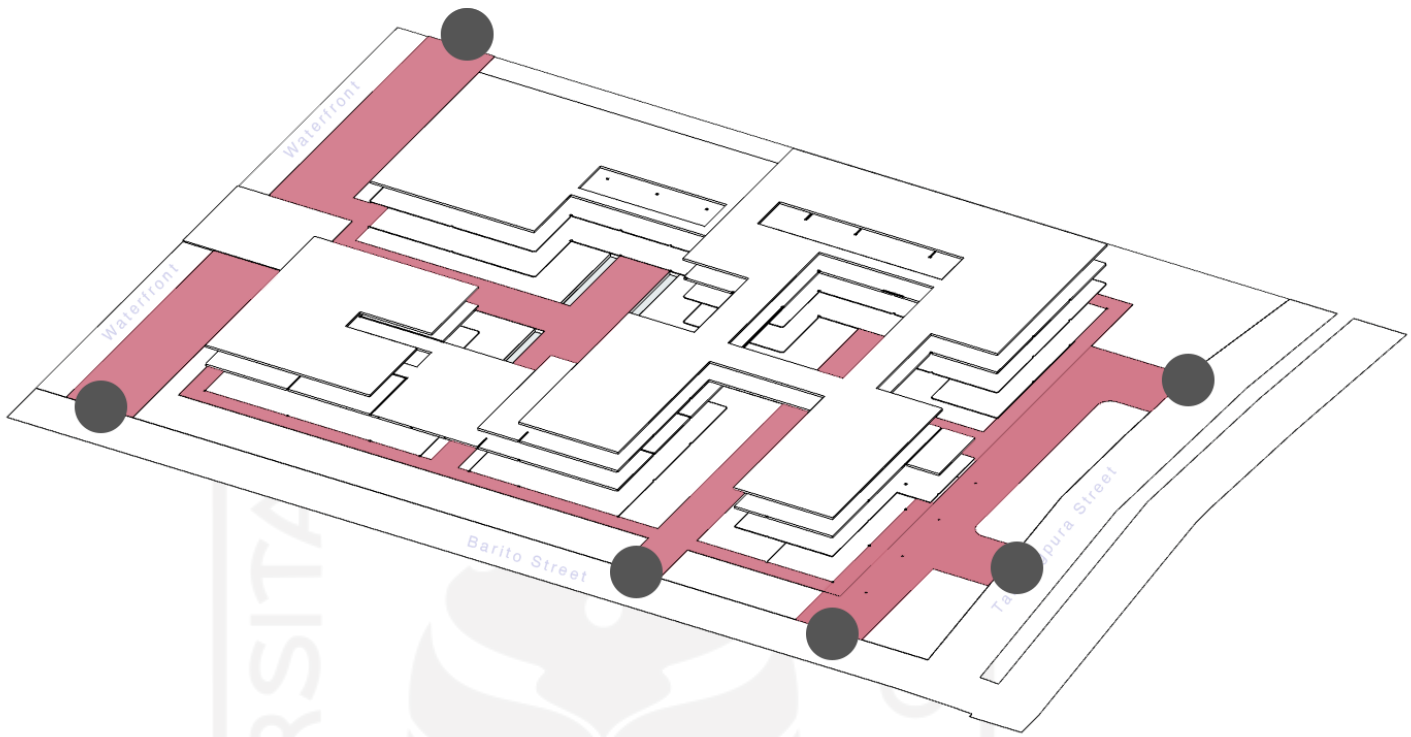


Figure 4. 12 Circulation access to the site
Source: Author (2021)

4.3.9 Circulation Analysis in Buildings

Circulation inside the building is also no different from the scheme such as in the outer space where linear corridors surrounded by shops. However, because of its presence in the inner space so dimensionally it will be smaller than that in the outer space. Circulation in buildings using standards issued by the Portland Dept of Transportation is a minimum corridor of 2 - 2.5 meters for the classification of "through pedestrian zone" is open space or public space is located at the intersection of corridors. Public space is divided into 3 types based on its area. Major Size or the largest public space is at the intersection of the main corridor. Medium for small and medium types are at each secondary corridor intersection.

The corridor will then be divided into 2 sides whose size is each adjusted to the standard of 2.5 meters then in the middle there is a void (atrium). Thus it is certain that the ground floor area will be larger than 5 meters (2 x 2.5 m). This scheme is used to support the character of city walk in a shopping center.

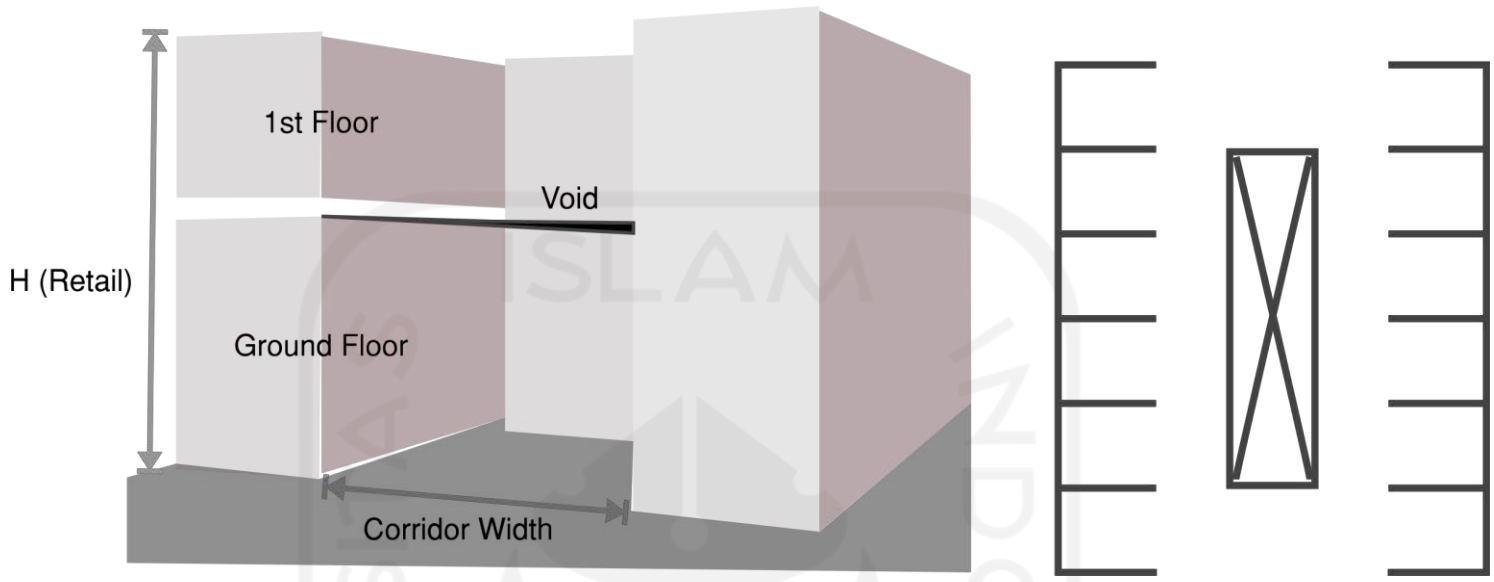


Figure 4. 13 Circulation inside the building
Source: Author (2021)

4.3.10 Zoning Analysis

Zoning in Pontianak City Walk Center follows the criteria on the city walk, namely; circulation, retail and open space. Overall the pattern of mass laying follows a response of site analysis. The dominance of corridors in the outer space that connects shops with linear laying patterns has been very supportive to achieve the character of the city walk.

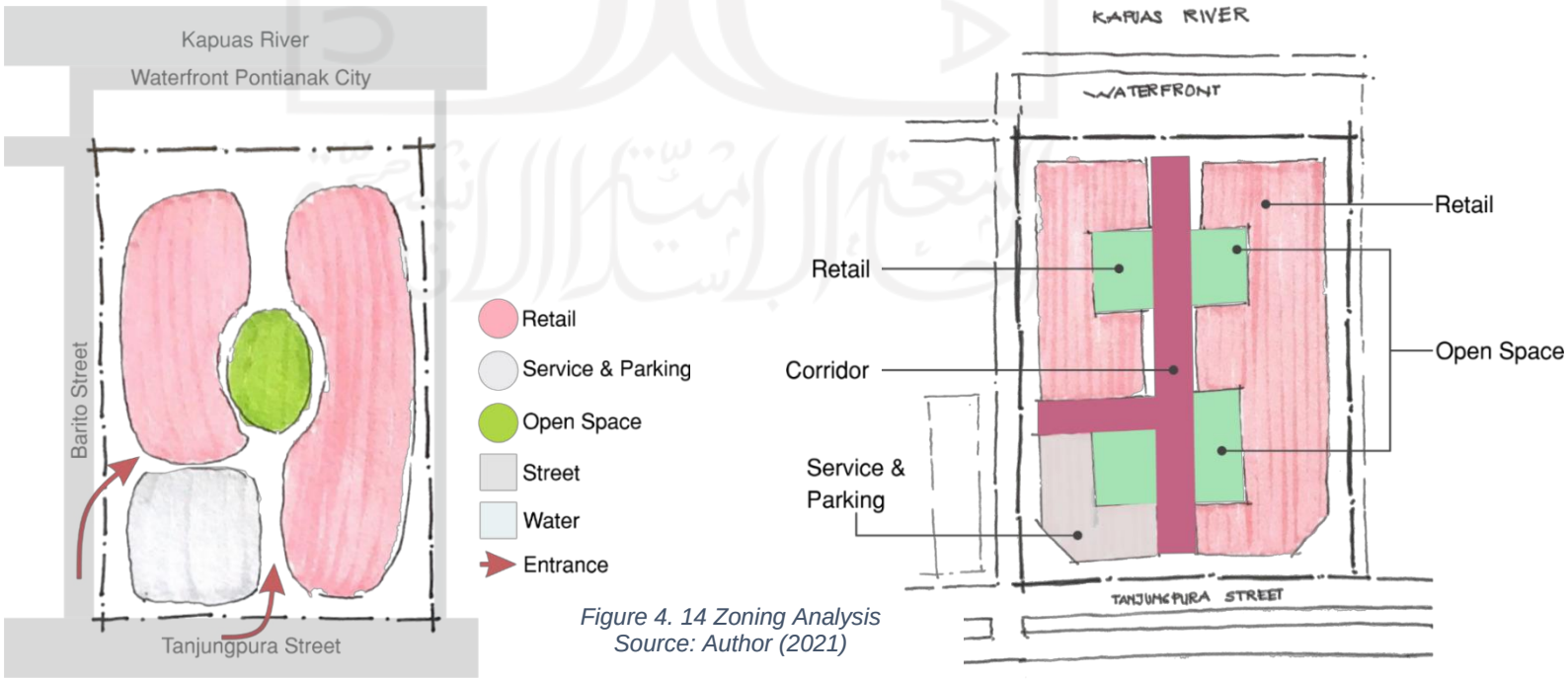


Figure 4. 14 Zoning Analysis
Source: Author (2021)

4.3.11 Mass Configuration

According studies that has been done in chapter 3, the building layout following linear type of building groups and spaces formed with adjustment of the wind direction aspect and existing circulation of the site.

Consists of three building masses then adding green open space as connector of each building.

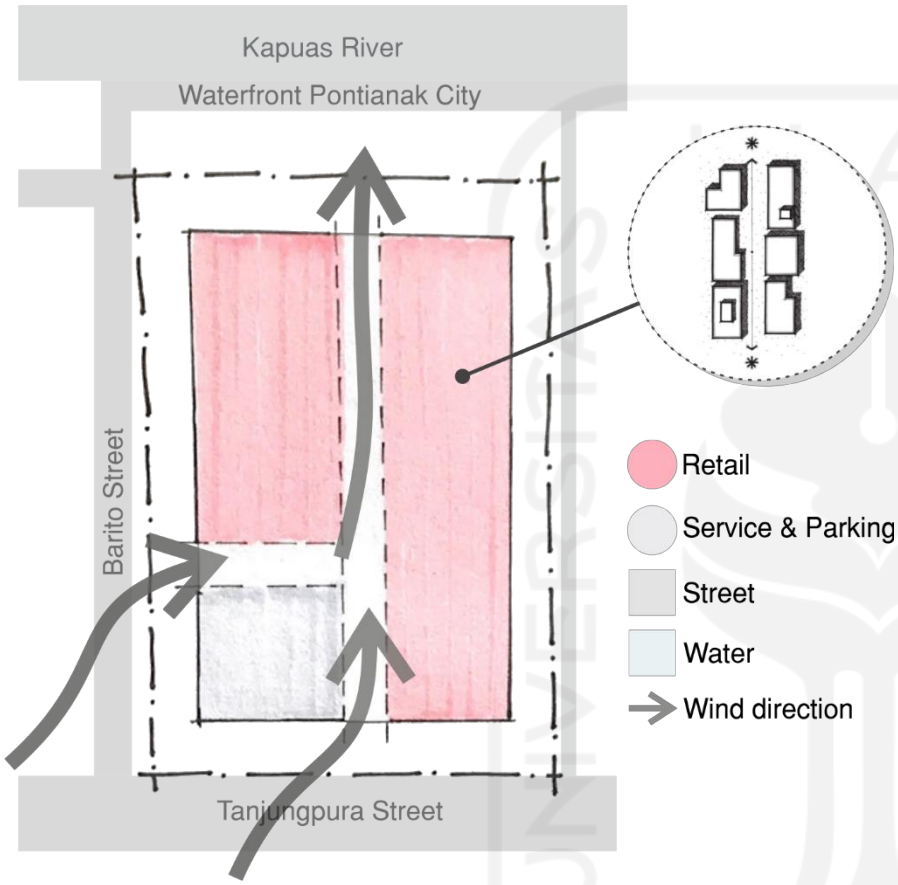


Figure 4. 16 Building layout with adjustment to existing wind direction
Source: Author (2021)

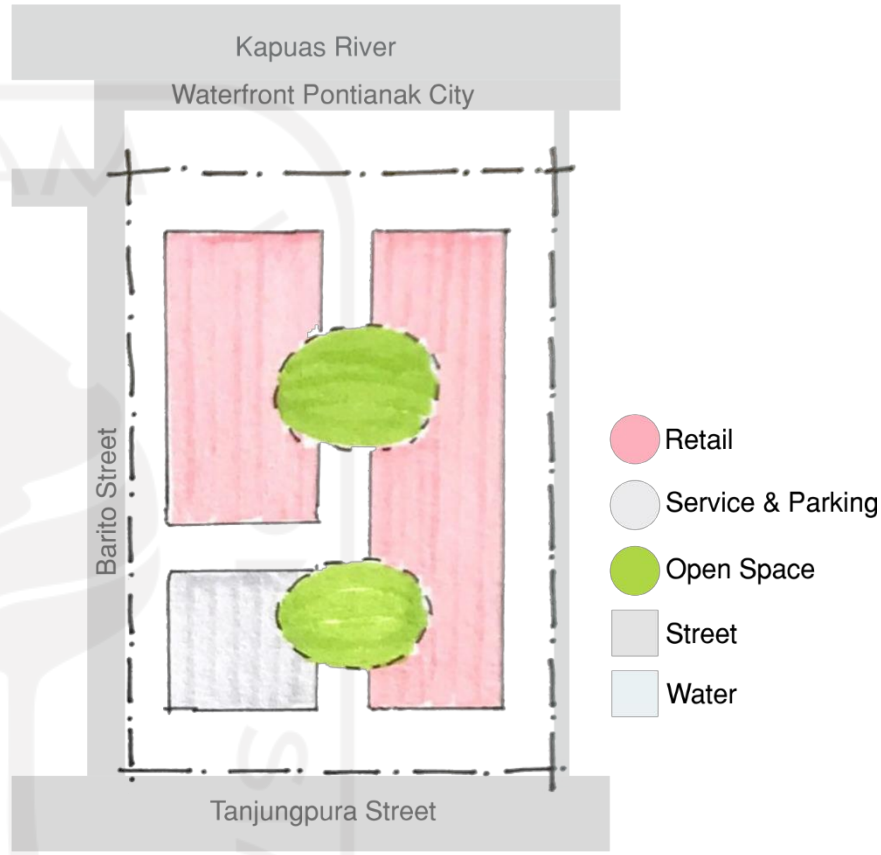


Figure 4. 15 Adding open space to connect
Source: Author (2021)

Forming main corridor outside the building to present city walk atmosphere. The corridor create a line that connects with the waterfront which is one of the center of the crowd. At the intersection of corridor will become a plaza.

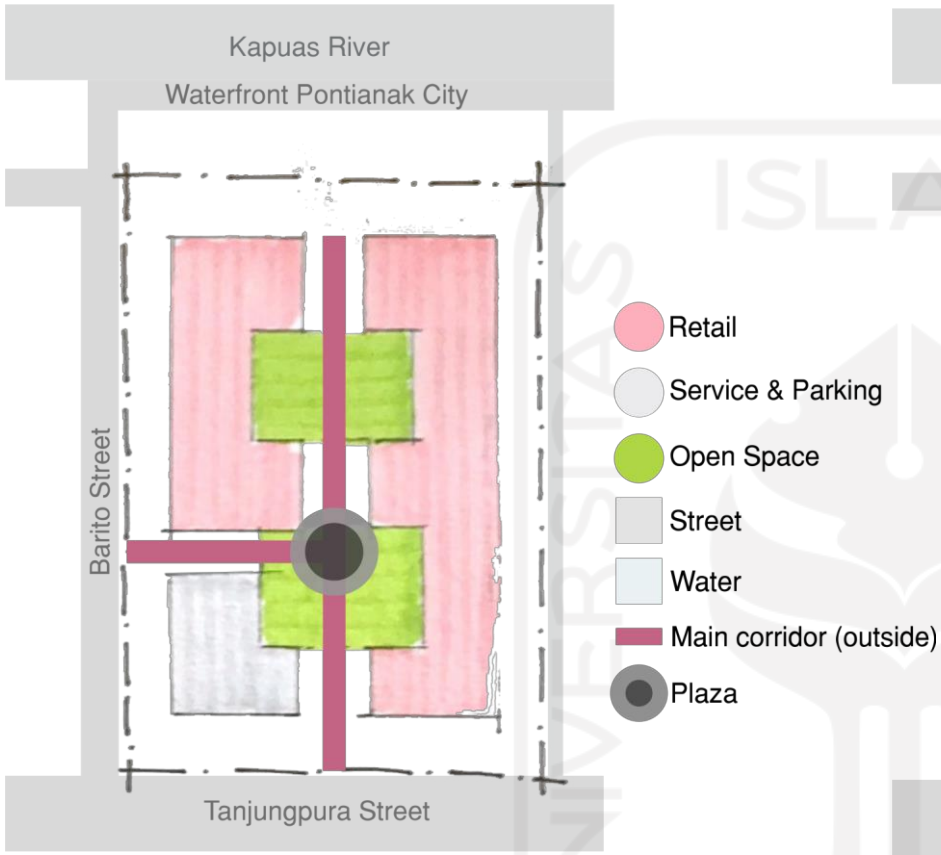


Figure 4. 18 Plaza as a result of the interconnection corridor
Source: Author (2021)

Anchor located on three spot inside the building, forming another main corridor inside the building.

The corridor inside create a line that connects each anchor on the corner of building.

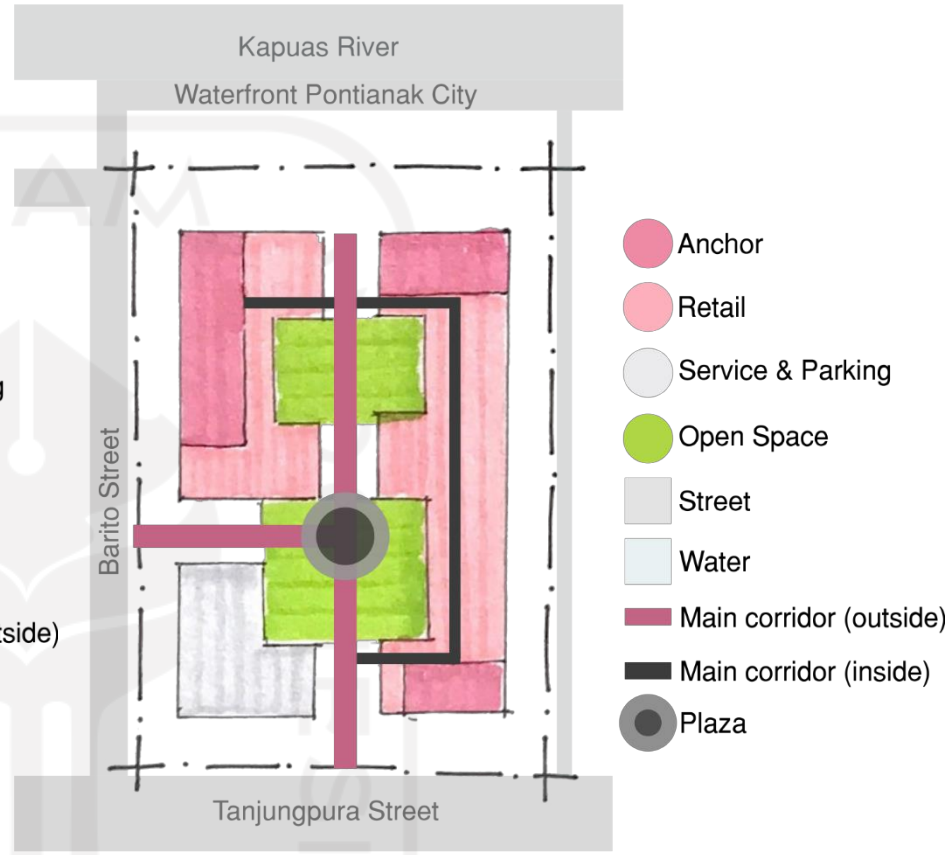


Figure 4. 17 Adding anchor in each corner
Source: Author (2021)

4.4 Problem Analysis with TRIZ Method

The initial stage is to determine the improving feature and worsening feature. The concept of city walk is a theory that can be applied to buildings in order to have high performance or performance in the creation of spaces that can give a feel like those found in city spaces. Based on the understanding of Jan Gehl's theory, city space can be formed based on 3 important points, namely meeting space, market space, and connection space. Where the more space, the more interaction will appear so that it can lead to a transaction. However, this concept cannot be applied as it is and requires adjustment given the ongoing pandemic conditions where interactions with each other are severely restricted to prevent the spread of the virus. TRIZ method is present in this project to help solve problems arising from the application of the concept of city walk accompanied by its contradictions.

4.4.1 Increase Chance of Virus Transmission

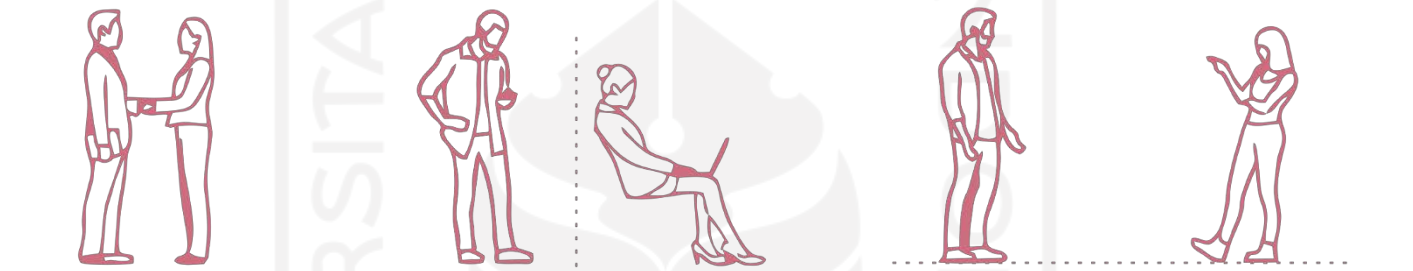


Figure 4. 19 People condition before and after pandemic
Source: Dian N., & Samuel I. (2021), Author (2021)

In this discussion, author focus on the first weakness that is the spread of the virus. Then we match the Contradiction Matrix owned by TRIZ, the result:

Improving effect: Area of Moving Object (5)

City walk concept is a theory that creates as much space as possible in order to create a lot of meeting space that can later develop into a market space. 'Area of Moving Object' is appropriate because the space is used by the user as a circulation to move.

Worsening effect: Object Generated Harmful (31)

But city walk itself still has a contradiction that is the existence of spreading viruses. This is due to the provision of a large enough meeting space to support the concept of city walk. This meeting space causes interaction between users, causing the virus to spread faster. 'Object Generated Harmful' is appropriate because the object in this case is a building that is applied city walk theory is negatively affected.

