

# STUDY OF THE ELEMENTS OF FAÇADE OF COLONIAL BUILDINGS, CASE STUDY: PALM OIL RESEARCH CENTRE (PPKS) AND AGENCY OF SUMATERA PLANTATION COMPANIES (BKS - PPS)

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## ABSTRACT

*Dutch plantation expansion in the city of Medan left many historical buildings. The plantation building is a historical legacy that must be preserved. G.H Mulder was one of the architects of the time, with his work on the Palm Oil Research Center (PPKS) and the Sumatra Plantation Cooperation Agency (BKS-PPS). The facade is an inseparable element of the architectural product, which is the first element that we capture visually. This research studied and analyzed the elements of colonial architecture that form the facade of The Plantation Development of the Oil Palm Research Center (PPKS) and the building of the Sumatra Plantation Cooperation Agency (BKS-PPS). The research method used in this study is a qualitative method with variables such as walls, columns, doors, windows, vents, roofs, balcony, and ground floor zones. The study founded that the two estate buildings had the characteristics of the transitional colonial architectural period, accompanied by a grouping of similarities in the elements of the two facade. Despite having the same function, architect, and construction period, the two buildings still have differences in the characteristics in facade elements and the visual quality*

*Keywords: Colonial building, Elements of façade*

## INTRODUCTION

Medan is a historic city; it was known as Paris Van Sumatra. There are many buildings with historical value in the city of Medan, from several studies it is concluded that these buildings have undergone several adaptations or transitional.

The history of Medan cannot be separated from the expansion of plantation in the city of Medan. G.H Mulder was one of the architects at that time, and he designed two buildings in Medan; the Oil Palm Research Center (PPKS) and the Sumatra Plantation Corporation Cooperation Agency (BKS-PPS). Both of these buildings contain essential history in the field of plantations in Medan and have architectural richness that needs to be preserved.

The facade of the building is an element that cannot be removed from an architectural product, and it is an essential part of an architectural work because this visible element

is seen at first, the facade also displays the history of human civilization [1].

Therefore, researchers are interested in examining more deeply the elements forming the two facades of PPKS and BKS-PPS, what are the characteristics of the architectural facade of Dutch colonialism applied to the two buildings and how is the comparison between the two buildings.

## Façade Review

The word facade is taken from the Latin word "facies," which is a synonym of the words 'face' and 'appearance' [2]. Because of this, the facade is translated as the front-facing road. According to Moloney in Dedi Setiawan [1] the facade is one of the elements possessed by the building envelope, it has the meaning as an architectural face, the facade is a significant part of an architectural work because it is the face of a building and express everything from the functions, intentions, historical traces, the creativity of the designer and it is an

intermediate link between the outer and inner space.

Facade elements include walls, columns, openings in walls, entrance, roof, balconies, colors and materials, signboards [3]. Facade elements, namely entrances, ground floor zones, windows, guardrails, roofs and suffixes, signs, and ornaments [2] while according to Wiryomarto Bagoes [4] facade elements namely windows, vents, doors, walls, floors, and roof. According to DK. Ching [3] elements of building form are the shape, dimensions, color and texture, position, and orientation.

**Table 1.**

Facade elements and building form elements

Facade forming elements	Building forming elements
Wall	
Column	Shape
Door	Dimension
Window	Colour
Ventilation	Texture
Roof	Position
Ground Floor Zone	Orientation
Balcony	

Source: Author's Analysis

### Colonial Building

Colonial architecture is an architecture that was born during the colonial period in Indonesia. Colonial architecture is an architectural modification based on a combination of western and eastern cultures that were present through the works of Dutch architects. Climate differences, lack of material availability, and technical differences in colonies are the causes of these modifications. In the development of colonial architecture in Indonesia, according to Handinoto [5] the style of architecture at that time was divided into three.

#### 1.2.1 Indische Empire Style architectural style (Ages 18-19)

An architectural style that developed in the mid 18th century until the end of the 19th century. Its characteristics are shield roof construction, brick building material, wood usage especially on roof trust, sills and doors, glass material usage not yet widely used, full symmetry-shaped floor, the dominance of Greek-style column, in the middle there is a living room, central rooms directly with regard

to the front and back terraces, terraces are usually huge, the service area is separate from the main building.

#### 1.2.2 Transitional architectural styles (Ages 1890-1920)

Developed between 1890 and 1920 due to modernization with discoveries in the field of technology. The characteristics are the use of 'gevels', terrace, towers, 'geveltoppen' (gable top decoration), rooftop 'acroteire' (rooftop decoration), dormer (roof ventilation), 'windwijzer' (wind pointing), balustrade (guardrail), saddle roof construction and shields with tiled closure, Greek-style column arches have begun to be abandoned, the primary building materials are brick, floor plans still follow the Indische Empire style of full symmetry and the use of decoration.

