

Typology of Corner Buildings in the District of Central Market Medan

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ABSTRACT

The Central Market Medan is a district that holds significant architectural and historical value, especially in Medan. Built during the colonial era in 1929, the Central Market Medan was inaugurated in 1933 and consisted of 183 shopping buildings. The Central Market Medan played a role as a generator of commercial activity and was declared the largest market area in Medan during that period. As a commercial district, corner buildings play a significant role in optimizing commercial functions. Most of the corner buildings were built with special treatment that can be seen from the corner form and can be easily distinguished from the surrounding buildings to emphasize the presence of street corners. This research aims to analyze the corner buildings in Central Market Medan to find out the correlation between the corner building typology theory and corner buildings in Central Market Medan. The research is conducted using a qualitative method by field observations and literature studies. The results of this research are expected to find the typology of corner buildings in the District of Central Market Medan in the mean of emphasizing the corners in urban space. It is hoped that this research will contribute to developing architectural knowledge, especially regarding the corner buildings in the District of Central Market Medan.

Keywords: Central Market, corner building, typology

1. Introduction

One of the districts in Medan, particularly Central Market, has a rich architectural history and historical significance for the composition and development of the city. Over a total of 183 stores, the Central Market Medan was recognized as the biggest market district in Medan at the time and serves as a major source of commercial activity [1].

The architectural characteristics of a city affect the living environment of people which cannot be separated from the social and cultural life of the urban community at that time [2]. Built-in 1929, Central Market Medan is strongly influenced by Dutch planning and design. The design principles inherited by the Dutch can be found in the architectural aspects and urban spatial structure of the Central Market Area [3].

Buildings that hold architectural value can contribute a significant influence on the character of the surrounding environment [4]. In particular, corner buildings are not merely two-dimensional but affect the larger context of an area or city [5]. Buildings on street corners play a major role in urban design [6]. Corner buildings create variety within the visual experience of urban spaces that can be enjoyed from various directions [7]. Corner buildings have a prominent design compared to the surrounding buildings that serve as a guide and landmark in the urban space [8]. In colonial architectural styles, corner buildings were particularly given special importance, which can be seen in the form of building masses. Especially in the 19th-century architectural view, the design of corner buildings was a matter of specific design dictated by law. In this century, the appearance of facades was prioritized to enhance the urban appearance hence corner buildings stood out more

than the facades of adjacent buildings in the same row and were emphasized with tower forms [9]. In the context of urban environments, the design of corner buildings may affect the shape of street intersections and the shape of building blocks in urban spaces [10].

As a commercial center in the early 20th century, Central Market Medan features many buildings with interesting approaches to corner intersections. The corner buildings have forms and characteristics that mostly represent the design of the Dutch East Indies leadership period. Therefore, there is a need for research on the typology of corner buildings to find out how the typology of corner buildings and their influence in shaping urban space, especially in Market Center Medan.

2. Method

The research location is in the District of Central Market Medan. Central Market Medan is a district located in Central Market Village, Medan Kota Sub-district, Medan City, North Sumatra Province, Indonesia (Figure 1).

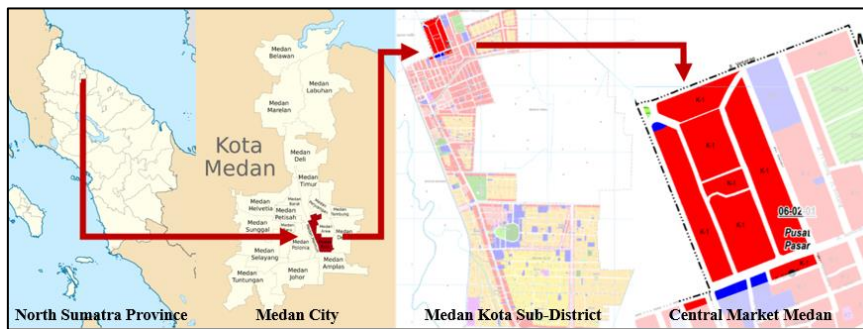


Figure 1 Research location in the District of Central Market Medan

The research object is a corner building located within the District of Central Market Medan. The research focused on corner buildings located between Pusat Pasar St., Sutomo St., Bulan St., Veteran St., and M.T. Haryono St. There were 15 intersections with 30 corner buildings in the research location (Figure 2).



