



THE IMPLEMENTATION OF *MANASARA-SILPASASTRA* AS A FACTOR IN THE SELECTION OF THE POSITION OF *PETIRTAAN DEREKAN* IN THE COMPLEX OF NGEMPON TEMPLE, SEMARANG, CENTRAL JAVA

Penerapan Manasara-Silpasastra sebagai Faktor yang Memengaruhi Pemilihan Letak Petirtaan Derekan dalam Kompleks Candi Ngempon, Semarang, Jawa Tengah

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Abstrak

Terdapat beberapa petirtaan di Jawa Tengah yang merupakan bagian integral dari sebuah candi. Fenomena ini dapat dilihat pada tata ruang Candi Ngempon yang terletak tidak jauh dari Petirtaan Derekan. Penelitian ini bertujuan untuk menganalisis penerapan kitab *Manasara-Silpasastra* yang memengaruhi tata letak petirtaan dengan suatu candi sebagai satu bagian integral. Penelitian ini dilakukan dengan analisis data sekunder yang diperoleh dari studi pustaka dan wawancara. Data sekunder tersebut kemudian menjadi dasar dilakukannya *crosscheck* dengan melakukan pengamatan lapangan. Dari metode tersebut diperoleh kesimpulan bahwa tata ruang *Pechaka* dalam *Manasara-Silpasastra* diduga menjadi dasar pemilihan letak Candi Ngempon yang berada di sisi timur laut Petirtaan Derekan sehingga menunjukkan adanya penerapan kitab *Manasara-Silpasastra* dalam kasus ini.

Kata Kunci: *Petirtaan, Candi Ngempon, Tata Ruang.*

Abstract

There are several *petirtaans* or bathing structures in Central Java that become an integral part of a temple complex. Such a phenomenon can be seen in the layout of Ngempon Temple and *Petirtaan Derekan* which are located close to each other. This research aims to analyze the implementation of the book of *Manasara-Silpasastra* in the layout of *Petirtaan Derekan* and Ngempon Temple as an integrated whole. The research was carried out by analyzing secondary data obtained from a literature review and interviews. The secondary data were corroborated with data obtained from field observations. Results of the analysis indicate that the layout of *Pechaka* in *Manasara-Silpasastra* might become the basis for the positioning of Ngempon Temple at the northeast of *Petirtaan Derekan*. This shows that the book of *Manasara-Silpasastra* might be implemented in the layout of the complex of Ngempon temple.

Keywords: *Petirtaan, Ngempon Temple, Layout.*

INTRODUCTION

Petirtaan or *patirthan* is a word originating from the Ancient Javanese word *tirtha*, which means 'water'. The prefix *pa-* and the suffix *-an* were added to the word, resulting in a new word *Patirthan*, which means 'a holy or sacred bathing place or a

pilgrimage place' (Zoetmulder, 1994, p. 1261). *Petirtaan* is essentially an integral part of a religious holy building of Hinduism or Buddhism. This is so because *petirtaan* is the place for a visitor to perform self purification before making a pilgrimage or

performing the ritual of *puja* at a temple (Santiko, 2012, p. 22). The book of *Manasara-Silpasastra* explains one requirement for the position of a temple that symbolizes its holiness, which is that it has to be close to a spring, because water has the potential for cleaning, purifying, and fertilizing, and because a spring may function as the centre of worship (Sudaryati & Adnyana, 2018, p. 111). Kramrisch (Sudaryati & Adnyana, 2018, p. 111) stated that the locations of a religious complex as a whole and its nearby spring are more important than the position of the temple itself. This shows that the positions of the land and the spring become the main consideration in the selection of a place where a temple will be built (Sudaryati & Adnyana, 2018, p. 111). The spring structure in a religious complex has to be built first. The temple has to be built close to the spring because water has a very important role in human life. Gods will not be willing to visit a holy place that has no water pool (Sudaryati & Adnyana, 2018, p. 111). Water as the symbol of holiness is mentioned in the book of *Adiparwa*. The book states that water or *tirtha* has the function of cleaning all *mala* (dirt), which is called *samanta pancaka tirtha*. Water may clean all the *mala* of a king who dies in a war. If the king takes a bath using the water from a holy place, his *mala* will be gone and he will go to the paradise (Sudaryati & Adnyana, 2018, p. 111).

