

## Identification of Spatial Pattern in *Pakungwati* as a Reflection of Architectural Transformation between Hindu-Buddhist and Islamic Palace in Jawa

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Received: January 29, 2019

Accepted: April 11, 2019

### ABSTRACT

Studies relating to the architectural transformation of Javanese Palace ranging from the late Hindu-Buddhist era of the Majapahit Kingdom to the subsequent Islamic era have not yielded any substantial revelations so far. This phenomenon can be said to suffer from a missing link. *Dalem Agung Pakungwati* is estimated to be one of the first palaces to have been established in the era of Early Islamic development on Java after the fall of the Majapahit Kingdom and is currently part of the *Kasepuhan* Palace in Cirebon, West Java. This study is expected to be an eye-opener leading to new insights, which can be used to examine the spatial pattern of the transitional palatial architecture from the Hindu-Buddhist Era to the Islamic Era. This research has been conducted with both the historical and qualitative approach. Through this study, the *Dalem Agung Pakungwati* Palace can be identified as showing a spatial pattern that contained the transformative Hindu-Majapahit concept of Islamic values. The findings obtained are expected to be used to reconstruct the local values in the form of understanding the spatial pattern of architecture as the genuine essence or identity of the archipelagic architecture that is sensitive to the appreciation of ancestral heritage.

**Keyword:** Palace, Transformation, *Pakungwati*, Islamic, Hindu-Buddhist

### INTRODUCTION

Javanese Palace are historical heritage buildings that illustrate the development of architecture in Indonesia along with the civilization behind it. The palace is considered to be the center of culture that has survived to this day, and it plays a very important role in urban life in Indonesia, both relating to the design of buildings and aspects of their environment. A palace can be considered as an embodiment of adaptive and dynamic architecture in response to the development of a particular era. Palace buildings (referred to as *Keraton*) have been around since the era of Hindu-Buddhism and continued during the period of Islamic expansion in Indonesia [1]. Studies related to the architectural transformation of palace on Java ranging from the late Hindu-Buddhist Majapahit Era to the Islamic Era are still lacking in terms of substantial revelations. This phenomenon can be said to entail a missing link in the context of its transformation.

The palace deemed to have developed in the era of transition, that is to say from the Hindu-Buddhist Era to the Islamic Era, is the *Dalem Agung Pakungwati* palace. It is located in the complex of the *Kasepuhan* Palace which was rejuvenated/renovated or modernized a few centuries later. The building pattern of the latter is outlined in a linear manner referring to the north-south axis as well as the more recent palace, known as the *Keraton Warisan Mataram Islam*, for example in Yogyakarta and Surakarta.

To connect the red thread between the architecture of the Hindu-Buddhist palaces and the architecture of the Islamic palaces, the *Dalem Agung Pakungwati* palace can serve as a bridge. Therefore, the study of this particular palace can be an important source of knowledge for the development of *Keraton* architecture in Indonesia, especially on Java. Based on artifacts in the field, the remains of the *Dalem Agung Pakungwati* are estimated to be recognizable so that it is possible to interpret the spatial architectural patterns through the reconstruction following the orientation of the arrangement. By employing the architectural typological approach [2] it is expected that spatial patterns and architectural forms can be identified.

### 2. RESEARCH METHODS

This research whas been conducted using the historical approach to understand the phenomena or aspects underlying the *Pakungwati* Palace's spatial design and its correlation with other manifestations of palace architecture found on Java, and with the Royal Puri Palace on Bali. Drawing a comparison with the latter is necessary for understanding

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spatial patterns in the Hindu context and in the context of Hindu-Buddhism. The Puri Palace on Bali can be considered as a continuation of the Majapahit tradition and style. The variables used in the analysis process are spatial planning in addition to mass and form. The analysis of this study has been conducted in a descriptive argumentative manner through the study of architectural morphology. To arrive at an interpretation, the spatial pattern and architectural orientation have been reconstructed. In general, the research steps taken consist of the following:

1. Reviewing and identifying matters related to the background of the *Pakungwati* Palace architecture in Cirebon, for example, covering historical, cosmological, cultural, ritual, geographical backgrounds through the study of relevant background literature, observations, and data collection regarding the object of study (method of observation and interviews); Reviewing matters related to phenomena that affect the architecture of the *Pakungwati* Palace.
2. Assessing the spatial pattern of *Pakungwati* Palace architecture in Java based on the morphology including its transformation.
3. Comparing spatial patterns and assessing *Pakungwati* Palace's analogous correlation with the architecture of the Majapahit Palace, the Puri Palace on Bali, and other Keraton palaces on Java from the Islamic era such as the ones found in Yogyakarta or Surakarta.