Figure 2 Distribution points of corner buildings in the District of Central Market Medan

To analyze the typology of corner buildings in the District of Central Market Medan, the researcher used a descriptive qualitative method. The qualitative method was applied due to observation-oriented research on

factual information in the research location. A research subjectivity study is required to understand the corner buildings in the District of Central Market Medan which is then connected to the theory and comparative studies on the typology of corner buildings. The typology identification approach was conducted as an initial step in assessing the typology of corner buildings in the District of Central Market Medan based on observations and literature studies. The literature study was conducted to collect the variables needed during the observation. Researchers used the theoretical analysis approach to obtain data on assessment instruments for the typological characteristics of corner buildings in the District of Central Market Medan. After the identification of data on characteristics was obtained, the identification results were described based on the typology of corner buildings in the research location by comparing the results of field observations with data and theories of corner buildings to obtain research conclusions. The indicators used in completing the study are as follows (table 1):

Table 1 Analysis method

Theory	Variable	Indicator	Method
Corner building typology	Characteristics of the corner building typology	The angular shape of the building at each corner building studied in Medan Market Center Area. - Internal angle; Non-corner, curved piazza corner, and angular piazza corner. - External corner; Angular corner, curved corner, and towered corner.	- Research articles - Observation

3. Result and Discussion

Typology is a term that refers to a method of classification by analyzing the composition of architectural elements into types or groups [11,12]. Typology creates a classification based on similarities in architectural object elements by studying and grouping types of architectural objects. Regarding terminology, a corner is defined as a place where one or more buildings stand at a street junction [4,5]. In an urban context, a corner can be defined two-dimensionally as the meeting of two surfaces, while in a three-dimensional expression, a corner is the area where roads meet to form an intersection point.

Different types of corner building typologies represent the character or description of a specific group of objects. The classification of typology is based on physical form in identifying spatial and physical forms. In the urban aspect, corners can be divided into two types of corners, namely internal corners and external corners [4, 13, 14]. Based on observations within the area under research, there are 1 internal corner building and 29 external corner buildings.

3.1 Internal Corner

An internal corner is where two planes meet and tend to close off the space. Internal corners can be commonly seen in public places or piazzas. Internal corners typically found in piazzas can be categorized into non-corners, curved corners, and angular corners. Non-corners are places where the surrounding buildings do not meet each other to create an intersection angle. Non-corners are further divided into open piazza corners, arched piazza corners, and piazza pavilions. Curved piazza corners are divided into two types: geometric and sinuous. Angular piazza corners are divided into simple piazza corners and faceted piazza corners. [13, 14]. The division of the internal corner building typology can be seen in figure 3.

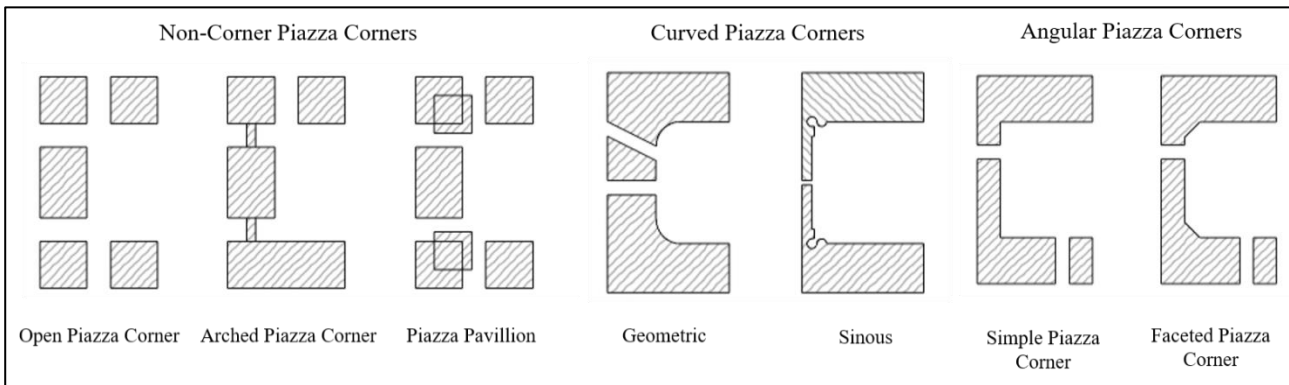


Figure 3 Typology of internal corner building

In the Medan Market Center area, there is one corner building that belongs to the internal corner building typology. The internal corner building is located at intersection O, at the street junction of Jl. Pusat Pasar 1, Jl. Pusat Pasar 4, and Jl. Pusat Pasar 5. Building I, which is an internal corner building, acts as a connecting corridor between the two buildings. The arrangement of the building mass forms the shape of the letter U and creates an open space as a meeting point between 3 buildings at the O intersection, namely between the mall building, the market center, and a row of shops. Corner building I can be seen in Figure 4.

