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Study of building arrangements in the old city corridor of Tanjung Pura

Nurlisa Ginting¹, B O Y Marpaung² and Indriana Sri Maspuri³

Architecture Department, Faculty of the University of Northern Sumatera, Medan, Indonesia

Email: ¹nurlisa@usu.ac.id ²beny.marpaung@usu.ac.id ³indriraisya81@gmail.com

Abstract. As in other cities in Indonesia, economic development, population growth is one of the causes of the physical changes in the Chinatown shop building on the Sudirman Street corridor in the old city of Tanjung Pura. The building turned into a modern building, which caused the loss of old buildings as a characteristic and identity of Tanjung Pura city as one of the historical cities that distinguishes it from the other cities in Indonesia. To prevent the deterioration of the physical, functional and visual character of this historic region, it is necessary to arrange a building arrangement on Sudirman Street in the old city of Tanjung Pura.

The research method used in this study is a qualitative methodology, with indicators based on variables obtained from the foundation to find the visual characteristics of the building structure and the factors that influence the structure of the building. The indicators are arranged based on variables then used as benchmarks in finding data and analyzing.

1. Introduction

The Chinatown on Sudirman Street corridor in the old city of Tanjung Pura is an area that plays a role in creating the identity of the city of Tanjung Pura with old buildings that are unique and have distinctive characteristics from other cities.

The building arrangement of Chinatown along Sudirman Street corridor in the old city of Tanjung Pura is very interesting with visual characteristics of facade elements of the building that can be seen from the Ngan Shan roof, windows and doors from wooden material that opens out and arcade buildings, facade elements lined up along the Sudirman Street corridor and looks very harmonious. The height of the two-story building and its almost parallel, is also a special attraction and looks very harmonious with each other. This is one of the uniqueness that is the identity of the Tanjung Pura city that distinguishes it from the other cities.

However, currently the Chinatown shophouses along the old city corridor of Tanjung Pura have changed physically due to the needs of facilities and infrastructure to fulfill the needs of the city community, shop owners have built these shophouses vertically into 3 to 5 floors, thus providing a less skyline attractive to buildings. Likewise, the facade of the building was changed without adjusting it to the old building, so that the new and modern buildings became lost and did not match to the old buildings. If it is not maintained, the old buildings in Sudirman Street corridor area will be lost by time.



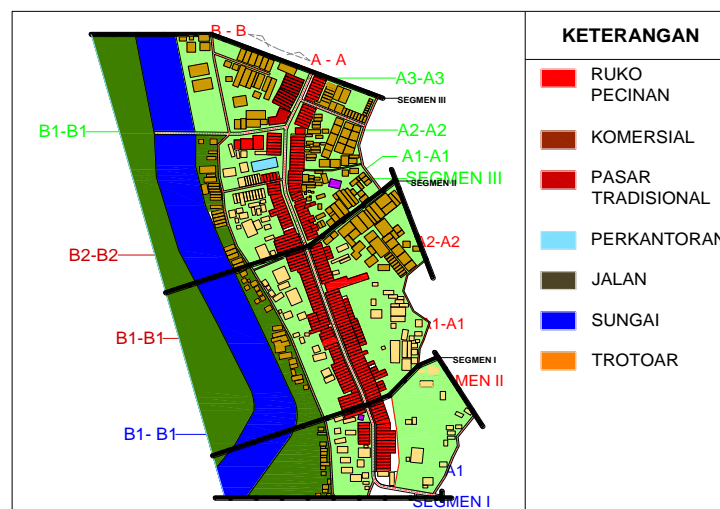
In order to prevent the deterioration of the physical, functional and visual character of this historic region, it is necessary to arrange a building arrangement on Sudirman Street corridor in the old city of Tanjung Pura. In order to revive the atmosphere of the environment so as not to fade. The effort taken is to adjust the new shape with the old shape that is adjusted to the function. Planning new buildings must pay attention to the old buildings around it. The uniqueness of the building layout with various styles and ornaments must be recognized to be presented in the shape of facades from new buildings relating to the chain of past history.