Solution from Contradiction Matrix I

Worsening / Improving	...	28 Measured Accuracy	29 Manufacturing Precision	30 Object-affected Harmful Factors	31 Object-generated Harmful Factors
...					
2 Weight of Stationary Object		18, 26 28	10, 1 35, 27	2, 19 22, 37	35, 22 1, 39
3 Length of Moving Object		28 32, 4	10, 28 29, 37	1, 15 17, 24	17, 15
4 Length of Stationary Object		32 28, 3	2, 32 10	1, 18	
5 Area of Moving Object		26, 28 32, 3	2, 32	22, 33, 28, 1	17, 2 18, 39

Table 4. 10 Contradiction Matrix I
Source: Author (2021)

Principle (17) Another Dimension

Another Dimension have the following criteria:

A. To move an object in two- or three-dimensional space.

B. Use a multi-story arrangement of objects instead of a single-story arrangement.

C. Tilt or re-orient the object, lay it on its side.

D. Use 'another side' of a given area.

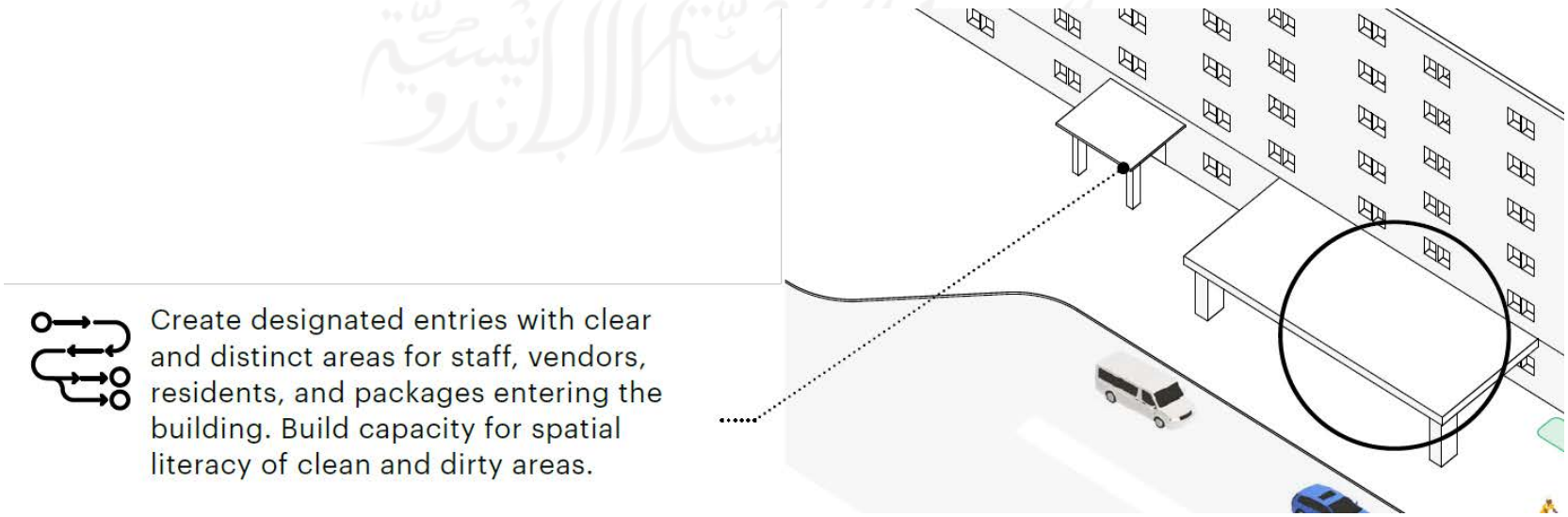


Figure 4. 20 Strategies for public realm
Source: https://massdesigngroup.org/covidresponse

Another Dimension principle is basically moving objects in two or three-dimensional spaces. In this case the object of contradiction is a corridor that allows to cause a lot of interaction directly so as to have an impact on the increasing spread of the COVID-19 virus. The problem-solving option is by **create sequence flows through a space.** It can be done by **create different user access from entry door.**

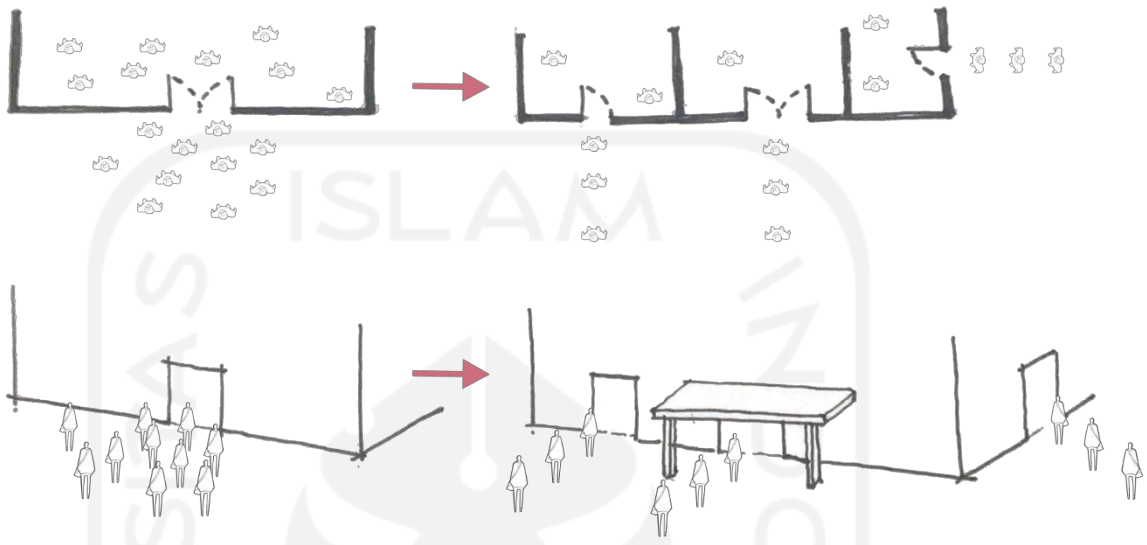


Figure 4. 21 Comparison ideas of before and after applying Another Dimension principle
Source: Author (2021)

Provide many separate entry points, customized for various users, each with space to conduct screening protocols — a typical mall with three anchor stores contains at least 15 major points of ingress/egress. Strong way-finding will help visitors and service providers navigate semi-public and semi-private spaces and limit unnecessary mixing. A clear threshold of sanitary protocols for both people and goods will additionally reinforce the inside of the building as a clean zone.

Principle (2) Taking Out

Separate an interfering part or property from an object, or single out the only necessary part (or property) of an object.

Taking Out principle is separation of things from grouping activities and places. In this case the object of contradiction is a corridor for meeting space that allows to cause a lot of interaction**,** so taking out the 'virus transmitter' out of the building is needed. Visitors have an important role in the building but may have a risk that they will transmit the virus inside. So it takes effort to get the 'troublemakers' out of the building. The problem-solving option is to **design larger**

space between shops outside the building for meeting space. This can reduces the impact of direct interaction between visitors so that the spread of the virus can be minimized.

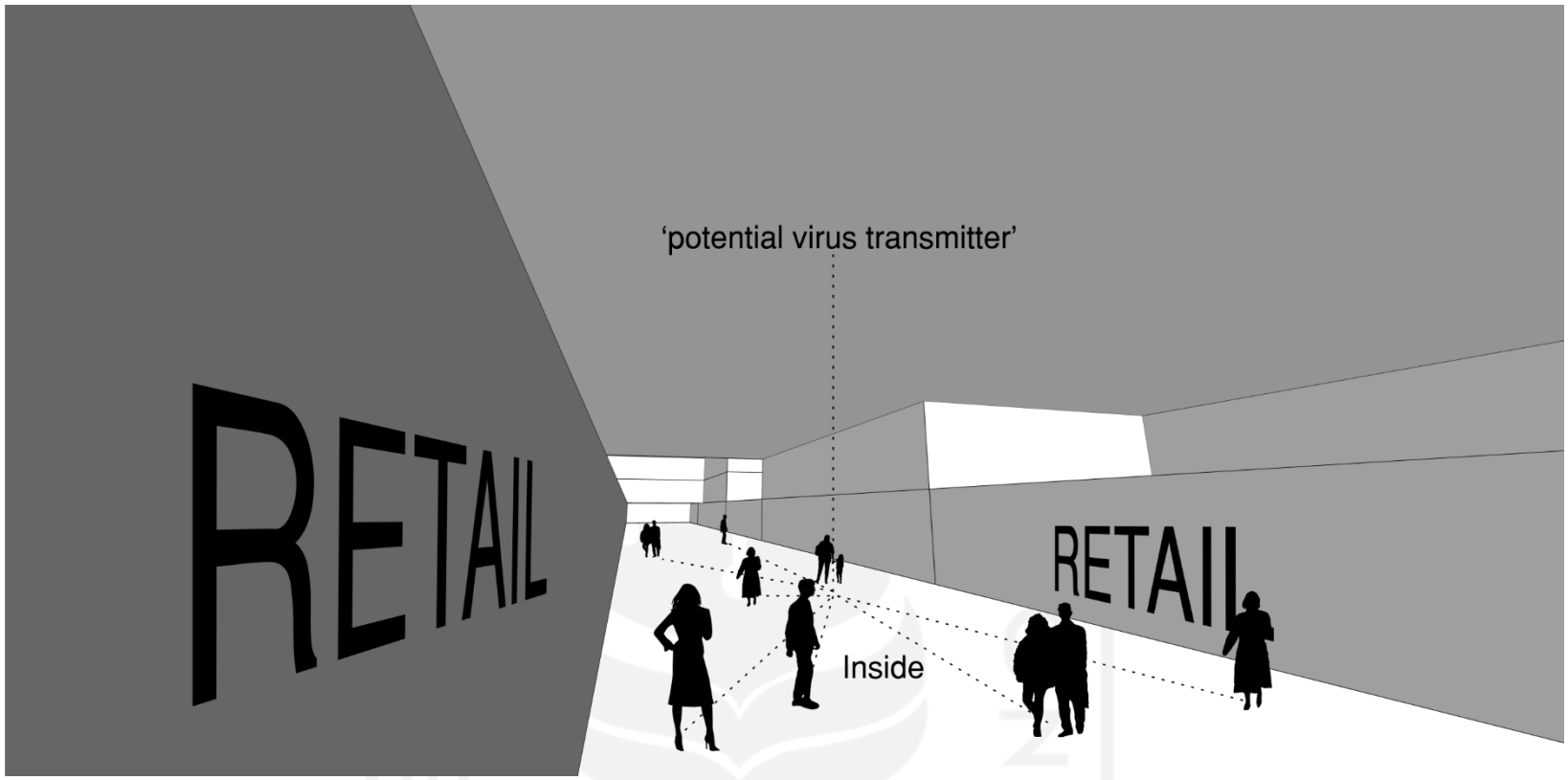


Figure 4. 23 Before applying Taking Out principle, visitors tend to spend more time inside the building
Source: Author (2021)

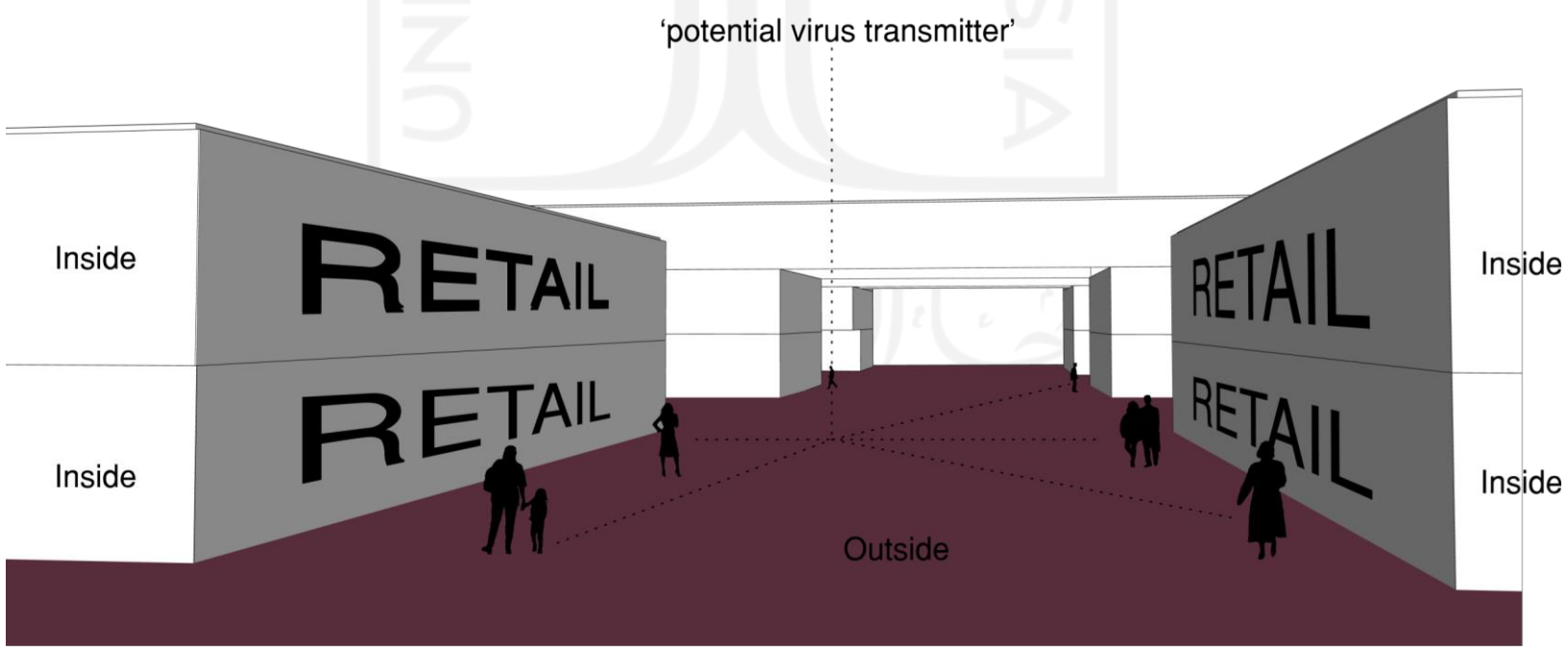


Figure 4. 22 After applying Taking Out principle, encourage visitors to get outdoors
Source: Author (2021)

The contradiction is also happen on corridor inside the building that can cause a lot of interaction directly due to minimum space compare to outside of building, so it have an impact on the increasing spread of the COVID-19 virus. Taking Out principle is also can be done by **make boundaries for pedestrian space** to solve the problem inside the building.

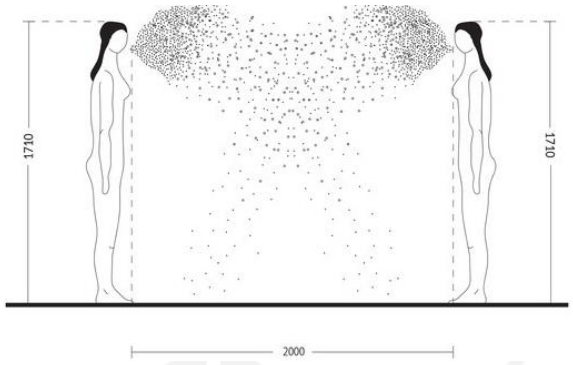


Figure 4. 24 Coughed droplets distance
Source: Raimana Jones (2021)

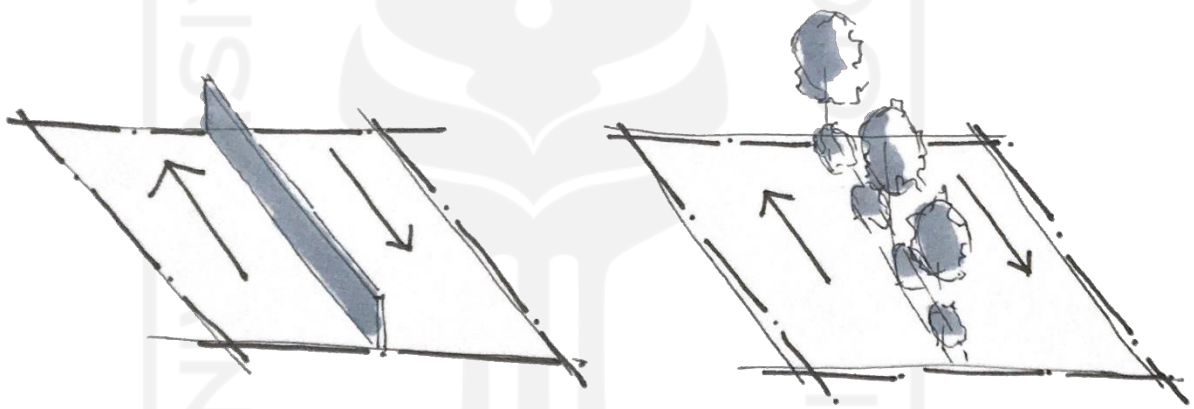


Figure 4. 25 Ideas of providing boundaries in corridor
Source: Author (2021)

Principle (39) Inert Atmosphere

Inert Atmosphere have the following criteria:

A. Replace a normal environment with an inert one.

B. Add neutral parts, or inert additives to an object.

Inert Atmosphere principle is presenting atmosphere that can calm / prevent from negative activities. In this case the object of contradiction is a corridor that allows to cause a lot of interaction directly so as to have an impact on the increasing spread of the COVID-19 virus. The problem-solving option is to **create open air patios that offer sun exposure (not fully) which can significantly correlated with recovery from Covid-19 patients.**

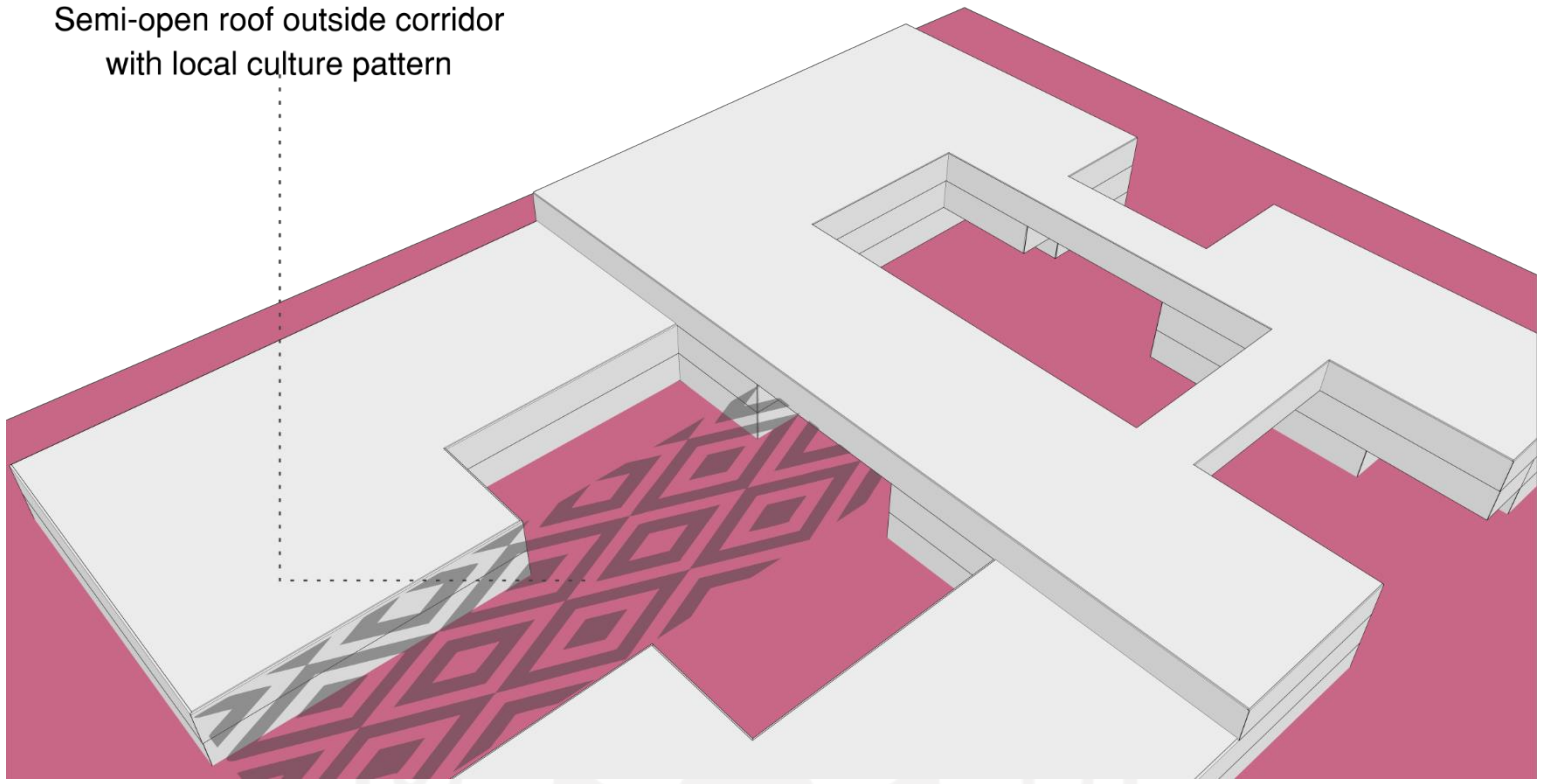


Figure 4. 26 Ideas of Inert Atmosphere by create semi-open roof
Source: Author (2021)

Principle (18) Mechanical Vibration

Mechanical Vibration have the following criteria:

A. Cause an object to oscillate or vibrate.

B. Increase its frequency (even up to the ultrasonic).

C. Use an object's resonant frequency.

D. Use piezoelectric vibrators instead of mechanical ones.

E. Use combined ultrasonic and electromagnetic field oscillations

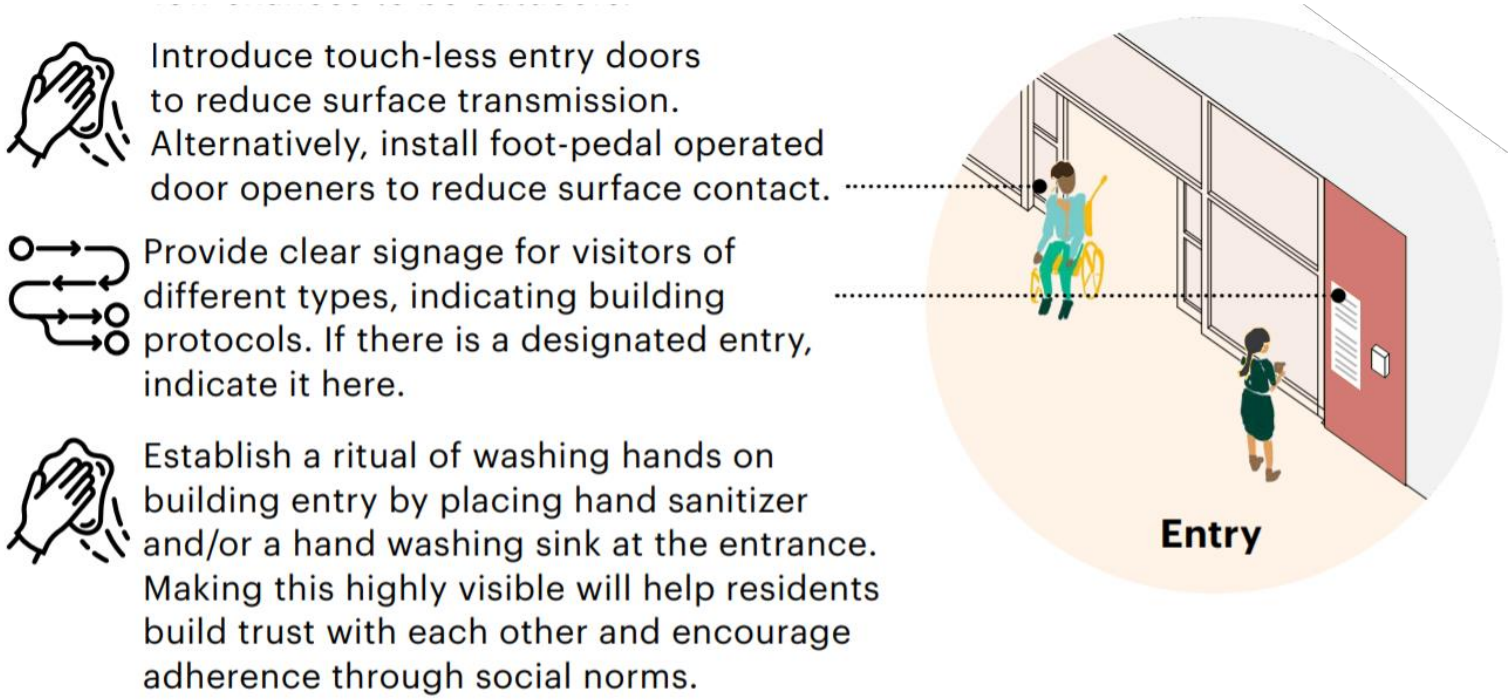


Figure 4. 27 Strategies for the Public Realm
Source: https://massdesigngroup.org/covidresponse

Mechanical vibration principle is presenting frequent. In this case the object of contradiction is more meeting space that allows to cause a lot of interaction directly so as to have an impact on the increasing spread of the COVID-19 virus.

The problem-solving option is **by provide touch-less entry doors with body temperature check technology to reduce surface transmission.**

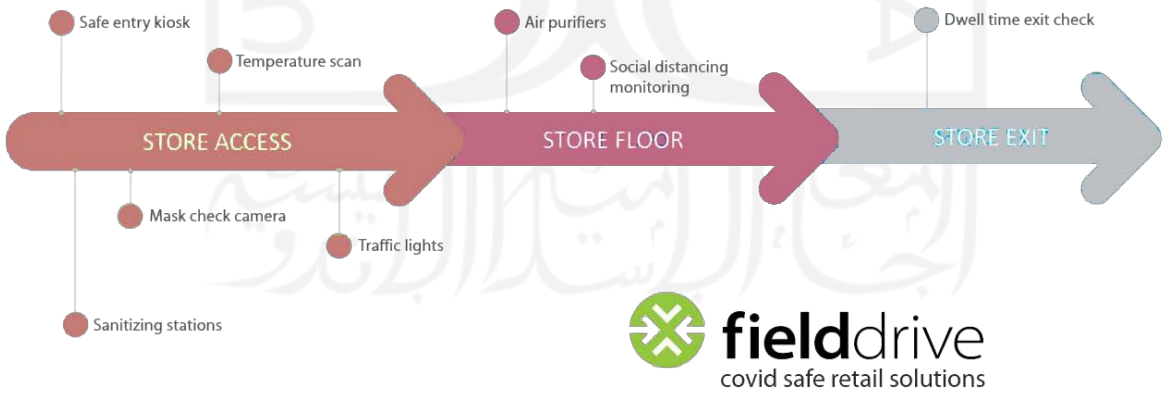


Figure 4. 28 Covid safe retail solutions
Source: https://fielddrive.com/covid-19-retail

Mechanical vibration principle is also can be done by **installed several technology to monitoring the user inside shopping center** such as below:

Store Access	
	Safe Entry Kiosk: A system using facial detection cameras automatically counts the number of people in a given space, and displays the count on large screens to limit the number of people entering a space.
	Temperature Scan: Small cameras instantly measure the body temperature of each visitor and can discreetly notify the organizers and/or security personnel.
	Mask Check Camera: A camera that automatically checks that everyone entering a given space is wearing a mask and can control access gates.
	Sanitizing Stations: A dedicated area prepared to sanitize the hands and visitor's belongings as well as any equipment entering the event.
	Traffic Light: An easy and efficient solution to regulate footfall in smaller stores. This remote controlled vintage traffic light is also an extension option for the safe entry kiosk, where it can be controlled an extra outside unite to control store access.
Store Floor	
	Social Distancing Monitoring
	Air Purifiers: Discrete air purifiers help keep the air clean in a given space and have been shown to be effective at reducing the risk of viral infections.
Store Exit	
	Exit Dwell Time Check: Facial recognition cameras can track the time each visitor spends in each area. This data can be used to make sure visitors do not stay longer than permitted.