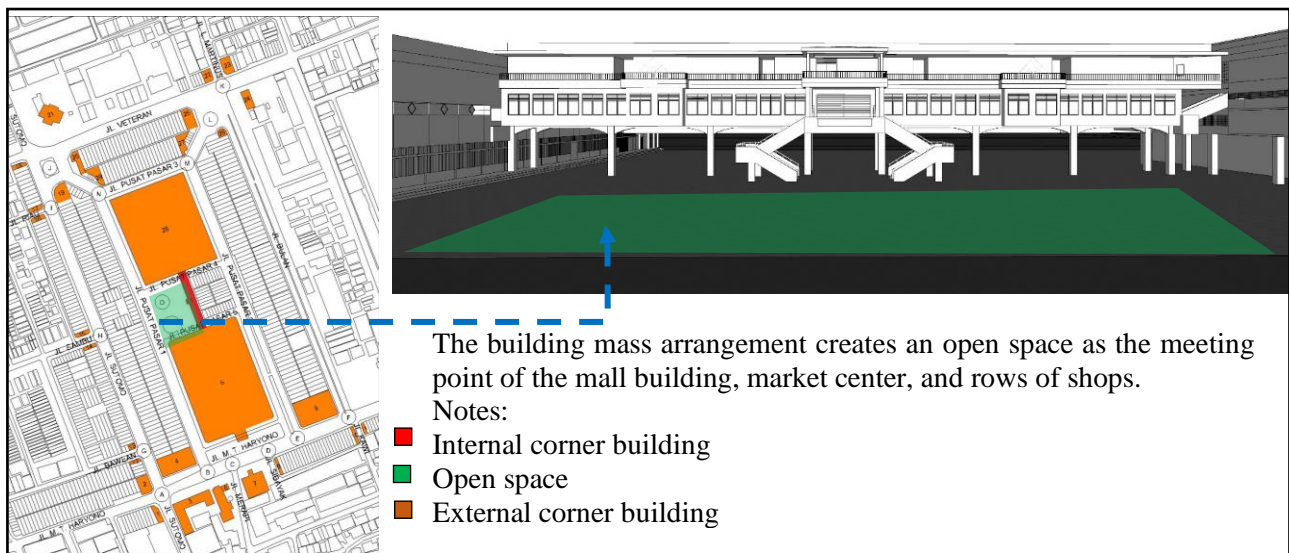


Figure 4 Open space as the meeting point at the O intersection formed by the internal corner buildings

Corner building I is a commercial building consisting of 3 floors. The corners between buildings can be spotted on the 2nd and 3rd floors of the building. The ground floor of the building is an open corridor that does not have an intersection corner between buildings. The meeting corners between buildings on the 2nd and 3rd floors have a right angle of 90°. The internal corner formed is included in the Angular Piazza Corner typology with the Simple Piazza Corner type [13, 14]. The corner meetings at Building I can be seen in Figure 5.