2. Method

The research method used is a qualitative methodology, with indicators based on variables obtained from the foundation to find the visual characteristics of the building structure and the factors that influence the structure of the building. The indicators are arranged based on variables then used as benchmarks in finding data and analyzing. According to Sudarwani, 2012 Symbolic physical elements or visual characteristics of ethnic Chinese houses are typologies, facades, roofs, ornaments, the color of residential houses as the main component. The facade components according to Krier and Vorreiter (1988) are stone walls, entrances and gates, arcades, ground floor zones, windows and entrances to buildings, railings, roofs and building endings, markers and ornaments. Alamsyah (2013) Typology can be done by classifying architectural objects through several similarities including : 1. The similarity of the basic forms in accordance with the shape of the object; 2. The similarity of object functions; 3. The similarity of the background / origin of the object and the style and style of object architecture. The factors that influence building management are the intensity of buildings Shirvani (1985); Moughtin (1992); Bentley (1985); Spreiregen (1965). According to (Pratiwo, 2010).

3. Result and Discussions

The object of the research is the Chinatown shop building along the Sudirman Street corridor in the Tanjung Pura old city, Langkat Regency, North Sumatra Province.



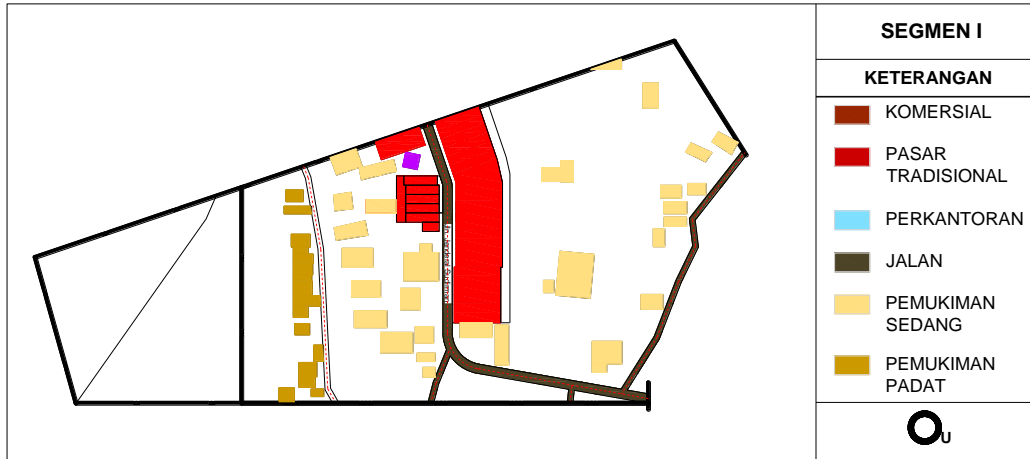
Picture 1. Building Layout on Sudirman Street in Tanjung Pura City Corridor.

Source: Field Findings and Analysis results

3.1. Regional Characteristics


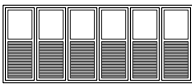
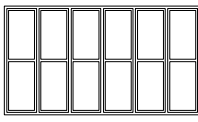


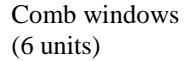

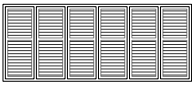
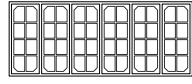

3.1.1. Building Façade. Like the others Chinatown buildings in Indonesia, the Chinatown buildings on Sudirman Street in the old city of Tanjung Pura have a Chinese architectural buildings. The

