

3.1.20

SUSTAINABLE DESIGN AND CONSTRUCTION IN THE JAVANESE ARCHITECTURE CASE: KAMPONG LAWEYAN SURAKARTA

Mohamad Muqoffa

Sebelas Maret University, Surakarta,
INDONESIA

ABSTRACT

The study tries to reveal the sustainable design and construction in the Javanese Architecture in which the space of the house are able to cater for the ever changing activities of the inhabitants, to include batik industry's activities.

The study is a very old traditional settlement of the batik industry called Kampong Laweyan located in the city of Surakarta, Central Java, Indonesia which started during the 19th Century.

The method used in the research is explorative and qualitative method. The changing use of space observed in the Javanese houses also includes houses of the batik industry workers.

The result shows that during the period of 1900-2007 the house spaces remain constant, while the activities of the dwellers changed, from household activities to home based batik industry's activities. The study shows that the design and construction in the Javanese Architecture can sustain.

Keywords: *dynamic usage of space, houses, sustains, the Javanese Architecture.*

I. INTRODUCTION

Based on cultural history, Laweyan (Figure 1.1) was an oldest area than city of Surakarta which separated into the inner city and outer district. A sociologist, Soemardjan (1981) and an archeologist, Adrisijanti (2000), suggested that segregation based on to cosmological concept divided Surakarta to some conceptual spatiality, i.e. *nagarigung* (centre, inner city) and *mancanegara* (outer district). There are some heritage areas in *nagarigung* district for example: Kampong Kauman, and Kampong Laweyan. Kampong Laweyan has grown into a settlement of batik industry in the early 20th century. Kampong Laweyan, an ancient district in Surakarta, is well known for its home based batik industry. It is a heritage area with vernacular Javanese architecture. As a heritage settlement, the vernacular architecture within the settlement should be preserved. However the development programmes and the increasing needs of the settlement's dweller may affect the design of the Javanese houses.

In order to keep the Kampong Laweyan as a heritage area, special attention must be given to the approach to sustain the vernacular Javanese architecture.

A. Indigenous Architecture as Basic Architectural Design

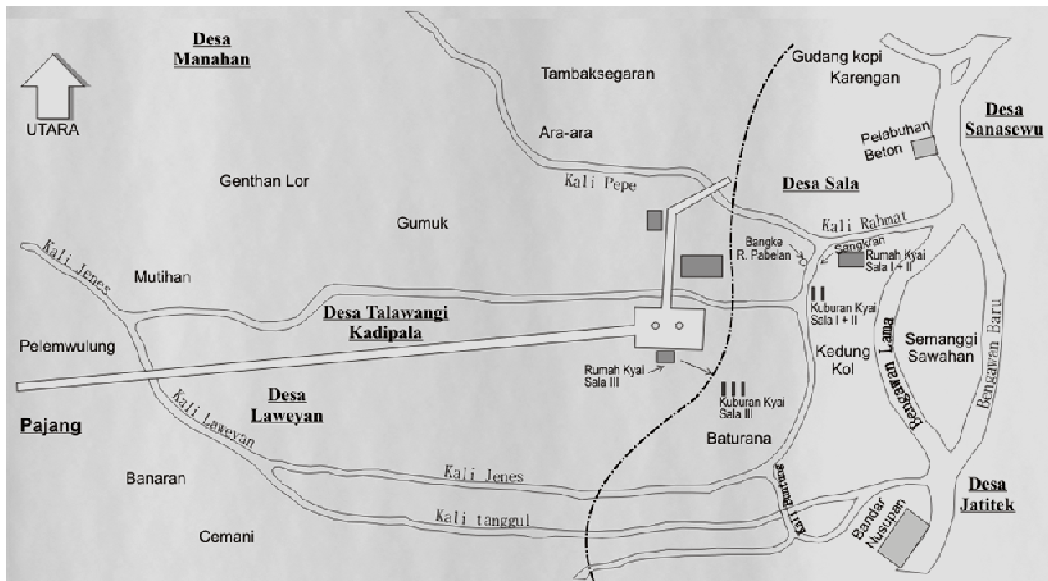


Figure 1.1 District of Laweyan in 1700s where Sala is located in Eastern
[Source: Redraw from Sajid (1984)]

