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# Between Sacred Nagara and Resilience Planning: The Transformation of Banten Port City in the 16th to 17th Century

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**Abstract:** This writing is a result of research to study the development and transformation of Banten Port City located in the west part of Java, Indonesia, during the early stage of the development in the 16th Century until the peak of its glory in the 17th Century. The aim is to better understand the urban culture, specifically the resilience of traditional cities in Indonesia, through observations on the development and transformation of traditional archipelago cities such as Banten. This research is an architectural and urban history study that relied on 16th to 17th-century historical data included local and colonial histories available in various maps, drawings, records, and journals. In conclusion, Banten Port City has a strong character of sacred nagara typology commonly used in traditional Javanese cities that keep on developed following the city's growth. Despite the contradiction between the mandala order and irregular plan, the development of the Banten port city does not fully match the conclusions made by previous researchers. The city transformation shown resilience consideration through adaptation and planning expressed in the city elements related to defense, economic, and food supply to support self-sustain of the city. The continuous development has proven to withstand all incoming attacks from constantly turbulent situations in that region and many other challenges, making Banten a safe city for international trade and reach its peak at this era.

Keywords: Banten, Nagara, City Transformation, Resilience Planning

## 1. Introduction

Banten Port City is located on a busy trading route in the archipelago. The city was becoming one of the centers for the spice trade, especially for pepper. Banten has become a magnet for seafarers from all over the world to stop and trade. Various nations who came and inhabited Banten, formed the city into a cosmopolitan metropolis in the era of commerce in Southeast Asia<sup>1</sup>. The 17th century is said to be The Banten Port City's most glorious moment.

Firstly built in 1540, Banten has grown to become one of the largest trading cities of the archipelago, even exceeding the cities in Europe at that time. Since then, the city has transformed as a process to respond to the condition and context that happened during the 16th to 17th Century period. This process characterized city morphology as part of fulfilling the people's needs, maintaining the socio-structural, wealth, and prosperity, while simultaneously responding to all the obstacles.

In the view of researchers who have researched the port

city of Banten, they generally agree that the morphology of Banten port city is a continuation from the morphology of traditional Javanese city with strong influence from Indian urban culture<sup>23</sup>. Even though it is located on the coast and no longer in the hinterland as traditional Javanese city generally located, The Banten Port City still showed the characteristics of a city-state or Nagara Kota. In his writing about nagara<sup>5</sup>, Geertz made an explanation from its origin. In Sanskrit, nagara means a city, which in its development is interpreted as a palace, capital, state, and the following initial meaning is the city. According to Wheatley<sup>17</sup>, who researched the origin of urban culture in South East Asia, nagara is always related to a hierarchy of power, a pyramid with the king holding the highest power and following by his layer of sub-ordinates underneath. This hierarchy of power can be seen in the city morphology, which prioritizes cosmic order. A balance between the sacred and the profane with the king as the center following by layers for his subordinates. The other characteristic of nagara is the use of mandala, a spatial

orientation based on wind direction.

From several historiographies about Banten, references often using are researches from Reid and Guillot. They mentioned, although the morphology of Banten port city's center was recognized as a typology of the city-state, the areas outside the center are contradictory because of the irregular pattern. According to Reid(1988)<sup>1)</sup>, the irregular pattern emerged due to the city's rapid development and a large number of unsupervised immigrants from outside. Meanwhile, Guillot(2008)<sup>6)</sup> concluded that the development of Banten Port City was a pragmatic matter following the interests of the time. While on the more recent writing of Kuswartojo(2019)<sup>23)</sup>, the inconsistent use of the mandala principle in Banten occurred because its development took place spontaneously and did not follow any institution.

Looking at several existing views as mentioned above, no one has specifically discussed the possibility that the development of Banten port city is an effort to build urban resilience. In theory, urban resilience<sup>21)</sup> is the ability of urban systems to withstand and adapt to disturbances. As for Banten Port City as a continuation of traditional urban city, how are the resiliencies being built? This paper will describe the spatial analysis and look at the possibility of other factors that influence the city's development, the connection between the city center and its rural area especially in anticipating the interests and challenges faced by Banten in the period of the 16th to 17th centuries, which formed the city's resilience.

