

# THE INTERNATIONAL JOURNAL OF HUMANITIES & SOCIAL STUDIES

## Thomas Karsten and the Java Traditional Architecture Development and Innovation

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### **Abstract:**

*Thomas Karsten is very well known as an architect and town planner in the colonial period in Indonesia. In the field of his architecture are among others in Semarang, Surakarta, Yogyakarta and Medan. Works of architecture consisting of various types of buildings, the main among others building schools, hospitals, museums, theaters, office buildings, terminals, residential and others. When examined Thomas Karsten building design from time to time, from 1916 up to the time before the jail in Cimahi 1942, there was development of architectural design influenced by the architecture that evolved at that time apart is the biggest influence on the development of traditional Javanese architecture. This is evident in the work of theater Sobokarti in Semarang and Sonobudoyo museum in Yogyakarta. The second planning period of the building is a period where the colonial architecture at that time challenged to design a modern building with regard to the value of local architecture and local climatic conditions. What is interesting is how Thomas Karsten observed innovate modern architectural design with a variety of functions by basing the development of function space, shape, structure and materials in the building of traditional Javanese architecture, with attention to building technology that developed at that time. How is the embodiment of innovation in building theaters, schools, markets, museums or office buildings, other than in residential buildings.*

### **1. The Gait of Herman Thomas Karsten**

Herman Thomas Karsten is a graduate architect in Delft Technische Hoogeschool coming year 1904. Karsten was born in 1884 in Amsterdam from educated families. His father was a professor of philosophy and vice-chairman of the Chancellor (Rector / Director) at the University of Amsterdam was his mother came from Central Java. In 1914 he came to Indonesia at the invitation of his friends, namely Henri Maclaine Pont. Since the beginning of his career in the Dutch East Indies Karsten had a career on two fronts: the architectural and urban planning. Progressive thoughts in the field of urban planning embodied in many of his works in many cities in Indonesia, then Karsten is the only city planners the most reliable and respected in the Indies. To realize the beautiful city fit this plan has great attention to the architecture of the building as a filler element of the city. Architectural works practically did little throughout his career until his death in 1945, Karsten has left nearly 30 early works of monumental architecture as a form of careful efforts in architecture, wrestle with architecture ideology that developed at that time.

Most of his works of architecture are public buildings, perhaps because of he is a socialist who has concern for the welfare of society. Works of architecture of public buildings which include, office buildings, hospitals, markets, stations, schools, buildings, folk theater, museum, home butchers and markets. In the housing sector, he also designed a type of house in the area he planned settlements in various cities. Karsten's work in the field of architecture are scattered in various cities in Indonesia, but most are in the city of Semarang, including Semarang part of the planning work. So it is appropriate that the so-called town Karsten Semarang. There is another debutant is the city of Bandung and Surabaya is a city Schoemaker Citroen. (Handinoto, 1996).

### **2. Java Traditional Java Architecture**

In essence, the traditional architecture of Java, Central Java, especially based on the shape of the residence. According Ismunandar, 2003, at the residence of the outline of Java can be divided into:

- i. Joglo house form.
- ii. Limasan house form.

- iii. Kampung house form.
- iv. Mosque and tajug or tarub house form.
- v. Panggang pe house form.

Each house has a diversity of forms and shapes of different variations with different names.

### 2.1. The Joglo House Form.

Joglo house forms are usually owned by people who are able or are owned by people who have respected social status in the Java community. Because it takes to build a house Joglo building materials more and more expensive. Joglo typically square and the main four-poster which is also referred to as the pillar.

The composition of the room is usually divided into three parts: a meeting room called the *pendapa*, living room or space that used to hold a shadow puppet show called *pringgitan*, and a back room called the palace or *omah jero* as a family room. In the room there are three *sentong* (room) that is *sentong kiwa*, *sentong tengah* (petanen) and *sentong kanan*. (Ismunandar, 2003).

### 2.2. The Limasan House Form.

Houses *Limasan* has a rectangular floor plan and two roof (*kajen* or *cocor*) as well as other roof *dau* (*brunjung*) parallelogram shaped isosceles. *Kajen* or *cocor* shaped like an isosceles triangle *tutup keyong*. Because it tends to change the house pyramid have additional sides called *empyak emper*. Because of this, home of Limasan blossom out with the name of each. When examined differences with joglo pyramid house is on the roof *brunjung* and construction of the middle section. It turns *brunjung limasan* roof over a long of the roof *brunjung joglo*, but lower than *joglo*.