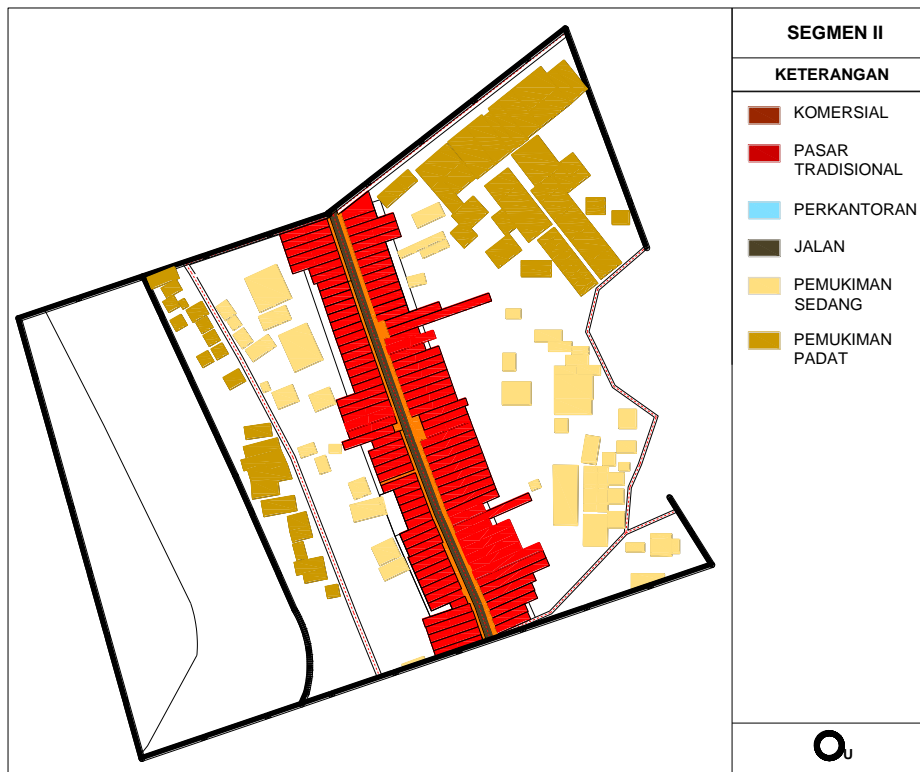
visual characteristics of facades in the Tanjung Pura Chinatown shop building will be analyzed based on the following segments:



Picture 2. Building Layout of First Segment.
Source: Field Findings and Analysis results


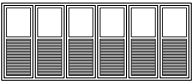
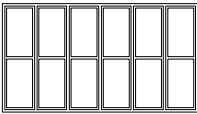




Table 1. First Segment of Building Characteristics.

