Ecological considerations for the placement of the “Candi Negeri Baru” site in 14 AD in Ketapang, West Kalimantan

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Abstract. The site of "Candi Negeri Baru" in Ketapang, West Kalimantan is a Hindhu temple and by the research team of the Archaeological Center of South Kalimantan it is included as one of the relics of the Majapahit Kingdom. The supporting data, namely the Negeri Baru toponymy, is related to the Tanjungpuri toponymy which is recorded in the Kitab Nāgarakṛttagama, Canto 14 --- 1, so that the temple is thought to have originated from the 14th AD. The existence of the temple on the site of "Candi Negeri Baru" today, is the only Hindhu temple building found in the West Kalimantan region. In the context of building a temple, based on the provisions of the Kitab Mānasāra-Śilpaśāstra, the placement of a temple building is based on ecological considerations. One of them is based on considerations of land where sacred buildings can be built and land where sacred buildings are not allowed. Land where sacred buildings are permitted are the types of “Brahmana land” and “Ksatrya”, while the types of land where sacred buildings are not permitted are “Waisya land” and “Sudra”. The “Sudra land” type is a type of soil that contains a lot of mud, is dark in color and has a bad smell. Based on the location of the location, the site of "Candi Negeri Baru" at this time, is in a swampy and watery environment, this type of land can be categorized as "Sudra land". Based on this problem, it is necessary to study the ecological considerations of the placement of the “Candi Negeri Baru” site in the context of the physical environment in Ketapang, West Kalimantan. The placement of the sacred building "Candi Negeri Baru" in Ketapang, West Kalimantan still takes into account the standard rules in the Kitab Mānasāra-Śilpaśāstra, namely in the "Ksatrya" land environment. Does the placement of the sacred building "Candi Negeri Baru" still take into account the ecological provisions that are taught in the “Kitab Mānasāra-Śilpaśāstra”?

1. Introduction
The site "Candi Negeri Baru", based on an archaeological survey report by the research team of the National Center for Archaeological and Heritage Research in 1977 AD [1], is in the area of Negeri Baru, Benua Kayong, Ketapang Regency, West Kalimantan (Fig.1). Initially, it was discovered that the site of "Candi Negeri Baru" was based on reports from local residents that in the area of Negeri Baru, Benua Kayong, Ketapang found scattered ancient bricks and some were still ancient brick structures. Based on this, the research team suspected that in Negeri Baru, Benua Kayong, Ketapang there was a temple building site composed of ancient brick structures. This valuable information was then followed up by a survey of the surface survey by the Banjarmasin Archeology Center research team in 2006,2007 AD, and continued planned excavations in 2010, 2011 and 2016 AD. The research team at the Banjarmasin Archeology Center conducted intensive research by conducting planned archaeological excavations in 2011 and 2016 AD. In 2016 AD to reveal the structure of the temple building, the plan of the temple building, the religious background of the temple building and the depositional environment of the "Candi Negeri Baru" site, Ketapang [2].
Intensive research on the excavation of the Banjarmasin Archeology Center in 2010, 2011 and 2016 AD succeeded in uncovering the structure of the temple building and the plan of the temple building. Intensive research for the excavation of the Banjarmasin Archeology Center in 2010 AD was to excavate the 4 mx 4 m excavation box, totaling 50 excavation boxes. As for the intensive research of the Banjarmasin Archeology Center in 2011 AD, namely by excavating the excavation box measuring 2 m x 2 m, a total of 21 excavation boxes [2].