II. THE JAVANESE HOUSE

Omah (house) is the most common of several Javanese words meaning house. The word *omah* symbolises a particular concept as well as the dwelling where, domestic practices mainly take place (Santosa, 2000). The *dalem* or noble's house is usually a complex of buildings which consists of two until four buildings and it is surrounded by a high wall. Each building has a different type of Javanese traditional architecture, i.e. *pendhapa*, *dalem*, *gandhok*, etc (Figure 1.2). Almost all of the *dalems* have a gate (or two gates), through which one passes to enter the *dalem*. The orientation of *dalem* is always north-south orientated. The users of *dalem* are usually the noble and his family, and also *abdi dalem* (servants) and his family. *Abdi dalem* usually lives in the *magersari*. The *magersari* is a symbiotic relationship of mutualism between the *abdi dalem* and the noble's family. The users of the *magersari* can be divided into two groups: the *abdi dalem* (noble's servants) families who live and work, and the noble's family whose members belong to the *priyayi* (the higher Javanese communities).

The Javanese houses as research samples are typological of Javanese house which refers to some of traditional manuscripts on the Javanese house (*Kawruh Griya*, *Kawruh Kalang*), i.e.: Javanese house is a house which consists of a specific expression or form, i.e.: *Joglo*, *Limasan*, *Kampung*, and *Mesjid* (Prawiro, 1969). The Javanese house is a large settlement and the houses are of wood's construction (Kridosasono, 1976). According to the Javanese house's theories mentioned above, it can be mentioned here that the Javanese house is a house (*omah*) which consists of *pendhapa* (front hall), *dalem* (main space, living room), and *gandhok* (extension building, attached/side pavilion). The Javanese house also has a specific roof typology such as *pelana* (*kampung*), *limasan*, *joglo*.