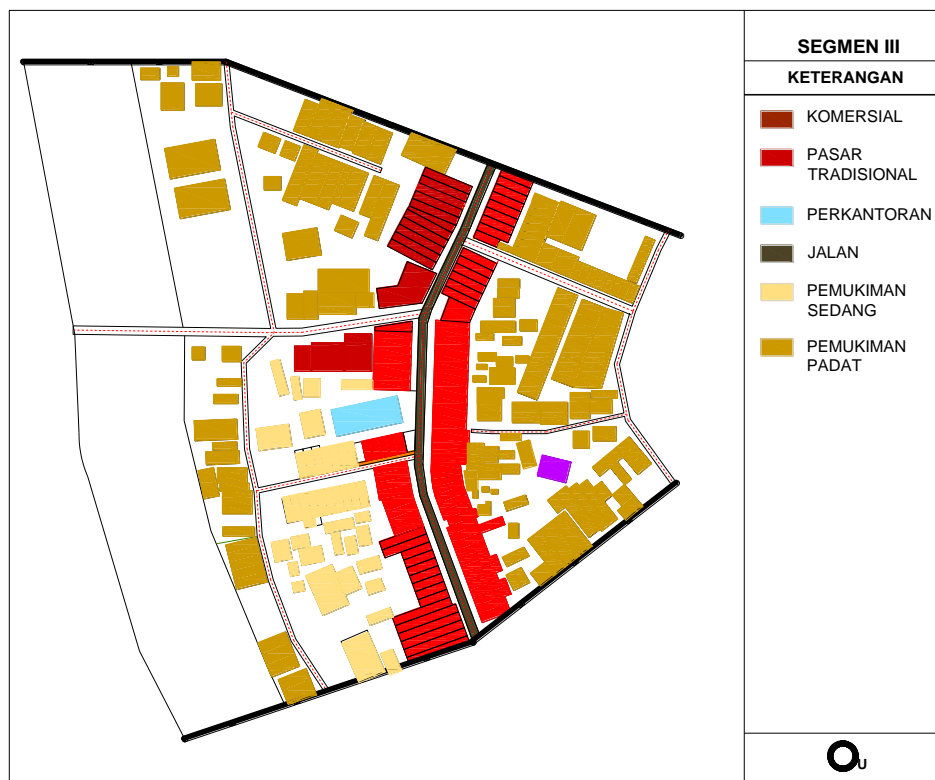
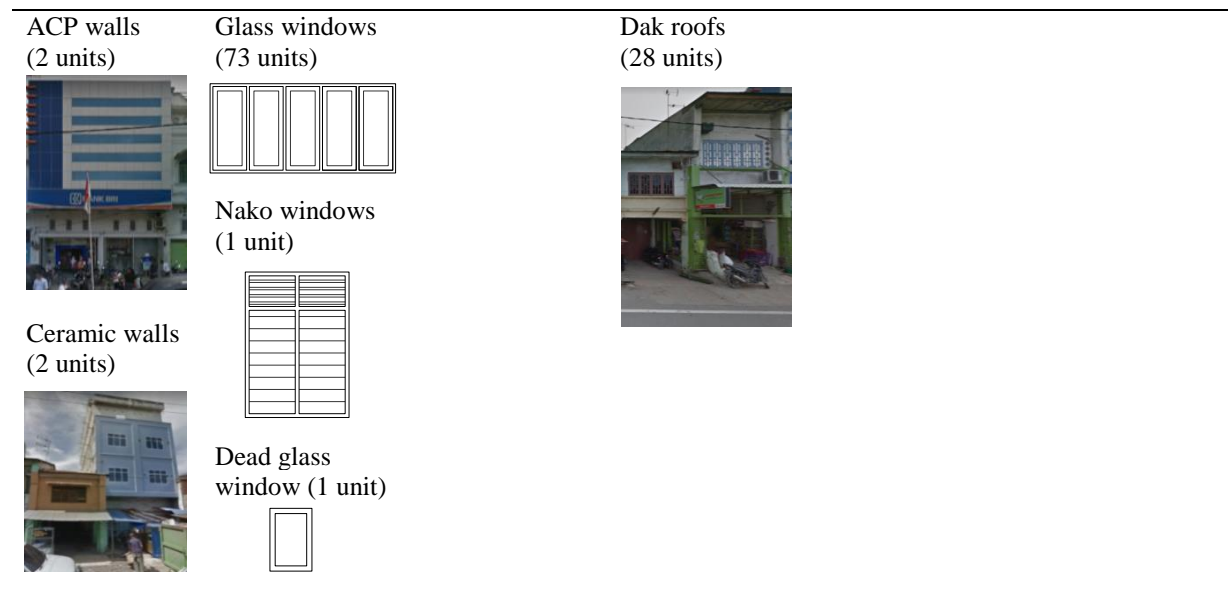
First Segment (Buildings Total: 26 Units) Right: 24 units and Left: 2 units					
Walls	Windows	Doors	Roofs	Arcade/ Railing	Ornament
Brick walls (14 units) 	Glass and comb windows (9 units) 	Wooden doors (large openings) 	Saddle roof with tile materials (slopes: 15 - 20 °) (7 units) 	<ul style="list-style-type: none"> • Buildings with arcade (23 unit) • Buildings without arcade (3 unit) 	<ul style="list-style-type: none"> • Ornaments at the column; • Ornaments at the ring balk; • Ornaments at the arcade; • Ornaments above the windows; • 3 buildings without railings;
Wooden walls (12 units) 	Comb windows (6 units) 		Saddle roof with zinc materials (slopes: 15 - 20 °) (19 units) 		
	Grid windows (2 units) 				
	Glass windows (5 units) 				
					



Picture 3. Building Layout of Second Segment.
Source: Field Findings and Analysis results

Table 2. Second Segment of Building Characteristics.