The results of intensive research on the excavation of the Banjarmasin Archeology Center in 2010 and 2011 AD, show that the site of "Candi Negeri Baru" is a ruin of a temple building with a structure of ancient bricks. The size of the ancient bricks varied, namely 8 cm wide, 17 cm long and 3 - 6.5 cm thick. The ancient bricks were mostly broken and scattered over the ground. The excavation results in 2010 and 2011 AD, among others, showed three structures of the temple. The three temple structures are then named Candi I, Candi II and Candi III, arranged in a line north and south and all the temple clusters face east-west which is oriented towards the Pawan River with the entrance on the west side and the Candi I building is thought to be the main building (Fig 2). Candi I has a square design, has 4 viewing angles on the front, has a temple or well and a square shape, measuring 5.3 m x 5.4 m. It is not known for sure whether the structure of the Candi I building has booths or not [2], but because it has a well, it is sumuran or perigi candi that the Candi I building has chambers and a temple roof, it is possible that the body and roof of the temple have collapsed.

Figure 1. Map of the Research Location in “Candi Negeri Baru” Site, Ketapang, West Kalimantan
(Dokument of BPCP East Kalimantan 2019)
The intensive research of the research team from the South Kalimantan Archeology Center in 2016 AD is a continuation of the 2011 AD research. One of the objectives of this study is to provide a complete picture of the existence of the "Candi Negeri Baru" site and the context of its distribution in West Kalimantan. Apart from that, it is intended to provide a broad description of the distribution of Hindu-Buddhist-style buildings in Kalimantan, in the context of the distribution of temple buildings in Indonesia, because so far the distribution of Hindu-Buddha-style buildings has been concentrated in Java, Sumatra and Bali. Thus, this intensive research in 2016 AD is strategic in nature, which is to provide new information and new theories about the distribution of Hindu-Buddha-style buildings on the earth of Borneo: West Kalimantan [3]. At the research stage in 2016 AD, the research team succeeded in digging up about 16 excavation boxes. Recent research results include the success of making a site map for the site of "Candi Negeri Baru", showing the plans of Candi III, the plans and wells of Candi I and the reconstruction of the plans for Candi III. The results of this 2016 AD study confirm the results of previous research that the "Candi Negeri Baru" site consists of three temple buildings, hereinafter known as Candi I, Candi II and Candi III [3].

It is confirmed that Candi I is the main or main temple, while Candi II and Candi III are thought to be the perwara or ancillary temples. It is estimated that the temple building complex does not have a perimeter wall like the temples in Central Java and East Java. The utilization rate of the temple environment is very high, this is related to the discovery of various types of artifacts, including pottery, ceramics and wooden posts. The types of pottery found in the temple environment include plates, tajau, bowls and pots. This proves that the temple environment has functioned as a residential area. The findings of ceramics prove that the settlers at the "Candi Negeri Baru" site had established a trade box with the outside world [4].

Based on the research team of the Banjarmasin Archeology Center / South Kalimantan Archaeological Center, it can be concluded that the “Candi Negeri Baru” site is a Hindu-Buddha site, in the form of a relic of a temple complex with a background of Hindu religion, possibly the sect of the Caiwa sect. The temple building complex consists of three buildings which became known as Candi I, Candi II and Candi III. Candi I is thought to be the main temple or main temple, while Candi II and Candi III are the ancillary temples. The temple building complex may not have a fence. Based on the description of the situation map of the site "Candi Negeri Baru" (Fig.2), it is known that the
direction facing the temple is oriented towards the Pawan River, namely east-west direction, the
temple entrance is on the west side.