This knowledge can underlie the understanding of the reconstruction of the *Pakungwati* Palace's spatial pattern so that it can be used as a basis for understanding the development of the architecture of these early Islamic palaces on Java. Through this research the palatial heritage built in the early transitional Islamic era on Java is closely examined, which is estimated to have retained elements of Hindu-Buddhist architecture such as Majapahit. This research can open one's mind to the idea that the legacy of the Majapahit spatial pattern is actually estimated to be still recognizable in coastal areas on Java, besides the ones found on Bali.

### 3. RESULTS AND DISCUSSION

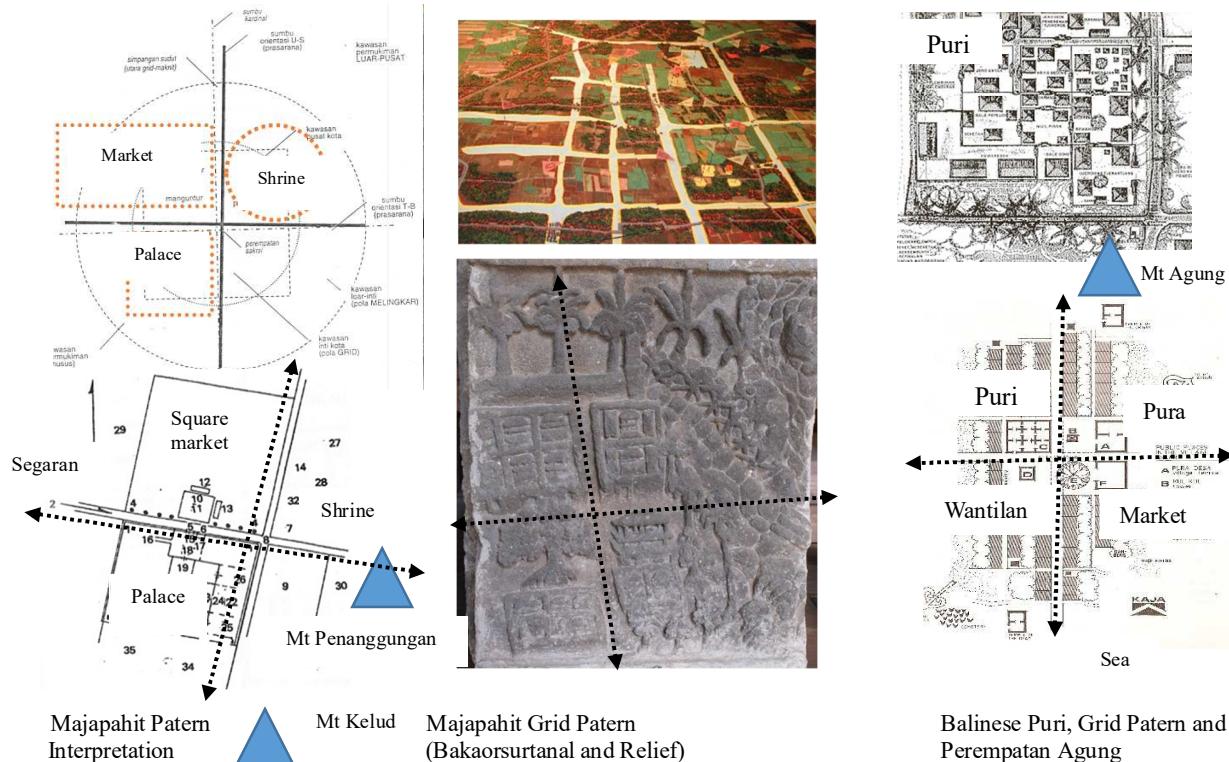
#### Spatial Patterns of the Majapahit Palace on Java and the *Puri* Palace on Bali