Table 4. 11 Covid safe retail solutions
Source: https://fielddrive.com/covid-19-retail

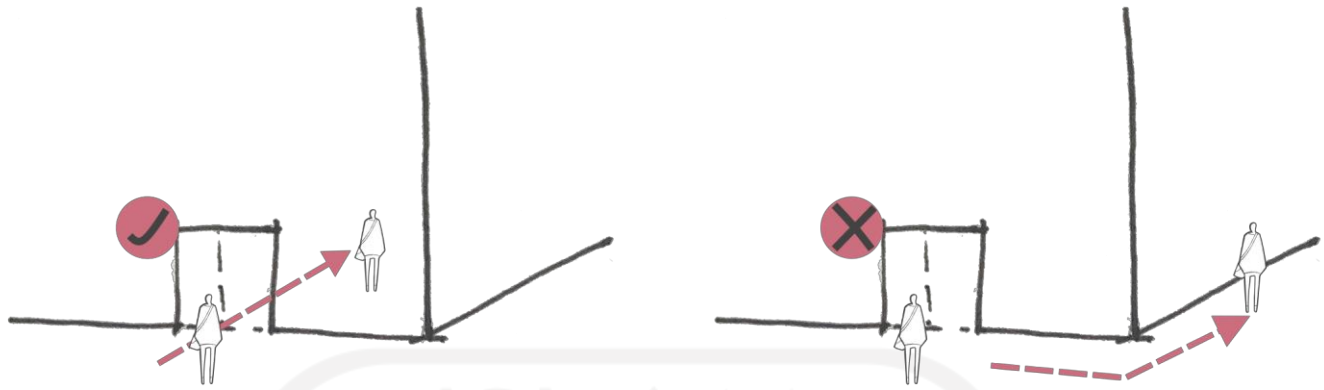


Figure 4. 29 Comparison ideas of before and after applying Mechanical Vibration principle
Source: Author (2021)

As the result of frequent check especially in entry doors, the visitor who not pass the ‘check’ will directed to other attraction outside the buildings.

4.4.2 Decreased Rentable Space

The second weakness is decreased rentable space. The result of match to the Contradiction Matrix owned by TRIZ:

Improving effect: Area of Moving Object (5)

City walk concept is a theory that creates as much space as possible in order to create a lot of meeting space that can later develop into a market space then 'Area of Moving Object' is appropriate because the space is used by the user as a circulation to move.

Worsening effect: Productivity (39)

But city walk concept itself still has a contradiction that is decrease the rentable space. This is due to the provision of a large enough meeting space to support the concept of city walk. This meeting space causes more space needed, causing more expensive. 'Productivity' is appropriate because the object in this case is the economical aspect that is applied city walk theory is negatively affected.

Solution from Contradiction Matrix II

Worsening / Improving	...	36 Device Complexcity	37 Difficulty of Detecting & Measuring	38 Extent of Automation	39 Productivity
...					
2 Weight of Stationary Object		26, 30 36, 34	25, 28 17, 15	2, 26 35	1, 28 15, 35
3 Length of Moving Object		1, 10 26, 39	35, 1 26, 24	17, 24 26, 16	14, 4 28, 29
4 Length of Stationary Object		1, 19 26, 24	26		30, 14 7, 26
5 Area of Moving Object		14, 1 13	2, 36 26, 18	14, 30 28, 23	10, 26 34, 2

Table 4. 12 Contradiction Matrix II
Source: Author (2021)

Principle (10) Preliminary Action

Preliminary Action have the following criteria:

A. Perform, before it is needed, the required change of an object (either fully or partially).

B. Pre-arrange objects such that they can come into action from the most convenient place and without losing time for their delivery.

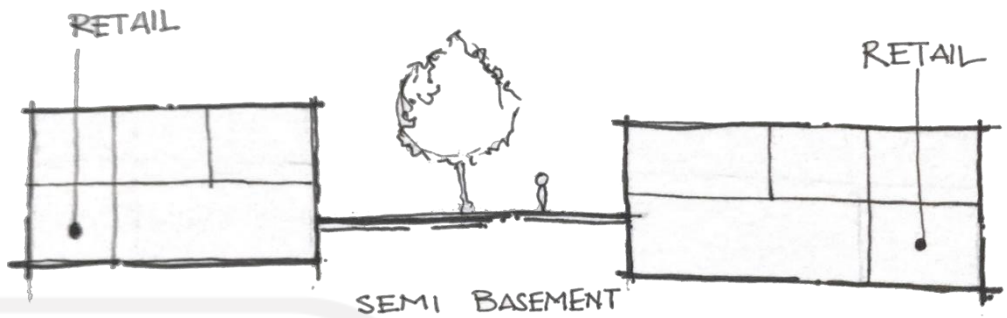


Figure 4. 30 Preliminary Action ideas

Preliminary Action or preparation is to execute an activity before an object or part of it is activated. The activity concerns the part of the object or its environment to give a positive effect or reduce the negative effect before the activity that concerns the object part is carried out. In this case the object of contradiction is a more open space and meeting space that can cause decreasing rentable space. The problem-solving option is to **make semi-basement that utilized also as retail area.** This means the space can be maximized for commercial but also preserve the area for meeting space and open space.

Principle (2) Taking Out

Taking Out have the following criteria:

Separate an interfering part or property from an object, or single out the only necessary part (or property) of an object.

Taking Out principle is separation of things from grouping activities and places. In this case the object of contradiction is a corridor that allows to cause a lot of interaction directly so as to have an impact on the decreasing of rentable space.

“In post-pandemic condition, knowing that a large physical footprint does not necessarily translate into larger sales volumes. The growing share of online purchases may mean that stores do not need to carry as much inventory, and many can lean more toward a showroom approach. Retail can have a smaller physical space, using technology to create a more interactive interface with the brand and products, and arrange order and delivery from a fulfillment center within 24 hours. New distribution strategies to offset its store-size reduction, adding more points of distribution rather than more floor space can be applied.”

Figure 4. 31 Online shopping
Source: Deloitte (2021)

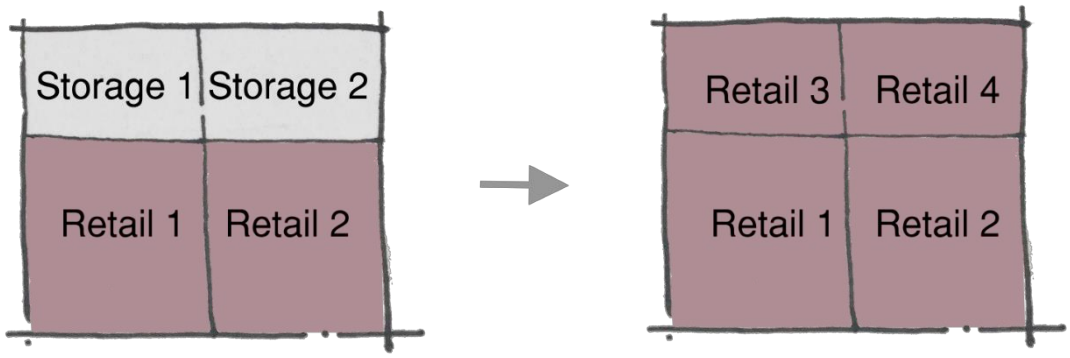


Figure 4. 32 Comparison ideas of before and after applying Taking Out principle
Source: Author (2021)

The problem-solving option is to **eliminate unnecessary space in retail therefore the rentable space become bigger.** For example eliminate the storage space, in the future storage in retail might be useless since online shopping is growing. Dedicated store space for fulfillment of online orders, for the one who wants to see the physical goods they can attend the shop but for order and delivering will be conduct online.

Principle (26) Copying

A. Instead of an unavailable, expensive, fragile object, use simpler and inexpensive copies.

B. Replace an object, or process with optical copies.

C. If visible optical copies are already used, move to infrared or ultraviolet copies.

The inventive principle ‘Copying” implies the use of cheaper, disposable, and inexpensive copies as a substitute for expensive, fragile, or difficult-to-replace objects. In this case the object of contradiction is a meeting space that allows to cause a lot of interaction directly so as to have an impact on the decreasing of rentable space. The problem-solving

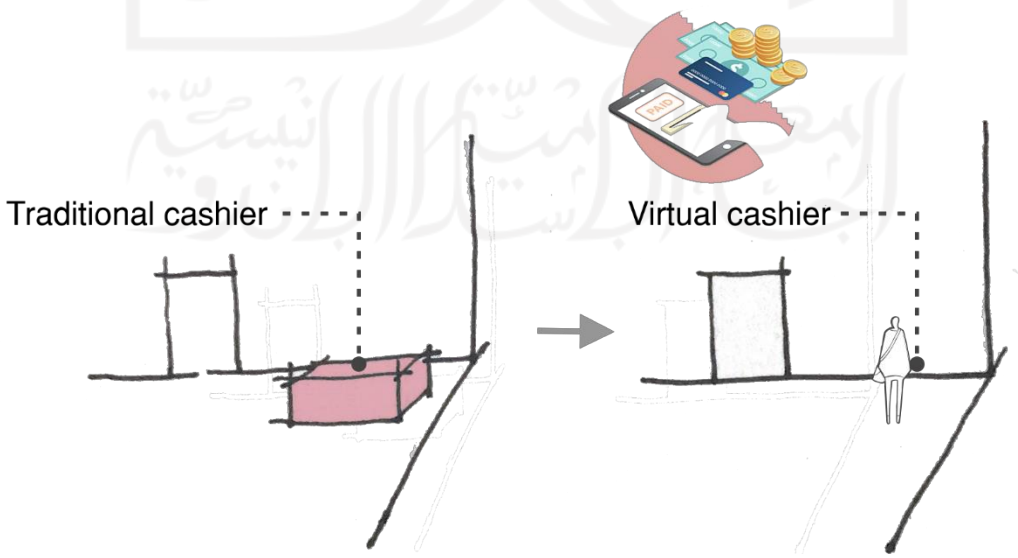


Figure 4. 33 Comparison ideas of before and after applying Copying principle
Source: Author (2021)

option is by **copying the traditional cashier into the virtual one** to provide a convenience between merchants and customers when shopping due to minimize the direct physical contact between people yet still maximize the rentable space.

Principle (34) Discarding and Recovering

Discarding and Recovering have the following criteria:

A. Make portions of an object that have fulfilled their functions go away (discard by dissolving, evaporating, etc.) or modify these directly during operation.

B. Conversely, restore consumable parts of an object directly in operation.

Discarding and Recovering involves making portions of an object or system go away after they have performed their useful function or repairs themselves so that the part does not need to be replaced. In this case the object of contradiction is a meeting space that allows to cause a lot of interaction directly so as to have an impact on the decreasing of rentable space. The problem-solving option is by **create a limitation on entering the shop.** It can be applied in restaurant/food court for instance. ‘Taking out’ some group of visitors outside and the next group of visitors will ‘recover’. It can multiply the capacity of space and it’s a new system to serve customer. When architect able to make a nice place, then people demand to using the space, actually it can increasing the transaction without decreasing the rentable space.

05

DESIGN EXPLORATION RESULT

CHAPTER V
DESIGN EXPLORATION RESULT

5.1 Schematic Site Plan

In determining the layout of the space, it is necessary to consider analysis of the nature of space, movement patterns of users as well as the organization of space. Zoning in Pontianak City Walk Center site plan follows the criteria of elements of the citywalk, namely; circulation, retail and open space. Overall the mass laying pattern follows a reference from the regional guideline which has then been reshaped based on the planning direction.

Figure 5. 1 Schematic Site Plan
Source: Author (2021)

5.2 Schematic Axonometric Plan

The figure of axonometric plan below shows the division of space inside the building which divided into retail, anchor, service& parking area.

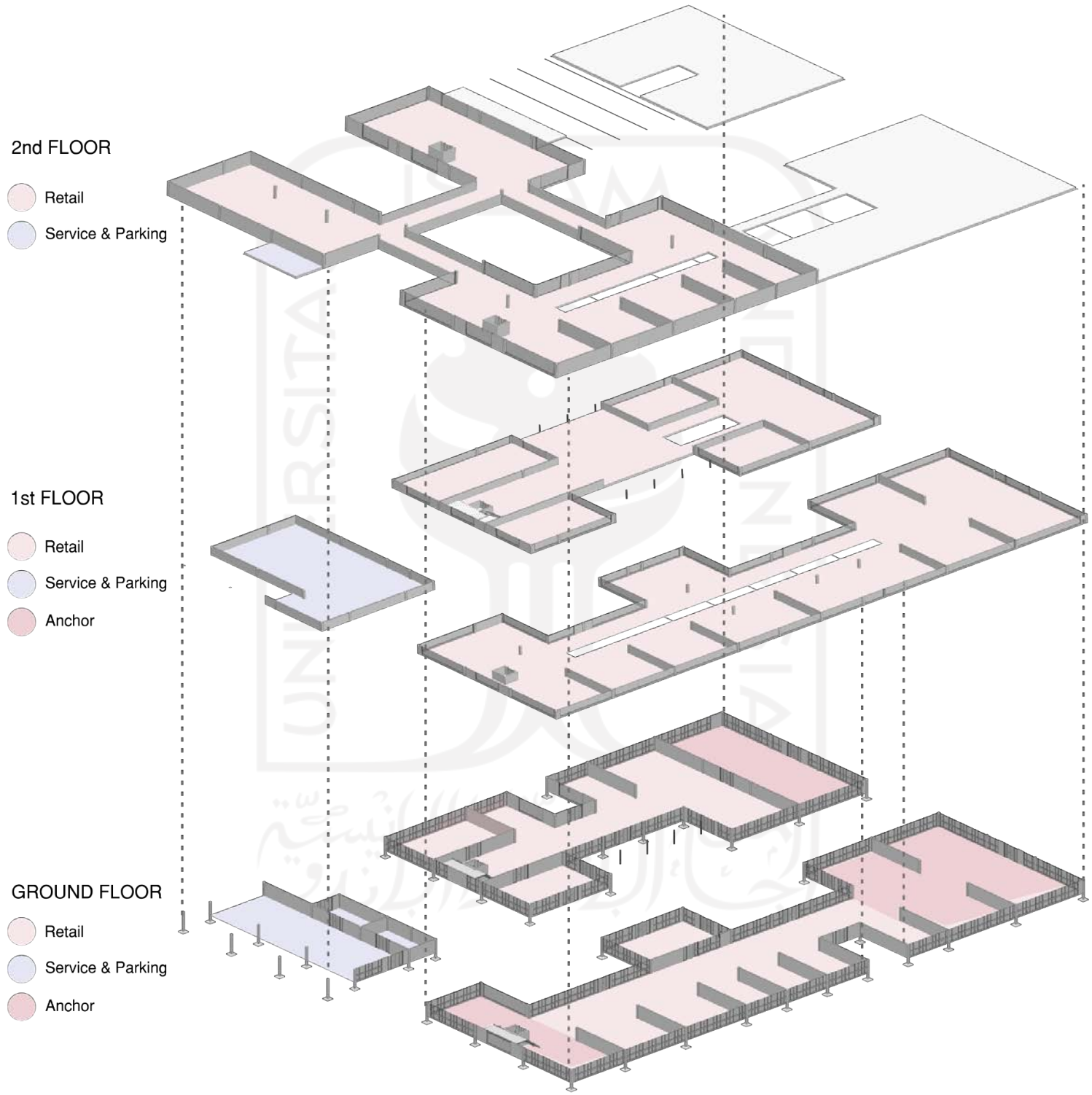


Figure 5. 2 Schematic Axonometric Plan
Source: Author (2021)

5.3 Schematic Floor Plans

The ground floor plan is dominated by public spaces, such as anchor, commercial area, and plaza. The main parking area is also located on the ground floor.

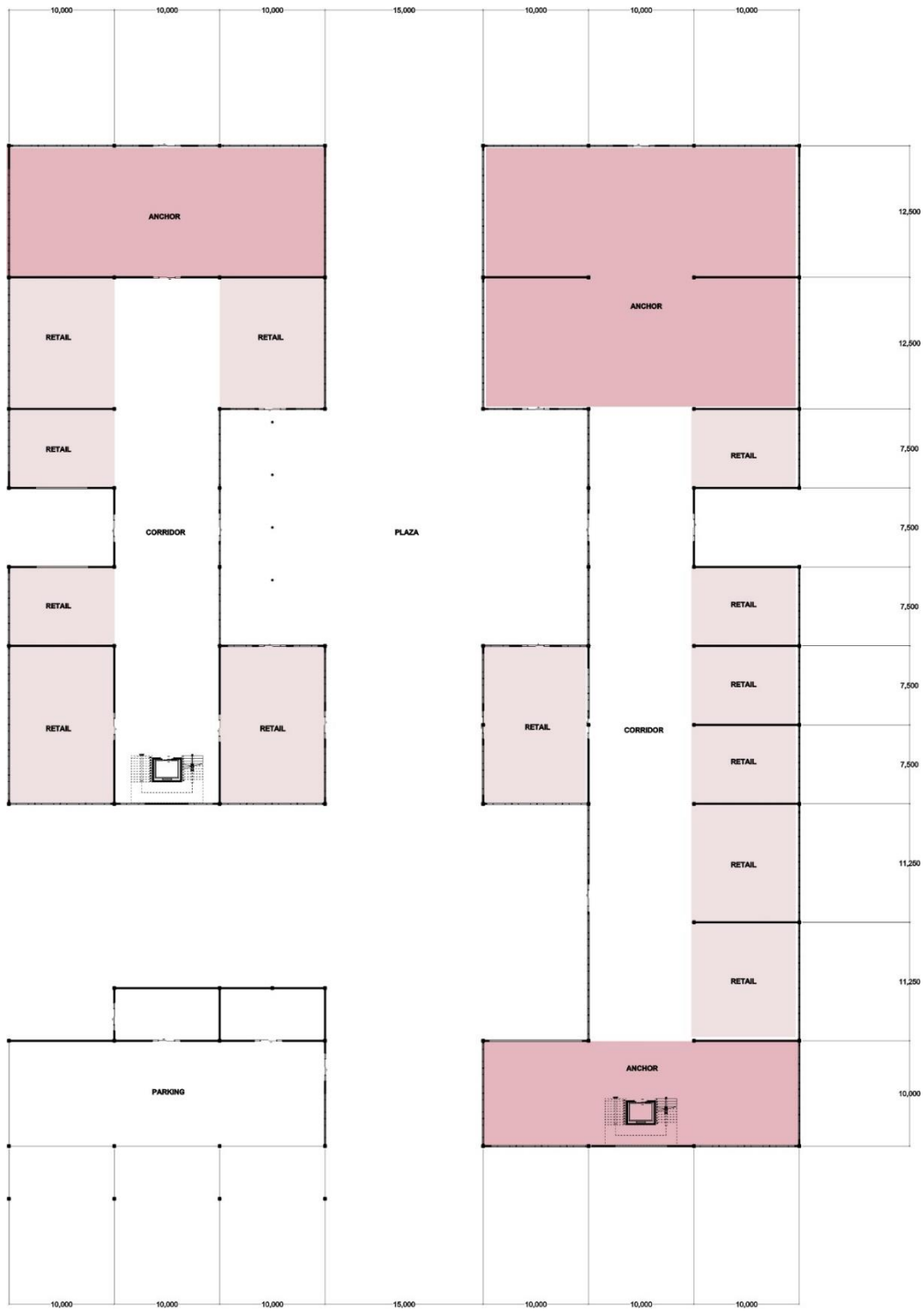


Figure 5. 3 Schematic GF Plan Source: Author (2021)

The 1st floor plan is also dominated by public spaces, such as anchor, commercial area, and food court. The parking area is also located on this floor.

Figure 5. 4 Schematic 1st Floor Plan
Source: Author (2021)

The 2nd floor plan is also dominated by public spaces, such as anchor, and commercial area. The parking area is also located on this floor. In this floor, there are also bridges that connect these 3 main mass of the building.

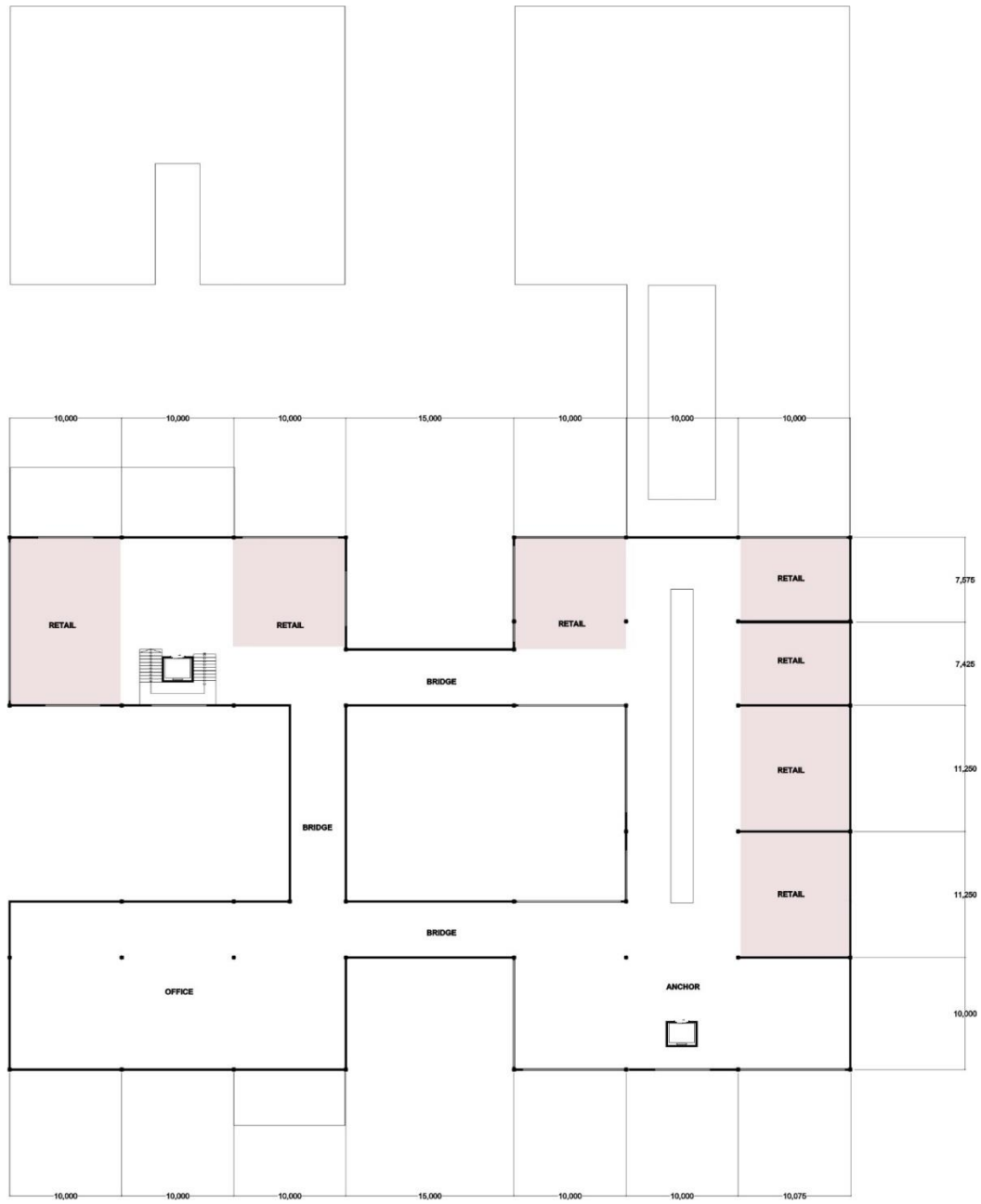


Figure 5. 5 Schematic 2nd Floor Plan
Source: Author (2021)

5.4 Schematic Elevations

Figures below shows the elevations from four different view to the site.

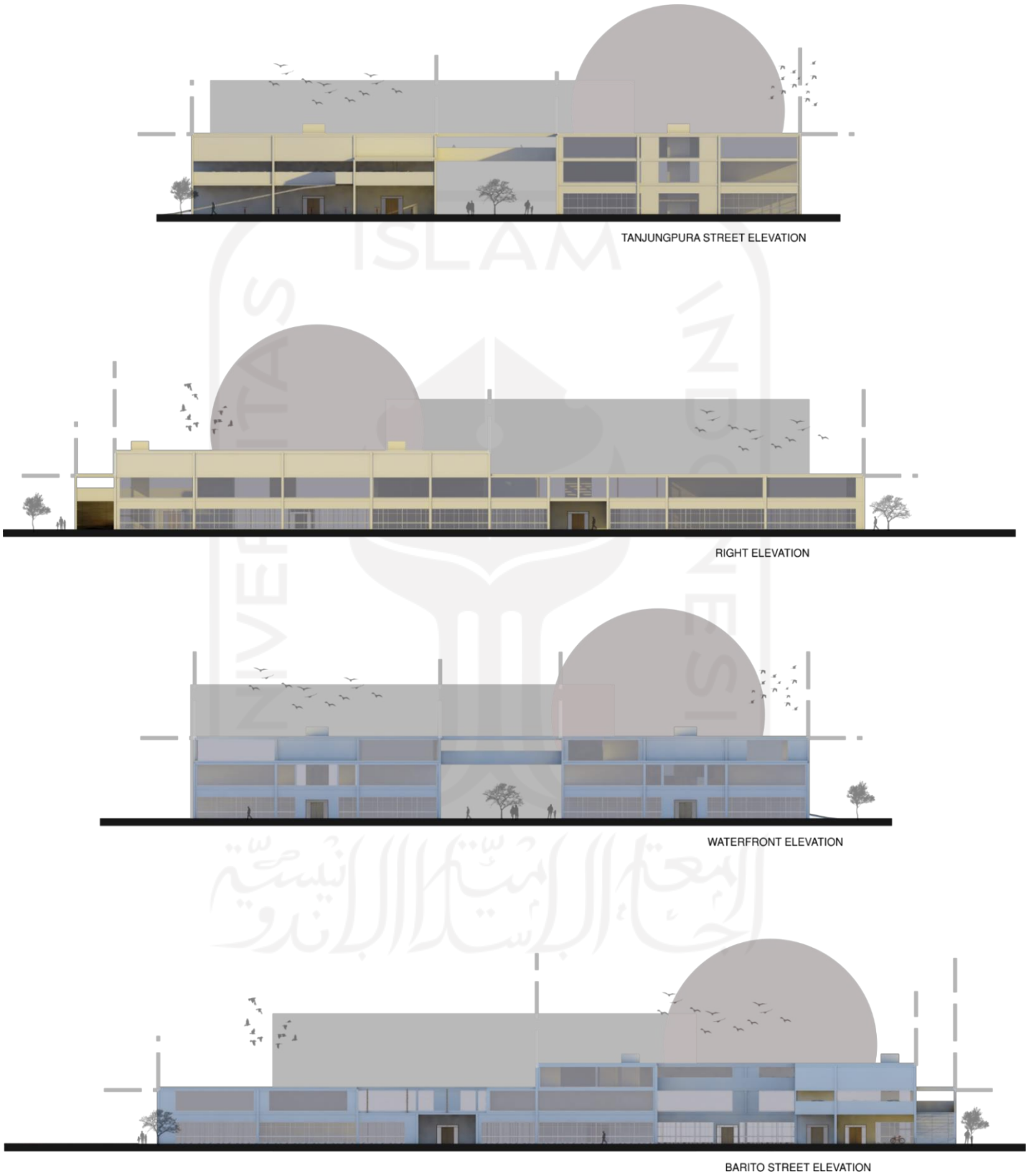


Figure 5. 6 Schematic Elevations
Source: Author (2021)

5.5 Schematic Sections

Figures below shows the sections from two different point.