Not far from the temple complex, which is about 1 km, northwest of the temple, there is an ancient
Islamic tomb complex known as the Keramat Tujuh and Keramat Sembilan tomb complex. In the
Keranat Tujuh tomb complex there are 7 graves, three of which contain the numbers for the year of
çaka, namely 1363 Ç, 1363 Ç, and 1340 Ç [5]. As for the Keramat Sembilan grave complex, there are
10 graves, four of which contain the numbers for the year of çaaka, namely 1354 Ç, 1354 Ç, 1360 Ç
and 1354 Ç. The last gravestone contains the surya Majapahit decoration. All graves in the Keramat
Tujuh and Keramat Sembilan grave complex are generally in the style of the tombs of Troloyo,
Trowulan, Mojokerto, East Java [6]. On the basis of the gravestone style and containing the çaaka year
numbers and surya Majapahit decorations, the site area of "Candi Negeri Baru", the tomb complex of
Keramat Tujuh and Keramat Sembilan can be included as a settlement complex that developed during
the Majapahit Period at the beginning of the 14 AD [7] . Toponymy Negeri Baru, Ketapang can be
related to the Tanjungpuri toponymy which is recorded in the Kitab Nāgarakĕrtagama , Canto 14 --- 1
[8]. Thus the site of "Candi Negeri Baru" can be included as one of the temple buildings with the
background of the Hindhu religion of the 14 AD Majapahit which was outside Java Island. Until now,
this temple is the only finding of a temple from the Majapahit era, in 14 AD in West Kalimantan.

Figure 3. Situation Map of “Candi Negeri Baru” Site in Negeri Baru, Ketapang, West Kalimantan
(Copy Right : Banjarmasin Archeology Center 2010)
Based on the site site map of "Candi Negeri Baru" (Fig 3), it is known that the temple complex is located in the sediment area of the Pawan River or watery swamp land known as the wetland area. As explained in the Kitab Silpa Prakāśa [9] and Manasara [10] the placement of a sacred building including the site of "Candi Negeri Baru" is related to ecological considerations. The ecological consideration in question is the selection of the location of the temple building, including the temple building, through two stages of land testing. The first stage, first observes the condition of the soil through observation or testing of the nine physical elements of the soil, namely the contour, color, smell appearance, taste, touch, surface flatness and the nature of plants. The points that were tested were not only passed for the construction of a temple building, but also for building a village, city, fortress, or house. The second stage carries out soil testing in more detail. Thus it is stated that even though a place has been assessed and selected based on observations or soil testing on the nine main points of observation, but the area of land where a building is proposed is still to be tested with more detailed testing techniques [11].

Furthermore, in the Kitab Śilpa Prakāśa, it is explained the need for builders to seriously consider what kind of land can be chosen or not selected based on the type of land. The first two types, namely “Brahmana land” and “Ksatrya land” constitute land that may be selected, while the latter two namely “Waisya land” and “Sudra land” are asserted as unselected lands. In simple terms, regarding the type of "Brahmana land", namely the type of soil containing clay, luminous, smells of pearl and smells good. The characteristic of "Ksatrya land" is that it has a reddish color, glows like fresh blood, and smells of acidity. The characteristics of “Waisya land” contain sand, are yellow, muddy, smell of salt, sometimes have a strong or moderate smell. The characteristics of "Sudra land" contain a lot of mud, are dark in color and have a foul odor. In the Kitab Śilpa Prakāśa it is also stated that land which contains a lot of sand is a good place for a building to be built. Land or soils that are not good and must be avoided are land without rivers, land full of gravel, land in the form of swamps and land where bodies are burned [9].

In addition to consideration of soil types, Manasara also explains that the location where the building is built is associated with horses, elephants, bamboos, reeds and water-snakes, cows and reptile species. Associated with the sacred fig tree, the nimb-tree, the asoka, the mango tree and poison tree [10]. The officers who are obliged to select, determine and examine the building land are asthāpaka and asthapati. After going through the determination and selection of the building land, then proceed to various stages of ceremonies, one of which is the purification of the land. Furthermore, the land was repeatedly plowed, watered and sprinkled with seeds from various types of plants in order to test its fertility to finally be plowed again and leveled and smoothed. The meaning of planting seeds is that the land becomes a reservoir for the seeds of everything that grows, so the temple seeds (garbha) are handed over to him so that the sacred building will absorb and develop the sari buried in the purified soil [12], [13].

