

Overlay Mapping Technique to Determine the Boundary of Semarang City in 14th Century

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Abstract: Semarang has developed into a different city form than it was in 14th century. In addition to the shape of the city, Semarang also experienced several periods of development, starting from the initial period, the period of trade settlements and city in the fort, the Indish city period, the transition period, the colonial city period, and finally the current period as a modern city. Therefore the architectural styles that can be found in the Semarang Kampongs get the influence from the period its goes through. To see the original Semarang style architecture, it is necessary to see the locus where the building is located. Therefore, the determination of the boundary of Semarang City at the early period that is in the 14th century is very necessary to be studied so it can determine the locus in viewing the original Semarang style architecture. The research method is using Overlay Mapping Technique, where the current map is overlaid with old-year maps and the historical map of Semarang city where the north of Semarang area is the sea and Central Semarang area (Pragota now Bergota area) still island. The result is a Semarang map on the 14th century so can be discovered the locations where the original Semarang style architecture buildings is located.

Keywords: Overlay mapping technique; Semarang City; map; history; cultural heritage

I. INTRODUCTION

Javanese Traditional houses have many variations. Some of traditional house is now much that is not like before, many changes, reductions and additions on each side of the building (Setyowati, Nugradi, & Dermawan, 2018). Traditional house form and orientation are distinctive and unique (Setyowati, 2017). The houses in the Semarang City kampongs are included in variation of the Joglo Pencil House, but there is always an influence from the migrant architectural style of Semarang City, including Chinese, Colonial, Malay and Arabic architectural styles. The styles are usually seen in houses facade or ornamentation.

This evolution cannot be separated from the development of Semarang city. The Semarang city experienced development of a city form that was completely different from 14th century to the present. The concept of the most traditional city in Java are waterfront city. Old Semarang traditional city center used to have to move four times.

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All of them laid along the river. Jurnatan (1695), The Gabahan (1659), Sekayu (1666) and Kanjengan (1670) (Rukayah, Respati, & Susilo, 2016). City morphology in Java can be classified into the period 1600-1800 as a trading settlements and cities within the fortress period; the period 1800-1900 as the Indish city period; the period 1870-1920 as a transitional period also liberalization; the period 1900-1950 as the colonial city period; and finally period after 1950 as an Indonesian modern city period (Gill, 1997). Likewise, the Semarang city also experienced several development periods, begin from the initial period, the period of trade settlements and city in the fort, the Indish city period, the transition period, the colonial city period, and finally the current period as a modern city.

Therefore, to see the original form of Semarang traditional houses before variations occur, this can be seen in the initial period. Determining the location where the house stands is very important because the change of Semarang city form, which is very difference from the initial period to the current modern city period. Therefore, it is very important to study, where is the limits of Semarang city in 14th century, the period which the initial period of the city of Semarang.

There have been no previous research studies that overlay the Semarang city boundaries based on the contour map and history of the Semarang initial period. The research conducted by Purwanto (2005) explores history with a historical approach and literature study, which still opens up opportunities for discussion about archaeological evidence of old city traces that have been lost. The research conducted by Riyanto (2014) used an overlay mapping technique to make delineation of Semarang Old City area, especially the location of the fortress from the oldest map using the map of 1695. The research conducted by Sukawi (2009) explores Semarang houses typical scattered in the Semarang ancient kampongs which have a combination of various cultures ranging from Islam, China, and Indish (Dutch) culture. All research is carried out in the center of Semarang, even though the area was still a sea. Research conducted by Broomer (1995) has revealed the ancient northern coastline of the Java island located several kilometers inland today with a geological approach. Therefore the purpose of this paper is to get the limits of Semarang city in the initial period (14th century) with the overlay mapping method, so that it can be used to see the location of Semarang traditional houses before there are variations from migrants.

II. METHOD

The method used in this study using Overlay Mapping Technique. In overlay mapping technique the existence of a map becomes very important at least as a summary of past environmental conditions (Riyanto, 2014). This technique was used to describe the Semarang city map in the 14th century, especially regard to the study of determine the limits.