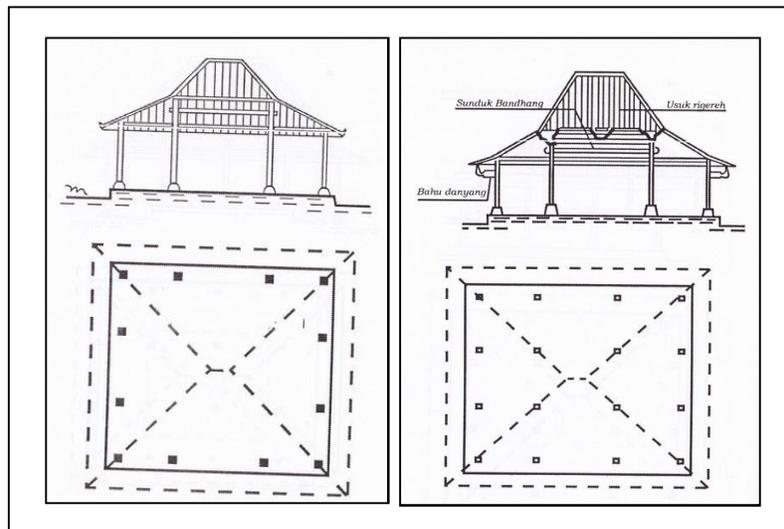


Figure 1: House Forms of Joglo Kepuhan Limolasan and Limasan Lambangsari. (Source: Ismunandar, 2003).

### 2.3. Kampung House Form

Home form this village has existed since the first, can be seen in the reliefs of Borobudur, Prambanan and other temples in East Java. From this it can be concluded that the older the home village of the joglo or *limasan*.

Home villages generally have a rectangular floor plan. But for those who want only use four pillars and simple roof and two rectangular. On the upper side closed with a *tutup keyong*.

### 2.4. Mosque and Tajug House Form.

The mosque is a place of worship for people who are Muslims. *Tajug* or *tajub* function similarly to the mosque and to teach Islam, for example, read the *Al Quran*. Houses form or *tajug* mosque has a square floor plan, and this is the form that still retains its original form until now. If there are variations, the variation was not going to change form of the square.

### 2.5. Panggang (Baked) Pe House Form

*Panggang* means a grilled baked (heated over the fire). *Pe* of *epe* word which means dried in the sun. House called like this is usually not including home form simpler, more modest when compared with home village. *Panggang pe* house in rural Java is not to stay. Formerly used for drying items such as tea leaves, starch, cassava and others. There is a roof and four poles or more and he dried goods because it dried quickly to avoid the evaporation of soil water. *Panggang pe* house is usually used as a shop, or a hut in the middle of rice fields to break the farmers or to repel birds, or as a small house amid the market to sell (*bango*).

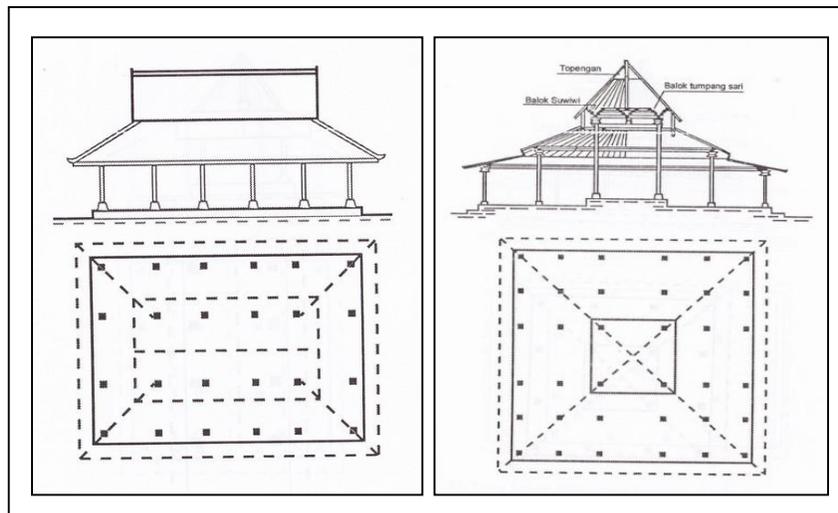


Figure 2: Image of house shape Kampung Dara Gepak and Tajug Mangkurat.  
(Source: Ismunandar, 2003)

The shape and character of a traditional house in Central Java is the inspiration of Thomas Karsten reference in designing the buildings.