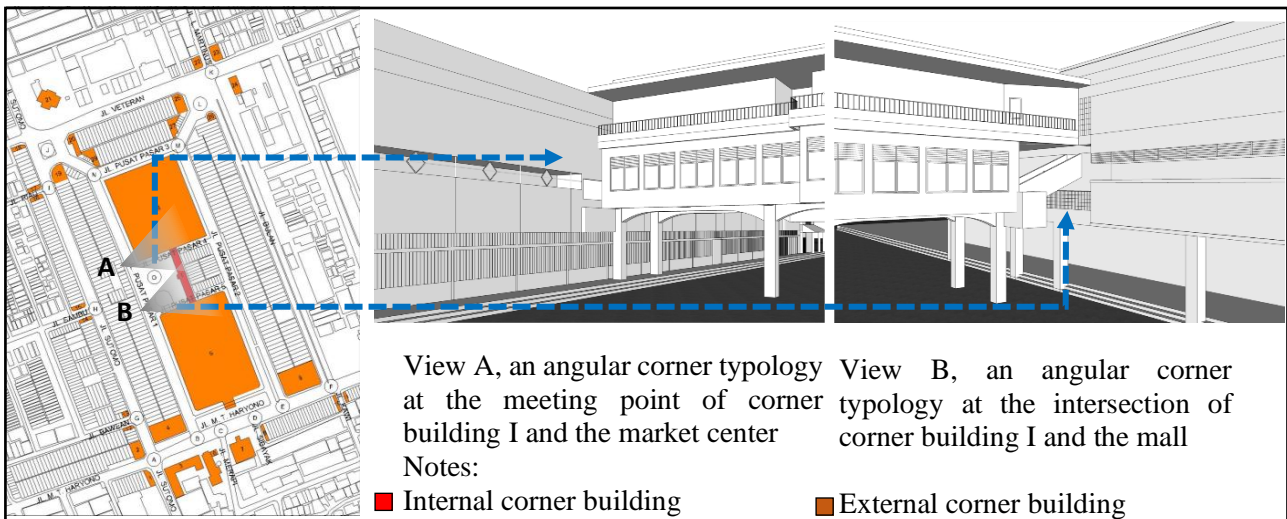


Figure 5 View A and B as a representation of the simple piazza corner of building corner I

3.2 External Corner

The external corner is where two planes meet which creates a three-dimensional view of the building. The external corner becomes a point that can serve as a landmark at street intersections. Street corners can be categorized as angular street corners, curved street corners and towered street corners [13, 14]. Buildings with Angular Street Corner typology are commonly associated with buildings that emerged from the Modern Movement. This movement initiated the form follow function principle where the form of the building must follow the function of the building [15]. Angular intersection typologies can be divided into two groups namely Simple Angular Corner and Faceted Corner. At the Simple Angular Corner, the two sides of the building face meet to form a single corner point that forms a defined line with a right angle. Both sides of the building face have an orientation that is directed towards two roads. At the Faceted Corner, the two faces of the building form a corner meeting that creates an angular corner plane. This plane creates a new viewing field and therefore the building is frequently utilized as a commercial function. At a curved corner building, the two sides of the building face meet and form a curve at the corner. Curved corners provide horizontal emphasis arising from the movement around the building face. Curved corner buildings can be divided into flowing corner, wrapped corner, and hinged corner. Towered buildings can be classified into attached towers and detached towers. [13, 14]. The division of the external corner building typology can be seen in figure 6.

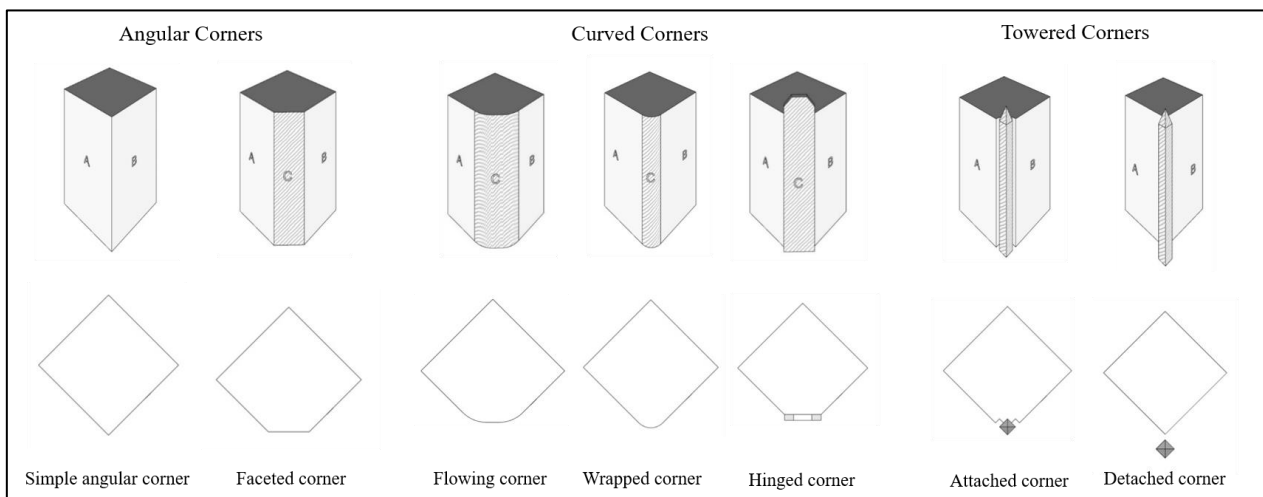
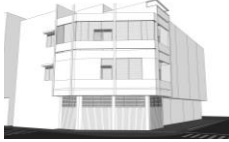