A. Indigenous Architecture as Basic Architectural Design

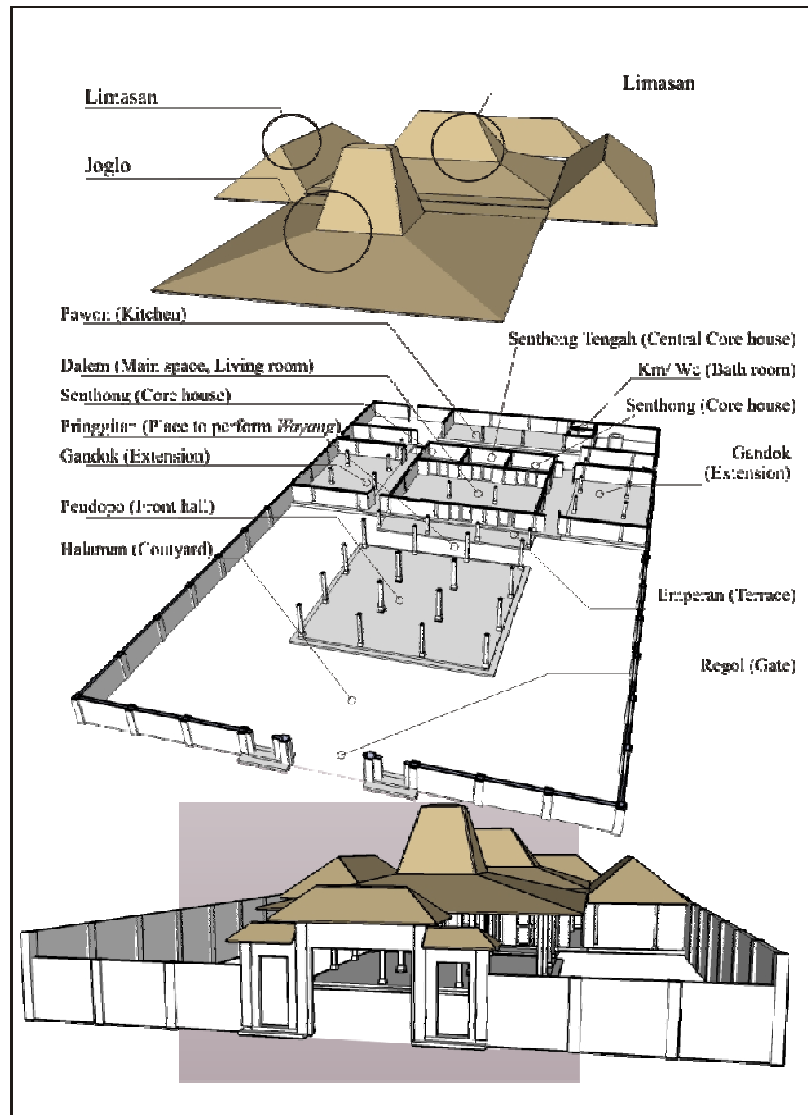


Figure 1.2 Basic Concept of Form and Spatial Pattern of the Javanese House

III. SUSTAINABLE DESIGN AND CONSTRUCTION

This study relate to analysis of sustainable design and construction context. Sustainable perspectives refer to how building can maintain. Architecture or built environment can be developed into dynamic ways: for both continuity and spatial arrangement changes.

IV. RESEARCH METHOD

The method used in the research is explorative and qualitative method. Firstly, the survey was conducted to investigate the Javanese houses. The Javanese houses as samples are chosen by purposive sampling. Looking at the domestic practices and batik industry over a substantial periode of time from 1900-2007, samples chosen are at least seventy five years old and have been inhabited at least by three generations, thus these houses have accommodated their inhabitants' entire life cycle. It is also considered that the originality of the Javanese house embodies cultural sensitiveness. The study is also investigated the continuity and change of space.

A. Indigenous Architecture as Basic Architectural Design

Twelve Javanese houses were chosen for case-study. The method used was deep-observation, and data gathering from a variety of the inhabitants' entire daily-life activity. For data cross-check and information, physical-traces and interviews with informants i.e. a person who has authority, were done.

V. SURVEY RESULTS

Kampung Laweyan inhabited by the batik producers and built during the 17th (Rajiman, 1984) is one of the heritage places in Central Java. The settlement pattern is unique with the historic mosque and Javanese architecture. The Settlement is bordered by a river and the pattern is a combination between linear and grid patterns. Most of the houses were built on north – south orientations. The Settlement supports the inhabitants in their everyday lives and economic activities as batik producers through generations. Hence Kampong Laweyan is a living heritage, where the authentic Javanese houses still exist. The dwellers sustain their traditions and the vernacular houses, and obtain their incomes by using the houses as a place for the batik industry.

Figure 1.3 shows the original plan of the Javanese house and Figure 1.4 shows the continuity and plan changes of the Javanese house. According to the dweller, the house was built in the 19th century. Since then the house was used for batik processing. Due to facilitate the need of batik's industry, the dweller re-arranged this house i.e. covering the *pendhapa* (front hall) with walls, and changing it into the batik showroom. The usage of *dalem* (main space, living room) is for batik packaging. The *gandhok* (extension building, attached/side pavilion) becomes the living room, bedroom, and office. Other building extensions at the right wing are for the garage, kitchen, dining room, and sleeping room.

Figure 1.6 and Figure 1.7 show the pictures of the house when the research was conducted from 2006-2008. From Figure 1.6 one can see that the house has a spacious front space, called "*pendhapa*" (front hall). This space and the front yard are usually used as a place for batik making activities done by the women. The inner of the house, called "*dalem*" can be used for the other batik craft activities and storing of the products. The everyday life activities are at the left wing of the house and have also been extended to the right wing of the house. The local wisdom such as the arrangement of the house spaces and the yards are still preserved, and proved to be very useful for home based industries and for everyday lives. This arrangement shows the changing of space at the dwelling level, but not at the block level.