The research steps were carried out using the current contour map and the sea level analysis at that time based on the Semarang city history of the early period. Where based on history, the Semarang downtown area is still in an ocean and Bergota area (formerly called Pragota) still separate as small island. From the analysis results map are overlaid with the current map so that it looks the boundary of Semarang city in 14th century.

III. HISTORY OF SEMARANG CITY

The Semarang history began approximately in 6th century, the coastal area called Pragota (now Bergota) and is part of the Ancient Mataram kingdom. The area at that time was a port and in front there was a grupof small islands. As a result of sedimentation, which until now still continues, the cluster now integrated with the land. The part of Semarang downtown that is known today is thus the sea. The port is estimated to be in the PasarBulu area now and extends into Simongan Port, where Admiral Cheng Ho's fleet rested in 1435 AD. Admiral Cheng Ho established temples and mosques which are still visited and called Sam Po Kong Temple (Gedung Batu).

At the end of the 15th century there was someone placed by Demak Kingdom, known as Prince Made Pandan (Sunan Pandanaran I), to spread Islam from the Pragotahills. From time to time the area became more fertile, then grew tamarind trees with black trunks like charcoal (Javanese: asemarang), thus giving the title or name of the area which later became Semarang.

Prince Made Pandan was the founder of the village, then became the head of the local area, with the title Kyai Ageng Pandan Arang I. After his death, the regional leader was held by his son, Pandan Arang II (later called as Sunan Bayat or Sunan Pandanaran II or Sunan Pandanaran Bayator Ki Ageng Pandanaran or Sunan Pandanaran). Under the leadership of Pandan Arang II, Semarang area is increasingly showing its growth, thus attracting the attention of Sultan Hadiwijaya of the Pajang Sultanate. Because the requirements for regional improvement can be met, it was decided to make Semarang the same level as the Regency. On May 2nd, 1547 it coincided with the anniversary of the Prophet Muhammad SAW, on the 12th of Rabiul Awal in 954 H it was ratified by Sultan Hadiwijaya after consulting with Sunan Kalijaga as the anniversary of the Semarang city.

Along with the fall of Pajang into the hands of the Mataram Sultanate, the Semarang region was included in its territory.

IV. THE CITY FORM

The current form of Semarang city is very different from the form of Semarang city in the initial periods. Bemmelen (1949) a Dutch geologist, put forward one theory, that the northern coastline of the island of Java in ancient times was located several kilometers jutting into the land at this time. The sludge deposition rate that makes new soil sediment moves at 8 m every year. The sludge originates from Demak which flows through the Kali Garang river. From 900 to 1500 is the beginning of alluvial deposits. Its formation starts from sedimentation of silt from Muara area which originates from Kreo river, Kripik river and Kali Garang river.

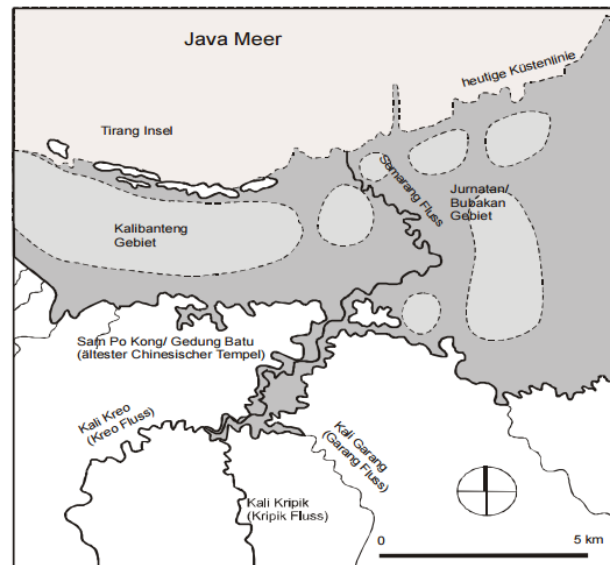


Fig. 1 Semarang before 900 (Broomer, 1995)

In 1476 Kiai Ageng Pandanaran began building Indigenous settlements. Early 1500 Semarang coastline has reached the Sleko area at this time. At that time the port of Semarang had become an important and well-known port, so many foreign merchant ships docked there. Chinese traders landed around the beginning of the 15th century, Portugal and Netherlands at the beginning of the 16th century, from Malaysia, India, Arabia and Persia at the beginning of the 17th century. The settlers made their respective ethnic settlements. The Dutch and Malays established their settlements in the estuary of Semarang River, the Chinese settled around Simongan and the Javanese settlements along Semarang River.