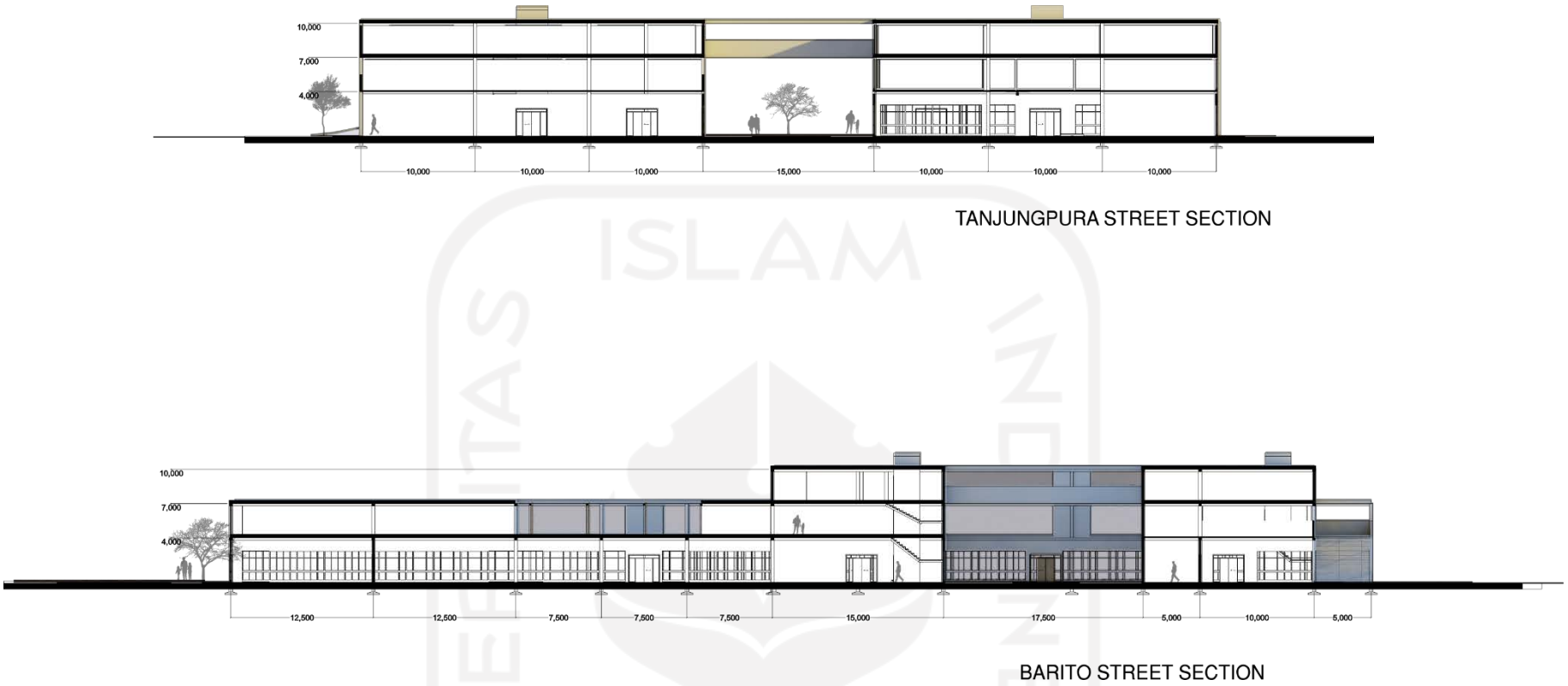


Figure 5. 7 Schematic Sections
Source: Author (2021)

5.6 Schematic Special Architectural Detail

The door entries using touch-less technology as the implementation of mechanical vibration principle.

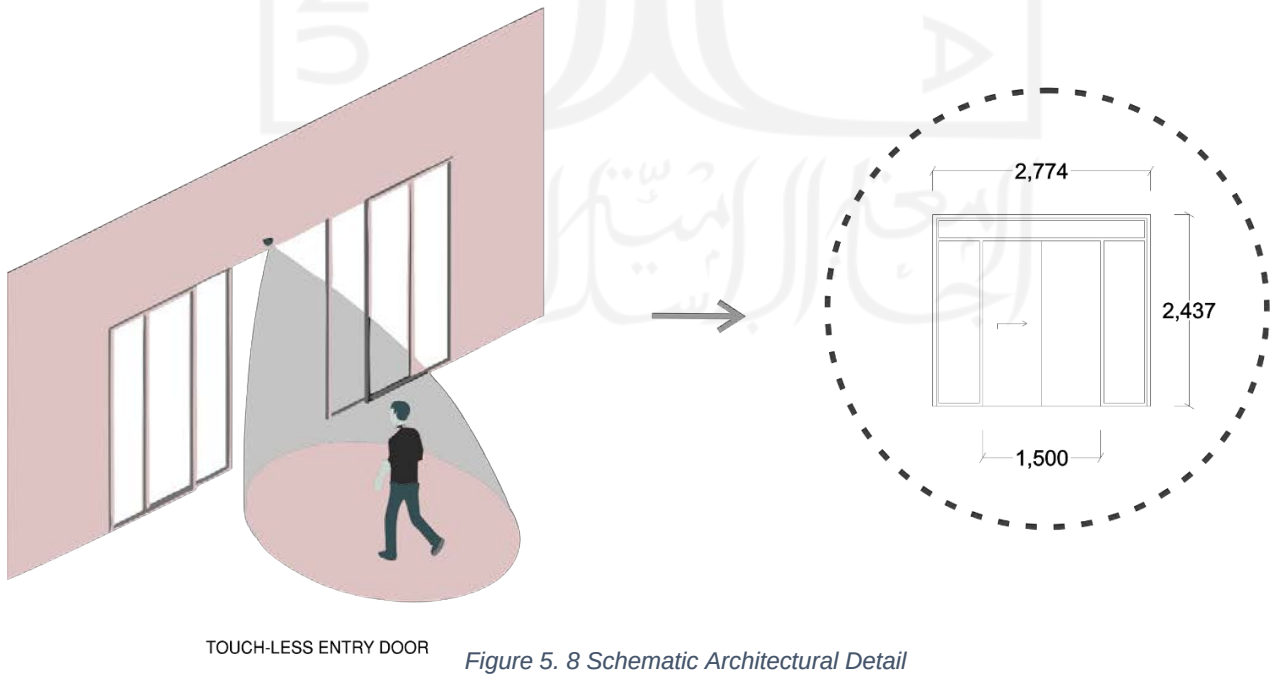


Figure 5. 8 Schematic Architectural Detail
Source: Author (2021)

5.7 Schematic Building Envelope

Use double low-e glass as one of the building envelope material.

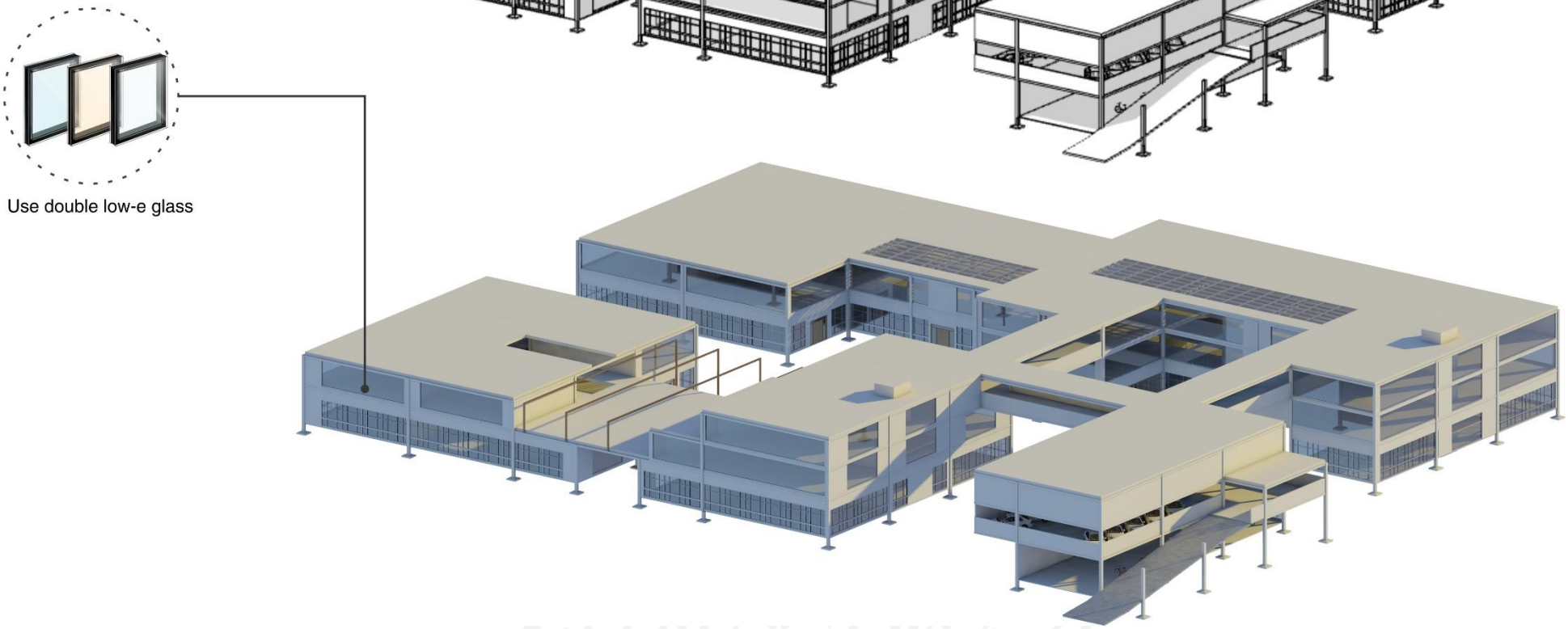


Figure 5. 9 Schematic Building Envelope
Source: Author (2021)

5.8 Schematic Interior & Exterior

The following figures shows the exterior perspective from bird eye's view.

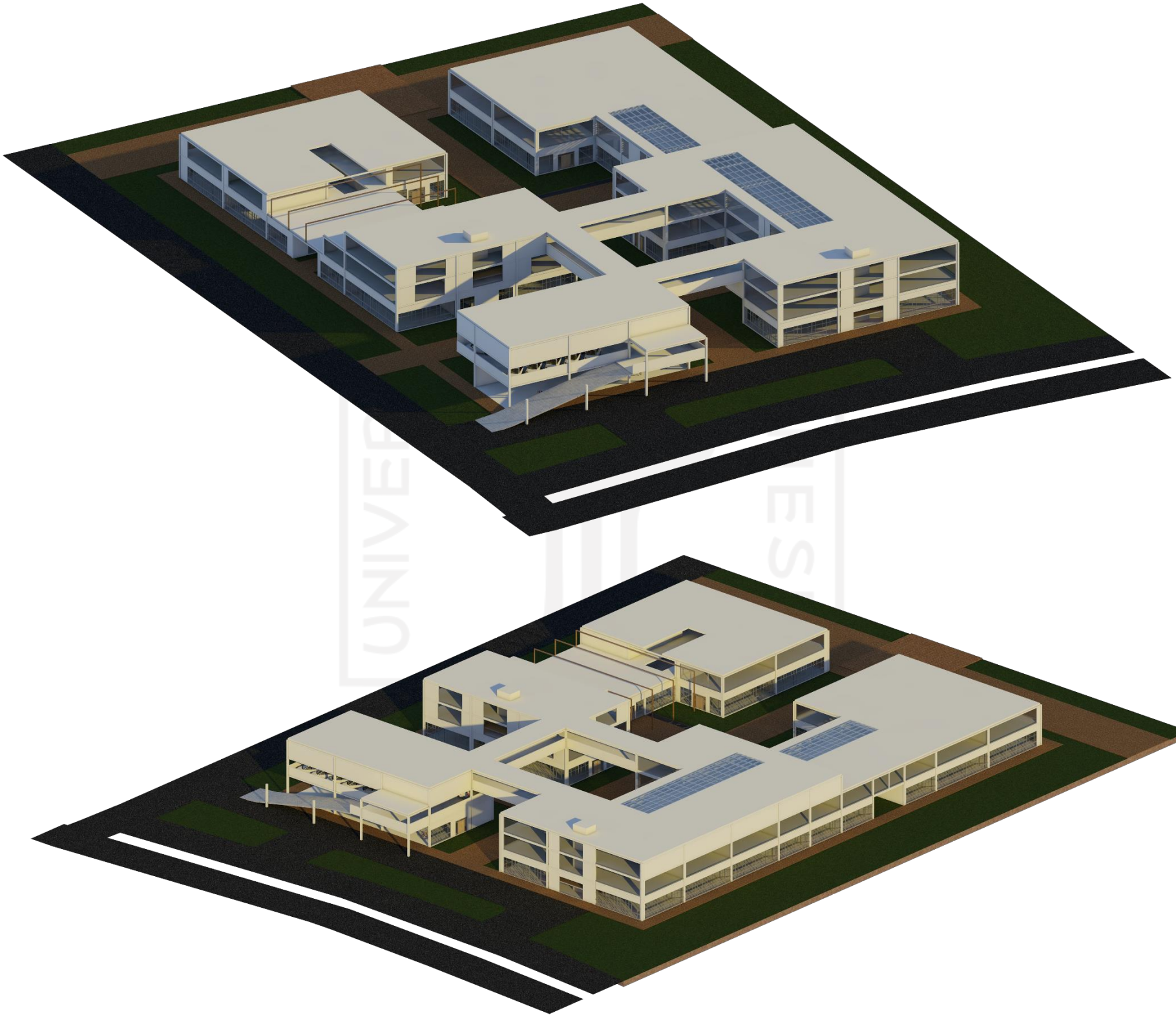
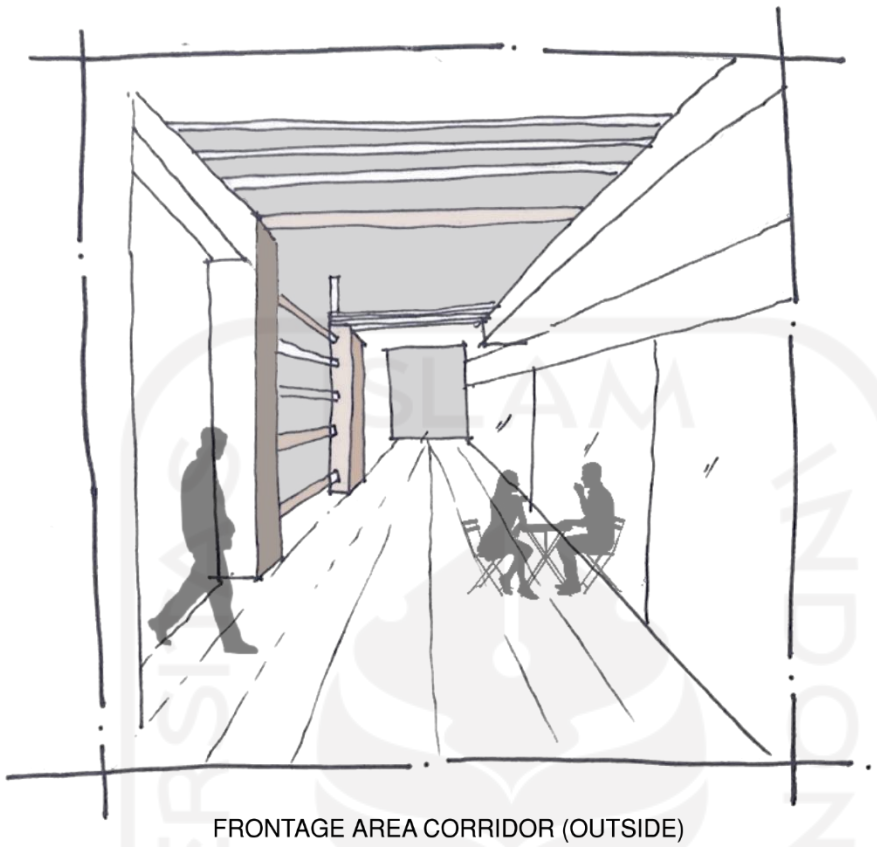
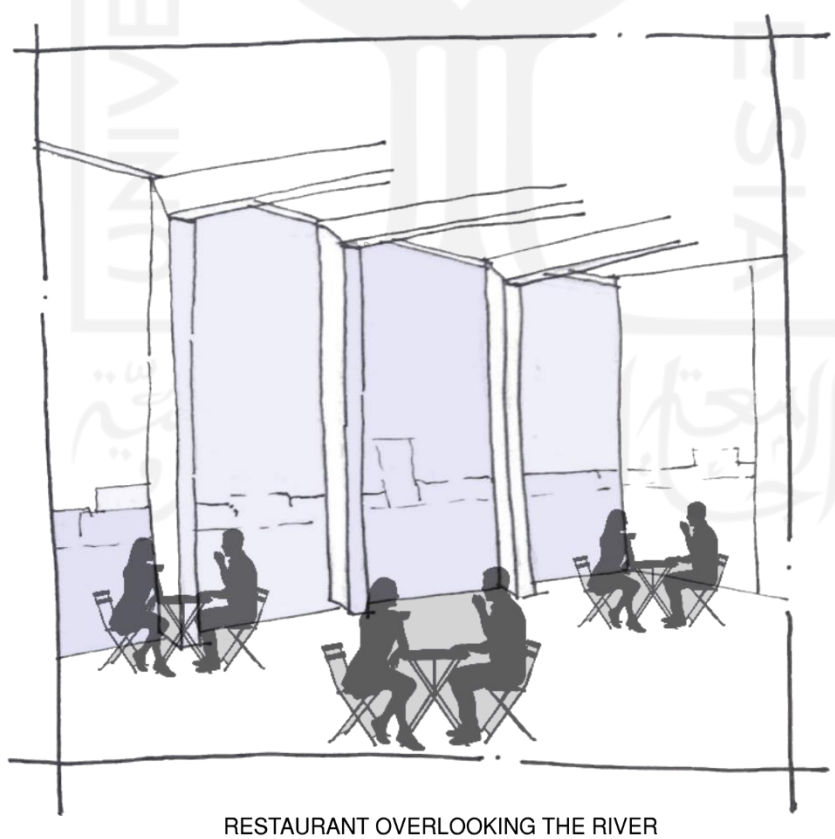


Figure 5. 10 Schematic Exterior
Source: Author (2021)

The following figures shows the preliminary ideas of frontage area corridor interior and restaurant interior.



FRONTAGE AREA CORRIDOR (OUTSIDE)



RESTAURANT OVERLOOKING THE RIVER

Figure 5. 11 Schematic Interior
Source: Author (2021)

5.9 Schematic Structure

The structural system used in this building is reinforced concrete structure. For the column size is 300x300 mm and beam 400x300 mm. The foundation using footplate foundation.

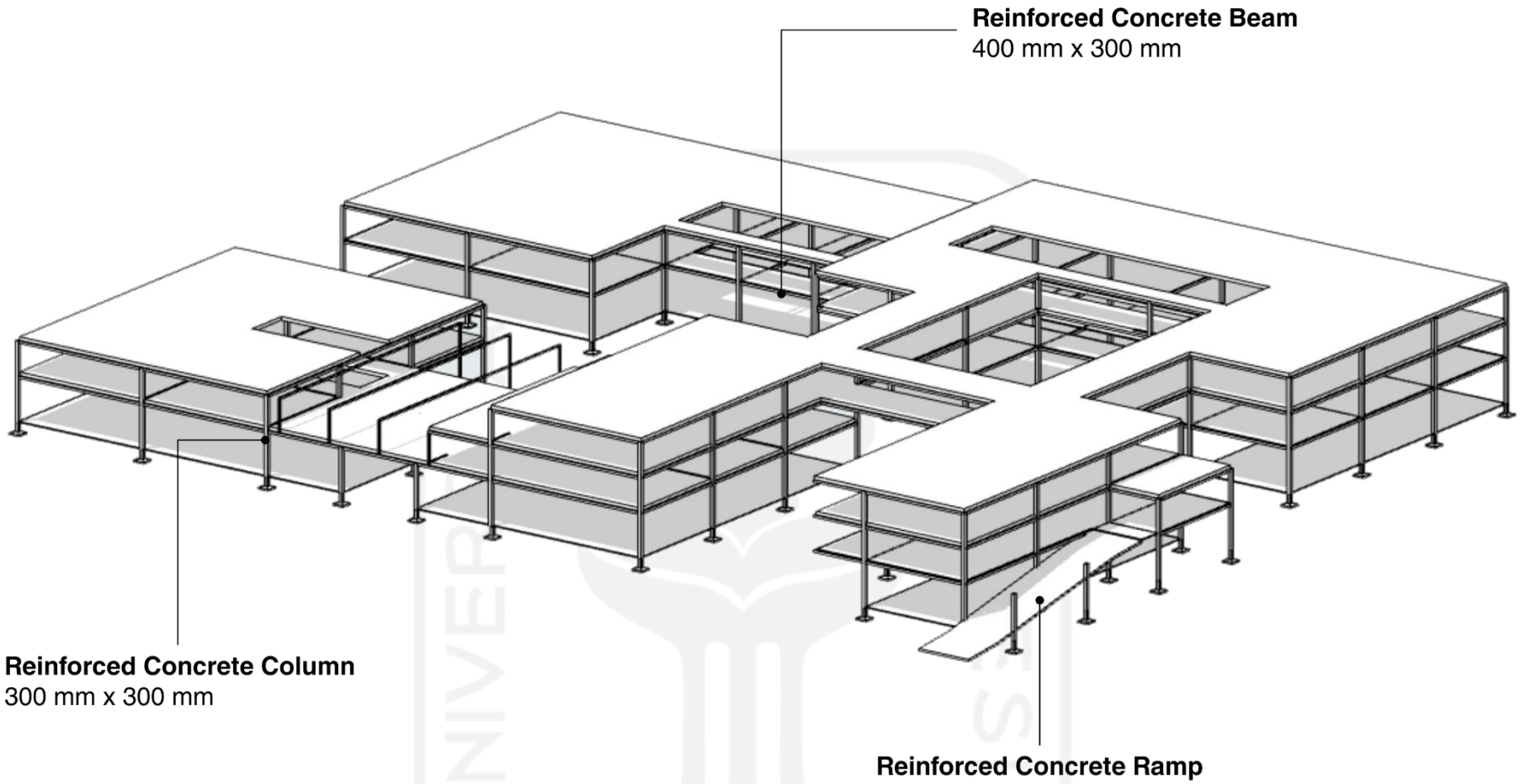


Figure 5. 12 Schematic Structure
Source: Author (2021)

5.10 Schematic Utilities, Building Safety, & Barrier Free

In this design, the clean water distribution system uses an up feed system and down feed system where water from the ground water tank located on the lower ground floor, in the pump to the shaft and then directly will be distributed to each toilet or pantry.

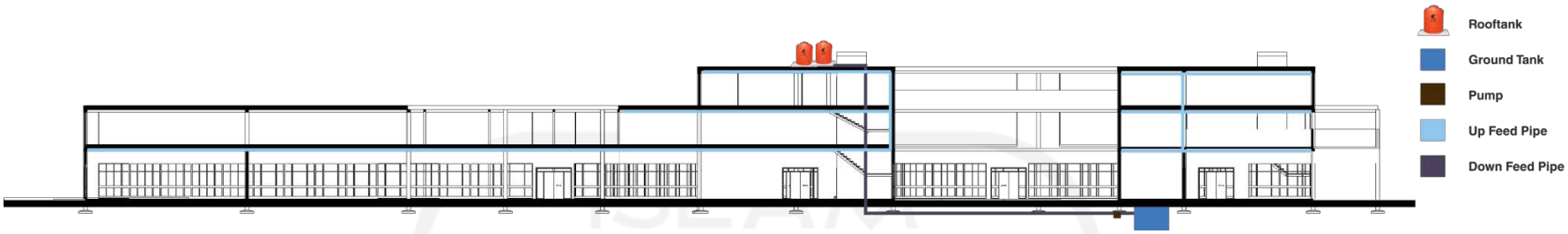


Figure 5. 13 Schematic Utilities

Source: Author (2021)

Figure 5. 14 Schematic Building Safety and Barrier Free
Source: Author (2021)

06

DESIGN RESULT

CHAPTER VI
DESIGN RESULT

6.1 Spatial Design

6.1.1 Project Specifications

This building is a shopping center located in the Waterfront Area of Pontianak. Pedestrians and shopping centers are certainly very close to the so-called shopping corridor or City Walk. This building is designed to give the feel of City Walk in a shopping center that focuses on the scale and proportion of inner and outer space.

Pontianak City Walk Center project specifications include:

1. Function : Shopping Center
2. Location : Jl. Tanjungpura, Pontianak, West Kalimantan
3. Site Size : 12900 m2
4. KDB : 80 %
5. Building Height : 18 meters
6. Number of Floor : 3 Floors

6.1.2 KDB

The shopping center building has a ground floor area of 5270.4 m2 with a site mall area of 12900 m2. In the regional regulations the maximum coefficient on the site is 80% so that for mall buildings the basic coefficient of the building has met the rules of 40.8%%.

6.1.3 KLB

According to local regulations, the maximum floor coefficient of the building is 8, for the total floor area of the shopping center is as large as;

15859,63

So that the total floor area of the building / total area of land is;

15859.63/12900= 0.24

So, the mall building has fulfilled the KLB.

6.1.4 Property Size

Shopping center has 3 floors, mall space program is divided into 3 groups of rooms, namely the main room (commercial area), management room, and service room.