The aim of this research is to build a better understanding of urban culture in Indonesia through observations on the development and transformation of traditional cities of the archipelago, one of which is the Banten port city. A city itself has several layers that can pictured urban strategies of that era. Thus the morphology of Banten Port City became a precedent in Indonesia's traditional city as being advance on building urban resilience at that era.

## 2. Methods

This paper is based on architectural and urban history research, emphasizing the use of historical data from the 16th to 17th centuries, including local and colonial historical data in the form of maps, pictures, travel notes, and journals. As the main method, several maps and drawing on that period were analyzed and being compared to record the pattern and spatial transformation. Other forms of data such us travel notes, journals and letters were used to validate and build the structure for the historiography. All data collected would be used to understand the city transformation and how each development were further more than maintained the sacredness but also related to resilience strategies.

## 3. Result and Discussion

### 3.1 The Early Morphology

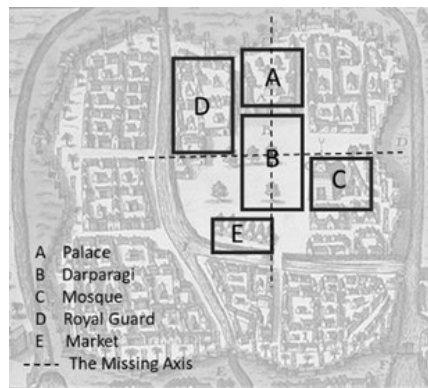
In his voyage from Portugal to Malacca by stopping in cities in Sumatra and Java between 1512 - 1515, Tome Pires mentioned Bantam as one of the important ports of the Sunda Kingdom<sup>26)</sup>, was located in the bay right at the mouth of the river. In his notes, there is no city on the coast yet but located quite far into the river, a city known as Banten Girang. As a port and city, Bantam has great rice, foodstuffs, and pepper, which attracted much attention, including from the combined troops of Demak and Cirebon, who succeeded in occupying the port and city Banten in 1527.

At the beginning of the occupation, the combined forces of Demak and Cirebon still used Banten Girang as the main city. The construction of a new city in the coastal area was only carried out when Banten declared itself as an independent kingdom following the waning of Demak's power and the fall of the center of the Sunda Kingdom to Banten. In the Babad Banten or Sajarah Banten, it is recorded that the construction of the port city of Banten began during the reign of Sultan Maulana Hasanudin (1540-1570) as the first sultan<sup>12)</sup>.

#### 3.1.1 Sacred Nagara and Mandala

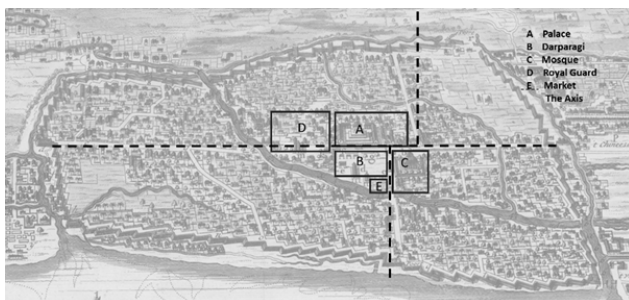
The construction of a port city in the coastal area was carried out on the instructions of Sunan Gunung Jati, which determined the city's location in the centerline of the bay and flanked by two large rivers that broke off from the Cibanten River<sup>12)</sup>. A large rectangular stone is known as *watu gilang* placed in an open field which later became the town square, which in Banten was known as *paseban* or *darparagi*. In the traditional Javanese city tradition, Watu Gilang is believed to be the prestige of a king and at the same time, emphasizes the concept of the king as the center. This center position has two meanings: a symbol of royal power and a symbol of the union of the king and his people.

