The influence of traditional javanese architecture in chinese-style house in Lasem

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Abstract. Chinese settlements in Lasem along the north coast of Java were the result of trading activities. The open-mindedness of Javanese people in coastal areas led to acculturation process between Javanese locals and Chinese immigrants that formed a new culture, including the architecture of Chinese-style houses in Lasem. The Chinese-style houses’ architecture has specific characteristics as the result of the cultural blend. This study aims to identify these characteristics, specifically the characteristics of Javanese architecture in the architecture of Chinese-style houses in Lasem. The method used in this study is qualitative descriptive method by aligning the acculturation theories with the architecture of Chinese-style houses in Lasem. The study concludes that there was a process of acculturation between Javanese and Chinese architecture that can be found in the ornaments, materials, and layout.

Keywords: Chinese Architecture, Javanese Architecture, Heritage, Lasem, Acculturation

1. Introduction

Lasem is a small town located on the north coast of Java between Semarang and Surbaya, approximately 12 km east of Rembang City, Central Java [1]. In Lasem, there are three common types of buildings that are distinctively different from one another, the Lasem community calls them Javanese, Chinese, and Colonial house models [2].

According to Pratiwo (2010), the architectural style of Lasem City is a combination of South Chinese architecture (the place where most Chinese people live in Lasem), Javanese architecture (Pesisiran and Mataraman) and Dutch architectural influences[3]. At first, the residential architecture of the North coastal community was dominated by traditional Javanese architecture, then there was the influence of Chinese-style architecture[4].

The North Coast of Central Java has long served as an international trading port, resulting in the acculturation of Chinese culture with local culture, including architecture [5]. The open coastal city community implies the formation of a new culture through the process of acculturation, the culture of newcomers who enter the coastal city area will create a new culture. The architecture of the coastal city has specific characteristics with various forms of the combination of the mixture of Javanese and immigrant local cultures[6].

Antarioka (2016) divided Lasem architecture into several types of residential buildings such as the form of Chinese Indies Architecture, Chinese Javanese Architecture, Chinese Architecture, Indis Architecture, Gladag Architecture and the Forms of Indis-Javanese Architecture[7].

This study aims to identify the presence of Javanese architectural elements in Chinese-style houses in Lasem, by taking four samples of houses in Karangturi, Babagan, and Sumbergirang areas.
1.1. Acculturation
People migrating from one cultural environment to another cultural environments will experience dual process of sociocultural and psychological changes due to their encounter with the local community [8]. Acculturation occurs when a cultural group meets with the other cultural group. This process continues and is a response to new social conditions [9].

Koentjaraningrat (1990) defines acculturation as a social process that occurs when humans in a society with a certain culture are influenced by elements from other cultures and gradually the foreign cultural elements are accommodated and integrated into their own culture without losing the personality of their culture [10].

The course of acculturation process will not be the same, there are elements that are easily absorbed but there are elements that are difficult to absorb. In Linton's terms quoted by Koentjaraningrat (1990), there are covert culture and overt culture, namely the part that is hard to change in the core and part of the birth that is easy to change.

The interaction between Javanese and Chinese culture in Lasem thought to have occurred since 1413, when the Ming dynasty envoy from China named Bi Nang Un first came to Lasem and settled in the Soditan area [11].

A house is a manifestation of human physical culture constructed by an ever-developing process related to the mobility of socioeconomic aspect of the inhabitants in a particular life span [12].

In architectural view, acculturation is a form of cultural mixing, which can be seen from the shape of a building as a form of the culture of an area, without eliminating the personality of the local culture or the culture of its immigrants [13].

In his research, Fauzy (2012) proves that there has been acculturation in Lasem architecture, with a case study of residents of Javanese descent. Acculturation that occurs in the residence of a Javanese in Lasem occurs in architectural elements such as shapes and ornaments, meanwhile Chinese architecture has an influence on the physical form of architectural elements, such as ornaments on the front porch railing, the stand on the side of the terrace and the land boundaries. As for the type of activity and the rooms in the house use traditional Javanese architecture [6]. Yet the acculturation does not only happen to the place of Javanese houses, but also in houses owned by Chinese descent.

1.2. Chinese Architecture
According to David.G.Kohl (1984) there are architectural characteristics of Chinese-style buildings, especially in Southeast Asia. The characteristics are as follows:
1. The existence of the Courtyard.