#### 1.2.3 Modern Colonial architectural style (Century 1920-1940)

Modern architecture is a protest made by Dutch architects after 1900 over the Empire Style. Its characteristics include using a flat roof made of concrete, horizontal gevel, starting to use cast iron, the use of a dominant white color, the wall only functions as a cover and use of glass (especially on windows) which is quite extensive, plans are more varied according to the suggestion of creativity in architecture modern, many forms of symmetry are avoided, the use of the terrace around the building is no longer used instead of often used elements of retaining the light, the building looks more reflective of "Form Follow Function."

### METHOD

This research uses a qualitative approach. The researcher wants to explore phenomena that cannot be quantified that are descriptive, such as the characteristics of an object, goods/services [6].

The objects in this study consist of two buildings, namely the building of the Palm Oil Research Center (PPKS) and the North Sumatra Plantation Cooperation Agency (BKSP-PPS). Both of these buildings are estate buildings with the same initial function as offices and architects, namely G.H Mulder. As for the variables as the focus of this study, the building facade elements of the two buildings

include walls, columns, doors, windows, ventilation, roofing, ground floor zone, and balcony.

For the location of the research object, the Sumatra Plantation Company Cooperation Agency (BKS PPS) is located at Pemuda Street No10A Kampung Aur, Medan Maimun District, Medan City while for the Palm Oil Research Center (PPKS) building is located at Jln.Brigjend Katamso no.51 Kampung Baru, Medan Maimun District, North Sumatra.

The data analysis process will begin with data collection. Data reduction, which filters all data related to the building elements of the other facade, then presents the facade data of the two buildings that are the object of research in tabular form, then analyzes it to conclude the end of the research results.

## RESULTS AND DISCUSSION

Based on the analysis of the two buildings, which are the objects of research, the following conclusions are obtained:

a. The Oil Palm Research Center (PPKS) plantation building and the Sumatra Plantation Cooperation Agency (BKS-PPS) both have the closest proximity to the characteristics of the Transitional Colonial Architecture (Table 2), with the characteristic elements in the facade they have:

- Has a gable and shield construction, as a form (an adaptation of tropical climate)
- Using tile roof coverings (the use of local products)
- Use of 'Noc Acroterie' (rooftop decoration on buildings).
- Use of gevels on building facades.
- The wall is a pair of bricks with architectural details (utilization of local products and adaptation to climate)
- Window sills use wood, and windows use glass (still very limited) (use of local products).
- The use of 'Bouvenliet' (ventilation holes), which are openings in the face of buildings that function to meet the needs of health and thermal comfort (adaptation to climate)
- Use of Tower in the building.
- Use bright colors.

b. The similarity of characteristics of the two buildings based on the related architect:

- Both Buildings have a Balustrade (guardrail) with a uniform ornament pattern, made of cast concrete, and used as a balcony guardrail or building deck.
- Both buildings have a 'Gevel' in the building facade, with a square shape for PPKS buildings and for triangular BKS-PPS buildings.
- Has a uniform ornament in the entire column of the building's facade.
- The second wall of the building is a pair of bricks with architectural arrangements on the top of the building wall.
- Window sills use wood material with the same sills pattern, and window materials use glass material.

c. The different facade elements of the two Buildings:

- At the entrance of the BKS-PPS building, there is a tower, which is one of the features of the transitional colonial architecture, but in the PPKS building, there is no visible use of the tower.
- On the backside of the building, the BKS-PPS still uses a few Greek-style columns (cylindrical pillars) while in the PPKS building, the use of the Greek-style column is wholly abandoned.
- In the building, PPKS has 'Noc Acroteric' (rooftop decoration) is one of the features of transitional colonial architecture, whereas, in the BKS-PPS building, this feature is not found.
- The PPKS building uses a shield roof type with detailed ornamentation on the lisplank section, while the BKS-PPS building uses a dome and saddle roof type.
- In the PPKS building, the ground floor zone of the building is higher than the height of the road surface, whereas, in the BKS-PPS building, the ground floor zone has an elevation lower than the height of the road surface.