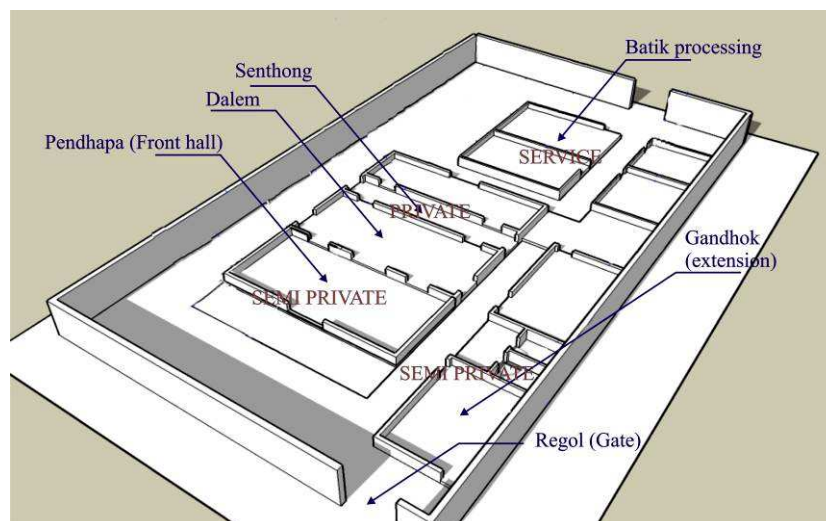


Figure 1.4 Sample [A] of the Javanese house: Original plan.

A. Indigenous Architecture as Basic Architectural Design

The figure shows that the semi private spaces are *regol* [gate], front yard, *pendhapa*. The private spaces are *dalem*, *senthong* and *gandhok*.

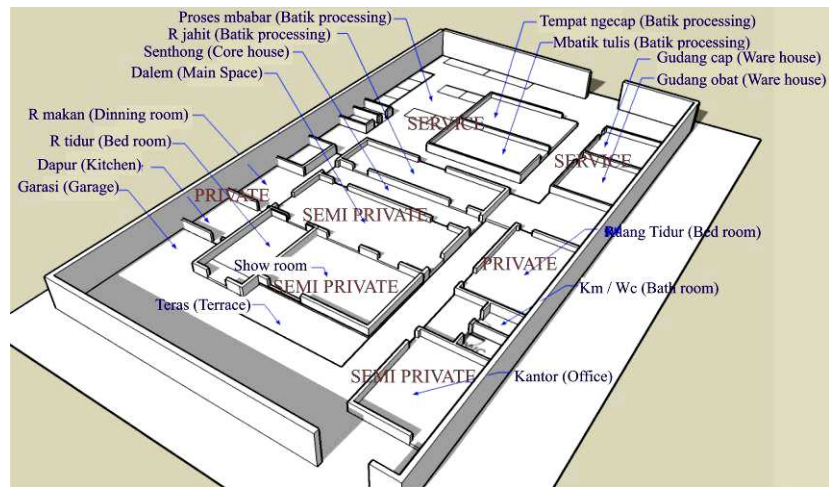


Figure 1.5 The Present Plan of sample [A] of the Javanese house.

The figure shows that the changes are *dalem* becomes semi private space because it is used as the showroom and batik packaging; and the *pendhapa*-the front hall for receiving guest now becomes the batik showroom. The stability is shown from the *senthong* as private space, and batik processing as the service area.



Figure 1.6 The picture of Javanese house showing the front yard and *pendhapa* (As batik showroom)

A. Indigenous Architecture as Basic Architectural Design



Figure 1.7 The *Dalem* (main space, living room) as batik packing place and showroom.

Figure 1.8 shows the original plan of sample B and the changes in space usage can be seen in Figure 1.9. Basically the house has no significant change even though it must be divided for two families, due to the increasing number of families settled in it. The house divided by semi-a permanent wall (block-wood). At the present time, the batiks activity is not continued. Nowadays the dwellers only sell the batik but not produce it. Based on the dwellers information most of the houses are not utilized. All of the dwellers live in the *gandhok* (extension building, attached/side pavilion). For temporary (semi-permanent) activities, they use *pendhapa* and *dalem* for example: for marriage ceremonies, religious activities (*pengajian*) etc. Figure 1.10 and Figure 1.11 shows the *pendhapa* and the *dalem*. The dynamic usages of the spaces in the houses prove the Habraken (1976) theory that the Javanese house will be changed depending on how dwellers need to use it even though it has stable structure.