The main ceremony of the series of "temple seeding" is called "garbhadāna". At night the Sthāpaka on behalf of the Yajamāna puts "garbhapātra" on the brahmasthāna section. The garbhapātra is a vessel, usually bronze but can also be of any other material which is divided internally into 9 to 25 squares, each for the representative of the wāstupuruşamandala gods. The boxes are filled with various kinds of objects which constitute the wealth of the land such as various types of agate, metals, plants, seeds and soil as well [13].

Based on the rules in the Kitab Śilpa Prakāśa [9] and Manasara [14], this research examines the ecological considerations of placing the “Candi Negeri Baru” site outside Java Island, namely on the land of Bumi Borneo, Ketapang, West Kalimantan. Based on the environmental situation map, the “Candi Negeri Baru” site is a swamp or wetland environment, mainly in the form of the sedimentation environment of the Pawan River. If this is true, then the ecological considerations for the construction of the temple at the "Candi Negeri Baru" site are no longer in accordance with the ecological rules stipulated in the Kitab Śilpa Prakāśa- Manasara. To prove this hypothesis, it is necessary to conduct a soil test study or soil layer in the site environment of "Candi Negeri Baru" [15].

2. Methods

This research method is a desk research category that examines the results of previous research, namely the site research "Candi Negeri Baru", in 2010, 2011 and 2016 AD.
conducted by the research team of the Banjarmasin Archeology Center / South Kalimantan Archaeological Center. To support the updating of data from previous research, it was also supported by a surface survey of the temple environment, the shape and architecture of the temple and the location of the temple in the natural physical environment in Negeri Baru, Ketapang, West Kalimantan [16]. Research related to the environmental stratigraphy of the “Candi Negeri Baru” site has been conducted by Cahyaningtyas (2013) through a geological approach, but has not yet been linked to aspects of ecological considerations regarding soil types contained in the *Kitab Silpa Prakāśa- Manasara* [17]. In connection with this problem, the aim of the study was to determine the ecological considerations for the placement of the temple complex with the background of the Hindu Religion on the site of "Candi Negeri Baru", Ketapang, West Kalimantan. Does the construction of temple buildings: sacred buildings in West Kalimantan where the environment is mostly swampy and watery environment (wedland ecology) still refers to the rules recommended in *Śilpa Prakāśa-Manasara*?

3. Results and Discussion

3.1. Physiographic and Stratigraphy Observations in the Ketapang Region

It has been explained in the description above, that the “Candi Negeri Baru” site is in the Ketapang landscape area, West Kalimantan. The following shows the observations of Cahyaningtryas (2013), physiography and stratigraphy of the Ketapang region [17]. The physiography of the Ketapang area in West Kalimantan is generally a peneplain to the east which gradually becomes a wavy landscape. This undulating landscape is made up of hills and further to the east are mountainous highlands. In this connection, the Ketapang landscape can be differentiated into alluvial and littoral coastal plains, undulating lowlands and mountainous highlands [18].

The alluvium and littoral coastal plains are flat areas with less river flow and are generally swamps. This area is wide, stretching from the west coast of West Kalimantan to the interior as far as 70 km. This area is characterized by the meander river and “oxbow” lake in the form of hard rock geological formations, namely granite outcrops and volcanic rocks. This area is also covered with mangroves, mainly thriving along rivers and the west coast of West Kalimantan [17].

The low, wavy land is generally located in lowland areas with rolling hills in the form of rounded hills. The rounded hills are between 500 m - 600m above sea level and specifically in the eastern part, it reaches an altitude of 800 m. The drainage pattern is dendritic with several large rivers flanked by floodplains and swamps.

The mountainous highlands are characterized by steep slopes, high relief, young topography and V-shaped valleys with strong and high levels of erosion. This plateau coincides with part of the border between West and Central Kalimantan, forming a ridge and the protrusion is separated by the Biaya River and its tributaries that cut through a wide valley [17], [18].