Second Segment (Buildings Total: 110 Units) Right: 54 units dan Left: 56 units					
Walls	Windows	Doors	Roofs	Arcade/ Railing	Ornament
Wooden walls (31 units) 	Glass and comb windows (10 units) 	Wooden doors (large openings) 	Saddle roof with tile materials (slopes: 15- 20°) (13 units)	<ul style="list-style-type: none"> • Buildings with arcade: 84 units) • Buildings without arcade: (26 units) 	<ul style="list-style-type: none"> • Ornaments at the column; • Ornaments at the ring balk; • Ornaments at the arcade; • Ornaments above the windows; • 26 buildings without railings;
Brick walls (75 units) 	Comb windows (9 units) 		Saddle roof with zinc materials (slopes: 15-20°) (69 units)  		







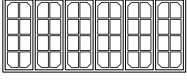
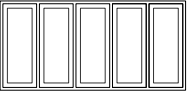






Picture 4. Building Layout of Third Segment.

Source: Field Findings and Analysis results

Table 3. Third Segment of Building Characteristics.

<p>Third Segment (Buildings Total: 89 Units) Right: 59 units dan Left: 30 units</p>
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Walls	Windows	Doors	Roofs	Arcade/ Railing	Ornament
<p>Wooden walls (13 units)</p> 	<p>Glass and comb windows (12 units)</p>  <p>Comb windows (20 units)</p> 	<p>Wooden doors (large openings)</p> 	<p>Saddle roof with tile materials (slopes: 15- 20°) (12 units)</p> 	<ul style="list-style-type: none"> • Building with arcade: 80 units) • Building without arcade: 9 units) 	<ul style="list-style-type: none"> • Ornaments at the column; • Ornaments at the ring balk; • Ornaments at the arcade; • Ornaments above the windows; • 9 buildings without railings;
<p>Brick walls (76 units)</p> 	<p>Grid windows (20 units)</p>  <p>Glass windows (34 units)</p>  <p>Nako windows (1 unit)</p>  <p>Dead glass windows (2 units)</p> 		<p>Saddle roof with zinc materials (slopes: 15- 20°) (63 units)</p> 		
			<p>Dak roof (22 units)</p> 		

From several tables above, can concluded that buildings that still have characteristics that are in accordance with building facade characteristics that can be seen from six facade elements are only 83%. Where of the 225 total units of the building there are only 187 units of buildings that still have complete visual building characteristics.

3.1.2. *Building Typology.* Typological analysis is done by classifying architectural objects through several similarities including:

1. Basic Form Similarities

Since ancient times the basic form of the Chinatown shop has stretched backwards. This is due to the maximum use of land due to the high price of land in the area of Sudirman Street in the old city of Tanjung Pura. But now some buildings have different facade widths due to the different functions of buildings as offices, sports facilities etc. So that the facade of the building looks wider than the others. The changes in the basic form can be seen in Picture 5.



Picture 5. Changes in the Shape of Chinatown Shophouse Becoming Wider and Changing the Position of the Shop to the Rear.

2. Similarity of Functions

Since ancient times the Chinatown shop has functioned as a trading place on the 1st floor and as a settlement on the 2nd floor. But now a part of the Chinatown shop has turned into a building that has 2 to 4 floors, so that the function of each floor is different not only as trading place but also a means of sports and even swallow nests. This caused the change in the physical structure of the Chinatown shop.

3. Background similarity

The Chinatown shop building on Sudirman Street in Tanjung Pura old city, has Chinese architecture, because at the time of its establishment the building was intended for Chinese people who became traders during the Langkat Sultanate. But not only Chinese people who live in this region, there are also many indigenous people living in this region. Because at that time people close to the Sultan got free gifts from the Sultan, one of which was a gift of land and a house. As other Chinatowns in Indonesia, the shape of Chinatown buildings in the Sudirman road area also has the same characteristics as other Chinatown buildings in Indonesia. But the needs of facilities and infrastructure and economic development caused the Chinatown architecture style to disappear little by little into modern buildings.

3.1.3. *Factors Affecting Building Arrangement.* The factors that influence the building layout are the intensity of the building, the elements included in the building intensity are:

a. Basic Building Coefficient ((KDB)

Basic building coefficient in the Chinatown shop building in Tanjung Pura old city can be seen from Table 4.

Table 4. Building Base Coefficient Percentage Table on the Sudirman Street.