### 3. Indo European Architecture

History of colonial architecture in Indonesia is essentially an integral part of the historical development of Indonesian architecture. Dutch colonial architecture is closely connected with the modernization of architecture in Indonesia (Handinoto, 1995).

Momentum is important that become part of the discourse of Dutch colonial architecture in Indonesia took place between 1920 until the 1930s. A period "Indo European Architecture" or Indish architecture.

This term is aimed at building that has the form (or outer impression) "fusion" between the archipelago architecture and modern architecture adapted to the climate, building materials and technologies are evolving at that time. Examples of buildings which can be classified in this style of that time include: Building Technische Hogeschool Bandung (ITB. Maclaine Pont 1919), Theatre Sobokarti Semarang (Thomas Karsten - 1930), Sonobudoyo Yogyakarta (Thomas Karsten 1930), Church Pohsarang Kediri (Maclaine Pont, 1936) and many more. Indo European architectural style is classified as one of the efforts to find a form of identity architecture that time the Dutch East Indies (Handinoto, 1995).

Discussion on Indo European architecture puts Maclaine Pont and Thomas Karsten as a central figure who pioneered this movement with his works. The main opponents are the architect Prof. Schoemaker Wolf, professor of architecture at the Technical High School (ITB) Bandung, which seek a purely modern architecture (the influence of the International Style) to be developed in the Dutch East Indies. As reflected by his works such as Villa Isola, Denis Bank or Hofman Savoy hotel in Bandung. In this discourse the famous Dutch architect, who've been to the Indies in 1923, clearly defends the establishment of Maclaine Pont and Thomas Karsten. In writing about traveling to the Dutch East Indies (Helen Jessup in his dissertation "Netherlands Architecture in Indonesia from 1900 to 1942, in Handinoto, 1995) Berlage wrote his impressions Indo European states that force can only be realized in the synthesis between European construction systems and oriental art form and for the Java marquee, as the original building, can grow further. "Indo-European architecture" can be born if one holds its own Java architect job, but also can obtain architect education entirely in the Indies (Indonesia). For an art form that is suitable for the Indo European, in this case the art of Java, he can not get it in Europe. So the form that must be rediscovered, only then there is harmony between construction and art form, which is the ultimate goal of every style. And that growth, where the Javanese role as an independent architect, will run parallel to the road leading to the independence of the Dutch East Indies.

Thomas Karsten in his study: "Notes on the possibilities of development of indigenous Building Art" analyzed traditional architecture indigenous to extract the elements which can be handled for the new building art Indies. Indonesian architects are supposed to play a role, has been emphasized by Thomas Karsten in the initial advice to Congress for Housing in Semarang 1922. Personal interpretation of the art of building Indies have formed in the theater folk Sobokarti in Semarang and the Museum Sono Budoyo in Yogya, designed years 1935. Both these buildings have a basic shape marquee (Akihari, 1988).

### 4. Karsten And Traditional Java architecture Development Idealism

Thomas Karsten is the idealistic figure not only in the field of architecture and urban planning based on local climatic conditions and culture, combined with the discourse of architecture and urban planning that developed in parts of the world, both in Europe and America. He saw the development of Indo European architecture, especially that based on Java traditional architecture is based on an understanding of Javanese culture and artifacts in archaeological studies into consideration ideology. In order to modernize traditional Javanese architecture and Javanese culture may be ditumbuhkan through an architectural artifacts he many studies have discussions with people who are competent. And gave rise to the idea of idealism in the form of works of architecture and town planning,

including in the field of interior of the building, especially in the palace Mangkunagara. Besides dozens of magazine paper in the building or culture has put Karsten a person who has always taken into account at that time. Attention to pengembangan tradisional Java architecture as manifested in the great work of architecture. Intensity attention Javanese architecture is supported by the intensity of the discussions in the correspondence between Mangkunegoro VII (1916 -1944), architect Thomas Karsten and archaeologist WF Stuterheim (Djayadiningrat in Nas, 2009). In addition to discussing Karsten involved in the planning section of the building in Mangkunegaran as the responsible expansion and modification Mangkunegaran (1917), the construction of a small pavilion for YM Mangkunegoro Prince (1923), interior office space YM Prince Mangkunegoro (1934) and the Pavilion for Women Nuru - Mangkunegoro (1936) (Akihari, 1990), it is that allows a long attention to the development of traditional architecture, especially Java, Central Java.