   There is often a large courtyard and sometimes more than one. However, in the area of South China where many Chinese-Indonesians came from, the courtyard was narrower because the house area was not too big [14]. Indonesian Chinese houses in the china-town area rarely have a courtyard. Even if there is, it is more useful for entering light or for ventilation. Courtyard in Chinese architecture in Indonesia is usually replaced with a wide terrace.

2. Emphasis on a distinctive roof shape.

   The shape of the roof of Chinese architecture is the most recognizable shape. Among all the existing roof shapes, there are only a few that are most widely used in Indonesia, namely the simplest type of roof, namely the gable type with an upward curved tip, which is referred to as the Ngang Shan.

### Table1. Chinese Roof Type

| Roof Type                | Figure          |
|--------------------------|-----------------|
| Pitched roof (Wu Tien)   | ![Roof Image]   |

2
### Roof Type

| Roof Type                                           | Figure |
|-----------------------------------------------------|--------|
| Gable roof supported by wooden truss at the ends    | ![Gable roof](image1.png) |
| (Hsuan Shan)                                       |        |
| Gable roof with solid walls                         | ![Gable roof](image2.png) |
| (Ngang Shan)                                       |        |
| Half-pitched and half gable roof                    | ![Half-pitched and half gable roof](image3.png) |
| (Hsuan Shan)                                       |        |
| Half-pitched roofs                                 | ![Half-pitched roofs](image4.png) |
| (Tsuan Tsien)                                      |        |

Source: Dewi, 2000

3. Open structural elements
   Carvings and wooden constructions as part of the building structure in Chinese architecture can be seen as a characteristic of Chinese buildings. Constructive details such as roof supports (toukung), or the joints between columns and beams, even the roof trusses, are so beautifully crafted that they do not need to be covered, as part of great woodworking skills.

4. Use of distinctive colours.
   Colour in Chinese architecture has a symbolic meaning. Although many colours are used in buildings, red and golden yellow are the most widely used in Chinese architecture in Indonesia. Red symbolizes the colour of fire and blood, which are associated with prosperity and good fortune. Red is also a symbol of virtue, truth and sincerity. The red colour is also associated with direction, which is south, as well as something positive.

   What's more, the principle of Chinese settlements contained in the book Kao Gong Jiyang written during the Western Zhou dynasty (1066 BC-770 BC), namely: 1. Surrounded by a defensive wall; 2. Axial symmetry; 3. The main buildings face south; 4. The roads run in a north-south and east-west direction, forming a grid or grid pattern; 5. The City Plan is a square with gates opening to the four cardinal directions.

1.3. Javanese Architecture
According to Ismunandar (2003), Javanese traditional architecture is classified according to roof shapes known as Joglo, Limasan, Kampung, Panggang-pe, and Tajug[15].
From the five types of the Javanese houses, joglo is the most often discussed as a representation of the Javanese architecture. Joglo house is usually owned by rich people or is owned by the highly respected people and has a high social status in the Javanese community. The Javanese house is a large settlement and the houses are of wood’s construction (Kridosasono, 1976).

In Traditional Javanese Architecture, the noble’s house or dalem 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. Almost all of the dalem have a gate (or two gates), through which one passes to enter the dalem [16].

The Javanese traditional house consists of pendhapa (front hall), dalem (main space, living room), and gandhok (extension building, attached/side pavilion), and also has a specific roof typology such as pelana (kampung), limasan, joglo [17].

The arrangement of the main spaces in Joglo house are divided into three parts, namely meeting hall or “pendapa”, living room or space that is used to perform a puppet show called “pringgitan”, and a back part of the house called “dalem” or “omah jero” which functioned as a family room. “Dalem” has three kinds of Sentong (rooms); it is Sentong “kiwa” (left part), Sentong tengah/middle part (petanen) and Sentong “tengen”/right part[15].

By dividing the traditional house plans as below:
The traditional Javanese house has symmetrical rooms and also a hierarchy of space inside. From the outside there is a common public space, and the space becomes private when going deeper to go inside the house, where *pringgitan* as a transitional space between public and private space [16].

Basically there are two kinds decoration of traditional Javanese house buildings namely constructional decoration and non-construction decoration, which divided into five groups. Namely: floral decoration, fauna decoration, natural decoration, religion and belief decoration, and other decoration groups [16.]