According to Hemanislamet [3] which considering the several interpretations of the arrangement of the city of Majapahit in Trowulan based on Kern, Maclaine Pont, Pigeaud, Stutterheim, Kern, Slametmulyana, show similarity in certain elements, namely: (1) the position of the city towards the direction of the wind; (2) identification of the palace as a city center as the core even though the core of the city is not always located at the center; (3) more details in the form of 3 palaces by having its own *winata* ward; (4) the location of Dharmajaksa Shiva and the Buddha at the back of the Palace; (5) at the front of the central core is a public zone containing a meeting hall (*manguntur*), *pendapa* (open verndah serving as an audience hall), pahoman / sacred buildings / temples, large fields (possibly town squares), and markets whose details are interpreted differently by researchers, whereas the palace of the princes and the houses of officials and noblemen are located around the core at the same distance.

Based on the results of Bakorsurtanal aerial photographs, it can be seen that there is a grid geometric pattern in the Trowulan area which is estimated to be the former center of Majapahit city. This grid pattern can be linked to the mandala concept along with the distribution of zones, especially for elite/official/clerical groups, while organic patterns are possible for villages outside the city on the hillsides and mountainsides. It is believed that Majapahit also made use of an axis pattern referring to the mountain concept- Mount Penanggungan. Another description of the form of settlements can be seen in enshrined reliefs. Relief illustrations show a grid pattern in the buildings and concentric patterns in rural and urban areas.

Studying the remnants of Majapahit civilization can be accomplished by searching the rural and urban arrangement on the island of Bali, considering the influence of Majapahit is still quite strong there, such as on Puri[4]. The pattern of urban and rural settings in Bali shows the use of square-grid and linear concentric elements. The sacred point is placed at the intersection (Perempatan Agung) which is formed from the cross line of paths, lanes, and roads. This intersection is an 'empty space' shaped node. Around this center there is the Puri palace (residence of the ruler), Pura (place of worship), and a gathering place in the form of Wantilan/Bale Banjar that is equipped with fields and a market place. The arrangement of the position of the elements around the intersection looks equally distributed; it does not look prominent, and it is doubtful whether any of them mattered. The castle uses the Sangamandala or Nawasanga pattern [5] which is arranged to form a grid pattern for the actual placement of the buildings. The description of the Balinese pattern is also recognized in the spatial pattern depicted in the reliefs of the heritage of Majapahit. Broadly speaking, the spatial structuring pattern in Bali shows the existence of linearity, namely the concept of the mount-sea,

and at the same time it is concentric in the form of a grand intersection, and the use of the grid, and the Sangamandala appears to have been used in the Puri buildings and its dwellings.



