

## INDISCH ARCHITECTURE ON WOODEN HOUSE IN STILTS IN GROBOGAN PURWODADI

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**Abstract**— Indisch architecture is the work of adaptation, the building appeared adjustment, is the principle of Dutch architecture as a concept on how to build and respond to social culture and climate. The building was designed by Dutch architecture and the consequences of using local materials by considering vernacular and traditional buildings. The most prominent effort in the adjustment of the building in humid tropical climate is the anticipation of: Ventilation, manifested by the number of opening for air flow. The rain and the sun is anticipated to create a gallery along the building so that when the window is open will be protected from direct sunlight and rain tempias.

Dutch architect sensitivity of tropical climate and the environment, seen from construction elements to regulate air conditional and lighting as well as protection against rain. Almost all the buildings surrounding the alley has rooms on the outside. This section has a double function, as liaison, heat insulation and direct sunlight.

In Central Java there is also a wooden house stage, which is the home office for Perhutani. Now this was a rare home existed, and only among the surrounding woods in Kedung jati Grobogan. Wooden house is a relic of this stage of the Dutch (Indonesia's forestry history I) From the aspect of architecture, architectural conception Indisch still visible with a big yard, steep roofs, high ceilings and do not use the traditional layout (Java), but have adopted elements local culture and respond to climate. Further functional reasons, for the bathroom, lavatory, kitchen which is designed service building outside the main building or separate.

**Keywords** : *Architecture Indisch, houses on stilts, spatial*

### I. INTRODUCTION

To find comfort in the building, the Dutch architect also trying to work they can adapt to the situation in Indonesia. Adjustments to the tropical climate. occurred in Indonesia at the moment is how to solve the problem of ventilation. The people here some sweaty, adequate ventilation is a necessity. In a large building with many rooms that have diverse functions, natural ventilation is the way out. The main demand in the residential areas of the tropics is

Roof sun and rain, the solution will determine the form of the exterior. Walkway that is used as a corridor connecting cause behind it remains cool room. The second thing is the hot air that must be driven by natural ventilation through the vent and the window (Hoytema, 1946). In this study the traditional houses, the Dutch architect stressed that they could be friendly design with climate and other conditions. In Sidhartha (1997) some of them run in the design:

- Create an open porch in front, beside or around the building.
- Overhange broad to protect the walls and windows from direct sunlight or rain.
- The height of the wall about 4 feet and enough natural ventilation above the doors and windows.
- Tropical gardens with trees enough.

Pioneer adjustment of colonial architecture with a wet tropical climate in Indonesia is Prof.. BJ Klinhammer dab. Quendag. Both architects are designing buildings railroad Nederland Indische Spoorweg Semarang. In Handinoto (1996) The most prominent businesses in the adjustment of the building in humid tropical climate is the anticipation of:

- Ventilation, banyakanya realized with the opening for air flow.
- The rain and the sun is anticipated to create a gallery along the building so that when the window is open will be protected from direct sunlight and rain tempias. Layout diusahakan building facing north-south direction to avoid direct sunlight

### Understanding Architecture Indisch.

Indisch word comes from the Dutch "Nederlandsch Indie" or the name of the Dutch East Indies Dutch colony across the ocean which geographically covers the colonies in the archipelago called Nerlandsch Oost Indie. Form of building homes Dutch government officials who have characteristics of building solidarity between the Dutch and the traditional home by Berlage termed Indo Europeesche Bouwkunst, van de Wall Indische called it Atmadi Huizen and call it architecture Parmono Indisch (Soekiman, 2000) .

Indisch architecture is the work of adaptation, the building appeared adjustment, is the principle of Dutch architecture as a concept on how to build and respond to social culture and climate. The building was designed by Dutch architecture and the consequences of using local materials by considering the traditional buildings and vernacular (Atmadi P, 1988). According Sidarta (1997) Architecture Architecture Indisch actually means built

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during the time of Dutch colonial rule in Indonesia between 17th century until the year 1942 which is influenced by Dutch architecture.

In Handinoto (1996) the development of architectural form that puts the traditional architectural tradition is worth indische architecture. A fairly successful effort was the work of Ir. Henri Maclaine Pont in 1918 the Technische Hogeschool building Bandung (ITB). The presence of this building into a specific discussion of the Indische form. The debate was conducted by Ir. Henri Maclaine Pont, CP Wolff Schoemaker and Thomas Karsten. Dutch architect sensitivity of tropical climate and the environment, seen from konsrtruksi elements to regulate penghawaan and lighting as well as protection against rain. Almost all the buildings surrounding the alley has rooms on the outside. This section has a double function, as liaison, heat insulation and direct sunlight. Similarly, the slope of the roof of a sharp and sometimes accompanied by an opening for heat flow. Spaces high ceiling also be one way to avoid the heat in the room (Sumalyo, 1993). According to Thomas Nix dissertation "Stedebouw in Australie en de Stedebouwkundige Vormgeving" (Town Design in Indonesia and Form-giving on the Town - Design). Large villas Dutch and palaces can be traced back to the palace in France to the dynasty Lodewijk XVIII century. French palace at the time of the main building which has made symmetrically, more to the back of the street than the building service. This shows the aristocratic way of life that avoids busy city. Generally the houses for the nobility in the Netherlands there is no front room or front court. Outside the city there are many situations open the possibility that separate the service building. The main house has a wide open Verandah in front and back, wide corridor that connects the two Verandah and designed bedrooms on the left and right corridor. Many houses are owned by Dutch people have a design like the above. Verandah much built as perfect in humid tropical climate. He held direct sunlight and make the room cool. Further functional reasons such symmetrical design are ignored, to the bathroom, lavatory, kitchen which is a service designed buildings outside the main building (Sidhartha, 1997).