The “*pendhapa*” is usually open, without walls. However, due to some of the dwellers need places for storing, the “*pendhapa*” was then closed with a bamboo curtain. Most of the houses in Kampong Laweyan were built about 200 years ago, and were occupied by 3 or 4 generations. The houses can be seen as memories to the dwellers and also to the observers.

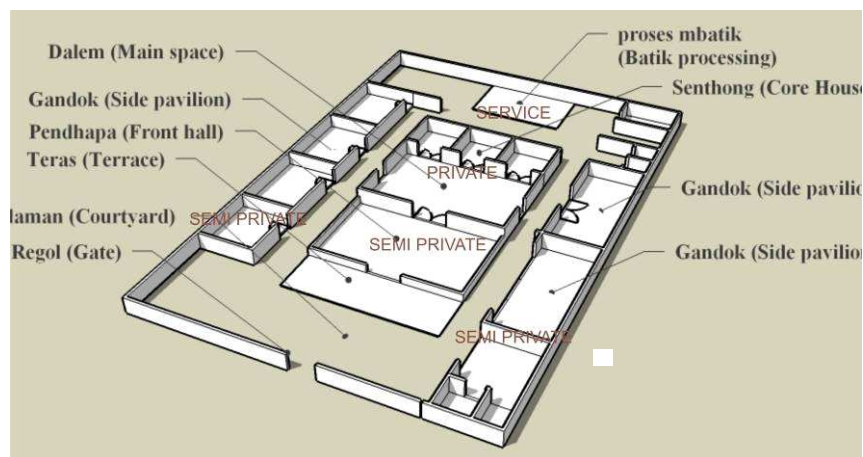


Figure 1.8 Sample [B] of the Javanese house: Original plan.

The figure shows that the semi private spaces are *regol* [gate], front yard, *gandhok* and *pendhapa*. The private spaces are *dalem*, and *senthong*.

A. Indigenous Architecture as Basic Architectural Design

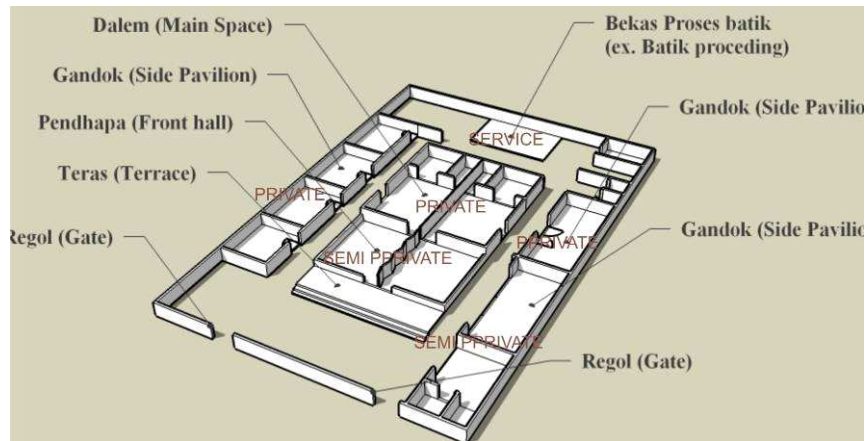


Figure 1.9 The present Plan of sample [B] of the Javanese house.

The figure shows that the changes are: the house is divided by two parts [see the wall in the middle]; regol [gate] become two gates; and batik processing [service area] unutilized. The stability is shown by *senthong* as private space, and *pendhapa* as semi private space.



Figure 1.10 The picture of Javanese house showing the front yard and *pendhapa* which is now covered with bamboo curtain.