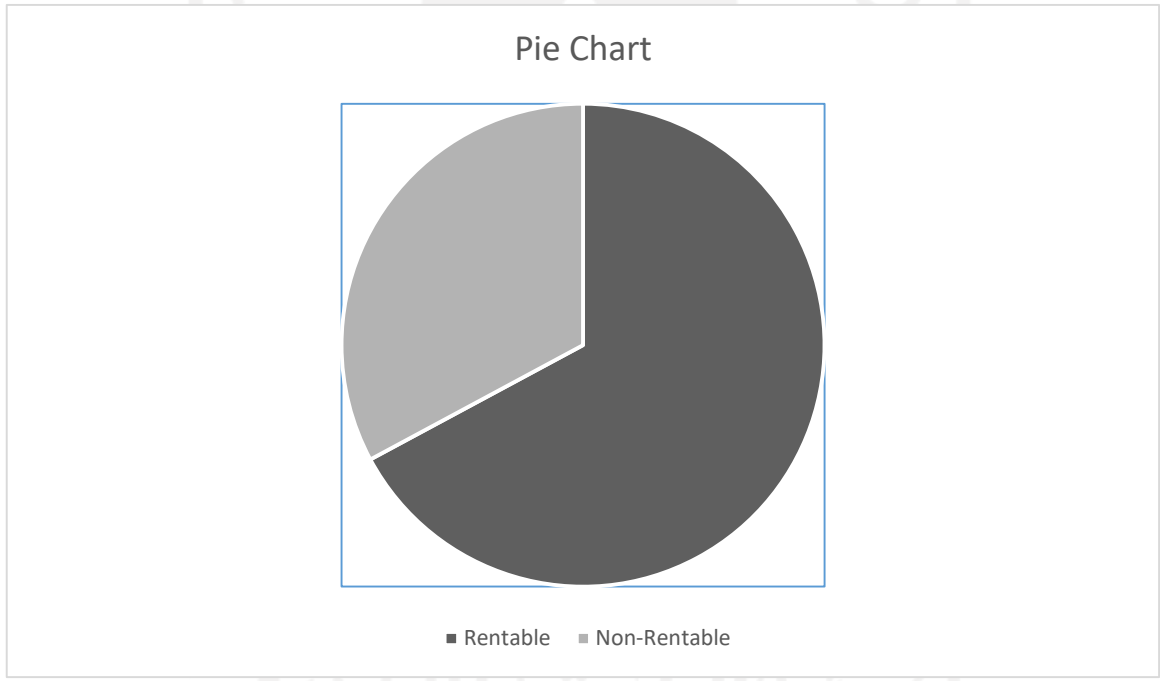
The total of the various space is as follows;

Space Type	Space Need	Number of Space	Total Area
Major Unit	Receptionist / Information	1	5
	Lobby	2	50
	Retail Type 1	1	360
	Supermarket	1	780
	Department Store	1	1749
	Food Court	1	1188
Small Unit	Retail Type 2	6	864
	Retail Type 3	32	2304
		Total	7300
Space Type	Space Need	Number of Space	Total Area
Management Room	Main Director	1	9,1
	Direct. General OP	1	6,19
	Direct. Financial OP	1	6,19
	Production	1	39,85
	Marketing	1	39,85
	HRD	1	27,84
	Living Room	2	20,66
	Pantry	1	6,29
	Lavatory	2	17,32
Service Room	Technician	1	5,56
	Security	1	36,21
	Cleaning Service	1	20
	Office Boy/Girl	1	15
	Pantry	1	6,29
	Lavatory	2	17,32
	Control Room	1	9,8
	Generator Room	2	11,32
	Water Pump Room	2	24
	AHU Room	2	11,58
	Server Room	1	9,8
	Emergency Stair	3	72
	Passenger Elevator	4	50
	Baby Room	4	40
	Health Clinic	1	21,17
	Mushola	1	42,5
		Total	565,84

Table 6. 1 Property Size
Source: Author (2021)

Main Room (Rentable)	: 7300 sqm
Management Room (Non-Rentable)	: 173.29 sqm
Service Room (Non-Rentable)	: 392.55 sqm
Total Corridor	: 34848 sqm
Rentable Corridor	: 21384 sqm
Non-Rentable Corridor	: 13464 sqm

In this project building there are corridors that can be sold so that for the corridors sold are put into commercial space and that are not sold put into the supporting room. For parking needs can be included in the rentable or non-rentable area because the needs of mall parking can be sold or serviced, therefore the room is not included in the count of rentable and non-rentable.



Shopping center buildings have 67.15% rentable area and 32.85% non-rentable area. The mall building has a rentable area of more than 50% so the commercial factor is good.

6.2 Space Programming

6.2.1 Space Classification

The space in this design can be classified by its hierarchy based on user patterns. Table below shows the final space classification that will be used as the basis for circumcised space layout on the floor plan.

PRIVATE	PUBLIC
Lavatory	Plaza Major
Main Director	Plaza Minor
Direct. General OP	Major Corridor (ex)
Direct. Financial OP	Secondary Corridor (ex)
Production	Major Corridor (in)
Marketing	Secondary Corridor (in)
HRD	Receptionist
Living Room	Lobby
Pantry	Retail I
Supermarket Storage	Retail II
Loading Dock	Retail II
Control Room	Supermarket
Generator Room	Department Store
Water Pump Room	Food court
AHU Room	Emergency Stairs
Server Room	Passenger Elevator
	Parking Lot
	Baby Room
	Health Clinic
	Mushola

Table 6. 2 Space Classification
Source: Author (2021)

6.2.2 Space Organization

From the space classification and organization that has been made, then it can be known the final relationship between each room in the shopping center. The relationship of the space that has been made as a basis in making a layout in the shopping center. There is a mall attraction center that is anchor. This anchor can attract visitors to reach commercial space and other supporting facilities.

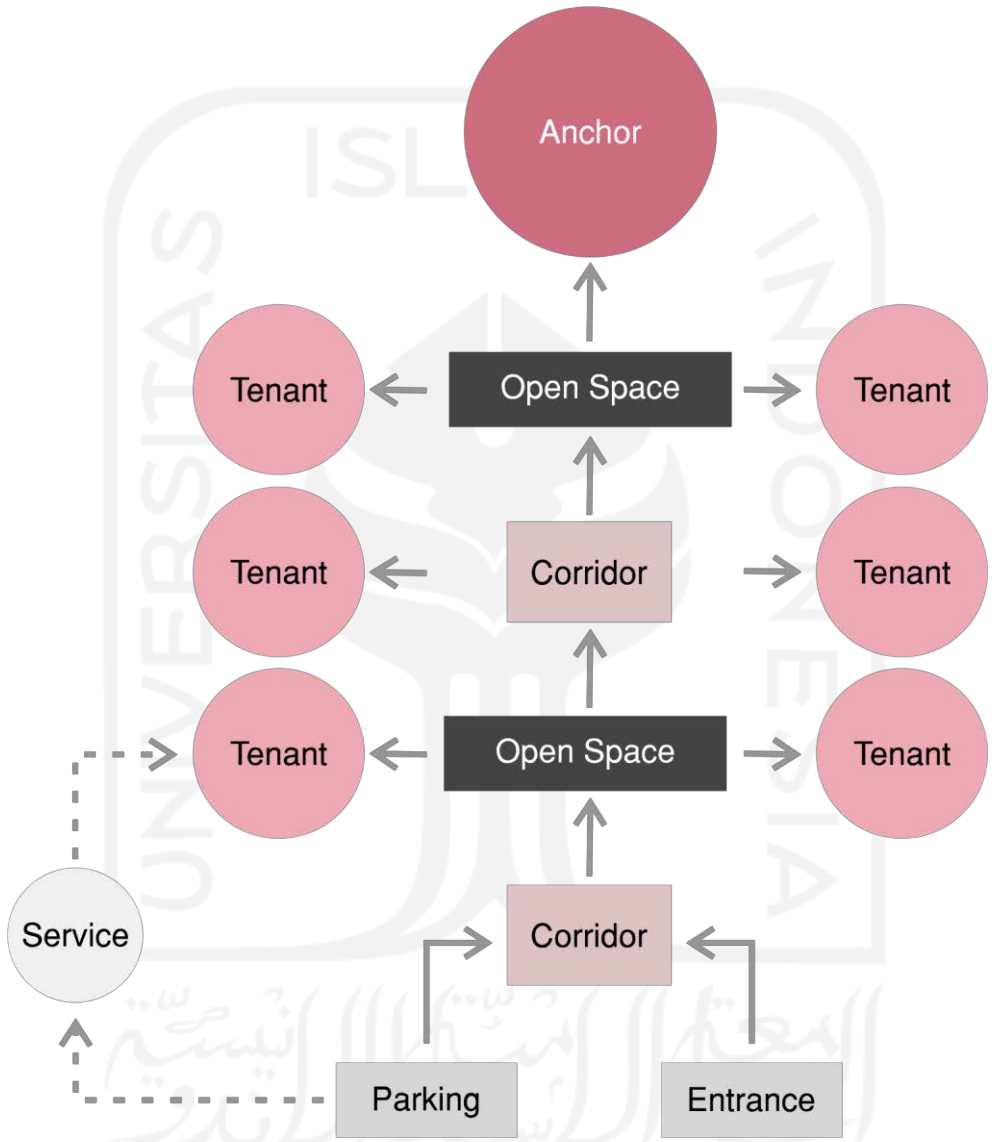


Figure 6. 1 Space Organization
Source: Author (2021)

6.3 Situation

The situation from the top of the building is equipped with the surrounding environment, and has the aim to show the condition of the building designed to the surrounding environment. This building is located in the waterfront area of Pontianak so it must follow the directions set out in the development planning of the area.

Figure 6. 3 Situation
Source: Author (2021)

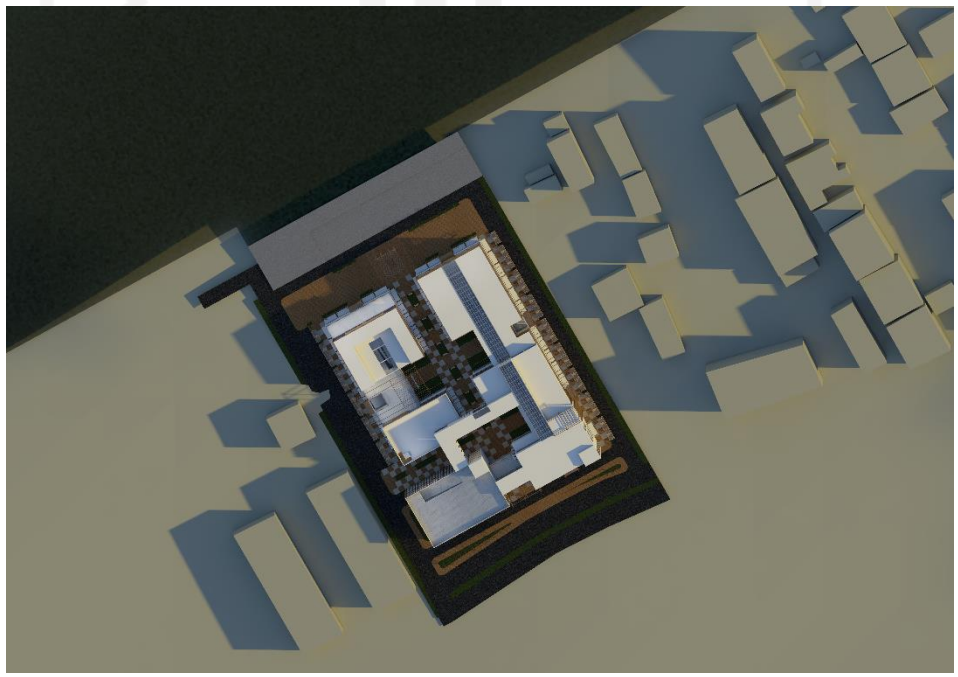


Figure 6. 2 Situation
Source: Author (2021)

6.4 Site Plan

Site plan is a floor plan that is equipped with the surrounding environment in the design site, so that it can know the relationship of the inner space and the outer space of the building. Through the site plan, you can see the circulation of vehicles and people when exploring various accesses, then also the proportions created in order to achieve the nuances of City Walk in the outer space and inner space.

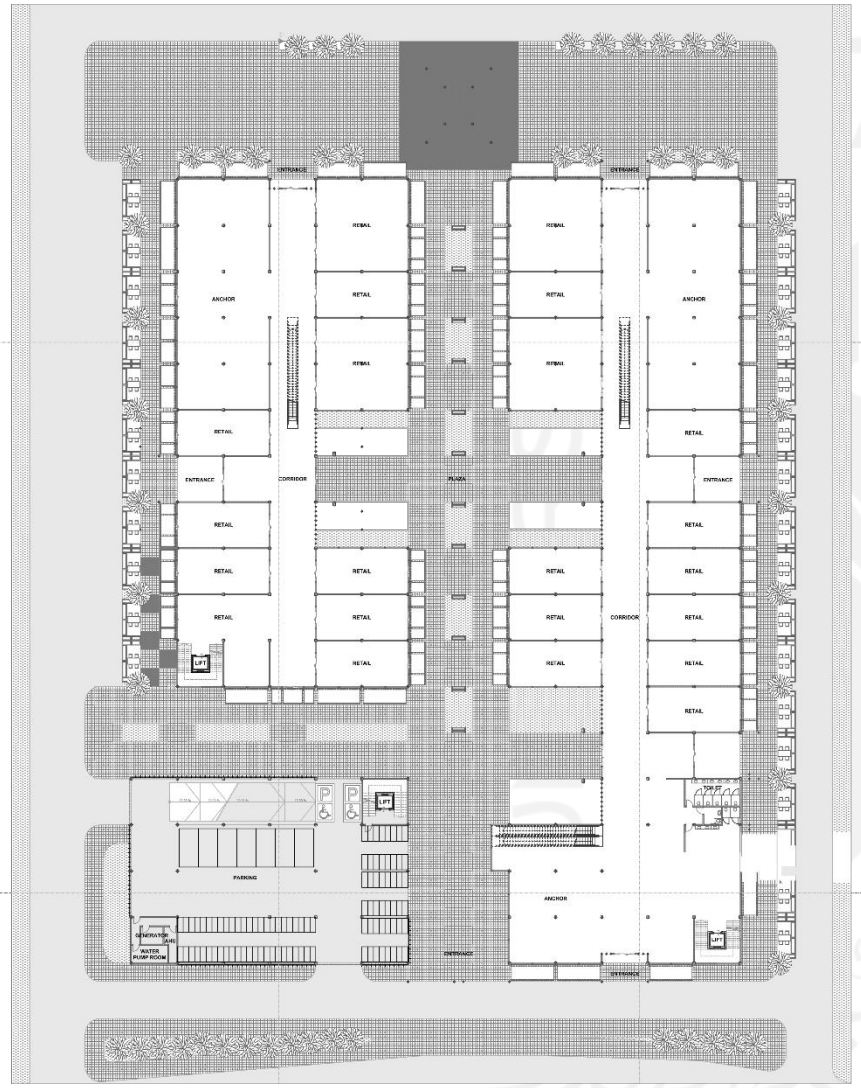


Figure 6. 5 Site Plan
Source: Author (2021)

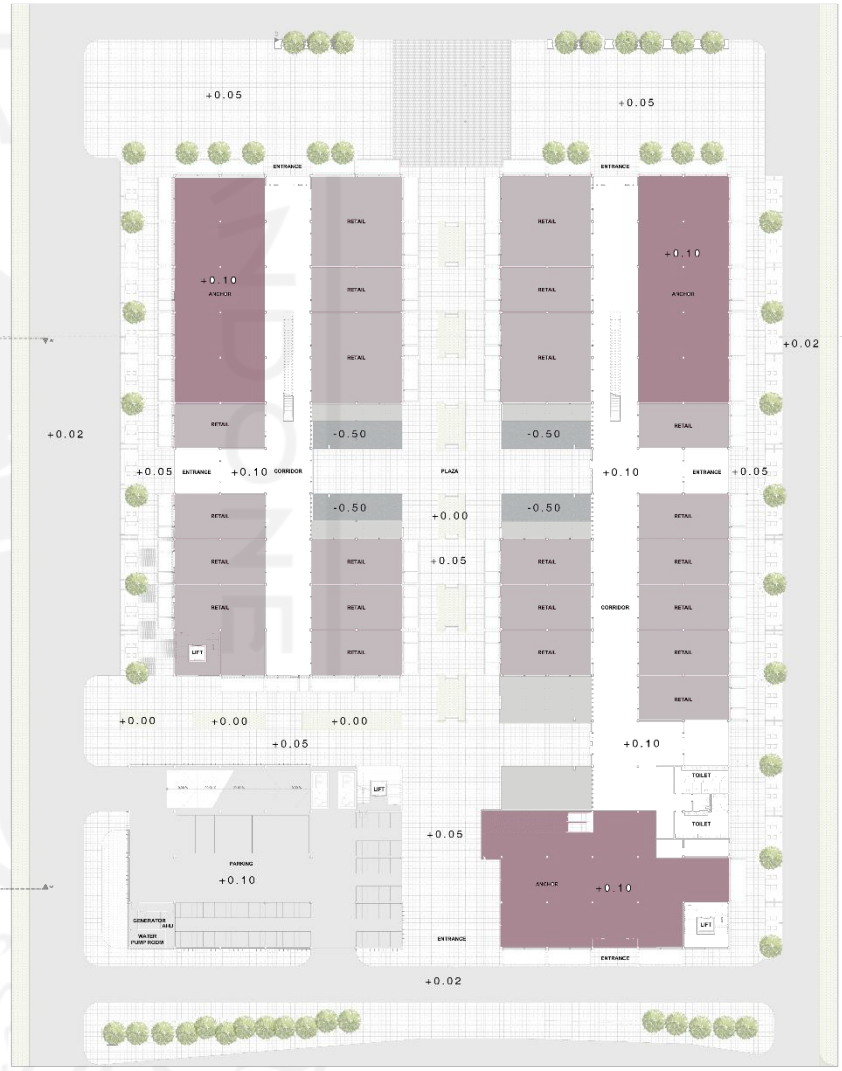


Figure 6. 4 Site Plan
Source: Author (2021)

6.5 Axonometric Plan

There are 2 mass composition functions in this project, the first mass is the one that serves as retail and supporting facilities. The ground floor is centered on public spaces such as lobby, public toilet, and commercial area. The 1st floor is also centered as a public area such as public toilets, food court, and commercial areas. While the 2nd Floor is centered as a more private area such as a management room.

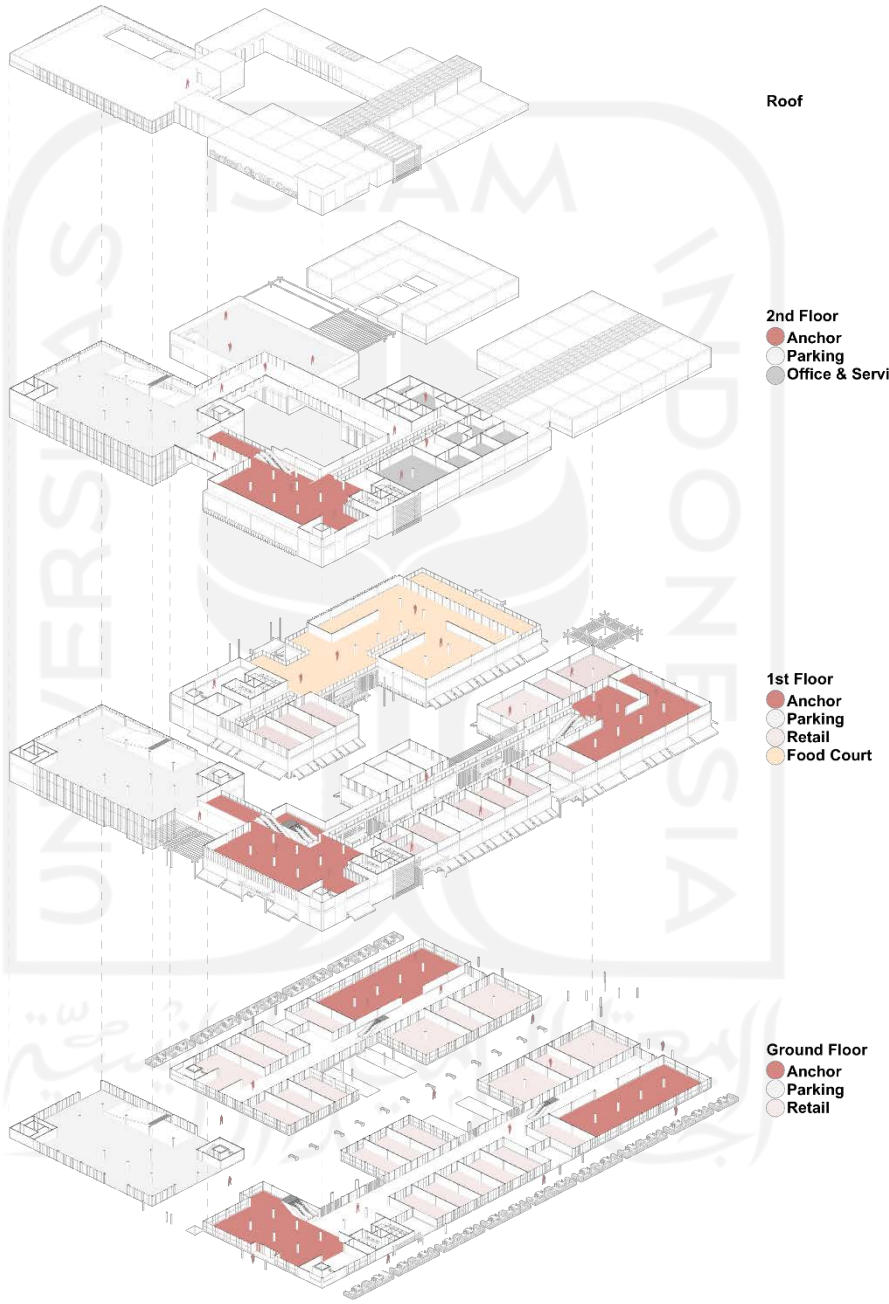


Figure 6. 6 Axonometric Plan
Source: Author (2021)

The second mass is the one that serves as parking. The building has 6 floors, where the first floor contains a MEE room, a parking lot. The height between floors is 3m so the height comparison of parking and retail buildings is 2:1. All the masses on the site are connected by a bridge on the 2nd floor.

6.6 Floor Plans

The ground floor plan is dominated by public spaces, such as information center lobby, commercial area, plaza, public toilet. The MEE room is also located on the ground floor located on the side of the parking building.

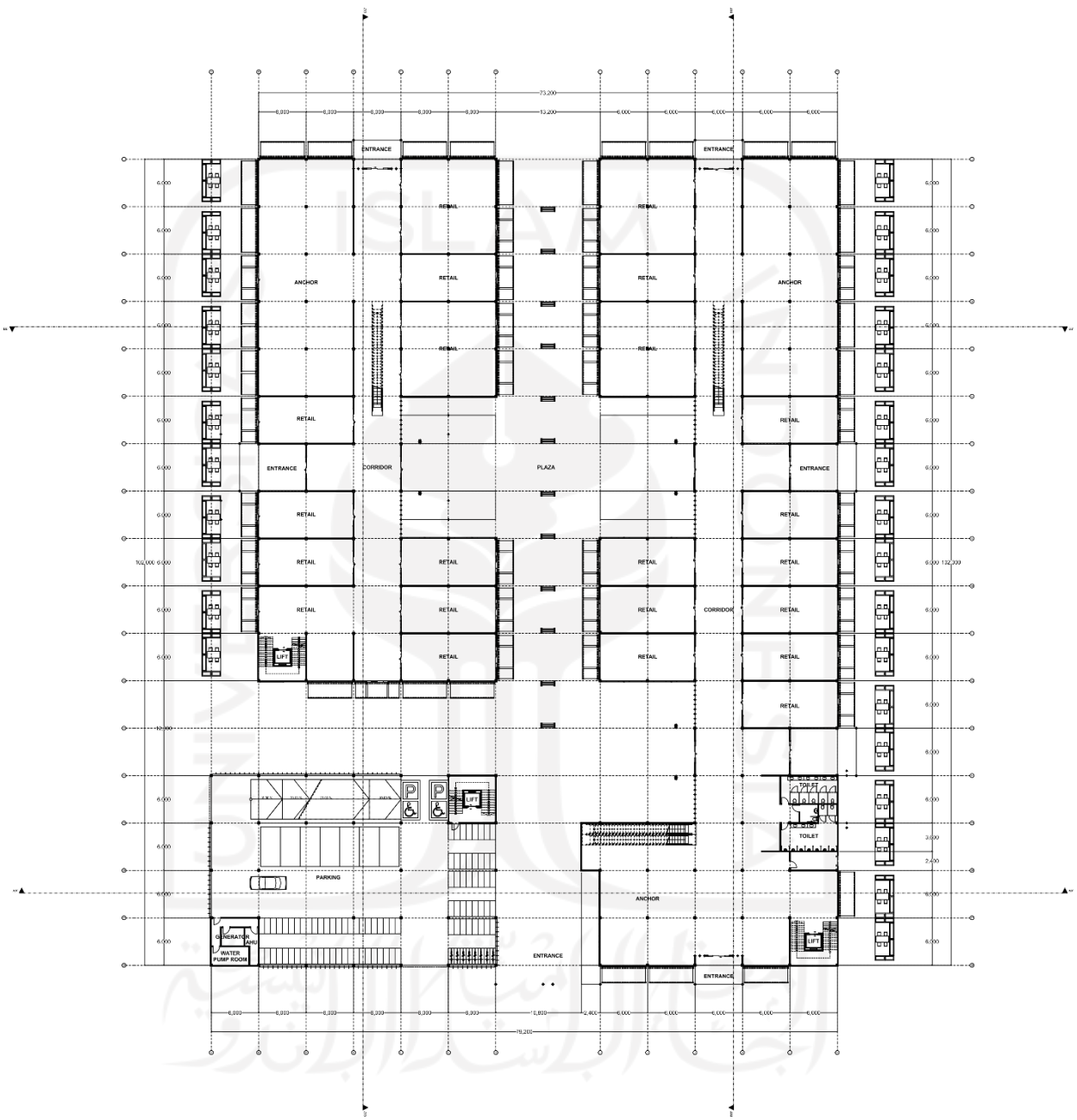


Figure 6. 7 Ground Floor Plan
Source: Author (2021)

On floors 1 to 2, the room is dominated by commercial areas. For major units there are supermarkets, department stores and food courts totaling 1 each. Untur minor unit there is retail type I a number of 1 unit, type II a number of 6 units, and type II a number of 32 units.