After determining the city's center<sup>11)</sup>, several important buildings were built around the darparagi following the cardinal directions, known as the mandala pattern. A palace complex was built for a king and his closest relative's settlement on the south side, the farthest side from the beach. A mosque for people to worship was erected on the west side. On the east side, it is intended for the settlement of royal employees and nobles, while on the north side, it is intended for an open market without any permanent buildings. In the future, the northern part of the mosque's courtyard used as a burial area for kings and nobles. According to previous researchers, this part of the central port city of Banten, which was considered a continuation of the traditional city pattern on the island of Java, used the capital of the Majapahit kingdom as a comparison (Kuswartojo, 2019; Santoso, 2010; Reid, 1988). The city center is a sacred area with the king as the center.



**Fig.1:** The spatial analysis base on map made by De Bry (1599)

From a map made by De Bry in 1599<sup>7) 19)</sup>, the city morphology following the mandala can be seen with the missing path usually used as an axis. The map itself shows some inaccuracy in measurement since De Bry drew it based on collected data about Banten not visiting the city himself<sup>15)</sup>. While on drawing made by Valentijn<sup>9)</sup>, a Dutch missionary during his visit to Bantam in 1694, show some development in the city center. The building orientation still has not changed, but there are more clear axes on the center build by paths, although the south axis shifted more to the west of the palace. Valentijn also recorded some additional buildings on the darparagi for the king's boat and carriages.

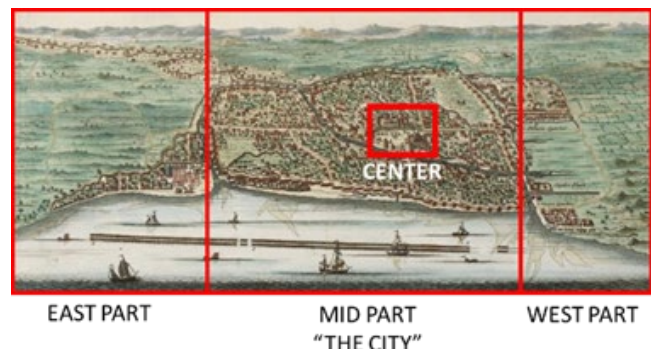


**Fig.2:** The spatial analysis base on map made by Valentijn (1724)

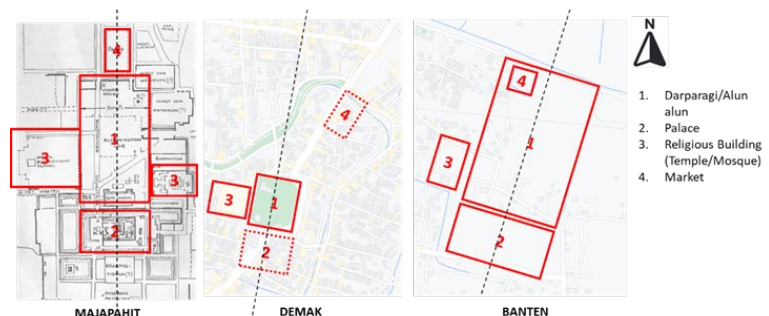
A comparison between Banten's center morphology to Majapahit and Demak, mainly because there is a historical connection between these three cities. After the decline of the Majapahit Kingdom, Sultan Pajang as the Demak Sultanate founders, declared his kingdom as the successor to the Majapahit throne<sup>8) 19)</sup>. As a new kingdom at that time, Demak tried to expand its power to the western region of Java Island to Sumatra and subjugated the Sunda Kingdom of Pajajaran. In the former territory of the Sunda Kingdom of Pajajaran, the forerunner of the Sultanate of Banten began and became an independent state after The Sultanate of Demak was dissolved.

Although Banten's center shows a simplification from Majapahit capital, yet it also shows very much sameness on the important building orientation around darparagi. At the center of Majapahit's reconstruction drawing by

Maclaine Pont<sup>13)</sup>, the palace was taking place on the south of darparagi, religious temples built on the west and east side, while on the northern part lay the market. It also has similarities with Demak center<sup>19)</sup>, even though there is not much physical evidence left. What still remains resembles Banten's, especially on the arrangement of mosques and darparagi or alun alun. As for the palace, many believe it is located on the south of the darparagi since that area is well known as Siti Hinggil, a type of building placed in front of the palace.



