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## Adaptation Of Dutch Colonial Architecture to Palembang's Humid Tropical Climate

\*ST.,MT.Endang Sri Lestari<sup>1</sup>, S.Si.,M.Kom.Evi Purnamasari<sup>2</sup>

Universitas Indo Global Mandiri, Faculty of Engineering, Palembang, Indonesia<sup>1</sup>

Universitas Indo Global Mandiri, Faculty of Computer Science, Palembang, Indonesia<sup>2</sup>

E-mail<sup>1</sup>:endang.sri@uigm.ac.id ,E-mail<sup>2</sup>:evi.ps@uigm.ac.id

### Abstract

The Dutch Colonial Architecture in the Talang Semut Palembang area notes that there is a lot of diversity in the style and function of the building as well as the historical journey that includes the adaptation process. This adaptation process is observed in the design world today and in the future. Proof of the adaptation process is carried out by calculating physical analysis to find out the extent to which this tropical consideration is carried out. The process of adapting Dutch Colonial architecture to a humid tropical climate is expected to be able to provoke the creativity of architects in designing buildings properly without using artificial air conditioning equipment. The arrangement of interior layout, outer space and mass management as well as the environmental pattern of this Dutch residential area with the completion of the detailed construction planned to anticipate tropical problems have really been carried out properly.

**Keywords:** Adaption Architecture, Humid Tropical Climate.

### 1. Introduction

At the end of the sixteenth century the Dutch came to Indonesia at first as traders, but later developed their power as colonizers. During the seventeenth century the Dutch began to settle in Indonesia and at first did not have close cultural contact with the Indonesians. The arrival of the Dutch to Indonesia with the main purpose of trading, together with other nations as traders, but because over time it was felt that it was causing competition with native traders, and traders of other nations, they were often involved in physical conflicts, finally the Dutch fortified themselves by living in an area enclosed by a strong fence (fort) to avoid physical confrontation with the indigenous population. Living overseas with conditions in Indonesia, which at that time was not yet developed, they had to open new lands, lived in the midst of conflict, made the Dutch people yearn for their comfortable homeland. This longing is reflected in the residential buildings, urban planning and their lifestyle. All Dutch developed cities are characterized by pure Dutch architecture, marked by canals with trees along the edges, houses, shop houses lined the roadside and warehouses lined the water's edge. Everything is in the style of Dutch European architecture, without the slightest influence indigenous culture. Even the way they built did not meet the demands of the climate, the way of life in the humid tropics and the existing health (Van Hoytema, J.F., 1946). these historical buildings record events that during the colonial era, many Dutch people lived, lived and worked in Palembang the Dutch who lived in the hemisphere with a moderate climate had to adapt to live in an area with a humid tropical climate. This life adjustment is not only patterned on daily life and behavior, but also includes the adjustment of the building pattern. The building which was built by the Dutch geese still uses the Dutch architectural style, but has been adapted to the local climate, namely a humid tropical climate. Because the form of the building which was built by the Dutch was still characterized by European architecture (including the architecture of colonialism in Indonesia).

### 2. Methodology

In the analysis of this research, there are several things that are analyzed in detail, and one part with other parts being analyzed is a unity. The other parts that are analyzed are a unit that supports and complements each other. Descriptive method was chosen to express all the problems of the research. the parts that are observed and analyzed include:

- Architectural conditions of Dutch buildings in the Netherlands and in Indonesia.
- Urban context in relation to the development of patterns of mass management and environment that affect tropical climatological conditions.
- The process of adaptation of Dutch colonial buildings in Indonesia with the observation area in Talang Semut Palembang.
- The climatological aspect of the humid tropics on the physical comfort of building users adjusted to the prevailing comfort standards.

To describe the research that will be conducted, historical research methods are used, which are expected to be able to describe the business journey of adapting Dutch colonial architecture, buildings that were built in the early

days. From its historical journey, it will reveal the extent to which this adaptation effort has been carried out, the level of technology used and the ability to anticipate climate influences in the interior and exterior spatial patterns. Determination of sample the research was conducted to observe the process of adaptation of Dutch colonial architecture to a humid tropical climate. Observations took case studies in Talang Semut Palembang. From the form of the research to be carried out, it would be very appropriate to use the method of determining the sample in the form of 'Purposeful Sampling' with a more concrete form of 'Criterion Sampling'. Purposeful Sampling is used in research that requires the selection of a lot of information with various cases to get an in-depth study.

### 3. Development of Dutch Colonial Architecture in Indonesia

External Factors as Determinants of Architectural Development.

At the beginning, architecture was formed as a shelter for humans from the influence of natural disturbances such as rain, wind, wild animals and others. simple, namely by occupying natural caves. limited human ability to create a place to live. Humans have not been able to make a shelter . Along with the advancement of culture, ways of thinking and processing natural resources as well as the discovery of household tools and carpentry make humans able to create shelter from natural materials such as wood and leaves. human In line with the level of technology that is controlled by humans and the ability to think, humans produce various forms of buildings even though they are made of the same material. For example, some of the following buildings have similar materials but differ in form due to external influences that play a role in changing the physical appearance of a building.

The Development of the Era of Dutch Architecture.

Traditional Dutch architecture is an architecture with special characteristics that appear on the roof and the details of the walls. But overall it has a lot in common with European architecture in general . This is due to the influence of the climatic equation in mainland Europe, namely the moderate climate. Roofs without eaves, wide and glass-covered windows, plain walls without sun block (sun Roofs are not architecturally moderate in climate. shading), is a feature planned for protect against sun and rain , but only to protect against wind and snow Dutch architecture is famous for its characteristic roof , which can be used for attic , known as Mansard roof The mansard roof has two angular bends , which result in two steep angles , with the goal is to create a roof slope that is sufficient to drain the snow pile in winter and produce a wide enough space under it, so that it is spacious enough as a living room. It is hoped that the sunlight will still be able to enter as much as possible into the Dutch architecture, which is located in this moderate area, using the sun's heat a lot for natural heating through the opening of the wall hole is capable of opening the wall hole in the form of a window, intended to capture direct sunlight (Direct Solar Heat Gain) as much as possible. These windows are stretched to hear the direction of the direction in accordance with the path of the sun which is always on the south side. These windows are closed with glass so that wind gusts do not enter the room. Roof The roof functions as a room, it also has a function to suck heat through the roof covering material so that it can warm the room inside. The ceiling is placed in a position following the slope of the roof covering , so as not to create an air cushion , which can absorb and absorb heat intensity to enter the room . Walls in Dutch architectural buildings are also used to absorb heat by choosing several building materials that do not hinder the absorption of heat much. The wall on the front view of the building is directly facing the sun and there are not many obstacles to be found. Corridors are not found in Dutch buildings.

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