Petirtaans, which have a connection with temples are often mythologically related to the symbol of mountain manifested in the forms of temple and sea. This shows that a *petirtaan* is related not only to the physical aspect, i.e. sea, which evaporates to form clouds, which turn to be rain, which fertilizes soil, but also to the preservation of sanctity, which is the function of a *petirtaan* itself (Sumerata, 2013, p. 222). Nareswara (1993) in his thesis titled “*Pengertian dan Fungsi Petirtaan pada Masa Klasik di Jawa*” (“The

Conception and Function of *Petirtaans* in the Classical Era in Java”) explained the function of *petirtaans* by referring to the conceptions of *petirtaan* developed in India and Java. However, like other studies that deal with *petirtaans* in Java, his study does not specifically discuss the selection of the position of *petirtaan* based on the book of *Manasara-Silpasastra*.

There may be other factors that have some influence on the selection of the position of a *petirtaan* from the practical and efficiency perspectives. A spring may be selected to be developed to be a *petirtaan* because its location is ideal and the water is abundant (Sumerata, 2013, p. 221). However, certain layout rules, like the one explained in the book of *Manasara-Silpasastra* or *Vastupurusamandala* from India, still become a key factor in the selection of the position of a *petirtaan*. Due to this, this research aims to find out whether the selection of the position of the *petirtaan* in temple complexes build during the classical period of Central Java was based on the book of *Manasara-Silpasastra*. The objects considered to be ideal to be investigated in the case study here are Ngepon Temple and *Petirtaan Derekan*, which are located in Semarang Regency, Central Java. Both sites are close to each other. The layout of the two sites and factors underlying the selection of their locations can be analyzed comprehensively.

Rahadian and Fery (2015) have investigated the typology of *petirtaans* built in the classical periods of Java and Bali. They established five typologies based on the *petirtaans*' typomorphology, layout, depth, locations, and water types. Based on its typomorphology, *Petirtaan Derekan* belongs to the category of ‘rectangular *petirtaan* temple’. Based on its layout, *Petirtaan Derekan* belongs to the category of ‘stand separately’. Based on its depth, *Petirtaan Derekan* belongs to the category of ‘deep’. Based on its location, *Petirtaan Derekan* belongs to the category of ‘above a

spring. Based on its water type, *Petirtaan* Derekan belongs to the category of 'hot water'. Based on its *bhauma* or spring type (according to an Indian classification), the water in a *petirtaan* belongs to the type of *audhiba*, in which the water comes out with pressure from a spring (Krishnamurthy, 1996, pp. 329-330). Besides Rahardian and Fery, Degroot (2008) has also conducted a study, in the form of short survey, on *petirtaans* in Central Java. Degroot did not analyze *Petirtaan* Derekan, but he concluded that the Indian influence on Central Javanese *petirtaans* is minimal. The Indian influence can be seen more in East Javanese *petirtaans*. Degroot (2008, p. 66) studied the typology of classical *petirtaans* in Central Java based on their geographical conditions. He doubted the function of *petirtaans* in Central Java as the place for self purification before entering a temple. Degroot emphasized that the positioning of a *petirtaan* is fully based on geographical consideration.