V. OVERLAY MAPPING

Before overlaying, it is necessary to understand the history of the Semarang city, that based on history, Pragota (Bergota) is a group of small islands that are part of the Ancient Mataram kingdom. Departing from this history required a Semarang contour map with sea level as high as Bergota feet.

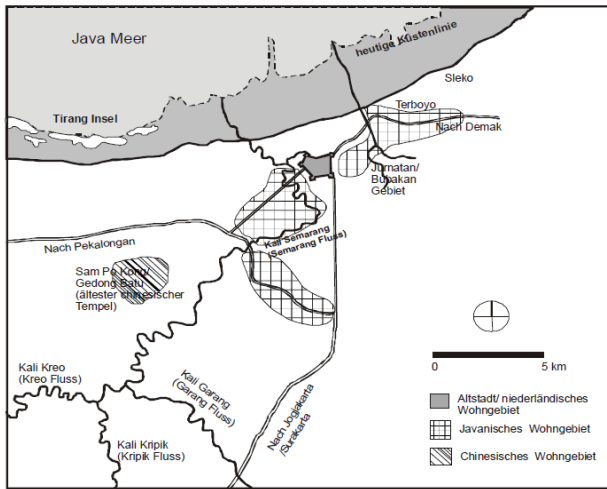


Fig. 2 Semarang in 1650(Muljadinata, 1993)

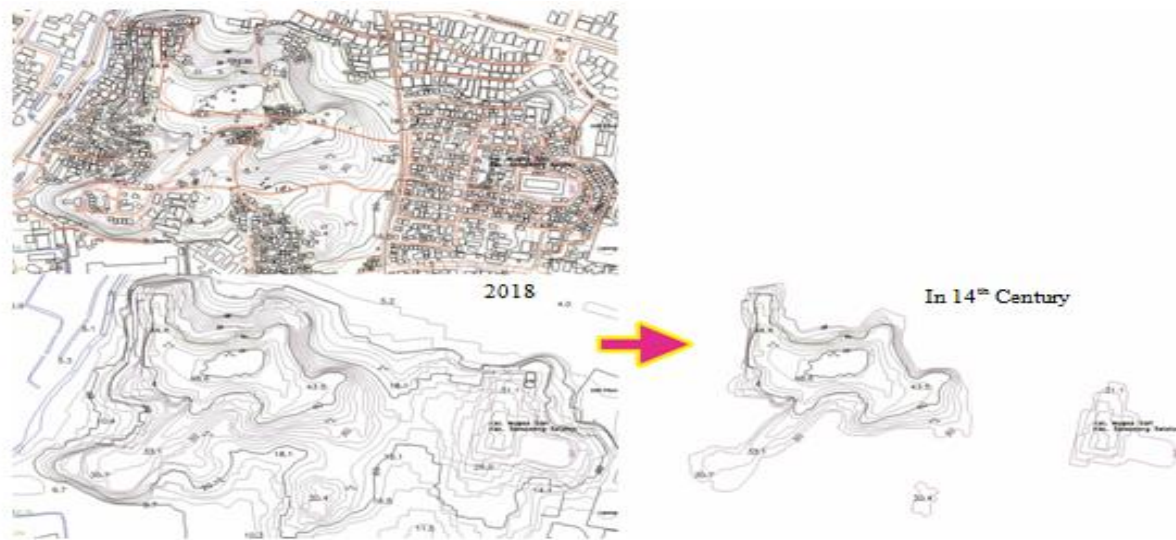


Fig. 3 Pragota (Bergota) in 2018 and in 14th Century

The sea level used to predict the coastline in the 14th Century is 30 meters above the current sea level. This is based on the existence of a lake at a height of 30 meters in Sadeng Village, as well as the swamp at a height of 29.3 in Tumplak Kampong, Tandang Village. From the contour analysis obtained Pragota boundary results in 14th Century as shown in Figure 3.