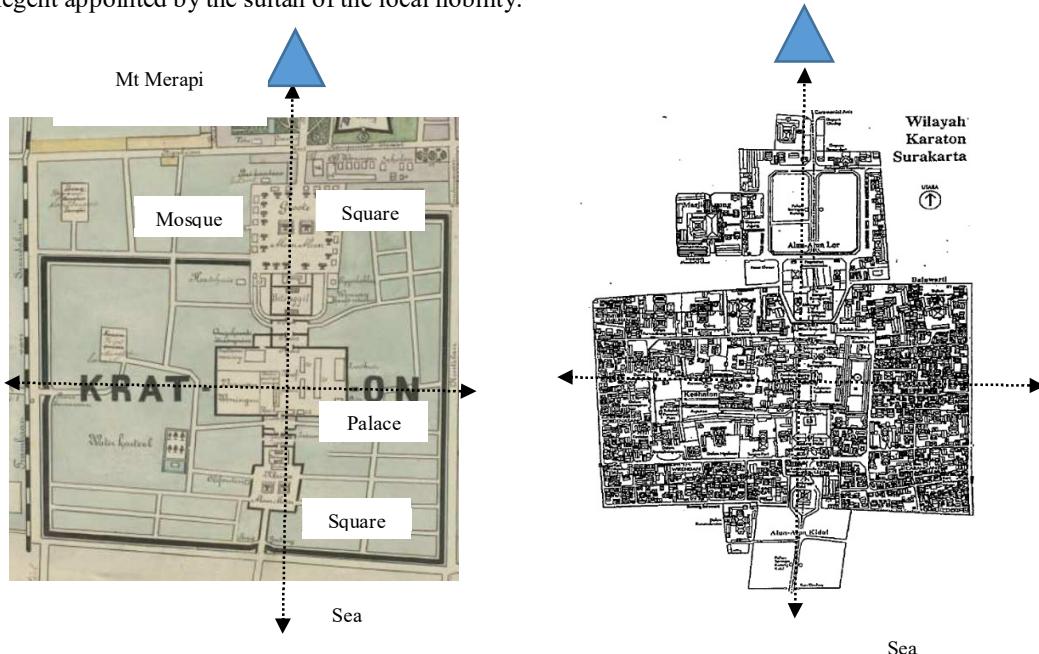
**Figure 1. The Relation between Majapahit and Balinese Patern, Grid, Mount-Sea Orientation and intersection (Perempatan Agung)[6][7]**

### The Spatial Pattern of Javanese Palaces in the Islamic Era on Java

On the island of Java, towns that were characterized by Islamic features developed from the era of *Demak* followed by *Cirebon*, *Banten*, and others. These towns show a unique arrangement of spatial structures, namely the square, with the palace to the south, the mosque in the west with *santri* settlements for Islamic students/adherents located behind the mosque [8]. Cosmologically, the spatial structure refers to the concept of *Moncopat* (*manca* = 5 and *pat* = 4), that is to say one main center in the middle surrounded by four surrounding areas and emphasizing linear orientation on the north-south axis (the mountains). This shows the presence of spatial duality other than concentric with the four corners and linear.

Basically, the *Moncopat* concept not only regulates the problem of territorial constraints but is also related to the basic concepts of community life which refer to the balance between the macrocosm and microcosm. If it is drawn on the scale of the concept of cosmology, then the core palace /town as the center is surrounded by four sacred points around it as its protector, such as the Surakarta palace with its metaphysical supporters in the North (*Krendowahono* forest under the authority of *Kalayuwati* Goddess), South (Sea under authority of *Kanjeng Ratu Kidul* Goddess), East (Lawu Mount under authority of *Kanjeng Sunan Lawu*), and West (Mount *Merapi* under the authority of *Kanjeng Ratu Sekar Kedaton*) [7], while Yogyakarta places more emphasis on the Northern (Mount *Merapi*) orientation, and the Southern (South Sea). However, in general, the territorial structuring principle of the heritage city of *Mataram* is divided into 4 zones arranged hierarchically, the more central to the central position that is held sacred. Physically, other cities in the *Sultan Agung* era can be divided into *Kutagara*, *Nagaragung*, foreign countries/regions, and peripheral/coastal regions (pasisiran).

According to Selo Sumardjan in Santoso[9] the territorial structure of the *Mataram* kingdom is generally in the form of a multi-level circle system with four different radius. The central circle is the manifestation of the ruling king. The physical representation of the sultan is the palace and its accessories (internal and religious administrators) The second circle is the state that covers the central area of the kingdom or the capital, the location of aristocrats and important people in profane life (traders, commanders-in-chief called *senopati*, and the like), and the economic-market center. The third circle is the Supreme State, covering all the main regions under the absolute authority of the king, which is headed by the Supreme Governor (*mahapatih*) and divided into sub-regions headed by the vice-governor (*patih*) and given responsibility for land management and tributes. The fourth circle consists of foreign regions, each headed by the Regent appointed by the sultan of the local nobility.