Besides Rahardian and Fery, Nareswara (1993) has also studied the typology of *petirtaans*. Nareswara classified several types of *petirtaans* and the relationship between the types of *petirtaans* and their functions. He classified *petirtaans* into three categories, namely, the *petirtaan* close to a temple, the *petirtaan* related to the layout of a town, and the *petirtaan* close to a *kraton* (Javanese palace). These three categories are related to the function of *petirtaans* in its connection with the existence of a holy building close to them and the hermitage inside them that stands separately. Meanwhile, *petirtaans* related to the layout of a town or located close to a *kraton* are more related to the conception of cosmology that the capital city of a kingdom functions not only as the political centre, but also the magical power of the kingdom (Nareswara, 1993, p. 117).

Manasara-Silpasastra is the book used by the Indian community as a reference to determine all things related to architecture

including the architecture of *petirtaans* and other holy buildings. The book of *Manasara-Silpasastra* consists of 60 chapters that discuss all building types, the layout of a building, furniture, ornaments, clothes, sculpture, and the principles of selecting the location of a building (Acharya, 1934b, p. 1). Actually, it is still debated whether the book of *Manasara-Silpasastra* was used as a reference to build temples in Indonesia. The implementation of the book in the selection of the location of a temple has been discussed by some scholars, who have recommended that it be studied, but this has never been done due to the assumption that geographical differences between Indonesia and India are too big (Mundarjito, 1993, pp. 239-243). Another source stated that the book of *Manasara-Silpasastra* was never fully implemented in Indonesia, especially during the Majapahit era, because the book was adapted in such a way to the development of knowledge and skills in the building of religious structures during the classical period in Indonesia so that in the Majapahit or late classical period, *Manasara Silpasastra* was not used anymore or a new book resulting from an adaptation of the book of *Manasara-Silpasastra* with the Indonesian culture and environment appeared (Munandar, 2015, pp. 131-133).

A research based on *Manasara-Silpasastra* has been carried out to calculate the number of workers building a temple (Munandar, 2015, pp. 142-152). The result of the research is an estimated formula for calculating the number of workers building a temple based on the temple's dimensions. Another research based on *Manasara-Silpasastra* has been conducted by Hidayah, Suryani, and Antariksa (2016). The results of their research show that there is a connection between the proportions of Angka Tahun Temple and Sawentar Temple in Blitar and that of *Santika* in *Manasara-Silpasastra* (Hidayah, Suryasari, & Antariksa, 2016, p. 9). Unlike the results of some previous researches, the results of the

analysis of the height and width of the gate of Gebang temple show that they are different from the ones specified in *Manasara-Silpasastra*. Therefore, it can be concluded that not all the temples in Indonesia were built according to the principles of building a holy structure adopted in India (Indradjaja, 2000, p. 73). Considering all this, it is hoped that this research will provide some contribution to the development of discourse on the implementation of the book of *Manasara-Silpasastra* in Indonesia.

The principles of laying out a religious complex that are used for the analysis in this research are taken from one section in Chapter 7 of the book of *Manasara-Silpasastra*, which discusses the layout of a religious complex. Line 60 in the section states that a *petirtaan* and a general place of worship has the layout of *Pechaka*. Lines 57-59 explain that in the layout of *Pechaka*, an area is divided into four squares and delimited by eight lines. The squares are located in the cardinal directions of North, South, East, and West respectively. Each of the directions corresponds to a certain god (Acharya, 1934a, p. 428). In the section of the layout of *Pechaka*, it is stated that Shiva is placed in the northeast, Agni in the southeast, Pavana in the southwest, and Gagana in the northwest. The analysis in this research is conducted to find out whether the layout of *Pechaka* was implemented in the positioning of *Petirtaan* Derekan in the complex of Ngempon Temple.

METHOD

This research applied the method of inductive reasoning, which was started by making an observation of the layout of the complex of Ngempon Temple, specifically the positioning of *Petirtaan* Derekan in the complex. Results of the observation were analyzed with the theories related to some previous researches, namely the theory of the layout of temples built during the Central Javanese period and the theory of *petirtaans*

as an integral part of a temple complex, which has been mentioned above. These two theories become the basis for formulating conclusions and developing new theories based on the results of this case study.