The building consists of 3 separate masses on the ground floor but has connections on the 2nd floor of the bridge. In the rooftop area there is a roof tank installation for clean water purposes

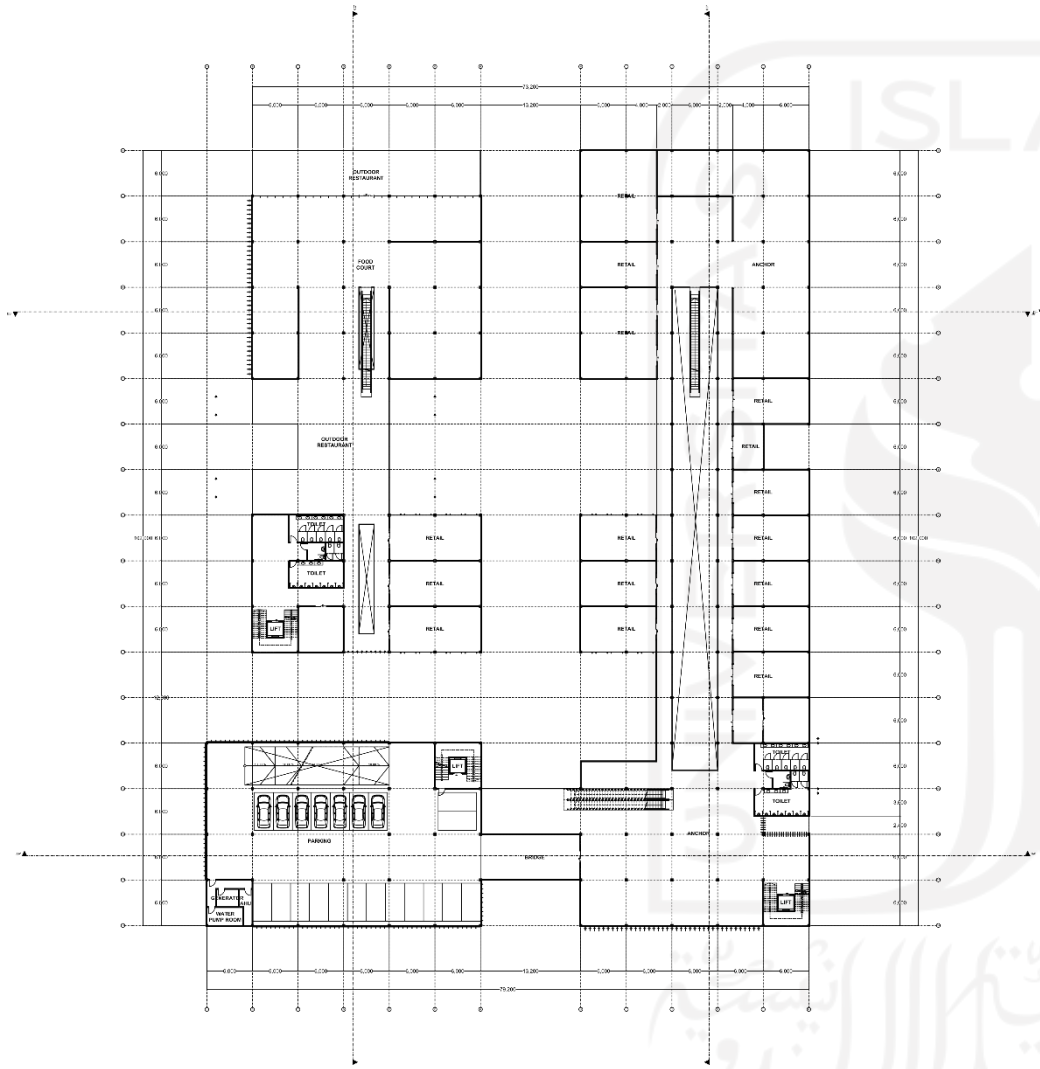


Figure 6. 9 1st Floor Plan
Source: Author (2021)

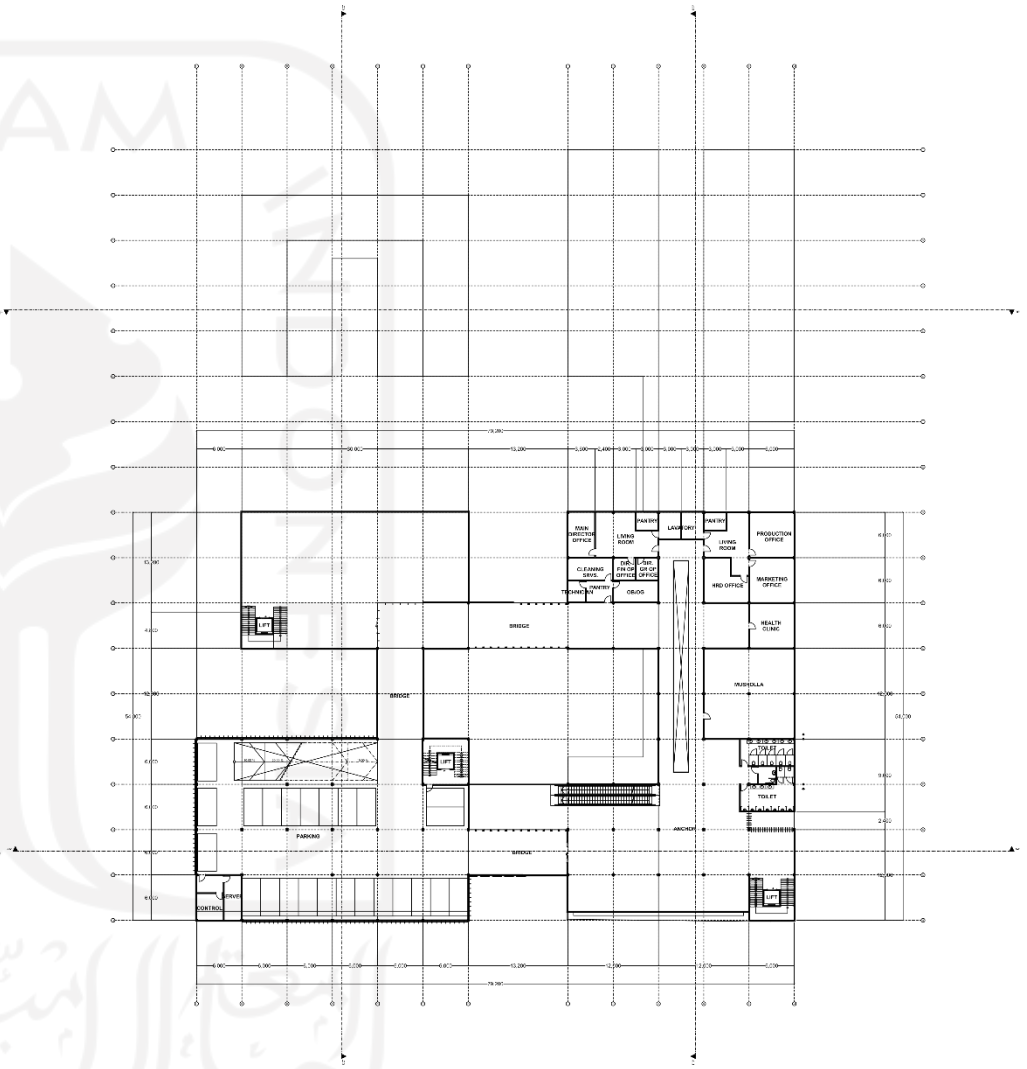


Figure 6. 8 2nd Floor Plan
Source: Author (2021)

6.7 Elevations

Elevation is the form of the building in two dimensions which visible from the outside of the building. The design of the shopping center using the city walk approach will result in visual perceptions arising from the engineering of the scale and proportion of inner and outer space. The goal is to provide a visual experience just like being in an urban corridor. More information, technical design drawings are included in the attachment.

Figure 6. 10 Tanjungpura Street Elevation
Source: Author (2021)

Figure 6. 11 Right Sided Elevation
Source: Author (2021)

Figure 6. 12 Waterfront Elevation
Source: Author (2021)

Figure 6. 13 Barito Street Elevation
Source: Author (2021)

6.8 Sections

Section is a drawing of a systematic draft design that is cut vertically to show the contents in a truncated space. Then integration between levels, connectivity between spaces, as well as the realization of scale and proportion in the corridors that are the main focus. More information, technical design drawings are included in the attachment.

Figure 6. 14 Section A-A'
Source: Author (2021)

Figure 6. 15 Section B-B'
Source: Author (2021)

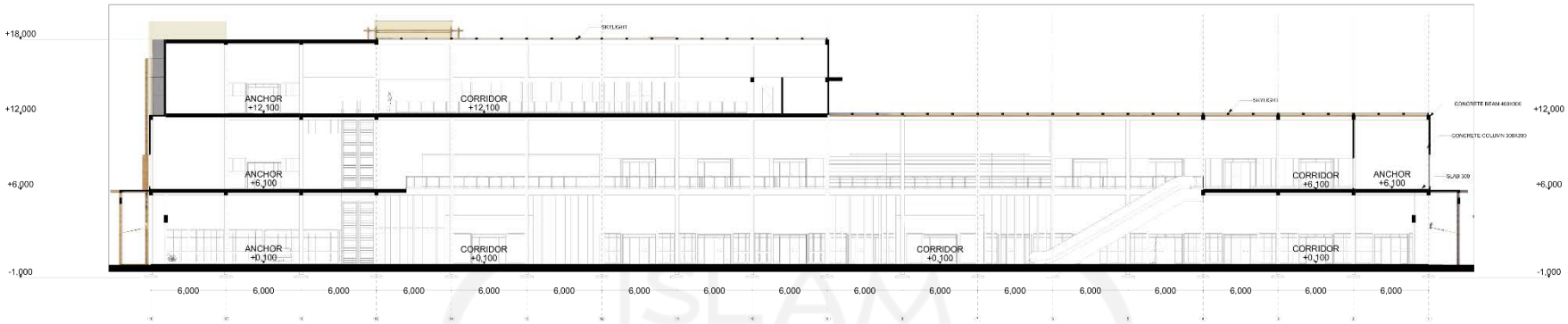


Figure 6. 17 Section C-C'
Source: Author (2021)

Figure 6. 16 Section D-D' Source: Author (2021)

6.9 Building Envelope

The shopping center envelope designed using brick as the main material of walls, 3 mm glass for windows, and skylight on the main mass.

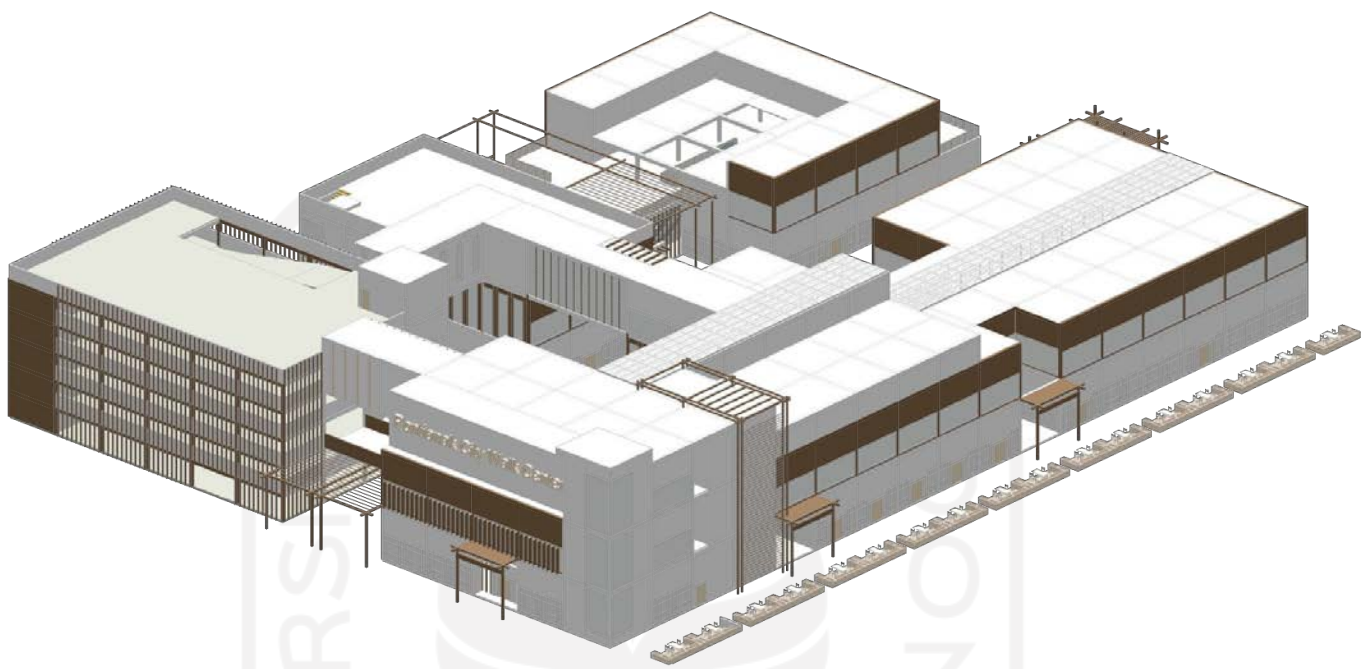


Figure 6. 19 Building Envelope
Source: Author (2021)

Figure 6. 18 Envelope Detail and Section Detail
Source: Author (2021)

6.10 Interior

In the shopping center building designed there is a skylight located near the middle of the main building, shopping center also has voids in the corridor room that serves as natural lighting for the building.

Figure 6. 21 View from Corridor Inside Main Building
Source: Author (2021)

Figure 6. 20 Void Inside Main Building
Source: Author (2021)

Figure 6. 22 Entrance View from Inside Corridor
Source: Author (2021)

Figure 6. 23 Retail
Source: Author (2021)

6.11 Exterior

Clear window provides opportunities for informal surveillance of the public realm. As well, it allows the public to see the activity within and to see displayed goods.

Figure 6. 24 Active Frontage Retail
Source: Author (2021)

Figure 6. 25 Entrance View from Outside Building
Source: Author (2021)

6.12 Structure

The structure at the center of this worship uses rigid frame reinforced concrete (site cast). The structure module has dimensions of 6000 mm x 6000 mm. But at some points such as vertical circulation areas the distance can reach 12,000 mm. The dimensions of the main column are 300 mm x 300 mm. 400 mm x 300mm dimensional beam. The structure is enough to withstand the load of a 3-story building.

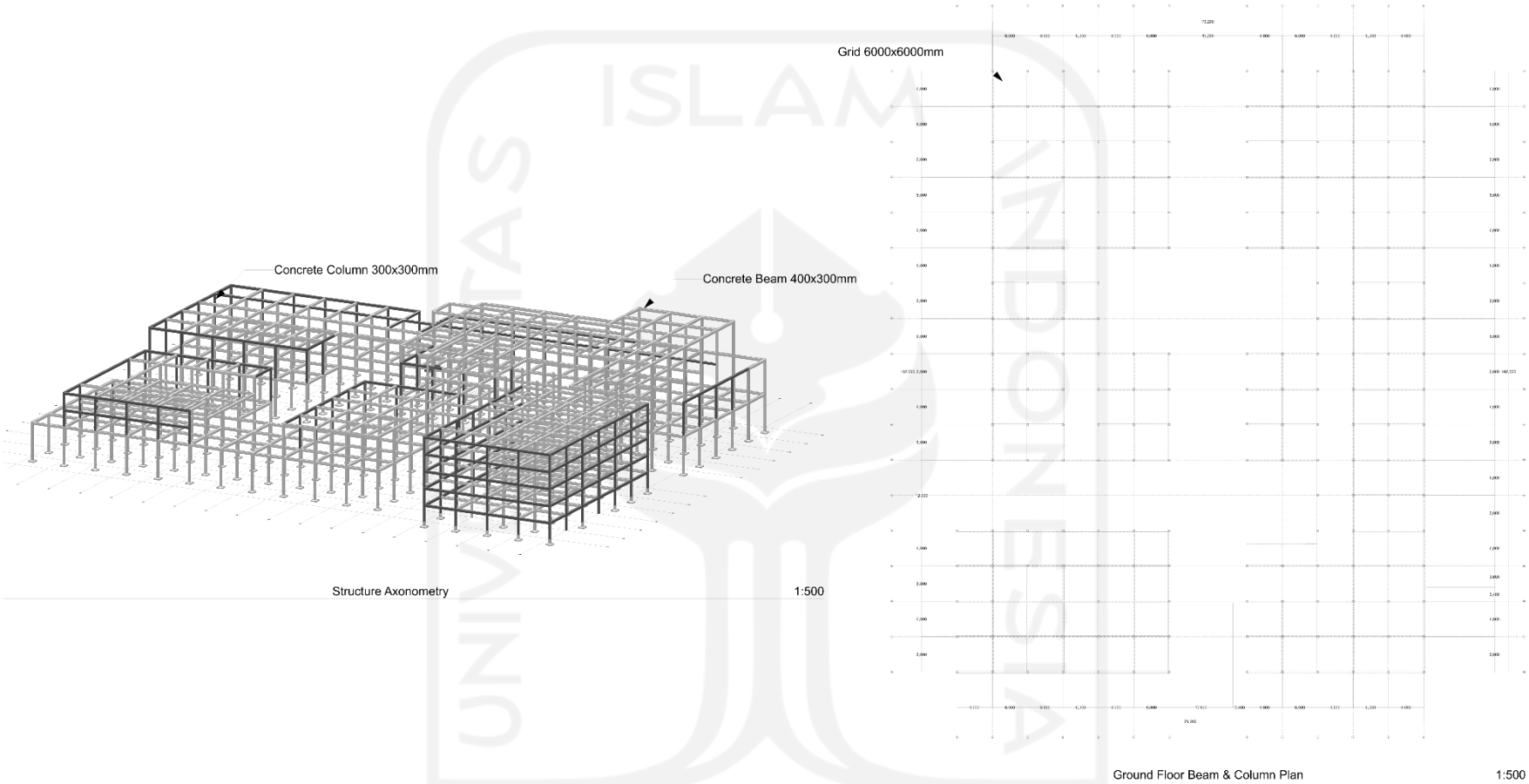


Figure 6. 26 Structure
Source: Author (2021)

6.13 Architectural Detail

6.13.1 Active Frontage

To support an active frontage interface of large format retail premises with the street.

The level of active frontage depends on the presence of a pedestrian entry point as well as a level of clear window area.
The appropriate level of active frontage will be influenced by the existing or preferred future character of the street.

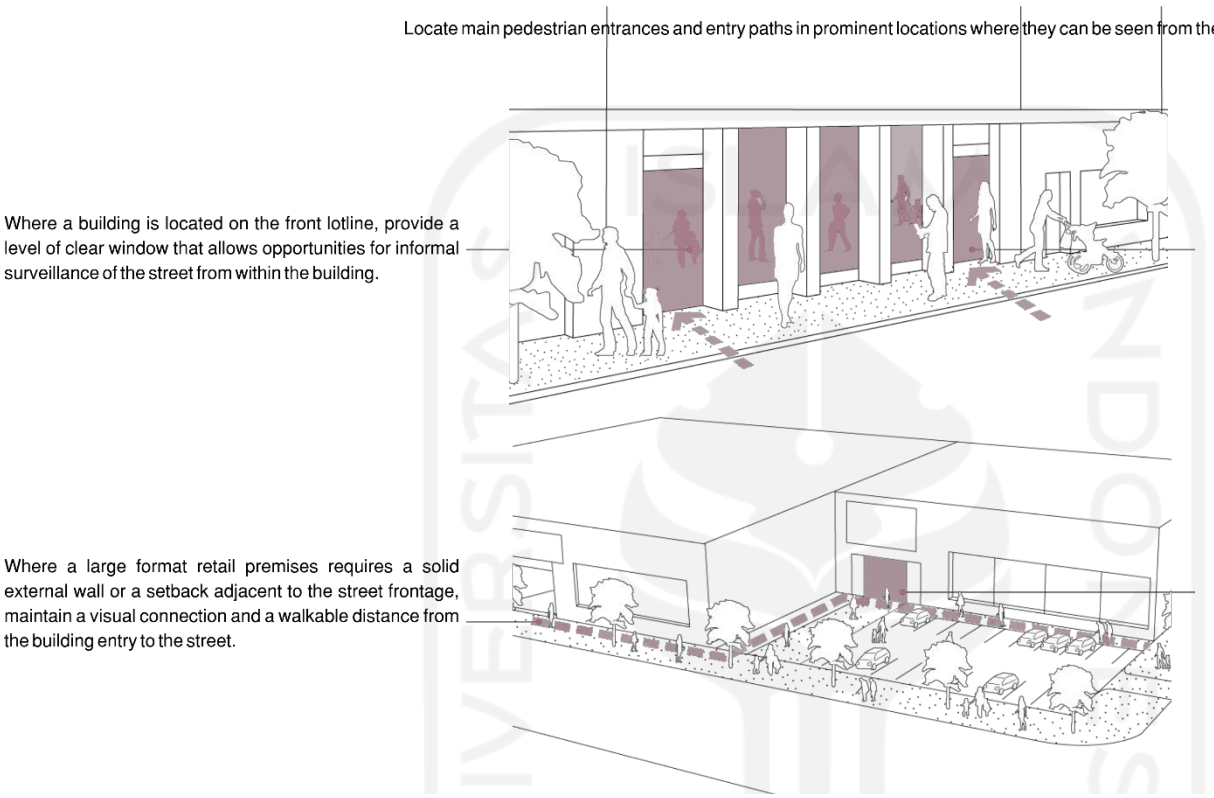


Figure 6. 28 Active Frontage Criteria
Source: Author (2021)

Figure 6. 27 Active Frontage Detail
Source: Author (2021)

6.13.2 Social Distancing Pavement

Following the inventive principle ‘Taking Out’ that is separation of things from grouping activities and places. In this case the object of contradiction is a corridor for meeting space that allows to cause a lot of interaction**,** so taking out the ‘virus transmitter’ out of the building is needed. Visitors have an important role in the building but may have a risk that they will transmit the virus inside. So it takes effort to get the 'troublemakers' out of the building. The solution to offer is by installed every 2.4 m of ‘boxes’ has sensor that can automatically spray the water from pavement if it exceed the maximum number of people due to minimize crowd.

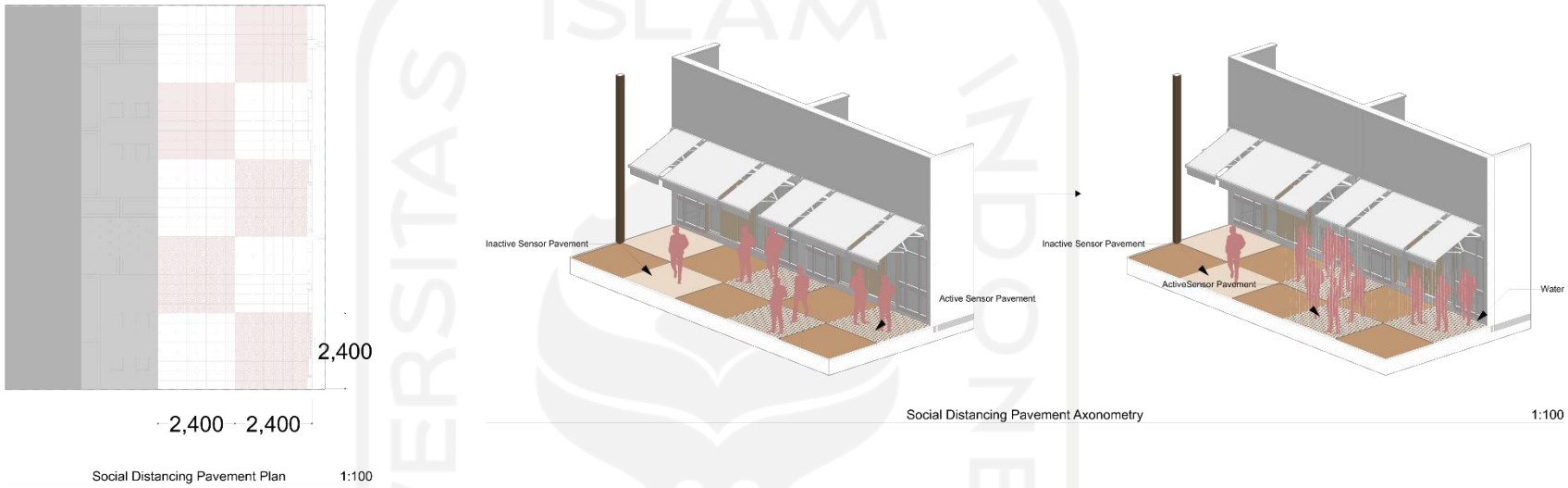


Figure 6. 29 Social Distancing Pavement Detail
Source: Author (2021)

6.13.3 Virtual Cashier x Traditional Cashier

The inventive principle ‘Copying” implies the use of cheaper, disposable, and inexpensive copies as a substitute for expensive, fragile, or difficult-to-replace objects. In this case the object of contradiction is a meeting space that allows to cause a lot of interaction directly so as to have an impact on the decreasing of rentable space. The problem-solving option is by copying the traditional cashier into the virtual one to provide a convenience between merchants and customers when shopping due to minimize the direct physical contact between people yet still maximize the rentable space.