### 5. Works of Innovation Development of Architecture Tradisional Java

It is undeniable that the building Sobokarti People's Theatre (1930) in Semarang and Museum Sono Budoyo (1935) in Yogyakarta are two architectural works most often called into the study of Indo European arstektur success in various writings from time to time. Both buildings are very clearly a form of symbiosis or synthesis between traditional Javanese architecture and modern architecture with the basis on spatial development, construction technology, building materials and building functions.

One success Karsten lift local architecture revealed by Abidin Koesno, 2000, about the theater building Sobokari in Semarang which is ideal theater for Javanese traditional drama, but also a public building that is unbelievably useful with its own peculiar form, idealistic, nationalistic and has practical value , Variations show "E" can be displayed on the basis of the democratic People's Theatre by the entertainer diluat power structure prince.

Karsten innovation in this building besides reconstructing the pavilion building functions as a public area for puppet show, where puppets screen can be viewed from two sides, from the outside or in the pavilion up and extends out of the building in pringgitan, transforms the pavilion space as a theater space where space middle as pertunjukan orientation space. Use Joglo structure developed in such a way, especially in scale to load the broader function of the building roof shaped Joglo roof Mangkurat. In the main room Sobokarti more for dance events or shadow puppets.

The Museum Sono Budoyo pavilion with Lambangsari Joglo roof forms are used for the storage of art objects such as Java, gamelan and others. Spaces museum brick with a roof Limasan and Joglo Part of interior lighting design of the roof through intercropping field in the middle of the pillar contained in one of the showrooms historical objects. Karsten accuracy seen in the preparation of spatial museum here



Figure 3: The theater folk Semarang Sobokarti and the entrance hall, planned Karsten 1920 was built in 1930 after initially designed modification. (Source: Ardiyanto documentation, 2005)

The architecture of the modernization of spatial form *Hageng Joglo* house into a theater. The entrance of the theater hall-shaped entrance to the building with the influence of Hindu architecture.

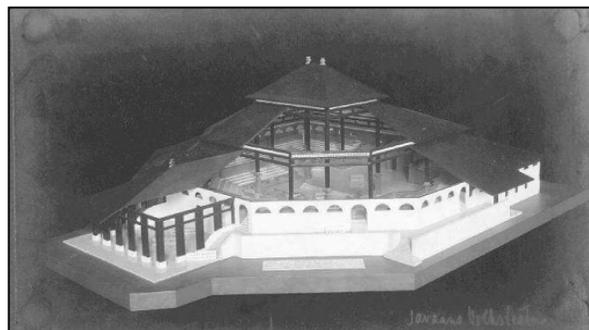


Figure 4: The initial design Sobokarti th.1930 folk theater. (Source: Akihari, 1988)



Figure 5: Sonobudoyo Yogyakarta planned Karsten built in 1935. The roof of the pavilion Joglo Mangkurat form. (Source: <http://www.sonobudoyo.com/id>)

Innovation works against the development of other Java architecture is the school building van Deventer (1923). Part of the building is a unique school in the ward for the multipurpose room school activities. This hall is spacious enough pavilion building with a roof shaped Joglo Kepuhan Limolasan. This ward as a multipurpose public space connecting between library room and classroom space. The interesting parts of the ward versatile teacher made of double wooden columns, therefore the position of the roof is quite high, so it took the strength of a larger column. By using a double column mean streamline dimensional lumber. Modern ceiling applied to replace the function of intercropping above ornamental pillar. In general, the composition and selection of future building roof shape show harmony using various forms of Javanese roof.



Figure 6: School van Deventer now SMU Semarang Kartini and interior multipurpose building. Thomas Karsten designed the building in 1923. In the multipurpose building houses a development Limasan Lawakan home form with saka guru (main columns) shaped double column. (Source: Ardiyanto documentation, 2005)

Innovative work of Thomas Karsten else is Zustermaatschappijen (now known as the PT. KAI Daop IV) which was built in 1930 which is a modern office building with a concrete structure. In designing this office Thomas Karsten using a module of 2.42 m is equal to the size of the tiles 12, at a distance of columns portico that surrounds the building. The columns are combined with the roof forms an increasingly in the middle, most likely inspired by Javanese Joglo house.

In addition there is also the character of the house Joglo in levels or differences in the value space. The first is the portico or alley that surrounds the building, general and serves as a transition from outside to inside. The second is the office spaces, the library on the left wing, meeting rooms, secretarial and reception area at the front, and the right-wing leadership of the office as a semi-public space. The third part is a space that is private, an archive room and a room for employees with room size 22 X 32 m, height of 10.44 m reminded form *joglo* with rows of columns that surrounds identical to the pillar.