For collecting data, two methods, archaeological survey and literature review, were applied. The data collection with the method of archaeological survey was conducted by (i) making an observation and exploration on the site and the surrounding environment and (ii) making a short interview with the caretaker to obtain some information about the site. Documentation was then conducted by recording visual data so that the data could be analyzed more deeply. The documentation used an appropriate scale so that the measurement can be recorded correctly according to archaeological research principles.

The data collection with the method of literature review was conducted by reviewing various references considered to be relevant to the answering of the research questions.

RESULTS AND DISCUSSION

1. Description of the Site

Administratively Ngempon Temple is located in Ngempon Village, Bergas Sub-district, Semarang Regency, Central Java Province. Astronomically Ngempon Temple is located at $110^{\circ} 26' 40''$ East Longitude and $07^{\circ} 11' 34''$ South Latitude. The area is 2,250 m². Ngempon Temple is more or less 50 m north of Kedung Dowo River, which is also known as Tempuran River. The temple is located at the northern side of the stream valley of Kedung Dowo River, so that topographically the site of the temple tends to be higher at the northern side. The temple is surrounded by rice fields (Figure 1). Based on its architectural features, Ngempon Temple can be categorized as a Hindu temple built in the 8th-9th century (BPCB Jawa Tengah, 2014, p. 3). Ngempon Temple (Figure 2) is a temple complex that consists



Figure 1. Rice fields and Kedung Dowo River, which are close to Ngempon Temple (Source: Prakosajaya and team, 2020).



Figure 2. Ngempon Temple (Source: Prakosajaya and team, 2020).

of five *perwara* (accompanying) temples and one main temple. The main temple faces east. Two *perwara* temples at the northern and southern sides of the main temple also face east. Meanwhile, the other *perwara* temples face west and the other two *perwara* temples and the main temple. At a glance,

the layout of Ngempon Temple is identical to that of Prambanan Temple. The dimensions of the main temple are 3.77 m x 3.87 m with the height of 4.45 m while those of the *perwara* temples that have been restored are 2.85 m x 2.85 m with the height of 4.15 m. The four temples that have been



Figure 3. Petirtaan Derekan (Source: Prakosajaya and team, 2020).

restored are decorated with various ornaments depicting flora and fauna. An ornament of swan can be seen at the outer corner of the stairs leading to the door of the main temple. Ornaments of flowers and flowers with a strand of pearls can be seen on the temple's foot, and ornaments of

flowers with various fauna including goats can be seen on the temple's body. Ornaments of *genta* and *kinara kinari* can be seen on the niches of the main and *perwara* temples. Ngempon Temple was in ruins when it was found. The temple was restored step by step in 2006 and 2009 by the Central



Figure 4. An aerial photo of the complex of Ngempon Temple (red arrow) and Petirtaan Derekan (red circle) (Source: Google Maps with some modification, 2020).

Java Office of Cultural Heritage Preservation. The main temple and the *perwara* temple north of it were restored in 2013. The two *perwara* temples that face west and the main temple were excavated in 2014 to find their *peripih* (amulets or talismans put in a container). However, the *peripih* could not be found. During the restoration process, the foundation of the four temples was reinforced with cement concrete for conservation purposes BPCB Jawa Tengah, 2009, p. 7).