More widely, it appears that there is a group of small islands. This can be seen in the results at Figure 4, and looks like the limits of Semarang city form in the 14th Century. The small islands are Pragota (Bergota) island, Mugas island, Bongsari island, Sri Rejeki - Gisikdrono, Srandito island.

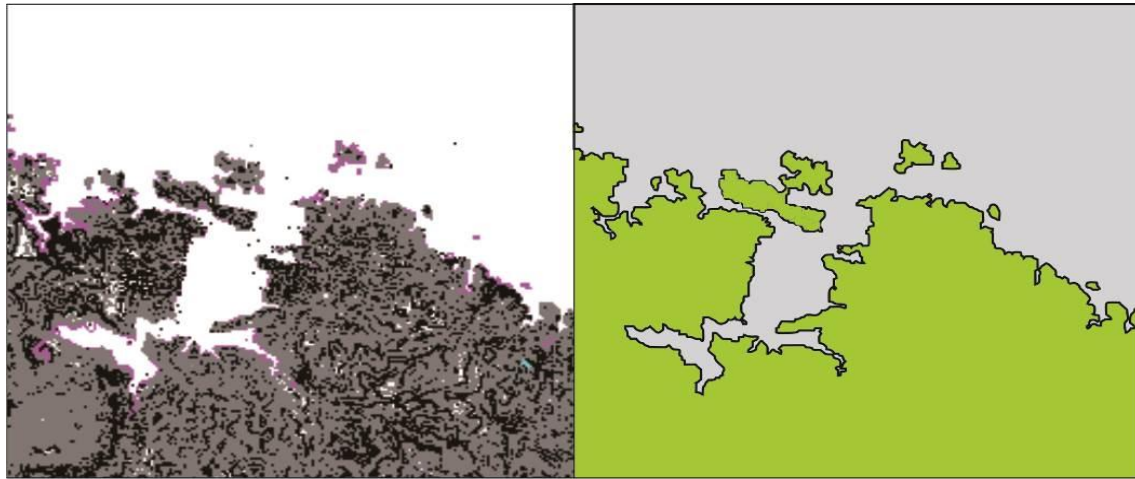


Fig. 4 Semarang in 14th Century

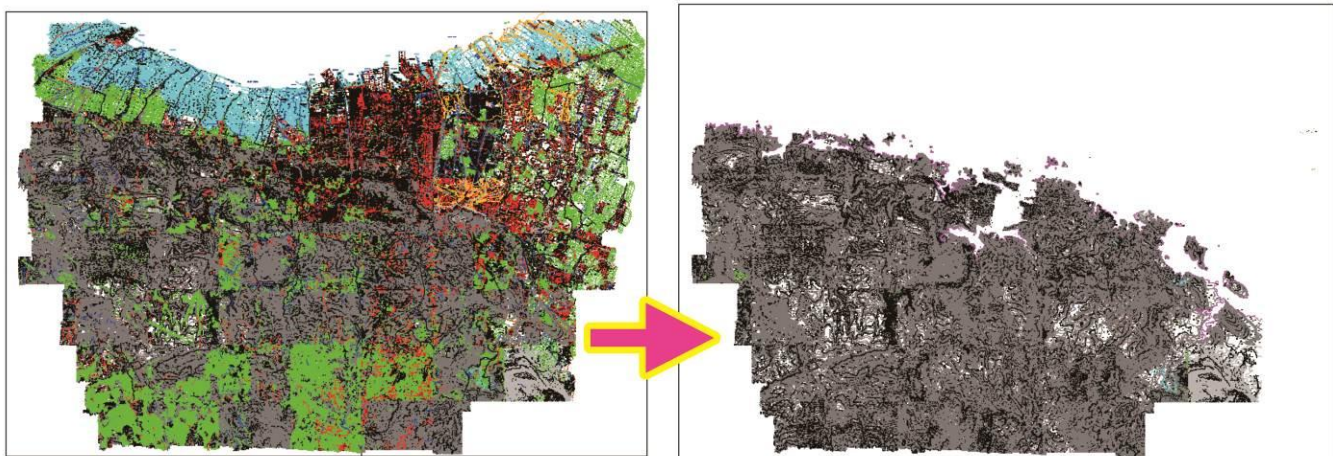


Fig. 5 Kontur Semarang 2018 and in 14th Century

Semarang 2018 and in the 14th Century Contour

On the figure 5 can be seen significant changes in the form of Semarang city currently and in the 14th Century. From these results, if there is a study of a Semarang house in the city kampongsnowaday, it is clear that there are variations from the newcomers because the area only existed

long after the 14th century where sedimentation has begun, and become a new land, and newcomers have enter the city of Semarang. So if you want to