The results of the stratigraphic observations of the Ketapang area generally consist of Malihan Pinoh Rock, Ketapang Complex, Split Granite, Laur Granite, Sukadana Granite, Sangiyang Granite, Retas and Mafic and Felsic Siles. Kerabai Volcanic Rocks, Flower Basalt, Sintang Breakthrough Rocks, Taulus and alluvium deposits and swamp deposits. The base of Ketapang is granite and volcanic rocks that are scattered and separated by pre-Tertiary sedimentary outcrops and a few deep malihan rocks [17], [19].

The Ketapang complex consists of psamite rock and layered in a pelitic, medium to thin layered manner, varying in various ways by thermal debris and hydrothermal changes: claystone, fine to coarse sandstone which is clay, arenite contains volcanic rock fragments, shale, slab, limestone, and forming layers with an inclination of 30º to 90º. Cleavage granite consists of dark gray monzonite and biotite, rounded senolite and possibly from sediment products. Laur granite consists of biotite-horblende monzogranite and horblende-biotite granodiorite. Sangitang Granite consists of fine-grained, leucocratic, leucoblede, fine-grained feldspar feldspar, with allotriomtric texture in Sangiyang Hill.
Kerabai volcanic rocks, generally in the form of andesite and basalt, quartz keratophyte, dacite, riodasite and general rhyolite. The Flower Basalt consists of solid black to dark gray basalt, with greenish-gray dacit and andesite members; lava, lithic-crystalline tuff and volcanic breccia, namely sandstones overlapping the Kerabai Volcano Rocks in the southeast of Bukit Bunga. The Sintang Breakthrough Rocks consist of glass riodasite tuff or welded arrangement of very fine volcanic rock fragments. Alluvium deposits and swamp deposits consist of gravel, sand, silt, mud, peat and inseparable blocks [17]. Based on the description above, it is known that the Ketapang stratigraphy consists of Malihan Pinoh Rock, Ketapang Complex, Split Granite, Laur Granite, Sukadana Granite, Sangiyang Granite, Retas, Kerabai Volcanic Rocks, Flower Basalt, Sintang Breakthrough Rocks, Talus and Alluvium Deposits and swamp deposits. The position of the site “Candi Negeri Baru” is in alluvium and watery swamp deposits or in the wetland environment.

3.2. Physiographic and Stratigraphic Observation Results of "Candi Negeri Baru" Site

Based on the results of the survey around the site conducted by Cahyaningtyas (2013) and also the results of the ground level survey around the Keramat Tujuh and Keramat Sembilan grave complexes, an overview of the physiography of the site "Candi Negeri Baru" can be presented [17]. The general physiographic description of the site is located on the banks of the Pawan River approximately 20 km to the east of the City of Ketapang, West Kalimantan. The site is located more than 100 m from the west bank of the Pawan River. Meanwhile, the range of elevation figures for the “Candi Negeri Baru” site ranges from 0 m to 2.5 m above the water level of the Pawan River.

The physiography of the "Candi Negeri Baru" site contains only one type of landscape, namely in the form of a flood plain which originates from the fluvial origin. The topography of the landform in the "Candi Negeri Baru" site has a slope of 0 ° to 0.5 ° and is dominated by sedimentary or depositional landforms. Based on the results of the ground surface survey, it can be concluded that the landform of the "Candi Negeri Baru" site is the coastal and littoral alluvium plains [19]. The results of the stratigraphic description of the site "Candi Negeri Baru" were obtained from the stratigraphic observations of the excavation box (Fig.4).

![Figure 4](Document of Banjarmasin Archeology Center 2016)
The stratigraphic sections are made or observed based on the trajectory of the excavation box S2B2 - S2T9 which traverses west-east and the path of the excavation box U2T1 - S12T1 which traverses north-south. The track box with a west-east direction includes 8 excavation cities measuring 2 m x 2 m, namely boxes S2B2, S2B1, S2T4, S2T5, S2T6, S2T7, S2T8 and S2T9 (Fig.5). The depth of the boxes ranges from 45 cm - 100 cm. The excavation box used on the north-south route is the excavation box path U2T1-S12T1 (Figure). There are 10 excavation boxes consisting of the excavation boxes U2T1, U1T1, S3T1, S4T1, S5T1, S6T1, S7T1, S8T1, S11T1 and S12T1 (Fig.6). The track boxes are trending north-south, which is around 20 cm - 130 cm.