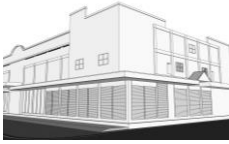
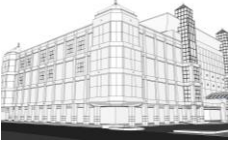







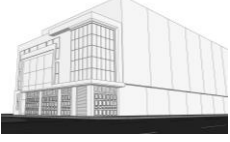

















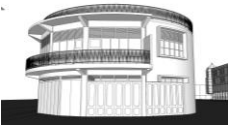
Figure 6 Typology of external corner building





In the District of Central Market Medan, there are 14 intersections which consist of 29 internal corner buildings with 35 corner points that are classified as external corner buildings. The shape of the external corner of the building has a different design implementation towards the road intersection. The corner building at each intersection is analyzed based on its corner form. The external corner forms that can be found in the Central

Market Area are in the form of angular corners, curved corners, and towered corners. The classification of the corner buildings at each intersection in Medan Central Market Area can be seen in Table 2.

Table 2 External Corner Building at the District of Central Market Medan

Intersection	Corner building			
A				
	<p>Corner Building 1 Angular corner; faceted corner</p>	<p>Corner Building 2 Curved corner; Flowing corner</p>	<p>Corner Building 3 Towered corner; Attached tower</p>	<p>Corner Building 4 Angular corner; Simple angular corner</p>
B				
	<p>Corner Building 4 Angular corner; Simple angular corner</p>	<p>Corner Building 5 Towered corner; Attached tower</p>		
C				
	<p>Corner Building 6 Towered corner; Attached tower</p>	<p>Corner Building 7 Angular corner; Simple angular corner</p>		
D				
	<p>Corner Building 7 Angular corner; Simple angular corner</p>	<p>Corner Building 8 Curved corner; Wrapped corner</p>		
E				
	<p>Corner Building 5 Towered corner; Attached tower</p>	<p>Corner Building 9 Angular corner; Faceted corner</p>		
F				
	<p>Corner Building 9 Angular corner; Faceted corner</p>	<p>Corner Building 10 Angular corner; Simple angular corner</p>	<p>Corner Building 11 Angular corner; Simple angular corner</p>	

Intersection	Corner building			
G	 <p data-bbox="352 360 584 461">Corner Building 12 Angular corner; Faceted corner</p>	 <p data-bbox="635 360 866 461">Corner Building 13 Angular corner; Faceted corner</p>		
H	 <p data-bbox="352 660 584 786">Corner Building 14 Angular corner; Simple angular corner</p>	 <p data-bbox="635 660 866 763">Corner Building 15 Towered corner; Attached tower</p>		
I	 <p data-bbox="352 981 584 1084">Corner Building 16 Towered corner; Attached tower</p>	 <p data-bbox="635 981 866 1084">Corner Building 17 Towered corner; Attached tower</p>		
J	 <p data-bbox="352 1290 584 1379">Corner Building 18 Angular corner; Faceted corner</p>	 <p data-bbox="635 1290 866 1379">Corner Building 19 Curved corner; Flowing corner</p>	 <p data-bbox="908 1279 1139 1379">Corner Building 20 Angular corner; Faceted corner</p>	 <p data-bbox="1182 1279 1414 1413">Corner Building 21 Angular corner; Simple angular corner</p>
K	 <p data-bbox="352 1601 584 1704">Corner Building 22 Angular corner; Faceted corner</p>	 <p data-bbox="635 1601 866 1704">Corner Building 23 Angular corner; Faceted corner</p>	 <p data-bbox="908 1601 1139 1736">Corner Building 24 Angular corner; Simple angular corner</p>	<p data-bbox="1182 1451 1414 1478">Corner Building 24</p>
L	 <p data-bbox="352 1910 584 2000">Corner Building 25 Angular corner; Faceted corner</p>	 <p data-bbox="635 1910 866 2000">Corner Building 26 Curved corner; Flowing corner</p>		