### Wooden Houses Indisch Stage

Perhutani stage compound is also adjacent to the Railway Station Kedung identity. This station is the first railway line in Java that connects Semarang-Solo and Semarang - Surabaya. Kedungjati station has a very large role in the Dutch period. Kedungjati a teak centers on the colonial era Belanda.



Figure 1: House of Perhutani

It is also adjacent to the home office of PT Kereta Api Indonesia. The home office of PT KAI is also a Dutch heritage, which is used as a home office. What distinguishes, for the home office for Perhutani with the stage and the dominant form with teak wood materials for the home office while PT KAI, no stage and the use of brick materials.

This wooden house stage there are close to the forest or forest edge but were there who had merged with surrounding settlements. The house is also close to the stage with the river which is Tuntang largest river in Kedungjati.



Figure 2: House of PT KAI

### Shape and Spatial

The shape of the building houses the offices Perhutani Kedungjati stage is a wooden house with a floor elevation of the land / pit ranged from 70 to 125 cm. Use of this stage of the house associated with security during construction, which is located on the edge of the forest so useful to avoid wild animals and to health by avoiding high humidity. Construction used is lightweight construction with wood frame.

- The building is divided into three parts namely:
- Head, a steep roof covered with tiles.
  - Body, part of the pillars and walls made of wood / board.
  - Feet, lifting a floor buffer with a column made of logs of wood and because many base rotted wood was replaced partly by stone base pairs.



Figure 3: House Perhutani with verandah around building



Figure 4: service area separate from the main building

### Roof form

The building roof Limasan and saddle-shaped with a steep slope, to respond to the tropical climate in the environment. As for the kitchen and bathroom / WC is building service (own building) that was not the stage, which is located behind or beside houses on stilts (main building). This is not like the surrounding houses that are not the stage and among the main building and service together or side by side.

This Perhutani official residence of the building consists of two days, the main building of the platform and service buildings not associated with stage doorlop (hall) which is protected with a roof. For the main building layout, as in the Dutch colonial heritage house that is more symmetrical and asymmetrical patterns. For symmetrical pattern, the hallway in the middle of the building that connects the front room with rear porch and left and right side of the hall are the bedrooms. As for the asymmetric pattern, the bedroom is located on one side to the other side to the living room, dining room / family.

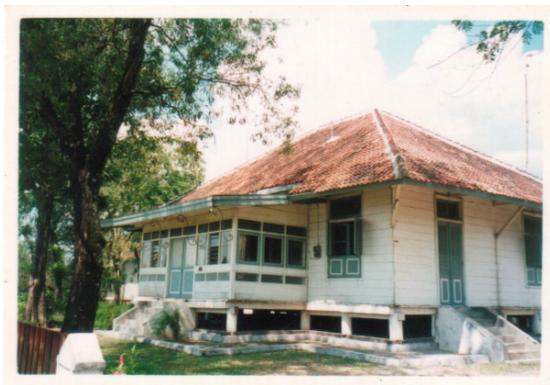


Figure 5: the use of glass and iron console

Roof construction using teak wood with a roof covering of the roof. To protect the space below, come Limasan and saddle with a slope of 35 equipped with a ceiling / ceiling of teak wood with a thickness of 3 cm, width is about 20 - 25 cm long and 2.5 - 3 m. High ceilings from the floor about 4 m or more.



Figure 6: Houses with foundation "ceblok" .

To protect the walls from the hot sun, and rain tritisan equipped with buildings on all sides, with a wide tritisan average ranges from 70 to 80 cm. To the front of the building, equipped with a wide tritisan extension length of about 120 -150 cm. There is also a whole side of the building is equipped with a hall / foyer large enough. This porch supported by wooden columns that can serve to protect the walls and window openings as shading from the heat of the sun and rain.

### Walls and Aperture System

The wall of this building houses on stilts using teak wood with a thickness of 3.5 cm, and mounted in a horizontal row. For the columns using a wooden structure with the assistance of the columns for the windows and doors.

Clearing system to incorporate natural lighting and air movement using a wooden windows. The windows are double windows to the outside of using the window blinds and the window glass in use. The window is not equipped with bouvenligh above. While the door panels using wood that comes with bouvenligh above. There are also building a porch / front porch with a timber equipped with a functioning lambrisering to shading the sunlight.



Figure 7: interior house of Perhutani

## II CONCLUSION

No matter how simple a building, let alone the building of houses, the technology would be needed. House manufacturing technology is not low, it has been proved by humans began with the traditional buildings of colonial buildings which have been adapted to the environment. Likewise with wooden houses this stage, although a simple form, but not born of a sudden. Strength has been proven and showed a balance of forces that prop is a wooden pole with a large building foundation that was balanced with nature.

Dutch architect sensitivity of tropical climate and the environment indisch architecture, seen from konstruktion elements to regulate air conditioning and lighting as well as protection against rain. Almost every building has eaves and alleys around the house. This section has a double function, as liaison, heat insulation and direct sunlight. Similarly, the slope of the roof of a sharp and sometimes accompanied by an opening for heat flow. Spaces high berplafon also be one way to avoid the heat in the room

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