**Fig.3:** City Distribution in Banten



**Fig.4:** Mandala comparison between the center of Banten, Majapahit and Demak

### 3.1.2 The Irregular Plan of The City

The Banten port city is located along Banten Bay, reaching approximately eight hundred fathoms. The city is divided into three parts, namely the east, mid, and west. The part that is located in the mid and the widest is where the city center is located, and a fortress surrounds this part. In contrast, the east and west are the areas located outside the city wall. In the mid part of the city, only the king's complex is built with an order, and the other part is said to be irregular because it has no particular orientation, without a clear axis or grid.

#### *Settlements Inside The Wall*

Inside the city wall, the south side where the center is located is intended for the king and his relatives. Moreover, the rest is designated as a settlement for the nobles. In the map made by De Bry, the settlements of the nobles are described as forming clusters that are not related to each other. The pattern of building arrangement resembles the pattern of a palace where one building is

placed in the center, in the middle of open land, and then surrounded by other buildings to form a closed cluster.

Meanwhile, in the map drawn by Valentijn, the pattern of settlements has changed and is no longer the same. The center has a more pronounced east-west axis and a north-south axis whose southern part turns slightly to the west of the palace walls. The axis was extended to the boundary of the city wall, the settlements that had formed a closed cluster had disappeared, replaced with buildings that spread irregularly inside the city wall.

#### *East and West Side of the City*

On the east side, buildings in the form of markets, warehouses, and residential areas were built. In the map drawn by De Bry, the buildings on the west side can be seen extending along the coast, while on the map drawn by Valentijn a century later, a road pattern has been formed that divides the east side of the city into several parts. While on the western part of the city, which was designated as a lodge for Europeans and Chinese, there was a very striking development. De Bry described that only the south side adjacent to the beach had been built as a place for sea lords and admirals. In comparison, Valentijn describes that the city's west side has developed far to the south following the length of the city walls. The southernmost part of the widest is a village for the Chinese, while European lodges were built between the syahbandar and the Chinese village. The city development recorded by Valentijn happened during the reign of Sultan Ageng Tirtayasa (1651 -1683), with harbourmaster Cakradana as the main architect.

### **3.2 The 16<sup>th</sup> Century Urban Resilience System**

The main aspect that a traditional city must own at that time was its sustainability<sup>22)</sup>, the ability to meet the population's needs, provide wealth and prosperity not just for the present but also the future. As a trading city, Banten's development also pays attention to all these aspects that can be achieved when the city is in a state of peace. The city builds resilience on defense, economic, and food security aspects to bring the city to its self-sustaining condition<sup>25)</sup>. Furthermore, those can be seen through this city elements:

#### *Environmental Setting As Part of The Defense System*

Naturally, The Banten Port City takes advantage of the environmental setting in the planning and development of its city, especially in utilizing the river channel that flows into the Bay of Banten. Banten Bay becomes the estuary of the Cibanten river, which divides into two branches as it approaches its estuary area. The Banten Port City was built right in the middle of the bay flanked by two branches of the Cibanten river. The areas surrounded by sea and river became the main transportation for goods and people because land transportation systems were not yet developed<sup>10)</sup>. Apart from being the main transportation route, the river is also used to separate essential parts of

the city from other parts that can be a threat. Foreigners are deliberately kept away from the city center and must live outside the city wall on the east or west side, separated by the river. In Valentijn drawing, the waterway has been changed to only have one in and out access to the city center from the sea. Even inside the wall, the king's complex and the noble settlements are also separated by a river that further limits who can enter this part of the city.

#### *City Fortress*

From the very beginning until the peak of its glory, Banten Port City managed to become a peaceful city. At the same time, the archipelago was an area that was always turbulent and prone to attacks from outside. Based on the historical record, several sea attacks were aimed at Banten Port City during that time. Such as those carried out by the Portuguese fleet in 1598 and the troops of Sultan Agung in 1597, which were successfully thwarted by the strength of the Banten sea troops and also the city's good protection system.