Intersection	Corner building	
M	 <p data-bbox="352 360 584 488">Corner Building 27 Angular corner; Simple angular corner</p>	 <p data-bbox="635 360 866 488">Corner Building 28 Angular corner; Simple angular corner</p>
N	 <p data-bbox="352 649 584 777">Corner Building 28 Angular corner; Simple angular corner</p>	 <p data-bbox="635 649 866 777">Corner Building 29 Angular corner; Simple angular corner</p>

The findings of field observations of 29 external corner buildings in the District of Central Market Medan showed a different response of the corner buildings to the street junction. Corner buildings with simple angular corner typology can be found in corner buildings 4, 7, 10, 11, 14, 21, 24, 27, 28, and 29. The similarity in typology can be seen in the shape of the corner that forms a 90° perpendicular line to the street junction. The placement of every corner buildings with simple angular corner building in the District of Central Market Medan can be seen in Figure 7. In addition, there are corner buildings with faceted corner typology which can be seen in corner buildings 1, 9, 12, 18, 20, 22, 23, 25. Most buildings with this typology, utilize the corner plane as the main entrance to the building. This increases and emphasizes the existence of the corner position in the corner building at the street junction. The positions of corner buildings with faceted corner typology in the District of Central Market Medan can be seen in Figure 8.

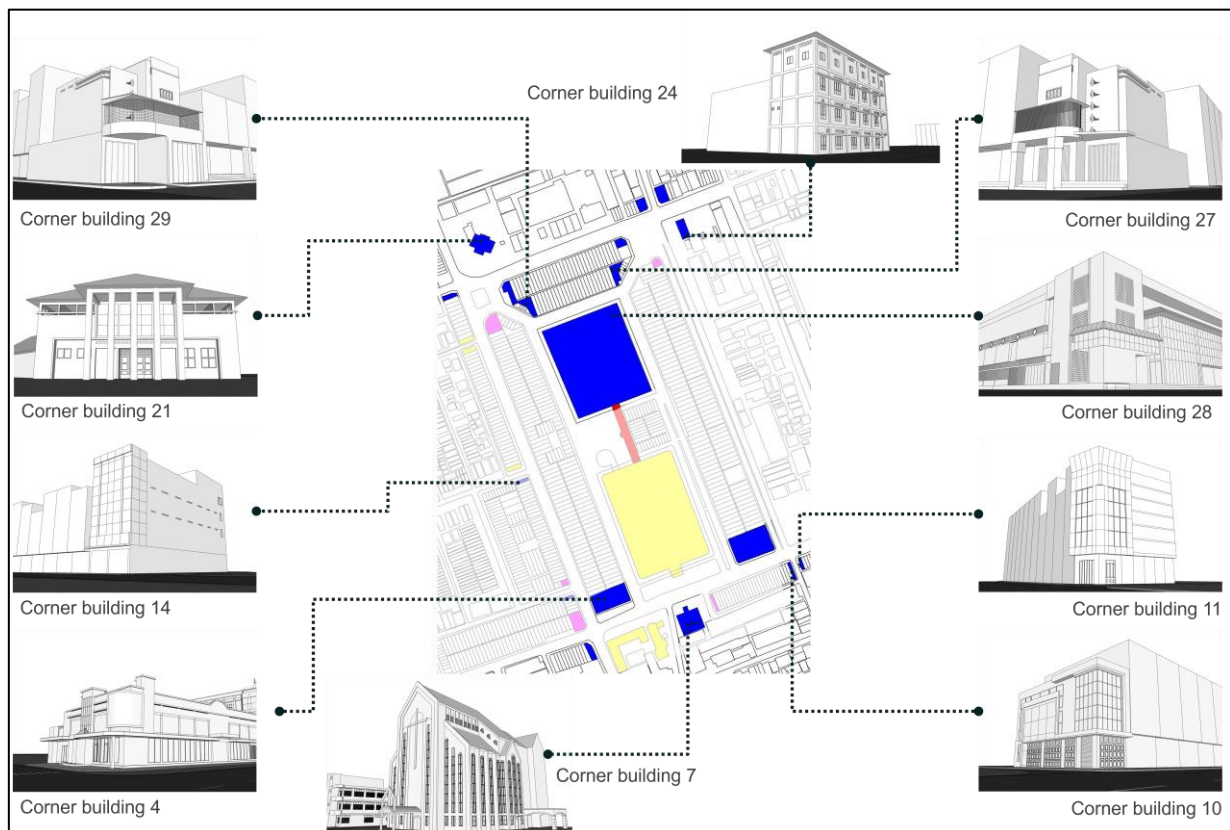


Figure 7 Corner buildings with simple angular corner typology in the District of Central Market Medan