The *petirtaan* related to the layout of Ngempon Temple is *Petirtaan Derekan*, which is located 100 m southwest of the temple. *Petirtaan Derekan* (Figure 3) is a square-shaped bathing pool found in 2009. This *petirtaan* is made of andesite stone and in the middle of it there is a hot spring whose water contains sulphur. The length of the *petirtaan* is 512 cm, its width is 514 cm, and its depth is 150. The pool wall is made of six layers of andesite stone. The stairs leading to the pool gate are placed at the eastern side of the *petirtaan*. There is a niche at the southern side of the *petirtaan*. There used to be a statue of Ganesha inside the niche. A couple of statues were found in the middle of the pool. The statues cannot be identified and interpreted as character figurines. Now the three statues are being stored in the Central Java Office of Cultural Heritage Preservation. Around the *petirtaan*, twelve bases were found and they have been left in situ. Their dimensions are 30 cm x 30 cm (Balai Arkeologi Yogyakarta, 2017, p. 54). The bases indicate that *petirtaan Derekan* used to have roof that was made of wood or another perishable material. *Petirtaan Derekan* is a living monument, which can be seen from the fact it is used by some Hindu people to perform a ceremony twice a year. The reutilization of *Petirtaan Derekan* as a place of worship shows that its current function and use are different from its original ones. Therefore, reconstruction using the method of ethnoarchaeology will not be possible. *Petirtaan Derekan* and

Ngempon Temple are relatively close to each other (Figure 4). Both are separated by a river and connected by a bridge as described earlier.

2. Data Analysis

As can be seen on figure 5, Ngempon Temple is located in the southeast of *Petirtaan Derekan*. Considering the position of *Petirtaan Derekan* relative to Ngempon Temple, in which *Petirtaan Derekan* is placed at the axis, it can be seen that such positioning conforms with the layout of *Pechaka* as specified in the book of *Manasara-Silpasastra* (Figure 2). This is supported by the positioning of the place for Shiva worship in the northeast area according to the layout of *Pechaka*. Like other temples in Indonesia, Ngempon Temple is a temple dedicated for Shiva worship, which is shown by the discovery of the statues of Shiva and Durga around the temple's foot (Ramelan et al., 2013, p. 59) and the statue of *lingga-yoni* in the ruins around the five *perwara* temples and the main temple. It is highly likely that these statues have been moved from their original place. The implementation of the layout of *Pechaka* for a public bathing structure in *Petirtaan Derekan* shows that this *petirtaan* was used for the public and supports the opinion of Degroot (2008) that the function of *petirtaans* in Central Java was not the same as that of most of the *petirtaans* in India, which are strongly connected to the existence of a temple or a worship place. The implementation of the layout of *Pechaka* is not found in the complex of Ngempon Temple if the temple is seen as the axis. This might be due to the fact that Ngempon Temple was used as a worship place not for the public, but for only a certain community.

There are some problems in interpreting the concept of *Pechaka* as stated in the book *Manasara-Silpasastra*; the book does not clearly explain how to interpret the positioning of the god of Shiva (Isa) in the northeastern side. In the case of *Petirtaan*



Figure 5. Illustration of the positioning of Petirtaan Derekan as the centre in the layout of Pechaka in which Petirtaan Derekan is in the axis and Ngempon Temple is in the square of Shiva /Isa (Source: Google Maps with some modification, 2020).

Derekan, the positioning of the god of Shiva in the northeastern side is manifested in the existence of Ngempon Temple as a temple for worshipping the god of Shiva, which is like the majority of other temples in Indonesia. Supposing that the complex of Ngempon Temple had been built according to the concept of *Pechaka*, besides a temple dedicated to the god of Shiva, there should be other places of worship for other gods, as specified in the concept of the layout of *Pechaka*, namely a place of worship for the god of wind (Pavana) in the southeast, a place of worship for the god of fire (Agni) in the southwest, and a place of worship for the god of sky (Gagana) in the northwest. The caretaker of Ngempon Temple said that there has been no discovery of structures, temple stones or other materials that may indicate the existence of classical artifacts outside the boundary fence of the existing archaeological site built by the Central Java Office of Cultural Heritage Preservation. However, the possibility of a discovery of new structures or materials related to the