**Figure 2. Yogyakarta and Surakarta Palace (Kraton) [10][11]**

#### Spatial Pattern of the Pakungwati Palace

Based on the artifacts in the field, the *Pakungwati* building complex is a square grid pattern with brick walls [12]. This pattern is reminiscent of the pattern of residential buildings or chateaux on Bali or as depicted inside reliefs of the *Majapahit* era. When it was in the form of an initial residence, *Pakungwati* was expected to face East. Functionally, the East indeed displays the sea, so that the initial building is expected to face the sea as a characteristic feature of a coastal building.

Buildings that are estimated to be even older, namely the *Bale Witana Kraton Kanoman*, also face east or towards the sea. The direction of this orientation can be attributed to two thoughts, namely the concept of the sea mountain which is the ancient concept of the archipelago or the concept of the *Kiblat* (direction of Islamic prayer) considering that the occupants are Muslim families, led by Prince *Cakrabuana*. In the West, apart from the *Kiblat* associated with the imaginary orientation of the mountains, there is Mount Ciremai. On the East side of *Pakungwati*, the building that is considered important is the *Pejlagrahan* Mosque which was built earlier than the *Sang Ciptarasa* Great Mosque. *Pejlagrahan* refers to the terminology of floating on water, which indicates the location of this mosque was indeed close to the sea in the past.

In subsequent developments when it became the center of government, the next building was estimated to have been added. The *Pakungwati* building then developed into the palace, adding *sitiinggil*, *alun-alun*, and mosque elements. This mosque became known as the Great Mosque of *Sang Ciptarasa*. With the existence of these buildings, it is estimated that the orientation of the Palace in general began to be used in the north-south direction, even though the orientation of the East- West was still recognized in the main complex of *Pakungwati*. Thus the orientation that

refers to the four directions can be identified in this complex which is identical to the concept of the arrangement of the *Majapahit* Palace.

North-South refers to Mount *Sembung* (the tomb of *Sunan Gunung Jati*) in the north and in the south there is a river or *Rara Denok* (a place to store heirlooms) or *Bale Kambang* (all use elements of water like the ocean), and in the West Mount *Ciremat* is located, while in the East there is a sea. The use of buildings surrounded by a pool of water or the typical *Bale Kambang* is closely related to the Hindu-Buddhist tradition of describing *jambudwipa* surrounded by oceans. The earlier Islamic *Mataram* palaces also featured buildings surrounded by water, for example *Tamansari* in Yogyakarta. The cosmological pattern embodied through the pattern of space that pays attention to these four directions shows that the ideas developed in the linear (hierarchical) and Hindu-Buddhist traditions of the four-way grid *Mandala*. This indicates the concept of ambiguity, namely linear and concentric patterns leading to four directions.