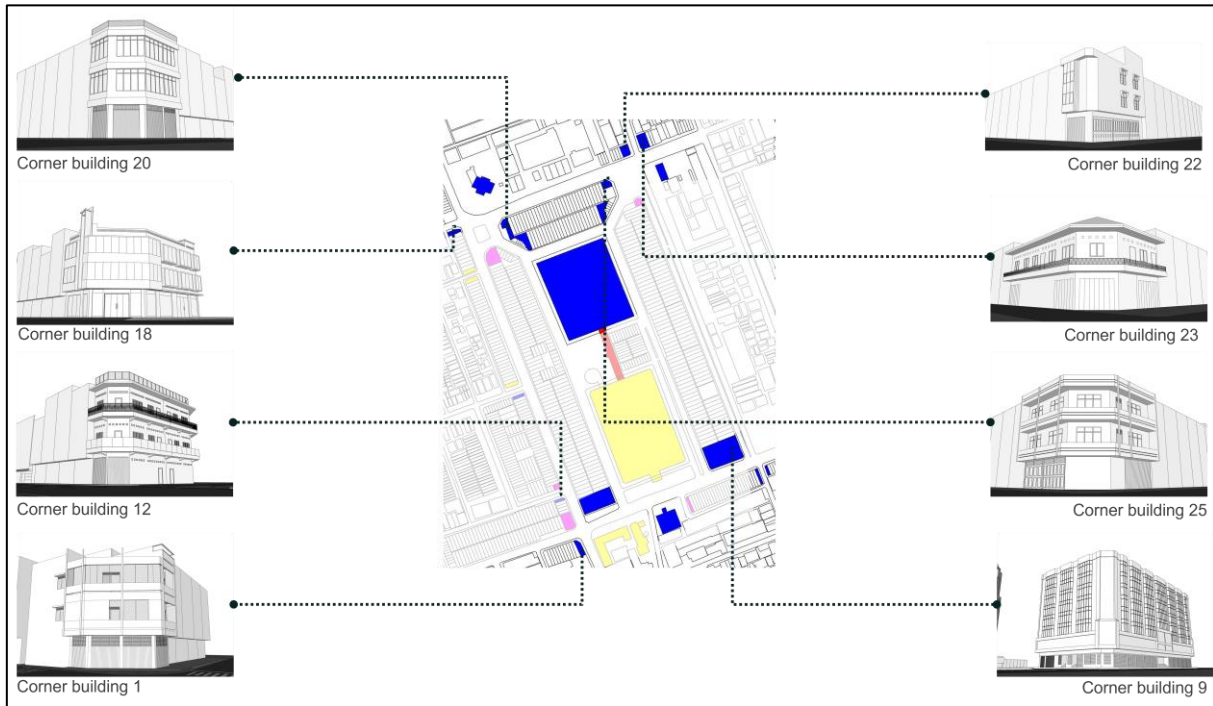


Figure 8 Corner buildings with faceted corner typology in the District of Central Market Medan

As for the curved corners, there are corner buildings with flowing corner typology that can be seen in corner buildings 2, 13, 19, and 26 and corner buildings with wrapped corner typology that can be found in corner building 8. The shape of the corner creates a smooth flow that connects the two sides of the building face. The curves of the buildings have different shape responses. Corner buildings 19 and 26 form a mass with a semi-circular shape and have a large curved radius to the form of the mass. At corner buildings 2 and 13, the corner forms a quarter circle that divides equally the importance of the 3 sides of the corner building face. While at corner building 8, the corner form on the building mass has a smaller radius curve. The location of corner buildings with curved corner shapes in the District of Central Market Medan can be seen in Figure 9.