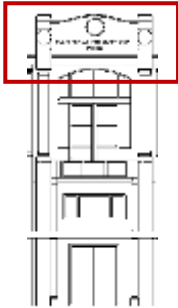




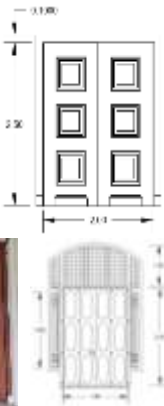



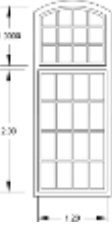
d. The difference in the elements making up the facade between the two buildings is caused by:

- Position. The position of PPKS building is facing towards the road section. As for the building of the BKS-PPS, its position faces the crossroads with the existence of a tower. This difference in position causes

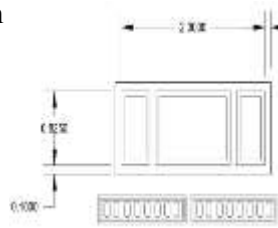
differences in the characteristics of the two buildings.

- Year of Development. The PPKS building was built in 1916, while the BKSP-PPS was built in 1918, although the difference in development years is not too far away.

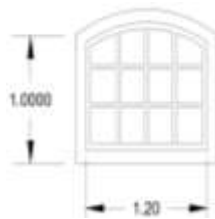
**Tabel 2.** Analysis comparison

No	Façade's elements	PPKS	BKS PPS	Explanations
1.	Wall	 (PPKS)	 (BKSPPS)	<ul style="list-style-type: none"> <li>▪ The second wall of the building fields with openings and bricks.</li> <li>▪ Both have 'gevel', PPKS square, BKS-PPS triangle.</li> <li>▪ BKS-PPS has the second wall</li> </ul>
2.	Column	 (PPKS)	 (BKSPPS)	<ul style="list-style-type: none"> <li>▪ The column uses the basic shape of a square (leaving the Greek column) on the BKS-contained some on the backside.</li> <li>▪ There is a uniform ornament on the column.</li> </ul>
3.	Door	  (PPKS)	 (BKSPPS)	<ul style="list-style-type: none"> <li>▪ In BKS-PPS there is a Tower that leads to intersections on the sides building entrance, meanwhile PPKS entrance facing road without a tower.</li> <li>▪ Door wooden door with two doors and size quite gigantic.</li> </ul>
4.	Window	 (PPKS)	  (BKSPPS)	<ul style="list-style-type: none"> <li>▪ Windows start using wood and glass material.</li> <li>▪ PPKS has shutters, BKS PPS no.</li> <li>▪ Both windows work for lighting function.</li> </ul>

5. Ventilation



(PPKS)



(BKSPPS)

- Ventilation made of glass and wood.
- Functioning in terms of air conditioning

6. Roof



(PPKS)



(BKSPPS)

- The use of gable and Shield, as well as the dome roof on the tower section.
- Use of 'noc acroterie' in PPKS.

7. Ground Floor Zone



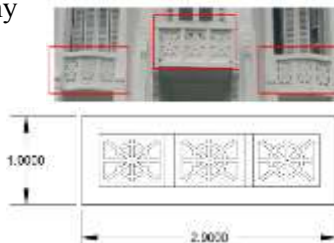
(PPKS)



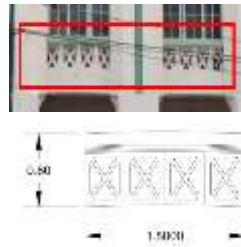
(BKSPPS)

- PPKS has a large yard, and the surface of the floor is higher than the road.
- BKS-PPS has the surface of the floor is lower than the road.

8. Balcony



(PPKS)



(BKSPPS)

- Both have balustrade with uniform ornaments.
- In PPKS function as an ornament, BKS-PPS functions as a place for relaxation and communication space.

## CONCLUSION

The results obtained from this study is that the two estate buildings studied have a closeness to the characteristics of the Transitional Colonial architecture, they have similarities in the facade elements such as the use of balustrade, gevel, ornament, and the same material: wood, glass and brick. But despite having the same function, architect and construction period; the two buildings still have differences in the characteristics of the colonial architectural facade elements such as the use of towers, columns, acroteric rooftops, roof and ground floor. As for the causes of this differences include the site position and the year of construction.

## REFERENCES

- [1]Setiawan, Dedi, 2016. Typology of Changing Facade Element for Commercial Buildings at West Jakarta's Puri Inda Road Drive Research journal, Vol 6 No.
- [2]Krier, Rob, 2001. Architectural Composition. Jakarta : Erlangga.
- [3]Ching, F. D. K, 1994. Architecture Form,Space And Order. Jakarta: Erlangga.
- [4]Wiryanartono, Bagus, 2016. Architectural Composition: Appreciation of Cases in Indonesia. Jakarta: Erlangga.
- [5]Hadinoto, 1996. Development of the City and Dutch Colonial Architecture in Surabaya 1870-1940. Yogyakarta: ANDI.

- [6]Satori, Djam'an' Aan, Komariah, 2009.  
Qualitative Research Methodology  
(ALFABETA).