Segment	KDB (%)	Number of Buildings (Unit)	Presentage (%)
Segment I	80 – 90%	26	11,55
Segment II	80 – 90%	54	24,00
	100%	56	24,89
Segment III	80 – 90%	89	39,56

From the table above it can be seen 24.89% of buildings with KDB 100%. This is due to the high price of land in the area of the old city of Tanjung Pura corridor which is the center of Tanjung Pura city.

b. Building Line (GSB)

From the results of the analysis found a building border line that almost coincides with the road, namely in Segment I which is caused by widening the road by the district government so that the existing demarcation line of the building decreases. In some new buildings (shop houses, sports facilities and offices) there is a set-back which is a space that arises because the building retreated from the border line of the building which is planned to be used as a parking lot.

Buildings that have frontline demarcation lines are buildings of BRI I with a distance of 7.00 m, Prima Gift mini market with a distance of 8.00 m, Bank Sumut with a distance of 5.00 m, Indomaret mini market with a distance of 5.00 m and several other buildings with a distance of 5.00 m - 7.00 m with commercial functions.

The zero border line and the 2 m boundary line in the Chinatown shop building can be seen in Picture 6.



GSB : 0



GSB : 2 m

Picture 6. Drawings of Chinatown shop buildings with building border lines 0 and 2 m.

c. Side Line Next to Buildings

There is no building that has a side border line of buildings on the Sudirman Street corridor except for shop buildings next to the road. This is because the planning of buildings in the Dutch colonial period was intended for buildings in rows, so that when viewed from the aspect of health the building only gets sunlight from the front and back of the building.

d. Side Line Next to Buildings

There is no building that has a side border line of buildings on the Sudirman Road corridor except for shop buildings next to the road. This is because the planning of buildings in the Dutch colonial period was intended for buildings in rows, so that when viewed from the aspect of health the building only gets sunlight from the front and back of the building.

e. Side Line Next to Buildings

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f. Side Line Next to Buildings

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g. Rear Side Line of the Building

The existing building of Chinatown shop in Jalan Sudirman corridor has a border line behind the building which varies from 3 - 5 m. However, for some new buildings there is no border line behind the building.

h. Building height

In general, building typologies found in the Sudirman General Street area are 100% shop houses with commercial functions on the 1st floor and residential houses on the 2nd floor, but according to their development the functions that exist in the area increase to offices and sports facilities with information can be seen in Table 5.

Table 5. Table of Amount and Percentage of Change in Facade and Floor Height.

Number of Floor	Building Function	Number of Building (Unit)	Presentage (%)
• 2 Fliir (Facade of Building Has No Changed)	Commercial dan Home Living	164	72,89
• 2 Floor (Facade of Building Has Changed)	Commercial, Office and Home Living	41	18,22
• 3 Floor	Commercial, Sport Centre, Home Living	13	5,78
• 4 Floor	Commercial and Home Living	5	2,22
• 5 Floor	Commercial, Home Living and Swift's Nest	2	0,89

From the table above can seen that the only Chinatown shop building has only 164 of the 225 total buildings or only 72.89%.

4. Conclusions

From the analysis above, conclusions can taken as follows:

1. Characteristics of building arrangement on Sudirman Street corridor in Tanjung Pura old city can seen through building facade characteristics and building typology;
2. Characteristics of building facades in Tanjung Pura old city corridor are very suitable for Chinese building facade characteristics, namely:
 - a. The walls are made from brick;
 - b. Windows and doors are made From wood material that can opened to the outside;

- c. Roof using Ngan Shan type;
 - d. There are one or two meters size of terrace as a transition between shop houses and public roads (arcade).
3. The building typology is shop with trade function, and Chinese style;
4. The building Arrangement in Sudirman Street corridor is:
 - a. Basic building coefficient is around 80 – 90 degrees;
 - b. The building boundary line is 2 - 4 metres;
 - c. The side boundary line of the building is zero;
 - d. The rear boundary line of the building is 3 - 5 metres;
 - e. The building height is 2 floors.
5. Chinatown shop buildings along Sudirman Street corridor in Tanjung Pura old city look quite strong, but trade activities are rapidly developing causing changes in facade of Chinatown shop buildings, so that the facade of original buildings that still survive is only 83%.

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