The construction of the Banten port city fortress as narrated in the *Sajarah Banten* has been carried out since the reign of the first king. Although the fort was built in stages, in the beginning, most of the city's walls were made of wood and only partly made of brick. However, during the reign of the second Banten sultan, Sultan Maulana Yusuf, the whole wall had become more robust and taller by using brick and coral materials. In *Babad Banten*, it's written as Gawe Kuta Baluwarti Kalawan Kawis, built a city with walls made of brick and coral.

The fort is also equipped with complete weaponry with the latest technology. In a collection of letters from the King of Banten to the King of England, in each period generally submit requests for weapons delivery by sending pepper and gold as a medium of exchange. Furthermore, the drawing made by Valentijn and Schenk<sup>16)</sup> in the same period on the latest of 17th century showing a long barricade built offshore to limit large ships from approaching the shore.

#### *The Palace*

De Bry, in his etching, drew the palace as a complex of buildings in the southern part inside the city wall. The palace consisted of one building placed in the center and surrounded by elongated buildings that form a configuration resembling the letter U on the east, west, and north. The southern part of the palace is more open, located close to the city walls with a gate on the southwest side of the palace. As the King's residence, the palace became the most important building that was not allowed to be entered by just anyone, a strategy to keep the palace out of surveillance especially to the outsiders<sup>20)</sup>. Even now, no clear records can explain the parts of the palace except those depicted from outside the fence.

In Valentijn's drawing, the depiction of the palace complex has several differences from that made by De Bry. He made a more detailed drawing about the palace, which

has a large building in the center, drawn as the city's most prominent and tallest building. This building, namely King's mosque, is situated on several terraced steps with an ornament at the top of the roof surrounded by elongated gable-roofed buildings on the east and west sides. On the outer part of that elongated buildings equipped with a thick high wall as the palace's wall and layers of wooden fences. Sajarah Banten in Pupuh 44<sup>24)</sup>, tells that a mosque minaret was built next to the King's Mosque inside the palace complex as described by Valentijn and Schenk on their drawing. From this building, the King could oversee the whole city from within the palace, used it as a surveillance part of defense system built through the architectural components<sup>20)</sup>. From the description above, we can see how the palace is continuously being strengthened as the most vital building in the city, where the king's power resides.

#### *The Market*

In the beginning, Banten port city has three active markets. The market in the north part of darparagi in the city center was used for international trading. While at the old port Karangantu in the east side of the city, it is a daily market where people can buy various items from food, cattle, and spices<sup>4)</sup>. The other market is the Chinese market near the harbormaster's square, primarily for weighing and shipment overseas. The market in Banten is one of the most memorable places for travelers because of the busyness inside<sup>14)</sup>.

Since the growth of international trade and Banten's ability to cultivate crops other than pepper, such as rice and sugar, each market shifted its functions. The international trade being concentrated in the west market under the surveillance of the harbormaster and his Chinese connections. The function of the market in the city center being lowered only to serve the daily needs of the residents inside the city wall, thus adding more protection to the city center from foreigners who spied the palace. At the same time, the market at Karangantu grew more extensive as a retail market for the city. By arranging particular functions on each market, Banten transformed the outer part of the city to become more important city's support and maintained the economy most efficiently.

#### *Food Supply*

On Tome Pires records, before Banten port city was built, he mentioned that Banten had a plentiful food supply, especially rice, staple food and main trade item in Southeast Asia. As a growing city in tropical climate<sup>2)</sup>, Banten needs to keep the stability of their food supply, making them look after very carefully on the resources. Banten's rice field is located on city rural area at south, along the bank of Cibananten river up to the old city Banten Girang. To protect the continuation of food supply there are two strategies applied. First strategy is by arranged clear zonation and limited access for foreigners from other continents who being placed on the west part of the city

with no direct access to this agricultural area. The importance of developing the rural area as the town sustainability support system<sup>3)</sup>, become second strategy applied in Banten. Since 1630, new rice fields have been open more with irrigation and a massive wet paddy farming system. During Sultan Ageng Tirtayasa reign, more agricultural areas being expanded, and permanent irrigation being built with a water reservoir, namely Tasikardi. The reservoir not only serves the need of agriculture but also provides clean water to the city. With this advanced clean water and irrigation system, Banten, who rely on agriculture, can do various plantations such as the rare and expensive sugar cane. As a king who brought Banten to its glory, Sultan Ageng Tirtayasa also built several barns in the city, which was useful during the famine happened during his reign.