To resolve the problem ventilation, Karsten make doors and vents wide every trave. Wide-opening is combined with spaces of very high 5.44 m on spaces located on the second and 10.44 m at the center of the room) can make fresh enough space for air flow very well. (Yulianto, 1993).



Figure 7: Building *Zustermaastchapijen*, now PT. KAI DAOP IV Semarang Planned by Thomas Karsten in 1929 was built in 1930. It is Modern office building with the shape of the building architecture development Joglo by accentuating the columns and rows of a traditional roof forms. (Source: Ardiyanto, 2014)

The work of other innovative modern buildings among others Elisabeth Hospital Semarang (1926), Gede Market Solo (1930), abattoirs Semarang (1928) and Solo Balapan Railway Station (1941). In each of these buildings Thomas Karsten tried to show the character of the development of traditional architecture in the shape of the roof.



Figure 8: Elisabeth Hospital Semarang designed by Karsten built in 1926.  
Source: Ardiyanto documentation 2005



Figure 9: Pasar (market) Gede of Surakarta  
(Source: [www.soloblitz.co.id](http://www.soloblitz.co.id))

The development of traditional Javanese architecture also applied Karsten in settlement areas that he have designed. Among others settlements in Housing Rent Mlaten (1924) Semarang and Magelang Kwarasan housing. The architecture of the building, especially on the roof to adjust the traditional Javanese architecture, especially the roof of the *kampung*. Roof forms *Kampung Pacul Gowang*

applied in Magelang Kwarasan housing (Yulianto, 1993) and the shape of the roof and *Kampung Doro Gepak Trajumas* applied in Mlaten Housing Rent Semarang.

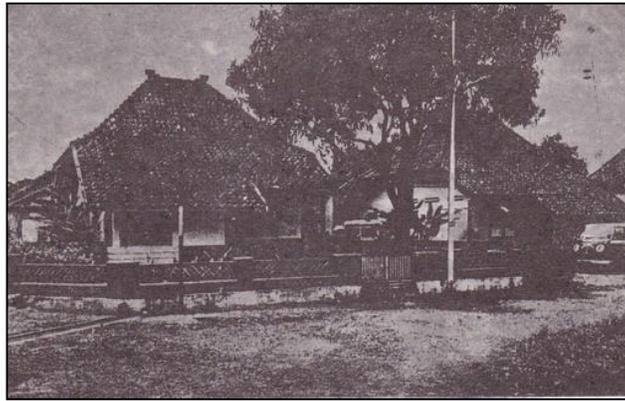


Figure 10: House in Magelang Kwarasan settlements with Kampung Pacul Gowang roof form.  
(Source: Yulianto, 1993).



Figure 11: Rental Housing of Mlaten with Kampung Dara Gepak roof form.  
(Source: Ardiyanto documentation 1996).

## 6. Conclusion

Thomas Karsten architecture in their work for more than 28 years, has produced many works, particularly in the development or modernization of Java architecture or directly tisak has applied regionalism in Java architecture variation through his work. Different types of building works of Thomas Karsten proved still work until now, and still "sustainable" even after about 80 years buildings was built. It would have to be a study or concern for the architects of today's wise in the work, including in assessing local wisdom.

## 7. References

- i. Akihari H, 1990, *Architecture & Stedebouw in Indonesie 1870 – 1970*, De Walburg Pers, Zutphen.
- ii. Handinoto, 1995, *Dimensi Arsitektur Vol. 25*.
- iii. Handinoto, 1996, *Perkembangan Kota dan Arsitektur Kolonial Belanda di Surabaya (1780-1940)*, Penerbit Andy Offset Yogyakarta.
- iv. Ismunandar, RK, 2003, *Joglo Arsitektur Rumah Tradisional Jawa*.
- v. Kusno, Abidin, 2000, *Behind the Postcolonial – Architecture, Urban Space and Political Cultures in Indonesia*, Roudledge, London.
- vi. Nas, Peter, JM, 2009, *Masa Lalu dalam Masa Kini Arsitektur di Indonesia*, Penerbit Gramedia Jakarta.
- vii. Sumalyo, Y. 1993, *Arsitektur Kolonial Belanda di Indonesia*, Gajah Mada University Press. Yogyakarta.
- viii. Ardiyanto, Antonius, 2014, *The Concept of Modern Dutch Colonial Architecture to the Development of Javanese Architecture*, *Dimensi Journal of Architecture and Built Environment*, Vol. 41 No. 1 July, 2014.