see what a typical Semarang house looks like, you should see it in an area that is land in 14th century. With the boundary drawn on the results of the overlay mapping performed (Figure 6).

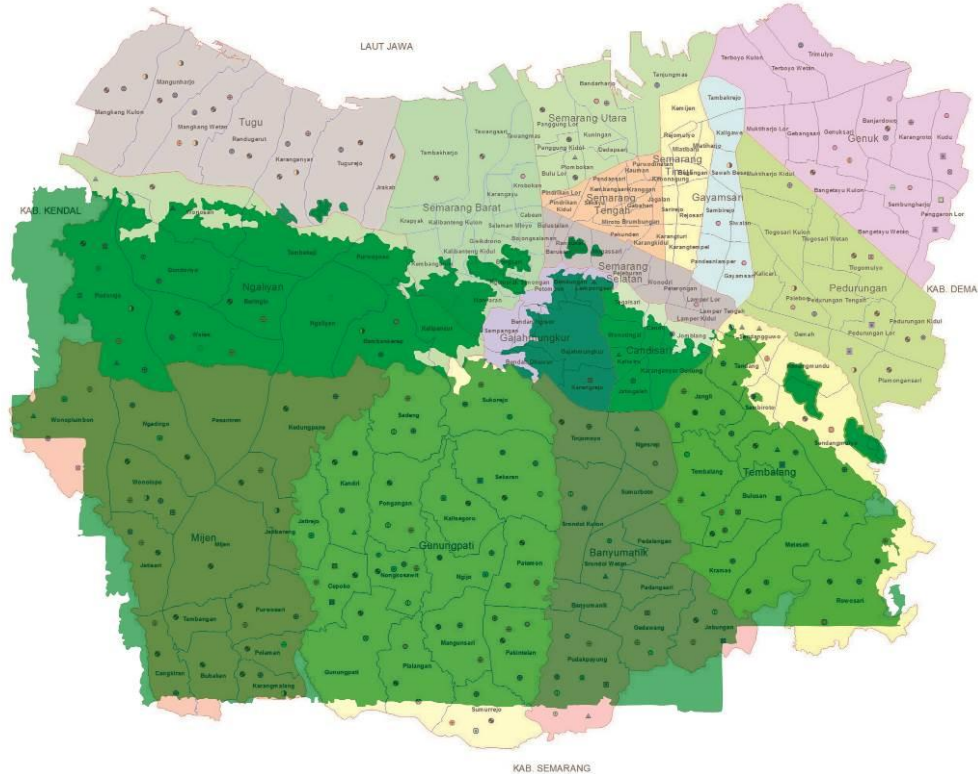


Fig. 6 The limits of Semarang city in 14th century

VI. CONCLUSION

The current form of Semarang city nowadays very different with in the early days (in 14th century). The North Semarang coastline is at the south of the city center at this time. Pragota (Bergota), Mugas, Bongsari, Sri Rejeki-Gisikdrono-Srindito is a group of small islands in the North of Semarang.

So that the study of the Semarang house in the area of the kampongs today (formerly the Java North Sea) clearly found architectural variations brought by the Immigrants. So if you want to see an original Semarang house looks like, you have to see it in an area that is land on the 14th century.

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