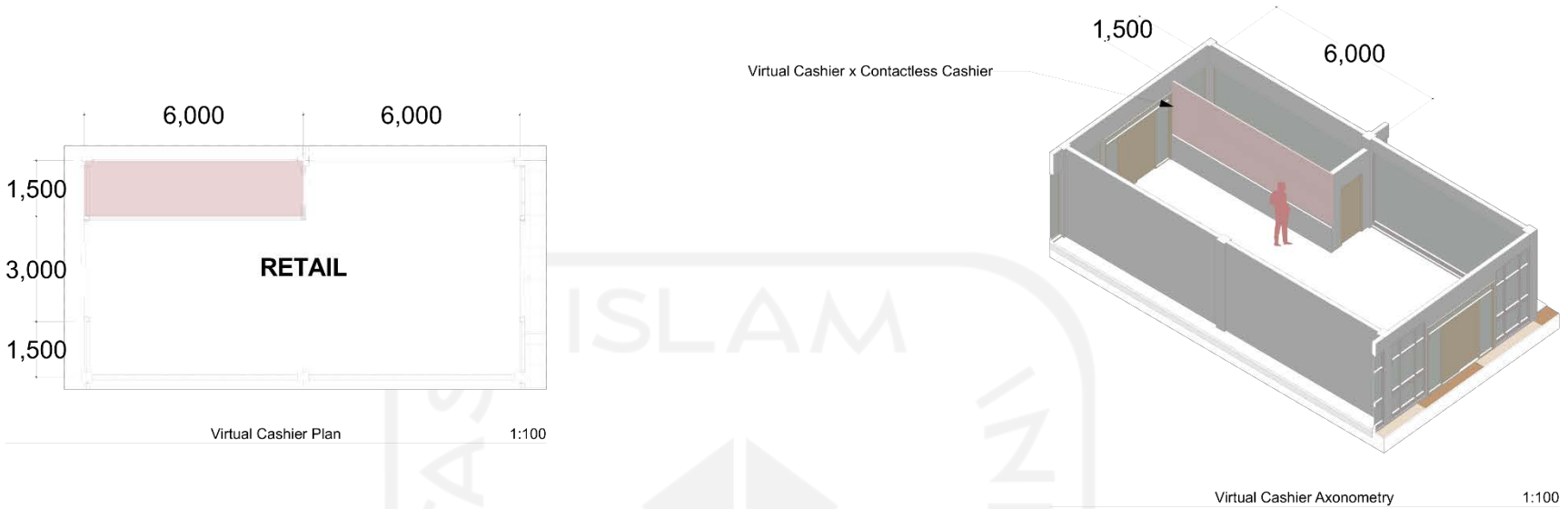


Figure 6. 30 Virtual x Traditional Cashier Detail
Source: Author (2021)

6.13.4 Touch-less Door

Mechanical vibration principle is presenting frequent. In this case the object of contradiction is more meeting space that allows to cause a lot of interaction directly so as to have an impact on the increasing spread of the COVID-19 virus. The problem-solving option is **by provide touch-less entry doors with body temperature check technology to reduce surface transmission.**

Figure 6. 31 Touch-less Door
Source: Author (2021)

6.13.5 Skylight

Inert Atmosphere principle is presenting atmosphere that can calm / prevent from negative activities. In this case the object of contradiction is a corridor that allows to cause a lot of interaction directly so as to have an impact on the increasing spread of the COVID-19 virus. The problem-solving option is to create skylight that offer sun exposure (not fully) which can significantly correlated with recovery from Covid-19

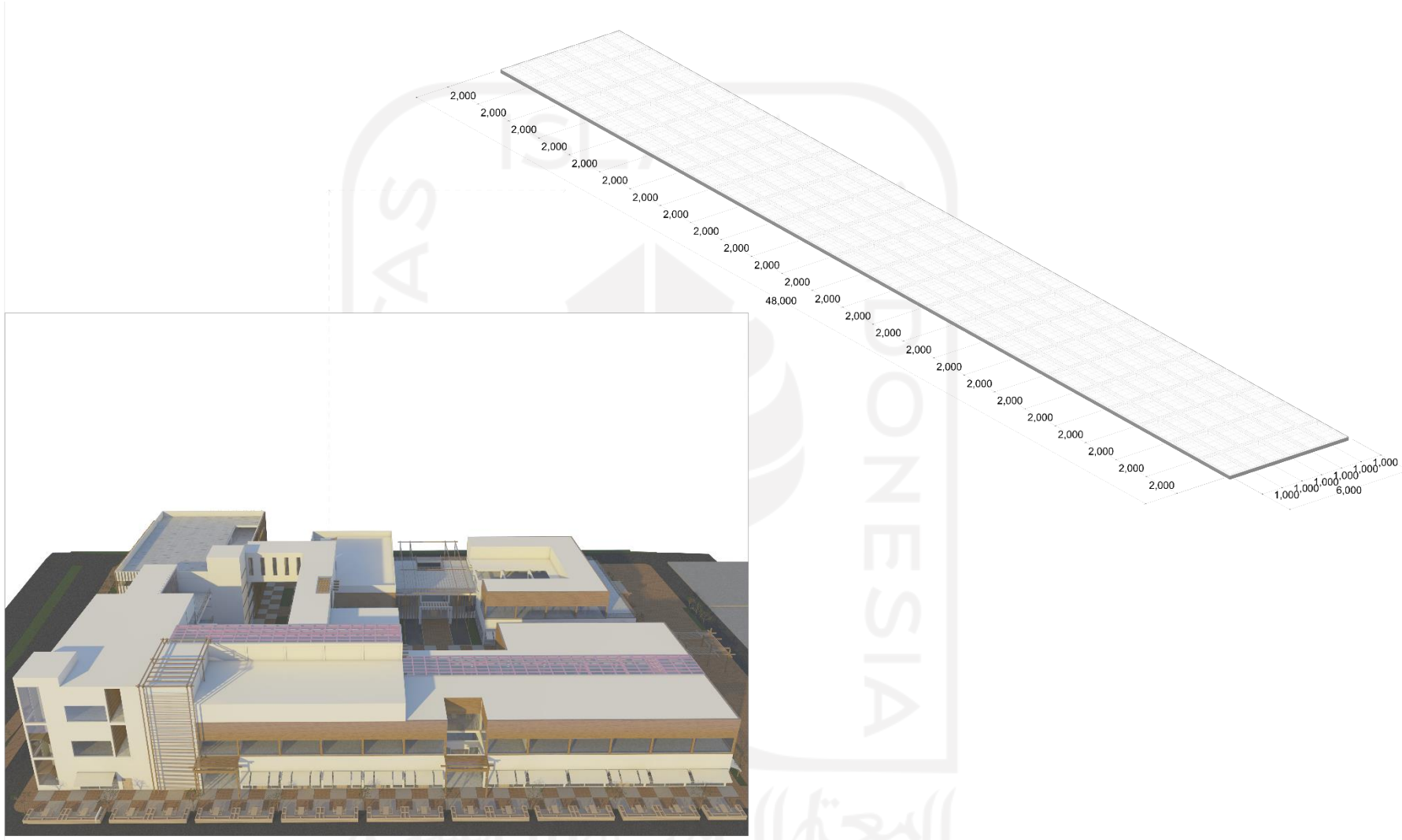


Figure 6. 32 Skylight Detail
Source: Author (2021)

6.14 Utilities

6.14.1 Natural Ventilation Scheme

The natural airing scheme in this design has almost the same principle as natural lighting which is to use voids but different positions that are horizontal. With a gap on the entrance side of the building will provide space for thermal variability because it will increase the potential for wind ingress in the building.

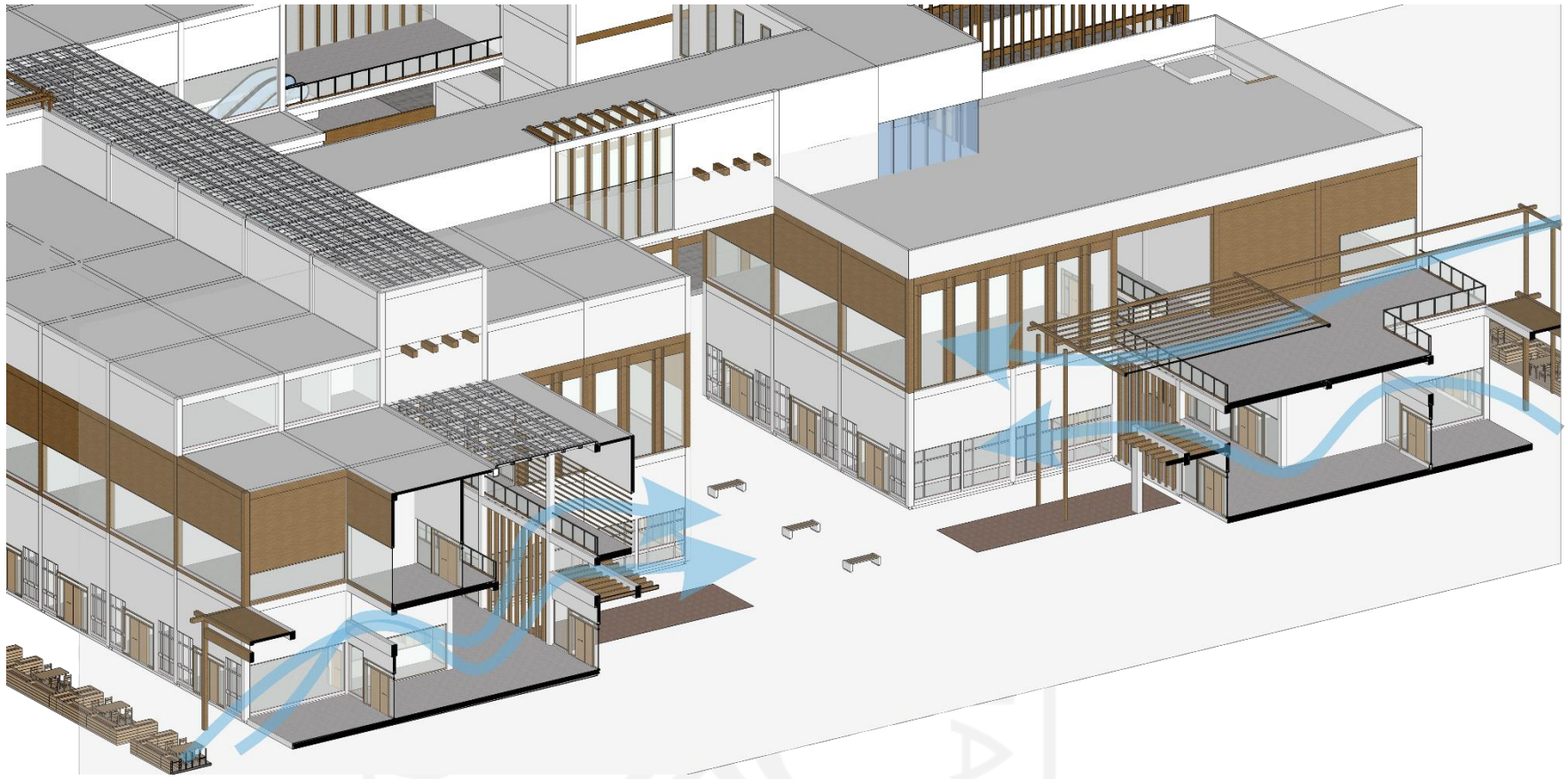


Figure 6. 33 Natural Ventilation
Source: Author (2021)

6.14.2 Natural Lighting Scheme

The scheme of entry of natural lighting or natural lighting in the design of this shopping center is more dominant through the available skylights creating a void impression on the area below. The void is located on all floors and is directly connected to the ground floor so that all floors will get relatively the same lighting. Voids on the vertical side are also an entry area for natural lighting. This void is also found on all floors except ground floor because the ground floor already has a lot of access to the entry of natural lighting.

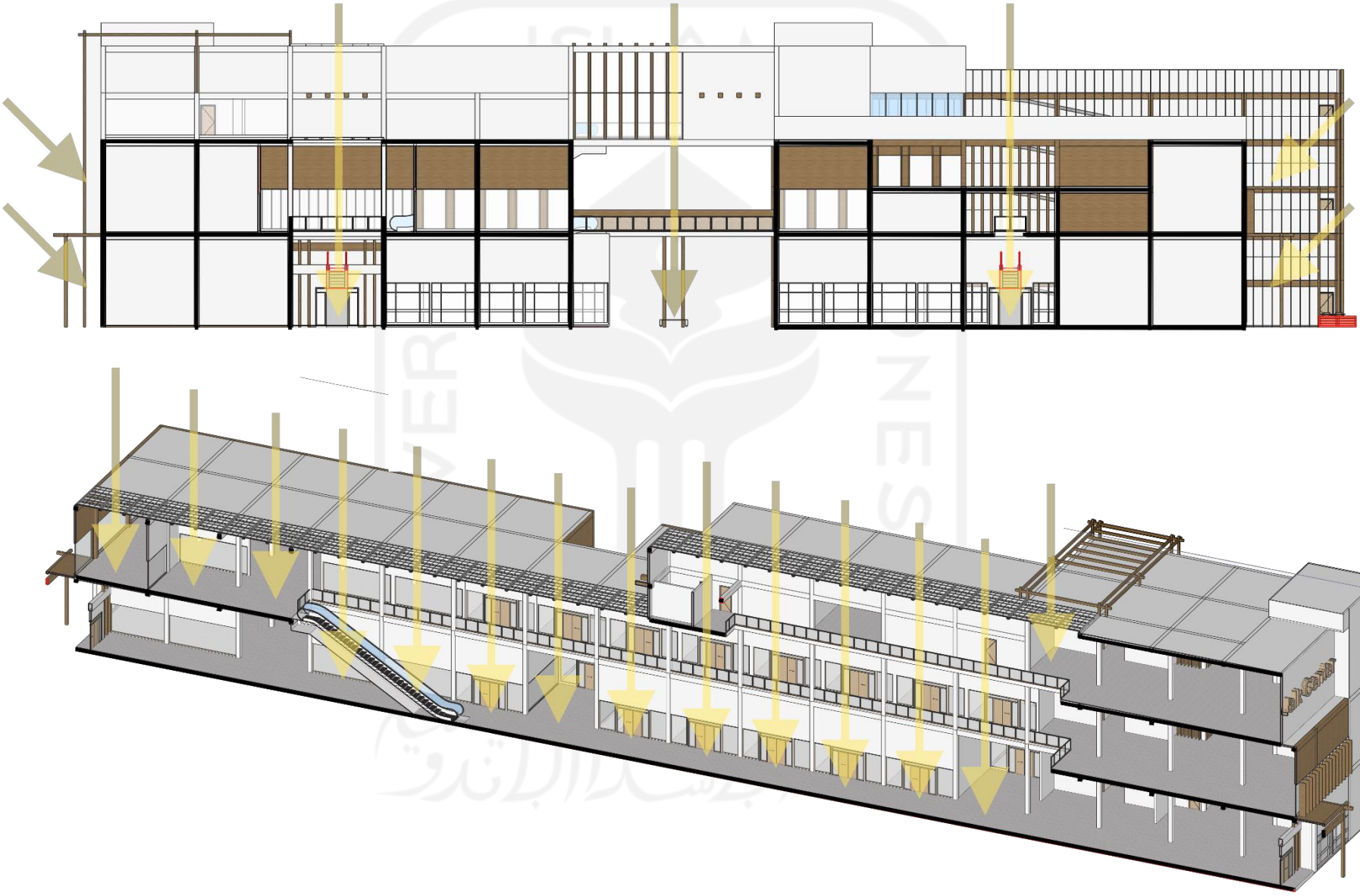


Figure 6. 34 Natural Lighting
Source: Author (2021)

6.14.3 Clean Water System

In the design of the mall using clean water sources from PDAM and wells, from ground water tank pumped to roof tank, and from roof tank down feed to the room that needs water. On the roof tank there are two types of tanks, namely for the main tank of visitor use, and water tanks used in times of emergency.

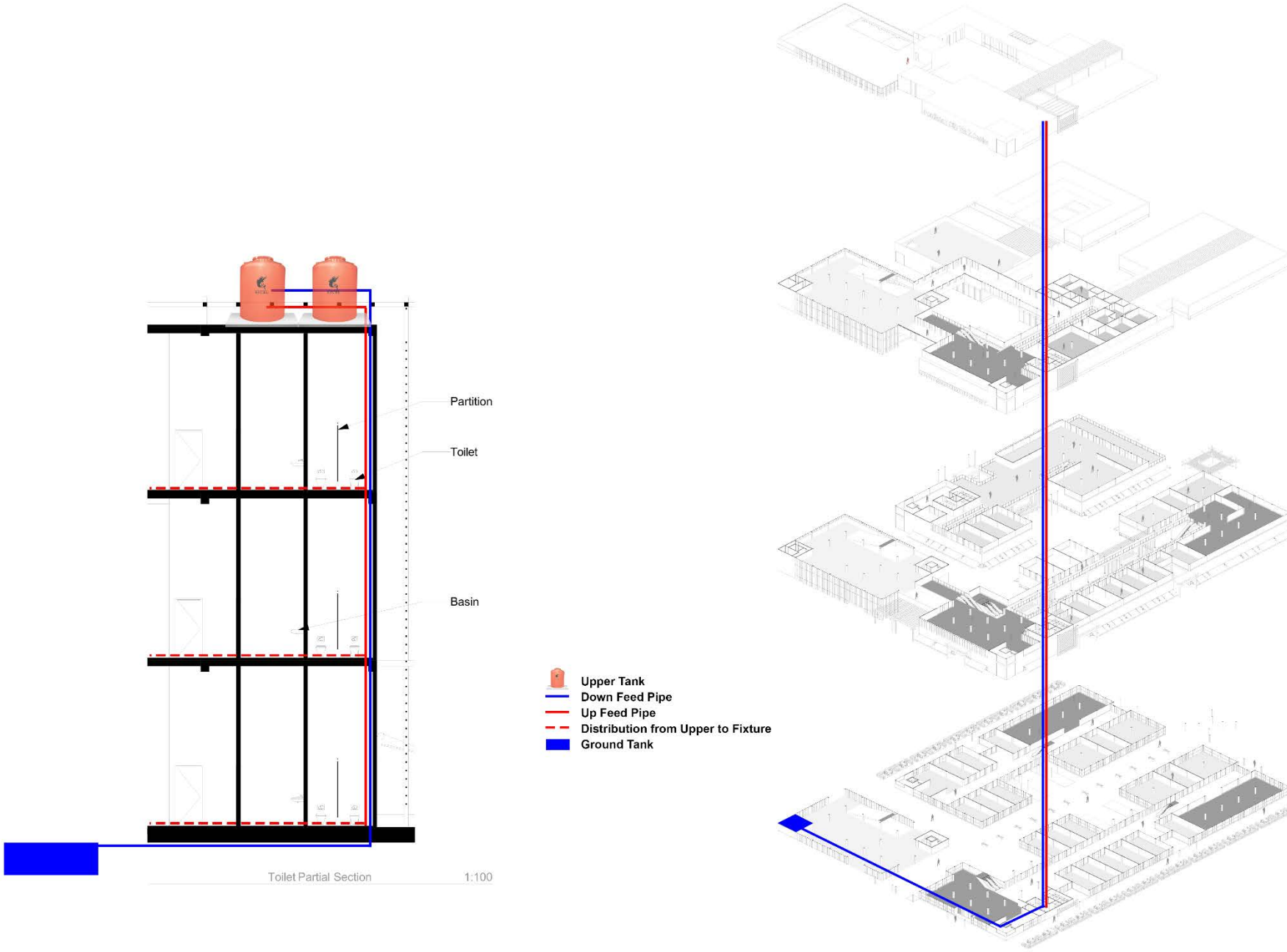


Figure 6. 35 Clean Water System
Source: Author (2021)

6.14.4 Waste Management

As for the dirty water utility system in this residence applies the principle of two stack which will separate vertical pipes between grey water and black water. This aims to avoid clogging and facilitate the treatment process in case of undesirable things. Furthermore, solid and liquid dirty water will be put together at the sewage treatment plant to be processed before being channeled to the infiltration well.

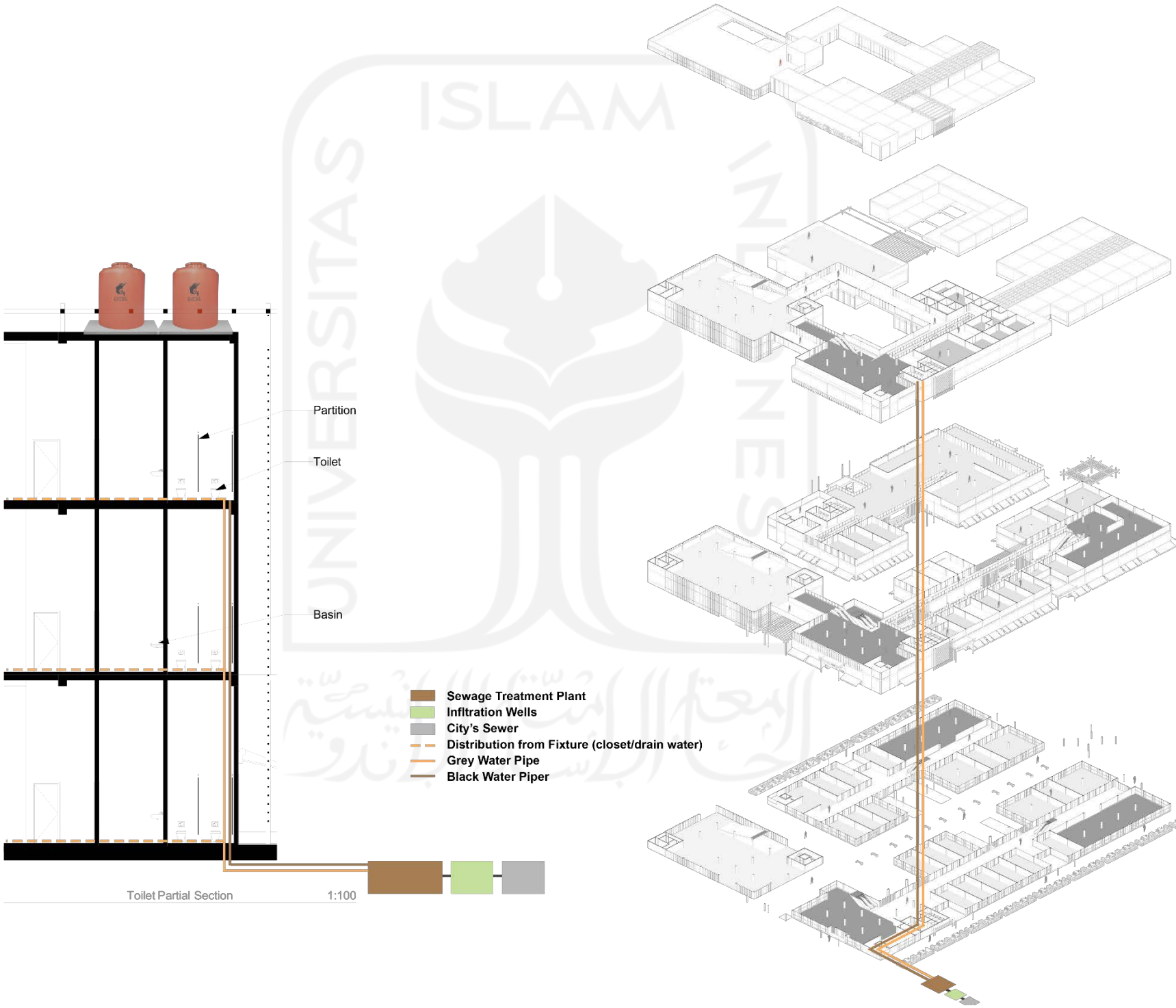
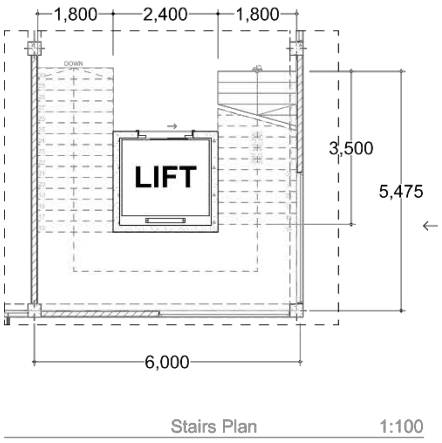


Figure 6. 36 Waste Management
Source: Author (2021)

6.15 Vertical Transportation

The vertical transportation inside the building consist of ramp, escalator, passenger lift, stairs, emergency stairs. Lift and stair located next to each other.



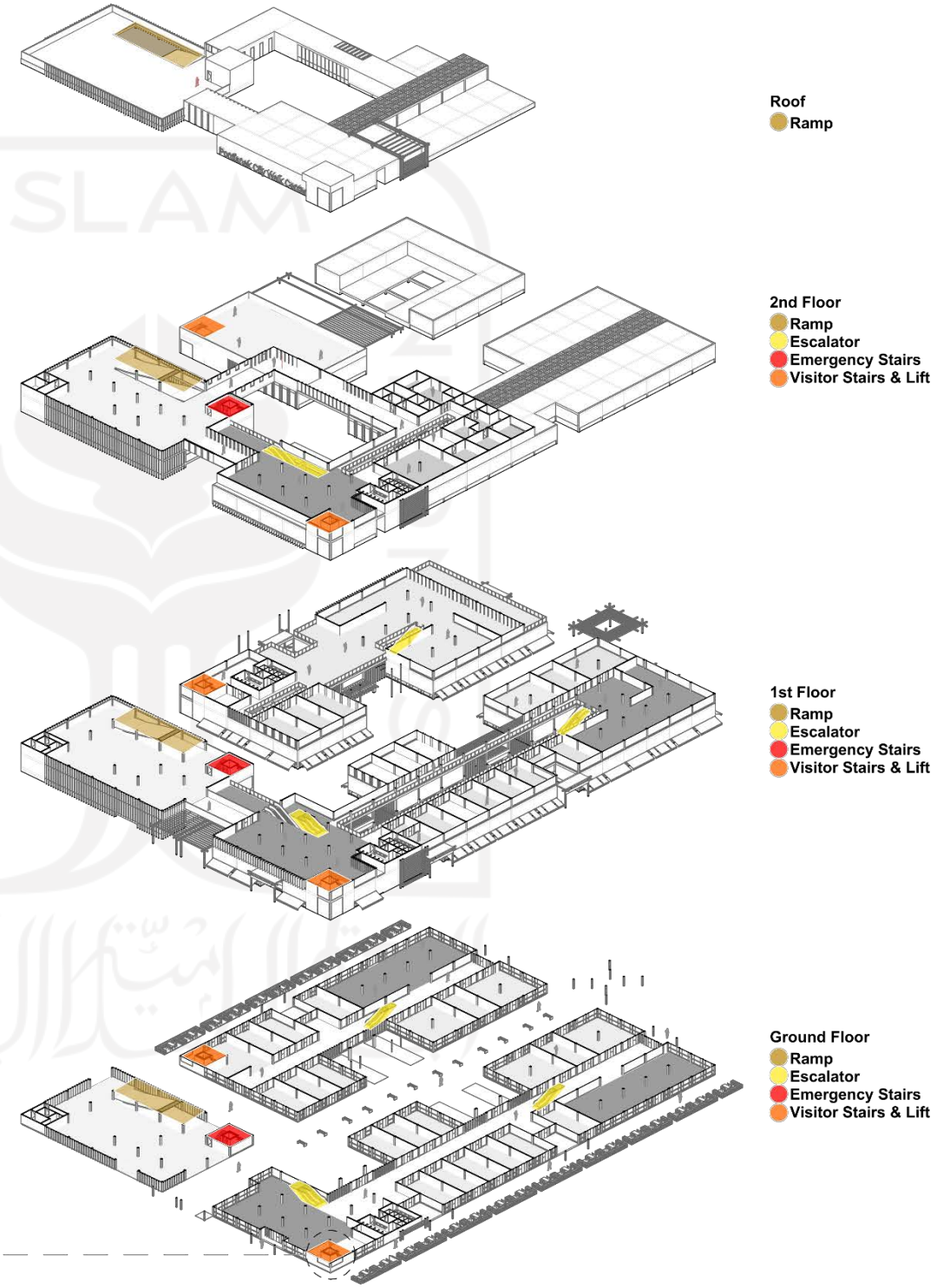


Figure 6. 37 Vertical Transportation
Source: Author (2021)

6.16 Barrier Free Design

This plan can be used by all people including people with disabilities. There are disabled toilets in an easy-to-reach location. There are also disabled parking located in strategic place and guiding block on outside pavement.