Natural decorations emphasize the role of the universe and God. The cosmology of dualism (male, female, day-night), orientation, and topography were transformed into symbols of water, rays, mountains, clouds, and sun[19].

2. **Material & Methods**

2.1. **The Study Area**

Located at the coordinates 111000’ - 111030’ East Longitude and 6030’ - 706’ South Latitude, Lasem is a sub-district city, which is under the Rembang Regency, Central Java. Lasem is located in the east of Rembang Regency, approximately 12 kilometers to the east. Lasem sub-district has an area of 4,504 ha and is divided into 20 villages / sub-districts.

2.2. **Research Methodology**

This study employed the qualitative methodology, in which a practical condition was disclosed and comprehended to reveal the unknowns. This research method is very suitable with the research objective, namely describing the acculturation process in the houses’ shape, structure, and construction as a result
of the meetings of two different cultures, which are closely related to the physical and materials in houses.

The first interview process was 26 September 2018, the second was 28 April 2019, the third was 20 October 2019 and the fourth was 9 November 2019. Interviews with three home owners and a Lasem tour guide were conducted as a data collection technique to obtain non-physical data.

2.3. The Technique of Data Collection
Primary data were obtained by field observations made by visual recordings in the form of photographs. Meanwhile, secondary data were obtained from several literature and interviews. Field observation and in-depth interviews were applied to collect the research data for the analysis.

2.4. Case Selection Criteria
The observed unit was Lasem houses with Chinese style. This house was selected based on the following criteria:
(a) The house is still original without significant changes, by observing its physical condition and also by interviewing the owner of the house.
(b) Building elements show a mixture of characteristics and identity of Javanese and Chinese architectural styles.

3. Results
The object of observation is a residence that is also used as a place for batik production with the division of space functions as follows:

Table 2. Observation Unit Analysis I

| Object | Room Function | Explanation |
|--------|---------------|-------------|
| 1      | Workshop Area | The back porch serves as a showroom and family room. The batik production process is on the front side and back |
| 2      | Private Area  | This house uses the backyard and front side of the house for the batik production process. The front porch is a place to receive guests and showroom. |
| 3      | Mixed Use     | The front porch is used as a place to make batik patterns and receive guests. The showroom is separated by a production house and a residence. The batik production located at backyard. |
| 4      | Service Area  | The back porch is used as a dining room, family room and a place to produce batik. |

Legend: Workshop Area, Private Area, Mixed Use, Service Area

According to Fauzy (2011), space in the architecture of Chinese houses in Java is based on the shape and hierarchy of Chinese residences on the mainland, but has adjusted to the location and local culture. In a complete state it consists of 1 - 3 main mass(es) and 2 additional masses. Furthermore the hierarchy
is determined by the location of the headroom and the altar of offerings to the ancestors[20]. Meanwhile the objects observed have a spatial pattern similar to that of the Javanese architecture, as the table below:

**Table 3. Observation Unit Analysis II**

| Object | Spatial Pattern | Figure |
|--------|-----------------|--------|
| **Object 1** | - There is a front porch that looks like a *pendhapa* at the front for receiving guests.  
- Areas that look like *pringgitan* before the palace are marked with openings without doors on the left and right side walls.  
- The main houses is divided by rooms on the right and left  
- Right in the middle of the main house is a *altar* area.  
- There is a back terrace as a showroom and a family room.  
- Buildings on the right and left of the main building are used as rooms and dining rooms.  
- The house on the back side is used as a kitchen area, bathroom and batik production area | ![](image1) |
| **Object 2** | - The front porch that looks like a *pendhapa* at the front is used as a showroom and a place to receive guests.  
- Areas that look like *pringgitan* marked by openings without doors on the left and right side walls leading to the palace.  
- The main house is divided by rooms on the right and left  
- Right in the middle of the main house there is a *altar* area.  
- The back porch as a family room.  
- Buildings on the right and left of the main building are used as rooms and bathrooms.  
- The house on the back side is used as a kitchen area and a place for batik production. | ![](image2) |
| **Object 3** | - There is a front porch that looks like a *pendhapa* at the front for receiving guests and draw batik patterns.  
- Areas that look like *pringgitan* before the palace are marked by openings without doors on the left and right-side walls.  
- The main house is divided by rooms on the right and left  
- Right in the middle of the palace there is a *altar* area.  
- There is a back terrace as a dining room and family room. | ![](image3) |
Object 4

- There is a front porch that looks like a *pendhapa* at the front for receiving guests and batik patterns.
- Areas that look like *pringgitan* before the palace are marked by openings without doors on the left and right-side walls leading to the palace.
- The main palace is divided by rooms on the right and left.
- Right in the middle of the palace there is a prayer area.
- There is a back patio as a dining room and a place for batik.
- The building on the right front is a child's house, the left side is a maid's room.
- The back side is used as a kitchen, bathroom and batik production area.