Based on the description of each layer of the excavation box used as the stratigraphic trajectory above, in general, the stratigraphic order of the excavation box for the site "Candi Negeri Baru" from the top layer to the bottom layer, consists of layers:

1. Black humus sand deposition layer. This layer consists of black humus sand deposits having a general description as follows, blackish gray color or Munseel scale 3/1 very dark gray 7.5, grain size ranging from coarse sand to silt. In this layer there are many roots, the sedimentary structure is not visible with varying thicknesses, namely between 20-25 cm.

2. The bottom layer is a layer of brown humus sand sediment. This deposit has a general description, as follows, 7.5 yr 7.5 dark brown on the Munsell scale, the size of coarse sand to clay, the sedimentary structure is not visible in this layer. In this layer some roots are still visible, the layer sorting is rather poor, the grain shape is slightly rounded and the thickness of the layer varies between 15 - 27 cm.

3. The bottom layer is a dark brown loose sand sediment layer. And has a general description as follows 3/3 very dark brown 7.5 yr on the Munsell scale, grain size of coarse sand to fine sand, the structure is not visible, sometimes it is still visible in several places, medium to good sorting and the thickness of the layers varies between 20 - 31 cm.

4. The lowest layer is the yellow-brown loose sand sediment layer. This layer has the following description: 4/6 dark yellowish brown 10 yr color on the Munsell scale, grain size of very coarse to medium sand with a layer thickness between 30-39 cm [17].

![Figure 5. Stratigraphic skema of trajectory of the excavation box S2B2 - S2T9](Source : Cahyaningtyas 2013, page 35)
Based on the exposure to the sediment layer mentioned above, it can be argued that the stratigraphy of the "Candi Negeri Baru" site from the bottom up there are four layers of deposition, namely (1) the lowest layer is a yellow brown loose sediment layer with a thickness of 30-39 cm, (2) sand sediment. loose yellow brown with a thickness of 20 - 31 cm, (3) a layer of brown humus sand sediment with a thickness of 15 - 27 cm, and (4) the top layer is a layer of black humus sand sediment with a thickness of 20-25 cm. Based on the stratigraphic description from the bottom up, the sedimentation process of the "Candi Negeri Baru" site can be described as follows: (1) the sedimentation process at the "Candi Negeri Baru" site begins with deposition of very coarse sand to moderate sand followed by the development of a maze cross structure, (2) then followed by a sedimentation process which is very rich in shells and its fractions, (3) the next deposition process is in the form of direct deposition in the form of coarse to fine sand with dark brown color and (4) the deposition process in the form of brown sand and black sand of coarse sand to loam. Based on the observations of the deposition process, it can be stated about the depositional environment of the "Candi Negeri Baru" site. Initially the site "Candi Negeri Baru" was in the form of a coastal environment and then changed to a river environment, changing again into a land environment on the banks of a river. In short, it can be concluded that at first the site environment of "Candi Negeri Baru" was on the coast and then changed to a land area on the bank of the river as far as 20 km from the present coast. This is due to the rapid fall in sea levels.

3.3. Discussion

Based on the description of the results of observations of the sedimentation environment of the "Candi Negeri Baru" site, it can be concluded that the physiography of the site is located on the bank of the Pawan River approximately 20 km to the east of the City of Ketapang, West Kalimantan. The site location is about 100 m from the west bank of the Pawan River. The altitude range ranges from 0 m to 2.5 m above the water level of the Pawan River. The site landscape is in the form of a flood plain from the fluvial origin and is the result of sedimentation, so that the site landscape can be included in the coastal and littoral alluvium plains. Based on the results of stratigraphic observations through the excavation box, it is known that the top layer in the form of black humus deposits has a general description of a gray-black color with a layer thickness between 20-25 cm. Thus the location of the site "Candi Negeri Baru" was currently on land in the form of an environment for river and swamp deposition.