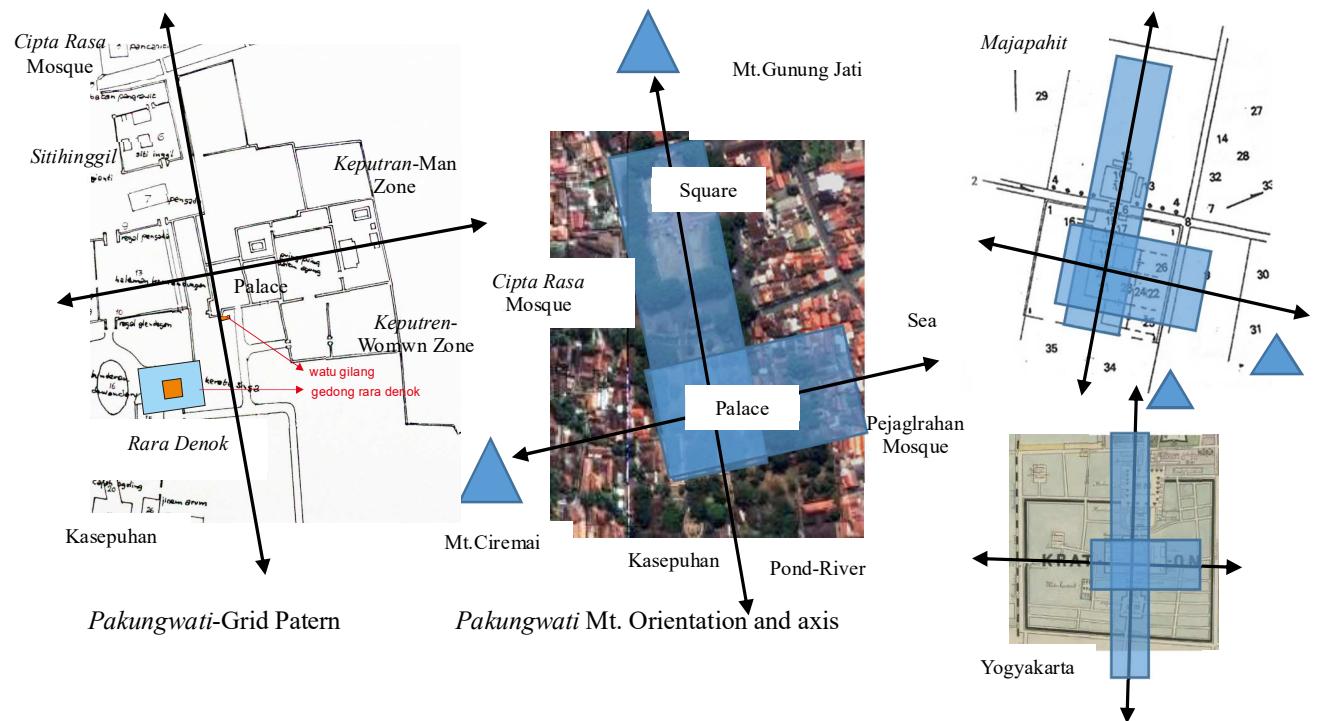
Referring to Jo Santosa [13], in the Eastern worldview according to geomantics, cities are imitations of the macrocosms that must be built according to the structure of the laws of natural balance. The relationship between the spatial parts of space in these places is formed based on two hierarchical microcosmic principles and microcosmic duality. The above study shows that the *Pakungwati* complex can be associated with concentric and linear grid patterns (north-south) mountains developed in the Pre-Islamic era. The influence of *Majapahit* is reinforced by a grid pattern that is insulated.

*Majapahit* is also estimated to have used a four-way orientation but there is a main reference, namely the mountain-sea; if we take Mount *Penanggungan* as the former, then the latter can take the form of rivers or ponds in the middle. *Pakungwati* has a mosque in the western part of the square, while *Majapahit* has a temple. Thus it can be seen that there is a phenomenon of transformation from the center in the form of open space node (*Majapahit*-Bali) and in the form of a crossroad into a palace building (*Pakungwati*). If in the order of the *Perempatan Agung*, Palace, buildings of worship, the marketplace, and the gathering place are equal and balanced, then the concept of *Pakungwati* is transformed with the center in the form of a palace with its square and mosque (in *Demak* the center is a mosque and its square).

Within the *Pakungwati* complex, the concept of duality can be recognized by the existence of linear and grid-concentric elements such as the ones found in the *Majapahit* and Balinese styles[14]. Based on reflections from Bali, it is estimated that the composition of a *Majapahit* town will not be much different from the one found on Bali. Square-hybrid and linear concentric elements are also expected to have been used in cities and rural areas during the *Majapahit* period. During the Islamic *Mataram* period this tradition continued with the use of square-grid linear and concentric patterns, such as the *Moncopat* concept.

During the formation of the city of Yogyakarta and Surakarta this linear concept was strengthened by the existence of two squares in line. However, the intersection of *Prapatan Agung* which is known in the spatial arrangement of Hindu traditions was transformed into the Kraton palace and its squares in the era of Islamic *Mataram*. In the context of *Pakungwati* it is estimated that it still employed two concepts such as *Majapahit*, namely the alun-alun square and the grand intersection called *Perempatan Agung*.