Figure 1.11 The picture of Javanese house sample B showing the main space or living room (*dalem*)

5.1. Continuity and Change of Space Usage

The survey shows that batik productions in this locality have experienced changes from a house as a processing-place to both a processing-place and market-place. This change greatly shaped the way the batik marketing itself was conducted. In the past batiks were sold in the “*Klewer*” market (city textile-market of Surakarta). Today batiks are sold in the Javanese houses, particularly in the *pendhapa*; hence the *pendhapa* becomes the ‘showroom’. On the other hand, temporary activities have been conducted in the *pendhapa*, such as wedding parties, *pengajian* (religious activities), communal meetings etc. Due to its need to accommodate the batik industry, the main house and the *dalem* is also arranged as the showroom, even though this room is meaningful for the inhabitants as their transcendental domain. The extension of the Javanese house is the *gandhok* (attached/side pavilion) which was used to facilitate daily activities in the past, is now changed as a place to print batiks. In contemporary usage, the Javanese house refers to a wide variety of modern life style.

As mentioned before, some of the Javanese houses in Kampong Laweyan have building extensions, called *gandhok* (attached/side pavilion), *lojen* (front attach pavilion), and *omah mburi* (back hall). Most of the extensions are used to facilitate the processing of batik.

a. Design and Construction Regulations

In order to adapt the changing uses of space, the Javanese house needs design and construction regulations. The Javanese house needs new regulations for building renovation, such as building coverage, building material, façade etc. The regulation should consist of detail arrangements for the interior such as doors, windows, tiles, and wall-colours. In exploring the spatial aspects of processing batik in the Javanese house, it can be concluded that future standards should consist of circulation (flow) standards, batik display arrangements, batik storage, and fitting-room.

VI. SUSTAINABLE DESIGN AND CONSTRUCTION IN THE JAVANESE ARCHITECTURE

The Javanese house should be maintained the spirit of rule of building construction (*kawruh kalang*). From the research, the writer explored the changing of space usage in the Javanese house. Then, the problem is how to educate the design principles of the Javanese houses with the dynamic use of space. Concerning the sustainable architecture, I recommended arranging a design guideline for inhabitants. Firstly, the design guideline should consist of the concept from both the traditional Javanese house and the contemporary Javanese house. Secondly, a comparison of a previous spatially used and a contemporary spatially used in Javanese house.

REFERENCES

- Adrisijanti, Inajati (2000). *Arkeologi Perkotaan Mataram Islam*. Yogyakarta: Penerbit Jendela.
- Brenner, Suzanne A. (1990). *Competing Hierarchies: Javanese Merchants and the Priyayi Elite in Solo, Central Java*.
- Crowe, Norman (1995). *Nature and the Idea of Man-Made World*. Massachusetts: The MIT Press.
- Kridosasono, R.Slamet Soeparno (1976). *Kawruh Kalang*. Province of Central Jawa, Surakarta: Ministry of Public Work.
- Prawiro, Soeto (1920). *Kawruh Kambeng*. Surakarta: Jajasan Pahaman Radya Pustaka.
- Rajiman (1984). *Sejarah Mataram Kartasura Sampai Surakarta Hadiningrat*. Surakarta: Penerbit Krida.

A. Indigenous Architecture as Basic Architectural Design

- Santosa, Revianto Budi (2000). *Omah: Membaca Makna Rumah Jawa*. Yogyakarta: Yayasan Bentang Budaya.
- Soedarmono (2006). *Mbok Mase: Pengusaha Batik di Laweyan Solo Awal Abad 20*. Jakarta: Yayasan Warna Warni Indonesia.
- Soemardjan, Selo (1981). *Perubahan Sosial Yogyakarta*. Yogyakarta: Gadjah Mada University Press.
- Swan, James; Swan, Roberta (1996). *Dialogues With the Living Earth*. Wheaton: The Theosophical Publishing House.
- Widayati, Naniek (2004). *Settlement of Batik Entrepreneurs in Surakarta*. Yogyakarta: Gadjah Mada University Press.