layout of *Pechaka* should not be ruled out, although such a possibility is little considering that the gods other than the god of Shiva were not popular in Java. The second problem is related to the discovery of the statue of Ganesha and the other two statues around *Petirtaan Derekan*. The discovery of these three statues breaks the notion that the concept of the layout of *Pechaka* is implemented in *Petirtaan Derekan* and that *petirtaans* in Central Java have a profane function. Regardless of the various existing problems and criticisms, the selection of the position of the *petirtaan* in the complex of Ngempon Temple is in line with the book of *Manasara-Silpasastra* although it is the layout of *Petirtaan Derekan*, not that of Ngempon Temple, that becomes the main consideration. This research did not find any implementation of the concept of the layout as specified in *Manasara-Silpasastra* in Ngempon Temple. Therefore, the analysis of the selection of the position of *Petirtaan Derekan* based on the concept of the layout of a holy structure as

the axis needs to incorporate concepts of the layout of holy structures other than those specified in the book of *Manasara-Silpasastra*. However, other layout concepts and non-conceptual considerations, such as geographical and geomorphological factors, are not incorporated in the analysis here because they are not in line with the title and problems of this research.

The concept emphasized in India and Indonesia is that some saints visited *petirtaans*, causing the water to become holy and useful; the presence of the saints made the gods happy, so that they were willing to visit the *petirtaans*. (Nareswara, 1993, p. 55). *Petirtaans* that are close to a river are common in India. *Kundas* or holy pools have been built along Gangga River as an integral facility of a worship place or as a place of worship itself (Singh, 1994, pp. 217-223). Considering that water plays an important role in all of the Hindu ceremonies and rituals due to the belief that water is pure and can be seen as a form of worship for the gods (Krishnamurthy, 1996, p. 327), the positioning of Ngempon Temple at a place not far from a river and a *petirtaan* can be seen as an effort to strengthen the sanctity of Candi Ngempon, which is dedicated to the god of Shiva. This notion is against the theory that the selection of the location of a temple was based on such parameters as soil permeability, fertility, and absorption rate (Harriyadi, 2019, p. 134). These parameters are also taken from *Manasara-Silpasastra*. The spring factor was more important than the location factor. If a place in which a holy structure would be built did not have a spring, an artificial spring in the form of water pool could be built (Harriyadi, 2019, p. 134). Another evidence that the spring factor was more important than the location factor is the selection of the position of the temple in an area that is prone to landslides. The soil is volcanic and alluvial and the tilt angle of the land is 25% – 45% (Zulaikah, 2020, p. 63-66). Building the temple on such a hillside is like challenging disasters,

because when there is a landslide, the temple will be buried. This shows that the existence of a spring became the main factor in selecting the location of a holy building; although the location in which a holy building would be built was prone to disasters, the holy building would still be constructed as long as there was a spring close to it.

CONCLUSION

Ngempon Temple and *Petirtaan* Derekan are two cultural heritage sites built during the classical period of Central Java that show an integral layout. The two sites are integral parts of a complex of worship, which is in line with the concept specified in the book of *Manasara-Silpasastra*. Results of the analysis show that the selection of the position of *Petirtaan* Derekan in the complex of Ngempon Temple was in line with the concept of the layout of *Pechaka*. The implementation of this layout is manifested in the selection of the position of Ngempon Temple in the northeast of *Petirtaan* Derekan. This shows that the temple is dedicated to Shiva (Isa) - as has been explained earlier, in the layout of *Pechaka*, the temple dedicated to Shiva is placed at the northeast. The layout of the complex of Ngempon Temple as a manifestation of the implementation of the concept of *Pechaka* indicates the Indian influence on Nusantara at least during the classical period of Central Java. This case study shows that the implementation of *Manasara-Silpasastra* in the layout of cultural heritage sites built in the Hindu – Buddhist period is potential to study. This research involves only one case, so that the results cannot be used for generalization. However, they may provide an additional perspective and interpretation to the discourse on archaeology especially the Indian culture's influence on Nusantara in the Hindu-Buddhist period. The results of this research may become a basis for further researches that have a broader scope. Results

of those further researches may be used for generalizing a pattern of the selection of the position of a *petirtaan* in a temple complex built in the Hindu-Buddhist period in Nusantara based on *Manasara-Silpasastra*.

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