Figure 9 Corner buildings with curved corner typology in the District of Central Market Medan

Corner buildings in the District of Central Market Medan have a towered corner typology which can be seen in corner buildings 3, 5, 6, 15, 16, and 17. All towered corner buildings in the study area are classified as a

attached tower typology. In corner buildings 3, 5, and 6, it can be seen that the tower emphasizes the corner with its mass form that can be clearly seen from the foot to the head of the building. While at the corner buildings 15 and 16, the tower can be seen attached on the roof of the building while at the corner building 17, the tower can be seen starting from the 2nd floor to the roof of the building. The existence of corner buildings with the typology of the towered corner in the District of Central Market Medan can be seen in Figure 10.

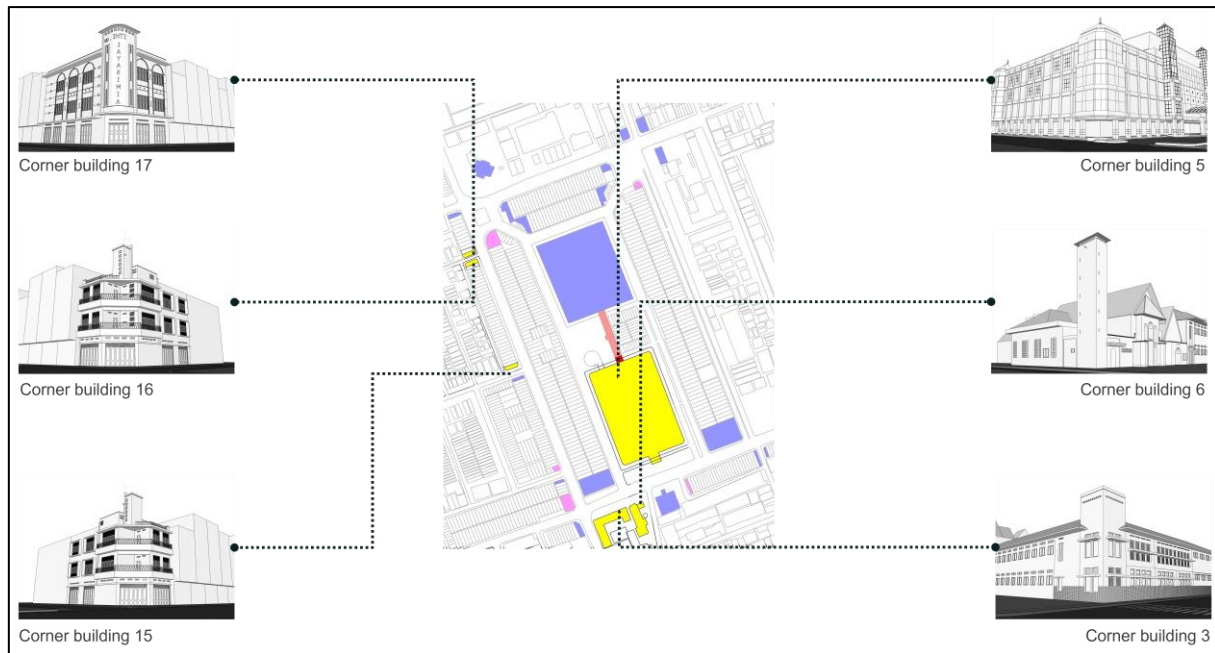


Figure 10 Corner buildings with towered corner typology in the District of Central Market Medan

4. Conclusion

Based on the findings, it is found that there is 1 building with internal corner building categorized as simple piazza corner typology and 29 external corner buildings consisting of 18 angular corner buildings, 5 curved corner buildings, and 6 tower corner buildings. The angular corner buildings in the District of Central Market Medan consist of 10 corner buildings with simple angular corner typology and 8 corner buildings with faceted corner typology. As for the curved corner, there are 4 corner buildings with flowing corner typology and 1 wrapped corner typology. Tower corners can be found in 6 corner buildings with attached tower typology. Corner buildings in the District of Central Market Medan are dominated by angular corner typology with simple angular corner and faceted corner shapes. Angled corner buildings are mostly found in buildings that function as shop-houses as the corner of the intersection is a strategic position for commercial buildings [8, 9] and the angled corner shape plays a good role in optimizing space efficiency [13].

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6. Conflict of Interest

The authors declare that this manuscript is devoid of any conflict of interest and is not funded by any external party.

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