In the 4 objects observed, the division of space is very similar to traditional Javanese architecture. The residential building consists of 1 main mass and 2 additional masses.

The hierarchy of Javanese buildings can also be seen from the sacred space placed in the middle of the main *dalem* which is marked by a prayer altar. The hierarchy of space is marked by steps leading to the *pendhapa* area (low hierarchy) and a more private and sacred space limited by walls and floor height (high hierarchy), as the table below:

**Table 4. Observation Unit Analysis III**

| Object   | The hierarchy of Javanese buildings | Picture |
|----------|-------------------------------------|---------|
| **Object 1** | - The lower hierarchy in the back porch area is indicated by floor height.  
- Medium hierarchy in the front porch area is marked by steps and walls that limit part of the veranda area.  
- The high hierarchy leading to the palace is marked by steps and walls that limit the space to the private zone. | ![Diagram](image) |
From the objects observed, there is room for ancestral prayer. As the most sacred space, this place of prayer is located in the middle of the main ndalem. The space for those who are Buddhist, Confucian is still there complete with a table and incense sticks. Meanwhile, Muslims, Catholics, and Christians rarely wear it. Apart from Javanese beliefs, the Chinese ethnic community itself always places the core building at the very centre, according to the Feng Shui concept.

The use of Javanese ornaments is also seen in objects 2 and 3, namely the banyu tetes and mega mendung ornaments that are usually found in coastal Javanese houses. These ornaments can be seen on the front and back porches as follows:

**Table 5. Observation Unit Analysis IV**

| Object  | Ornament                                                                 |
|---------|--------------------------------------------------------------------------|
| Object 2 | There is a Banyu tetes and flora ornament on the front porch and a mega mendung ornament on the back porch pole. |
Object 3 There is a mega mendung ornament on the front and back porch pole.

Roof and wooden construction on objects can be seen as characteristic of Chinese buildings, with constructive details such as Chinese roof supports (toukung). The material and construction of all objects can be seen on the table as follows:

| Object | Material and Roof Construction | Picture | Description |
|--------|--------------------------------|---------|-------------|
| Object 1 | Wood material with the exposed structure | ![Object 1 Picture](image1.jpg) | All objects have exposed roof structure which is typical on Chinese architecture, Nangshan Roof type and wood as material. |
| Object 2 | Wood material with the exposed structure | ![Object 2 Picture](image2.jpg) | |
| Object 3 | Wood material with the exposed structure | ![Object 3 Picture](image3.jpg) | |
| Object 4 | Wood material with the exposed structure | ![Object 4 Picture](image4.jpg) | |

4. Discussion
This study explores the characteristics of Javanese architecture in the architecture of Chinese-style houses in Lasem.

Based on the above theories, acculturation occurred in Lasem's architecture. Where Javanese architecture influences Chinese-style house architecture in Lasem. Chinese architecture can be found on the structural elements such as the roof shape and construction. While, the Javanese architecture influences the non-structural elements such as layout and ornament.

From the layout perspective, the layout composition of Chinese-style houses in Lasem is similar to a traditional Javanese house with front porch of the main house similar to pendhapa in a traditional Javanese house.
From the roof shape and construction, Chinese-style houses in Lasem use the *Ngang Shan* shape of the Chinese architecture. They also have a typical Chinese architectural structures, with exposed structure and wood materials. From the ornament perspective, Javanese Coastal ornaments such as *mega cloud* and *Banyu Tetesan* were found on Object 2 and Object 3 observed.

5. Conclusion

Acculturation led to a cultural mixing between Javanese culture and Chinese culture in Lasem. Where Javanese culture influences the Chinese-style houses in Lasem. This enriches the architectural diversity of Indonesia in particular, and the world in general. This may contribute to the knowledge in the field of architecture as a reference for similar cases, namely acculturation. However, more effort is needed to preserve these houses, due to the difficulty in finding similar substitute materials.

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