If the land sediment is correlated with land in the Kitab Mānasāra-Śilpaśāstra [14], it can be
categorized as land of the “Sudra land” type, which contains a lot of mud, is dark in color and has a bad smell. The basic reason for being included as “Sudra land” type land is because it contains a lot of mud which is reflected as swampy sediment and in high tide, so that during high tide the site is flooded by rivers many times. The dark color is associated with the soil type which is blackish gray and foul smelling because the site environment is in the sediment of rivers and marshes. Thus it can be concluded that the land, which is the top layer of the “Candi Negeri Baru” site based on the rules in the Kitab Mānasāra-Śilpaśāstra, it is not allowed to build sacred buildings including the temple buildings on the “Candi Negeri Baru” site. However, this needs to be tested through the stratigraphic trajectory of the excavation box and it should be noted that the top layer is not the first layer, the temple building is placed on the site "Candi Negeri Baru".

In connection with this, the following results are presented in the stratigraphic observations of the "Candi Negeri Baru" site from the bottom to the top in accordance with the law of superposition. In the law of low of superposition, among other things, it is explained that the lowest layer or stratigraphy is the earliest cultural layer and then the stratigraphy of the next cultural layer is followed. Thus the top stratigraphy represents the present cultural layer [20].

It has been explained in the results of stratigraphic observations that the stratigraphic site of "Candi Negeri Baru" consists of four layers of deposition. The following briefly describes the site stratigraphy from the bottom - above. The lowest layer (fourth layer) is a layer of loose brown sand sediment with a thickness of between 30 cm - 39 cm and a depth of about 65 - 130 cm from the present soil surface. This fourth layer is the depositional layer when the temple building is built or is called the first cultural layer and is the landscape and type of soil when the temple building is built (Fig.6).

The results of the deposition environment analysis show that the fourth layer is the upper layer of the coastal surface, namely the estuary mouth [17]. Thus, the initial place for the construction of the temple on the “Candi Negeri Baru” site is a coastal environment, with a dark yellowish brown soil-type environment. If this is related to the type of soil stipulated in the Kitab Mānasāra-Śilpaśāstra [14], the land is of the “Ksatria land” type, which is reddish in color including yellow-brown and contains little sand or loose sand, and smells of acidity. Thus, the land where the sacred building is built, namely the temple on the "Candi Negeri Baru" site, fulfills the requirements according to the rules for ecological consideration of the placement of the sacred building. Based on the Kitab Mānasāra-Śilpaśāstra, the placement of sacred buildings is also determined to be associated with sea and river transportation routes, various kinds of aquatic fauna such as reptiles, water snakes and turtles and various flora such as bamboo and mango plants. It is known that bamboo and mango plants generally thrive on the west coast of West Kalimantan and the environment on the west coast of West Kalimantan also contains a lot of aquatic fauna such as beach crocodiles, turtles and water snakes.

In the placement of sacred buildings, it is very difficult to find land of the "Brahmin land" type which contains clay, glows like pearl dust and smells good, is very difficult. Land of the type of "Brahmana land" is usually used for sacred royal buildings or shrines to the king as well as the surroundings of the Borobudur Temple, Prambanan Temple in Central Java, Singosari Temple, Malang and the Panataran Temple complex in Blitar, East Java [21], [22]. From the stratigraphic observations of the "Candi Negeri Baru" site, the land of the "Barhmana land" type is hard to find. One of them is the soil type which contains luminous clay such as pearl dust and smells very rare on the west coast of West Kalimantan.