## 4. Conclusion

At the beginning of its development, especially in the mid part, the Banten Port City morphology has a strong sacred nagara typology, commonly used in traditional Javanese cities. In more than a century of development, the city maintained its original form with several changes that strengthened sacred nagara typology. Despite the contradiction between the mandala order and irregular plan, the development of the Banten port city does not fully match the conclusions made by previous researchers. The city transformation shown resilience consideration through adaptation and planning expressed in the city elements related to defense, economic, and food supply to support self-sustain of the city. The continuous development has proven to withstand all incoming attacks from the constantly turbulent situation in that region and many other challenges, making Banten a safe city for international trade and reach its peak at this era.

## References

- 1) A. Reid, "Asia Tenggara Dalam Kurun Niaga 1450 – 1680 Jilid II: Jaringan Perdagangan Global Asia Tenggara" Yayasan Pustaka Obor Indonesia, Jakarta, 2011
- 2) A.G. Alam, Nasruddin, A. Tirta, C. K.Priambada "Building Beneficial Roof Insulation in Vertical Housing: Physical and Economical Selection Method" EVERGREEN Joint Journal of Novel Carbon Resource Sciences & Green Asia Strategy, Vol. 06, Issue 02, pp.124-133, June 2019 <https://doi.org/10.5109/2321006>
- 3) A.T. Nugraha, G. Prayitno, A. W. Hasyim, F. Roziqin, "Social Capital, Collective Action, and the Development of Agritourism for Sustainable Agriculture in Rural Indonesia", Evergreen Joint Journal of Novel Carbon Resource Sciences & Green Asia Strategy, Vol. 08, Issue 01, pp01-12, March 2021, <https://doi.org/10.5109/4372255>
- 4) Bazaar van Bantam, 1596,