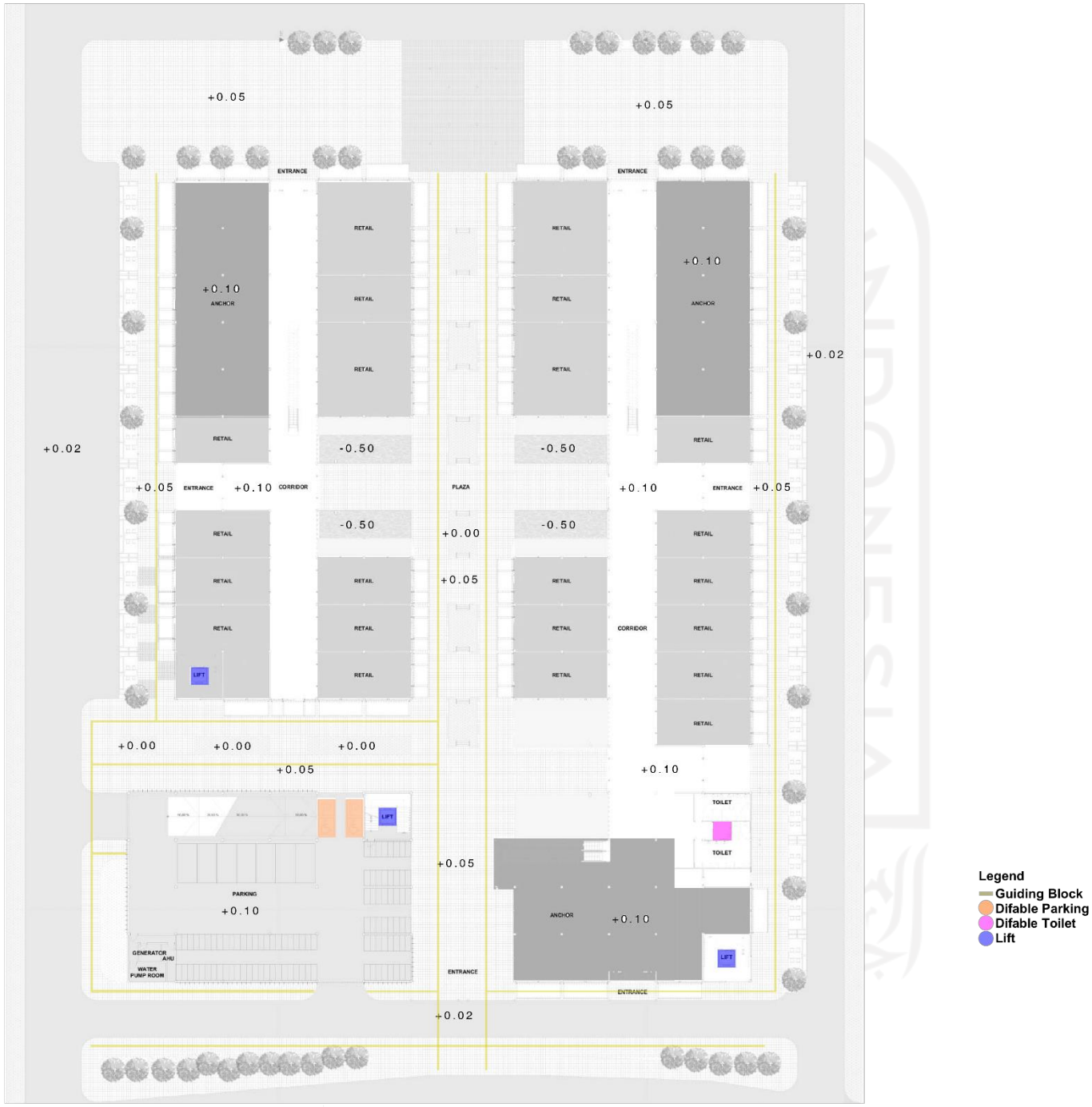


Figure 6. 38 Barrier Free Design
Source: Author (2021)

6.17 Building Safety

Fire Escape is located at 1 point, which is at the end of the parking building. This emergency ladder has also been directly connected to the gathering point or assembly point, so visitors can go directly to a safe place when an emergency situation occurs.

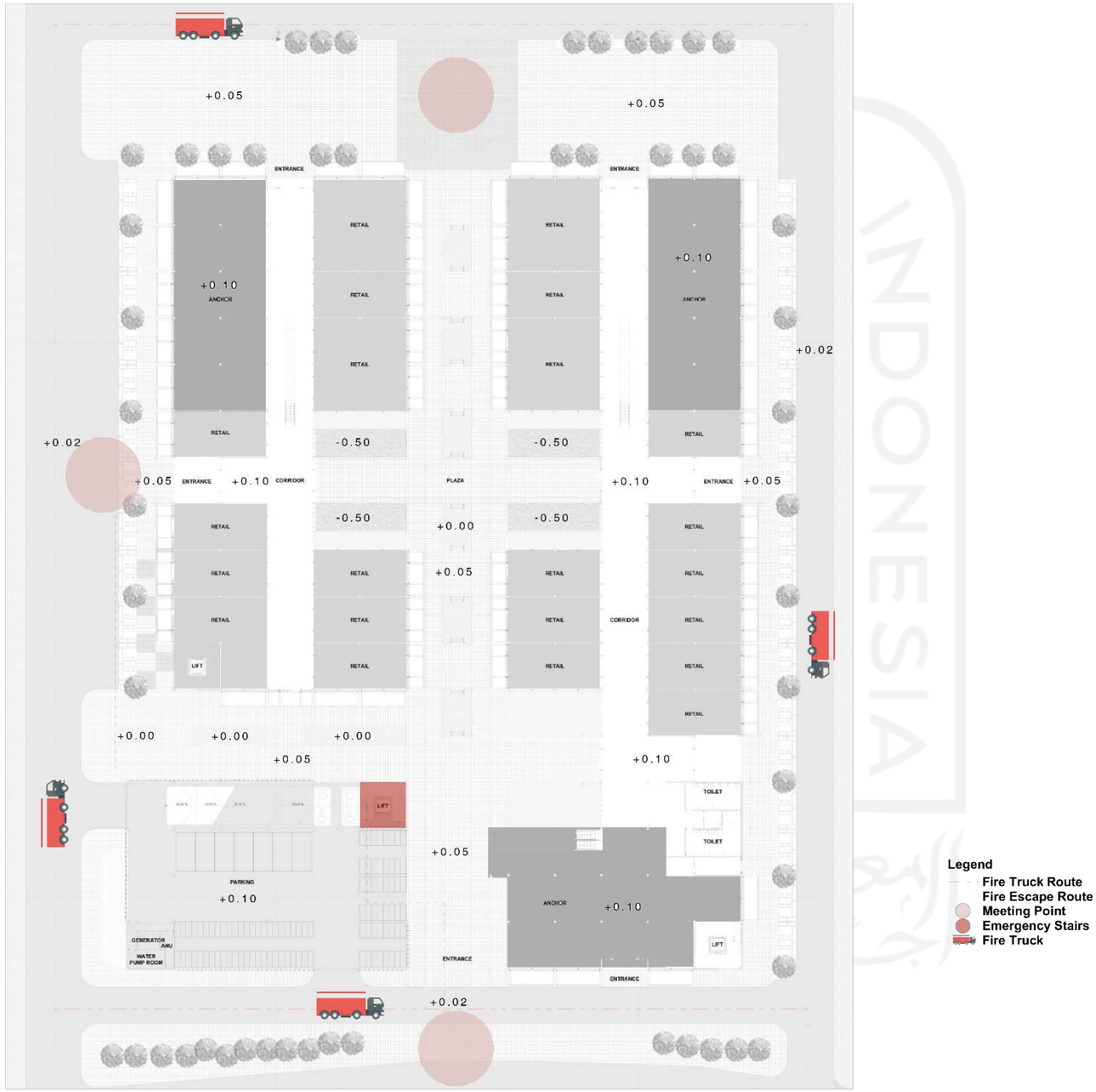


Figure 6. 39 Building Safety
Source: Author (2021)

6.18 Design Testing

To make sure the design serve an active frontage, the guidelines below is use as the parameter.

Figure 6. 40 Active Frontage Guidelines

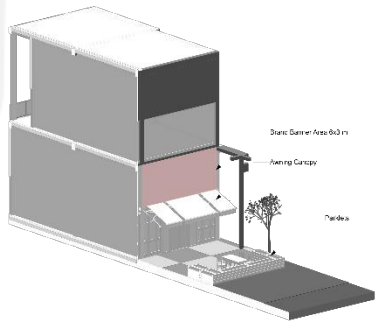
Requirements	Checklist	Design
More than 15 premises every 100 m	✓	
More than 25 doors and windows every 100 m	✓	
A large range of functions	✓	
No blind facades and few passive ones	✓	
Much depth and relief in the building surface	✓	
High quality materials and refined details	✓	 

Table 6. 3 Active Frontage "Grade A" Checklist

The table show the design testing of active frontage guidelines that already match with the grade A.

07

EVALUATION

CHAPTER VII
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 has been able to answer specific problems and major problems in handling the case of the application of the concept of city walk in the pandemic era, but 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.

7.1 Public Toilet

The overall design is already accomplish the covid-19 issue especially on public area, it can be shown by the implementation of walkability and how to manage the access etc. But there is particular issue that have not shown the response to the covid-19 issue, in this case is the design of public toilet.

The response to the covid-19 issue on the design of public toilet could be implemented on the placement of the sinks outside the main toilet. So the access for washing hand frequently is much more accessible for the visitors. And also the ventilation aspect should be take care off.

Figure 7. 1 Public Toilet Layout

7.2 The Problem of Identity and Building Value

The design have not really pay attention to the value of the building in order to help increase Pontianak city's value.

Figure 7. 2 Front Facade

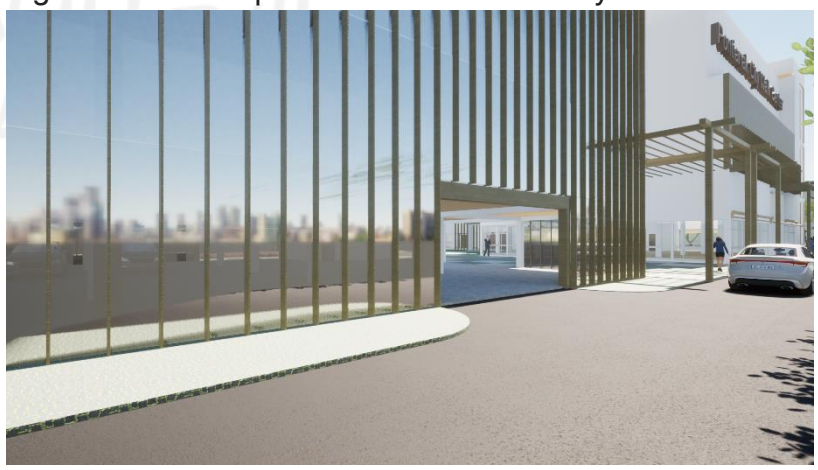


Figure 7. 3 Reflected Glass on Parking Building

The design actually can intended as a very modest and try to reflect what is happen outside the building by applying reflecting glass as one of the façade material. It can be used as reflection of the river and its surrounding because the surrounding is worth the view and very nice. Also the use of reflecting glass especially on parking building can solve the problem of car that mostly give a bad clearance to the building.

7.3 Recreation Aspect on Commercial Building

Recreational aspect on commercial building does not really shown on the design. The form of the building look too formal.

In order to show the concept of recreational building, the addition of recreational elements could be done by: path, node, vocal point, fountain, cascade, inner garden, forest, etc.

7.4 Climate Response

The design implementation climate response to the hot weather does not really shown especially on the layout and circulation outside the building (ex: plaza), this might be lead the visitor to go more to the inside of the building rather than the outside of the building which is contrast with the main concept.

On the design process, local situation should be also take care off. The author somehow try to use Pontianak's hot weather as inert atmosphere strategy to eliminate the covid-19 virus by make kind of shading which is small, only for one person and the other visitor will exposed to the sun which is hot, so the physical distancing is come from the sun.

08 REFERENCES

REFERENCES

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ATTACHMENTS

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Assalamualaikum Wr. Wb.

Dengan ini, menerangkan Bahwa:

Nama	: Joana Novarinda Carissa
Nomor Mahasiswa	: 17512037
Pembimbing	: Dr. Ir. Arif Wismadi, M.Sc
Fakultas / Prodi	: Teknik Sipil Dan Perencanaan/ Arsitektur
Judul Karya Ilmiah	: PONTIANAK CITY WALK CENTER "New Shopping Center Design with City Walk Approach on Waterfront Area Pontianak"

Karya ilmiah yang bersangkutan di atas telah melalui proses cek plagiasi menggunakan **Turnitin** dengan hasil kemiripan (*similarity*) sebesar **8 (Delapan) %.**

Demikian Surat Keterangan ini dibuat untuk dapat dipergunakan sebagaimana mestinya.

Wassalamualaikum Wr. Wb.

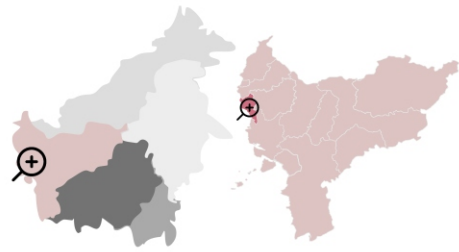
Yogyakarta, 23 Juni 2021
Direktur

UNIVERSITAS ISLAM INDONESIA
DIREKTORAT PERPUSTAKAAN
YOGYAKARTA

Joko S. Prianto, SIP., M.Hum

DESIGN OF PONTIANAK CITY WALK CENTER

as New Shopping Center with City Walk Approach on Waterfront Pontianak

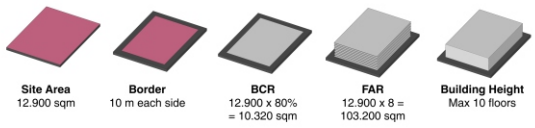


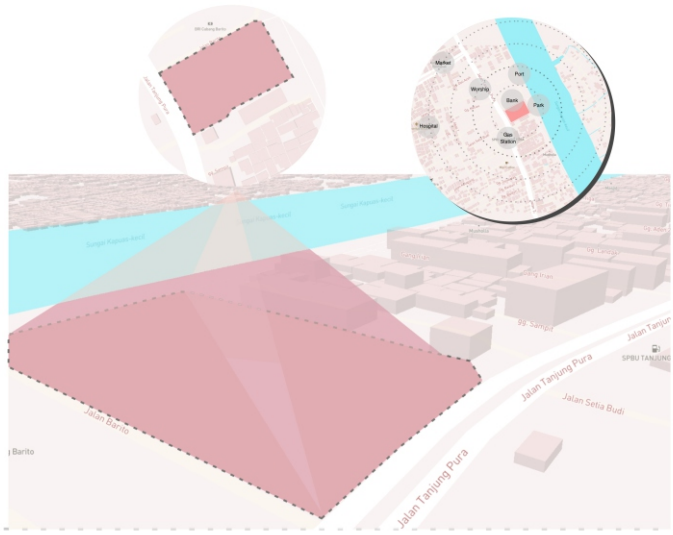
Site Location

Jl. Tanjungpura, Kel. Benua Melayu Laut, Kec. Pontianak Selatan, Kota Pontianak, Kalimantan Barat, 78243
-0.030442, 109.345138

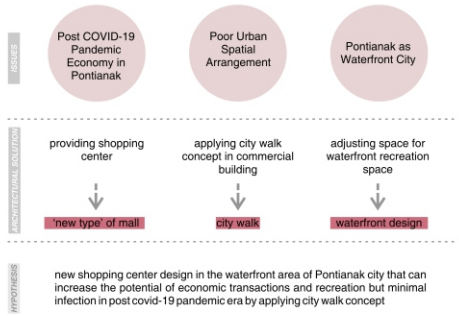
Pontianak City Walk Center design strives to accommodate the needs of space that accommodates buying and selling transactions and also serves as a public space in the waterfront of Melayu Laut Village by paying attention to post-pandemic conditions. Then after being able to accommodate the activities of buying and selling transactions, the design of this shopping center seeks to overcome the problem of poor urban space arrangement by adopting the concept of city walk, so that in the building visitors can feel the nuances and atmosphere as found in the city space. But in the application of the concept of city walk there are some contradictions considering having to adjust to post-pandemic conditions. This contradiction arises because the concept of city walk itself tends to create more interaction space but post-pandemic conditions demand social restrictions. TRIZ will be a design method that will solve the problem with 40 inventive principles. After the study and analysis was found 4 main solutions, namely: Taking Out, Another Dimension, Inert Atmosphere, and Mechanical Vibration.

About Location

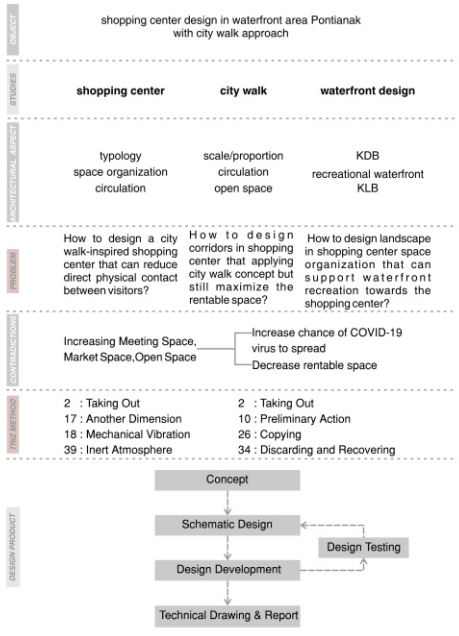




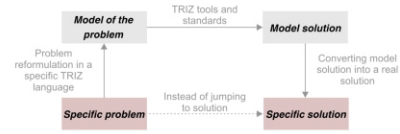
Map of Issues/Problems



Design Thinking



TRIZ Method



CONTRADICTION

If applying city walk concept in commercial building	**Then** there will be more *market space* occur so that will help to increase Pontianak economy	**But** there will be chance of virus to spread
If applying city walk concept in commercial building	**Then** there will be more *meeting space* occur so that the need of pedestrian space fulfiled	**But** it can decrease the space for rentable space
If applying city walk concept in commercial building	**Then** there will be more *open space* that can support waterfront recreation as the Pontianak government regulations to develop more facilities that facing to Kapuas River	

CONTRADICTION MATRIX BY TRIZ I

Worsening / Improving	...	36 Device Complexcity	37 Difficulty of Detecting & Measuring	38 Extent of Automation	39 Productivity
...					
2 Weight of Stationary Object		26, 30 36, 34	25, 28 17, 15	2, 26 35	1, 28 15, 35
3 Length of Moving Object		1, 10 26, 39	35, 1 26, 24	17, 24 26, 16	14, 4 28, 29
4 Length of Stationary Object		1, 19 26, 24	26		30, 14 7, 26
5 Area of Moving Object		14, 1 13	2, 36 26, 18	14, 30 28, 23	10, 26 34, 2

CONTRADICTION MATRIX BY TRIZ II

Worsening / Improving	...	28 Measured Accuracy	29 Manufacturing Precision	30 Object-affected Harmful Factors	31 Object-generated Harmful Factors
...					
2 Weight of Stationary Object		18, 26 28	10, 1 35, 27	2, 19 22, 37	35, 22 1, 39
3 Length of Moving Object		28 32, 4	10, 28 29, 37	1, 15 17, 24	17, 15
4 Length of Stationary Object		32 28, 3	2, 32 10	1, 18	
5 Area of Moving Object		26, 28 32, 3	2, 32	22, 33, 28, 1	17, 2 18, 39

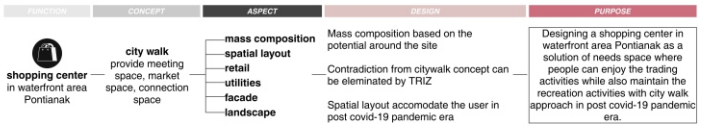
City Walk concept to create more market space that will help to increase Pontianak economy but also creating chance for virus spreading

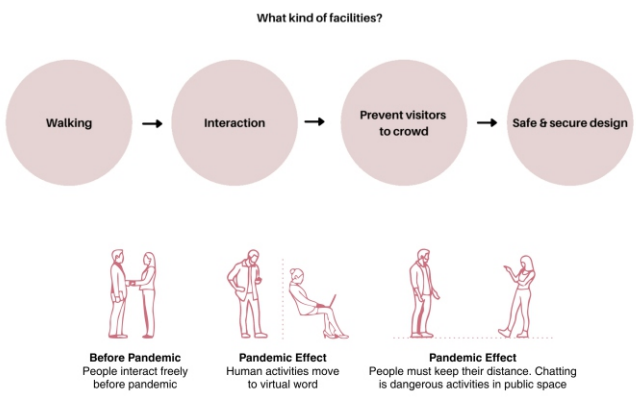
2 : Taking Out
17 : Another Dimension
18 : Mechanical Vibration
39 : Inert Atmosphere

City Walk concept to create more meeting space that will fulfiled the need of pedestrian space and Pontianak government regulations to develop more facilities that facing to Kapuas River, but also decrease the rentable space in commercial building

2 : Taking Out
10 : Preliminary Action
26 : Copying
34 : Discarding and Recovering

Concept

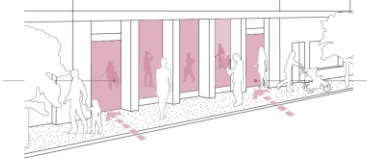




Active Frontage

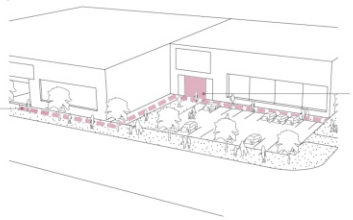
To support an active frontage interface of large format retail premises with the street.
The level of active frontage depends on the presence of a pedestrian entry point as well as a level of clear window area.
The appropriate level of active frontage will be influenced by the existing or preferred future character of the street.

Locate main pedestrian entrances and entry paths in prominent locations where they can be seen from the street.



Where a building is located on the front lotline, provide a level of clear window that allows opportunities for informal surveillance of the street from within the building.

The street frontage of a retail building that has areas of clear window provides opportunities for informal surveillance of the public realm. As well, it allows the public to see the activity within and to see displayed goods.

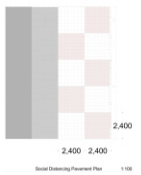


Where a large format retail premises requires a solid external wall or a setback adjacent to the street frontage, maintain a visual connection and a walkable distance from the building entry to the street.

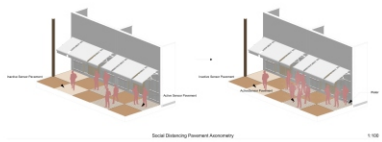
If a wall is set back from the street, allow the future opportunity for smaller scale retail or community activities along the frontage.

Taking Out (2)

"Separate an interfering part or property from an object, or single out the only necessary part (or property) of an object." Interaction that occur by active frontage startegy might create crowd. The solution to offer minimum virus transmission is by installed every 2.4 m of 'boxes' has sensor that can automatically spray the water from pavement if it exceed the maximum number of people due to minimize crowd.



Social Distancing Pavement Plan 1:100



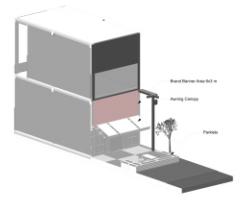
Social Distancing Pavement Axonometry 1:100

Roof

Taking Out (2)

"Separate an interfering part or property from an object, or single out the only necessary part (or property) of an object."

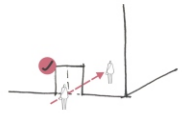
Facade Retail Brand

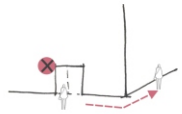


Retail Axonometry

Mechanical Vibration (18)

"Presenting atmosphere that can calm / prevent from negative activities". In this case the object of contradiction is more meeting space that allows to cause a lot of interaction directly so as to have an impact on the increasing spread of the COVID-19 virus. The problem-solving option is by provide touch-less entry doors with body temperature check technology to reduce surface transmission.

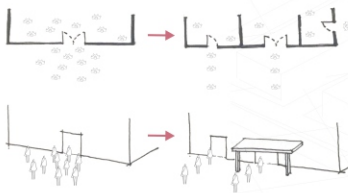


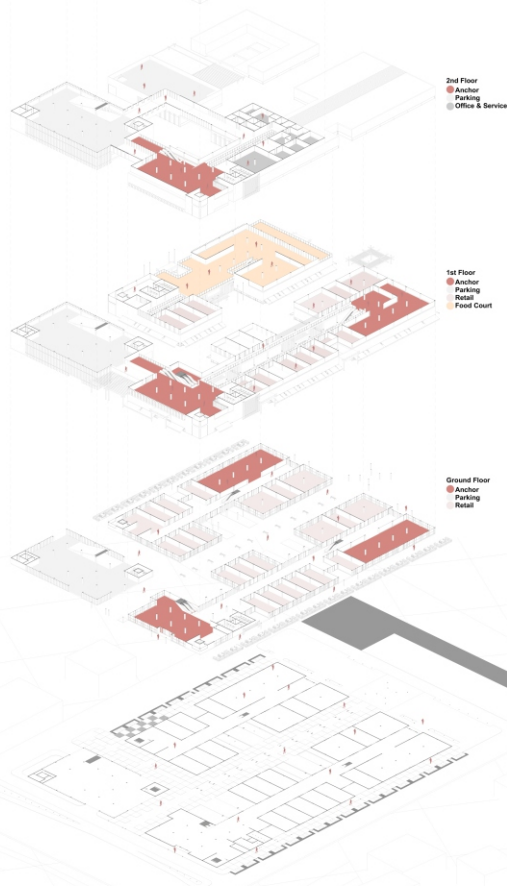


TOUCH-LESS ENTRY DOOR

Another Dimension (17)

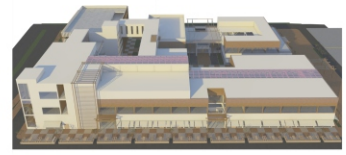
Moving objects in two or three-dimensional spaces. In this case the object of contradiction is a corridor that allows to cause a lot of interaction directly so as to have an impact on the increasing spread of the COVID-19 virus. The problem-solving option is by create sequence flows through a space. It can be done by create different user access from entry door.





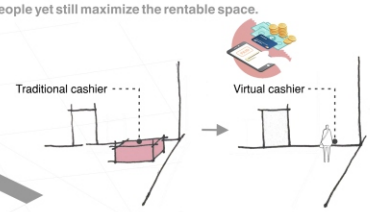
(39) Inert Atmosphere

"Presenting atmosphere that can calm / prevent from negative activities." In this case the object of contradiction is a corridor that allows to cause a lot of interaction directly so as to have an impact on the increasing spread of the COVID-19 virus. The problem-solving option is to create open air patios that offer sun exposure (not fully) which can significantly correlated with recovery from Covid-19.

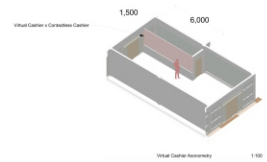


(26) Copying

"Implies the use of cheaper, disposable, and inexpensive copies as a substitute for expensive, fragile, or difficult-to-replace objects"
The problem-solving option is by copying the traditional cashier into the virtual one to provide a convenience between merchants and customers when shopping due to minimize the direct physical contact between people yet still maximize the rentable space.



Virtual Cashier Plan 1:100



Virtual Cashier Axonometry 1:100

Elevations

Front Elevation

Right Elevation

Rear Elevation

Left Elevation

Exterior

Interior

Corridor Inside Main Building

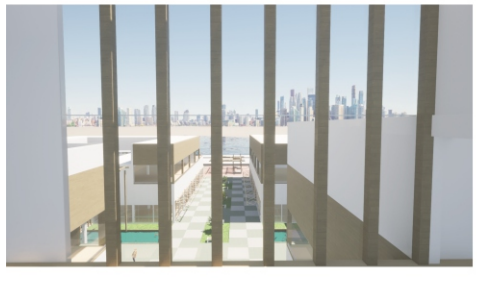
View from Outdoor Restaurant

Food Court Area

Void Inside Main Building

Corridor

Retail



View from Bridge

Plaza

Parking

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