From the results of this discussion, it can be concluded that the ecological considerations for placing the temple building on the site of "Candi Negeri Baru" even though it was established outside Java still adhere to the rules for building the temple recommended in the Kitab Mānasāra-Śilpaśāstra, namely in the land of the "Ksatrya land" type. The land environment is in the coastal surface environment and based on the analysis of the depositional environment of the fourth, third, second and first layers (from bottom to top), the cultural process of the existence of the "Candi Negeri Baru" site can be reconstructed. Initially the temple building on the site "Candi Negeri Baru" was erected on land of the coastal depositional environment, then over time the coastal deposition environment:upper shoreface changed to a river depositional environment:upper estuary, bay head delta channels, then changed to a land environment which is located in the riverbank environment:fluvial channels as it is today, until the site "Candi Negeri Baru" was rediscovered, for the first time by the research team of the Center for Research on Archeology and National Heritage in 1977 AD and followed up by a
planned research by the research team of the Banjarmasin / South Kalimantan Archaeological Center in 2010, 2011 and 2016 AD.

4. Conclusions

As explained in the introduction, the "Candi Negeri Baru" site is located on land of humus sand sediment type, is in a river and swamp sediment environment, and is situated on the west bank of the Pawan River. Based on this, the ecological consideration of the placement of the "Candi Negeri Baru" site based on the reference of the Kitab Mānasāra-Śilpaśāstra is a type of land of "Sudra land". In the Kitab Mānasāra-Śilpaśāstra, the land of the “Sudra land” type cannot be erected, thus the ecological consideration of the placement of sacred buildings: temples outside Java, namely in Negeri Baru, Ketapang are thought to have failed to comply with the rules for ecological consideration of temple placement recommended in the Kitab Mānasāra-Śilpaśāstra. On this basis, the research was carried out based on the stratigraphic observations of the depositional environment of the site "Candi Negeri Baru" in several excavation boxes.

Based on the stratigraphic observations of the excavation box along the S2B2 - S2T9 trajectory which is west-east and the U2T1 - S12T1 excavation box trajectory that runs north-south, a stratigraphy of four depositional layers is obtained. The settling layer is then from bottom to top called the fourth settling layer, the third layer, the second layer and the first settling layer. The stratigraphy of the fourth depositional layer has a thickness between 30 - 39 cm and a depth of between 50 cm - 130 cm. This fourth depositional layer is the initial land layer where the sacred building of the "Candi Negeri Baru" was built [23]. The results of the analysis of Canhyaningtyas (2013) based on Arroyo and Gentzler's depositional model, suggest that the fourth stratigraphic layer consists of layers of loose sand, dark yellowish brown [17]. The size of the sand grains is very coarse to medium sand, the structure is not visible, the sorting is good and the sand grains are tapered. Based on this depositional layer, the fourth stratigraphic layer is the upper shore face, so it can be concluded that the temple building on the “Candi Negeri Baru” site was originally built on the land by the coast.

The land of the fourth layer type of soil if it is related to the land regulated in the Kitab Mānasāra-Śilpaśāstra can be categorized as land of the “Ksatrya land” type, which is reddish in color, luminous and smells of acidity. Thus the initial erection of the temple building on the fourth depositional layer of land which is the land surface of the coast does not violate the rules suggested in the Kitab Mānasāra-Śilpaśāstra. Based on this, the ecological considerations of placing the temple in the “Candi Negeri Baru” site, Ketapang, West Kalimantan do not violate the rules recommended in the Mānasāra-Śilpaśāstra Book. Established on land type "Ksatrya land", associated with river and river transportation routes, associated with reptiles, water snakes and associated with bamboo and mango plants. In other words, although outside Java Island, namely on the west coast, West Kalimantan, which is generally in the form of river and tawa-marsh sedimentation environment: a type of "Sudra land", in the process of erecting sacred buildings: temples still refer to ecological considerations set out in the Kitab Mānasāra -Śilpaśāstra.

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