- <https://www.rijksmuseum.nl/en/collection/RP-P-OB-80.246>
- 5) C Geertz, "Negara teater : kerajaan-kerajaan di Bali abad kesembilan belas", Yayasan Bintang Budaya, Yogyakarta, 2000
  - 6) C. Guillot, "Banten: Sejarah dan Peradaban Abad X – XVII" Kepustakaan Populer Gramedia, Jakarta, 2008, p46 p59 p110-113
  - 7) De Bry, Johann Theodor, (1560-1623) and Johann Israel de Bry (1565-1609). Part III, Bird's-eye View of the City of Bantam. From the "Little Voyages" [https://upload.wikimedia.org/wikipedia/commons/4/4a/Bird%E2%80%99s-eye\\_View\\_of\\_the\\_City\\_of\\_Bantam\\_de\\_Bry.jpg](https://upload.wikimedia.org/wikipedia/commons/4/4a/Bird%E2%80%99s-eye_View_of_the_City_of_Bantam_de_Bry.jpg)
  - 8) De Graaf HJ and Pigeaud TH G TH "Kerajaan-Kerajaan Islam Pertama di Jawa: Kajian Sejarah Politik Abad ke-15 dan ke-16" PT Pustaka Utama Grafiti, Jakarta, 1985 p79-81
  - 9) De Stad Bantam, engraving by François Valentijn, Amsterdam  
[https://en.wikipedia.org/wiki/Banten\\_Sultanate#/media/File:Banten-city-Java-1724.jpg](https://en.wikipedia.org/wiki/Banten_Sultanate#/media/File:Banten-city-Java-1724.jpg)
  - 10) E. Supriatna, "Kemaritiman di Kesultanan Banten Sebuah Perspektif Historis" Jurnal Kemaritiman: Indonesian Journal of Maritime Vol,1, No,1, Juni, 2020
  - 11) H Michrob A Hypothetical Reconstruction of the Islamic City of Banten, Indonesia, University of Pennsylvania Graduate Program in Historic Preservation, Pennsylvania 1987 p14 p105
  - 12) H. Djajadiningrat, "Tinjauan Kritis Tentang Sajarah Banten" Penerbit Djambatan, Jakarta, 1983 p83 p84 p85 p127 p144 p160 p161
  - 13) H. Maclaïne Pont, "Madjapahit: Posing Tot Reconstructie Van Het Stadsplan, Nagezocht Op Het Terrein Aan De Hand Van Den Middeleeuwschen Dichter Prapanca" Albrecht & Co., Weltevreden, 1925
  - 14) H. Nurmaraya, Y. N. Lukito, "A Place to Remember: The Erasure of Pasar Johar's Collective Memory" EVERGREEN Joint Journal of Novel Carbon Resource Sciences & Green Asia Strategy, Vol. 07, Issue 01, pp72-78, March, 2020 <https://doi.org/10.5109/2740950>
  - 15) M. van Groesen, "The De Bry collection of voyages (1590-1634) Editorial strategy and the representations of the overseas world" UvA-DARE University of Amsterdam, 2007
  - 16) P. Schenk, Petri Schenkii Hecatompolis, sive Totius orbis Terrarum Oppida Nobiliora Centum; exquisite collecta atque eleganter depicta. Amsterdam, Petrus, 1702. <https://sanderusmaps.com/our-catalogue/antique-maps/asia/southeast-asia/old-antique-chart-of-banten-bantam-indonesia-by-petrus-schenk-26661>
  - 17) P. Wheatley "Nagara and Commandery: Origins of the Southeast Asian Urban Traditions" Geography Department University of Chicago, Chicago, 1983
  - 18) Plattegrond van Bantam, 1596, <https://www.rijksmuseum.nl/en/collection/RP-P-OB-80.245>
  - 19) S. Abimanyu "Babad Tanah Jawi" Penerbit Laksana, Yogyakarta, 2014 p324-326
  - 20) S. Fadhilla, N.Y. Lukito, "Surveillance and Architecture, Analyzing the Idea of Eyes on the Street", Evergreen Joint Journal of Novel Carbon Resource Sciences & Green Asia Strategy, Vol. 07, Issue 01, pp132-137, March, 2020, <https://doi.org/10.5109/2740980>
  - 21) S. Meerow, J.P. Newell, M. Stults, "Defining urban resilience: A review", Landscape and Urban Planning 147, 2016  
<http://urbansustainability.snre.umich.edu/wp-content/uploads/2016/01/dx.doi.org/10.1016/j.landurbplan.2015.11.011>
  - 22) S. R. Hamid, C B Cheong, A Shamsuddin, N. R. Masrom, N. A. Mazlan "Sustainable development practices in Services Sector: A case of the Palace Hotel from Malaysia" EVERGREEN Joint Journal of Novel Carbon Resource Sciences & Green Asia Strategy, Vol. 08, Issue 04, pp693-705, December 2021 <https://doi.org/10.5109/4742113>
  - 23) T. Kuswartojo, "Kaca Benggala: Perkembangan Habitat Manusia di Indonesia" Ukara Lawang Buwana, Bandung, 2019 p3 p17-19
  - 24) T. Pudjiastuti, "Perang, Dagang, Persahabatan: Surat Surat Sultan Banten" Yayasan Obor Indonesia, Jakarta, 2007 p252 p266
  - 25) T. Sato, "How is a sustainable society established: a case study of cities in Japan and Germany," Evergreen Joint Journal of Novel Carbon Resource Science & Green Asia Strategy, 3 (2) 25 – 35 (2016). <https://doi.org/10.5109/1800869>
  - 26) The Hakluyt Society "The Suma Oriental of Tome Pires and The Book of Francisco Rodrigues" McGill University Library, London, 1944 p166-174M.