Islamic values subsequently enriched the meaning in the spatial pattern in the *Pakungwati* complex by strengthening the *Kiblat* orientation of the residential complex in *Dalem Pakungwati* which places the entrance on the East side which is characterized by the existence of receiving buildings, and the placement of male and female zones separately. This is evident from the existence of *Keputran* (man) and *Keputren* (women) zoning. The latter (the place for women) is attached to the main building of *Dalem Pakungwati* which is marked by the existence of a water park, while the former (male zone) is separated by a corridor and is located in front of the close to *Siti Hinggil*. Based on the North South orientation in *Pakungwati*, the female zone called *Keputren* is located on the south side adjacent to the *Rara Denok* Building as a place to store heirlooms and the male zone called *Keputran* is situated in the North. These models of *Keputran* and *Keputren* were followed and developed by later Islamic-style palaces such as the Surakarta Palace and Yogyakarta.[15].



**Figure 3. Comparation Pakungwati between Majapahit and Yogyakarta Palace (Kraton) [15]**

The north-south pattern was still used by the Palace which was built earlier than the *Dalem Agung Pakungwati* namely *Kasepuhan* in this complex, and *Dalem Agung Pakungwati* was later abandoned. The *Kasepuhan* Palace still uses *sitihihgil*, *alun-alun*, and the existing Sang Ciptarasa Great Mosque. The building inside the *Kasepuhan* Palace is linearly arranged to the north and south. In the south there are also a Balekambang and Mount Indrakila, such as *Dalem Agung Pakungwati*. In the south this is indicated by the existence of small Indrakila hills and Balekambang (water) which are basically sourced from ancient traditions depicting *Jambudwipa* and *Samudra* (the Ocean). In this complex, there are finally two important points, namely *Dalem Pakungwati* in the form of a grid oriented to the East-West and the core building of the *Kasepuhan* Palace itself, which is oriented to the North-South direction.

The figure of the building in the *Dalem Pakungwati* complex is estimated to be identical to Majapahit architecture, namely using a hip-roof, with various patterns of poles and walls, and surrounded by walls. The rest of the building that remains is only the shape of the gate that is identical to the *Majapahit* split gate. The building that is still considered intact and recognizable is a *Sitihihgil* building with a group arrangement forming a grid pattern with gable roofs and floors that resemble the *Majapahit* building typology depicted in enshrined reliefs, which look like chateaux or dwellings on the island of Bali. The *Sitihihgil* building is surrounded by walls and has a split gate conform to *Majapahit's* heritage. The wall decoration is reminiscent of the geometric cruciform medallion ornamentation patterns as encountered on the walls of the Majapahit temples. If the year of construction for *Sitihihgil* is not far removed from *Pakungwati*, the building inside *Pakungwati* can also be analogous to using the same patterns as *Majapahit*[15]



**Figure 4. Comparation *Majapahit* architecture and Main *Pakungwati* (gate, wall, grid patern) [15]**

## 5. Conclusions

*Pakungwati* shows a pattern that combines transformative Hindu-*Majapahit* concepts with Islamic values. This can be seen from the use of grid patterns in the Majapahit and Balinese style and tradition. In addition, linear and concentric concepts are also identified - leading to four directions, so that hierarchical concepts and duality can be recognized. This can be gleaned from the typo-morphology of the space and mass order both in *Pakungwati* itself and the relation with other buildings, namely *Siti Hinggil*, *Alun-alun* (squares), and the Great Mosque. In Dalem *Pakungwati*, it is estimated that the division of zones based on gender is known, namely areas reserved for males and females, thus reflecting Islamic values. The concept of Islamic *Mataram* cities that is currently discernible at the Yogyakarta and Surakarta Palace is estimated to be a further development of the existing patterns in *Cirebon Kasepuhan*, especially the ones observed at the *Dalem Pakungwati* palace. This phenomenon shows that there has been a transformation of the mass and space of the city center, from the Hindu-Buddhist period to the Islamic Era, even though the archetype is the same but the physical composition of the layout has been subject to change. The use of duality and its forms of transformation show that the dynamism of the creativity of the Indonesian society in responding to the changing times. This shows a strong awareness of the necessity to attain harmony with nature and show respect for one's ancestral heritage. This awareness should in the modern period be fostered continuously in urban design, including its buildings.

## Acknowledgements

- LPPM Parahyangan Catholic University (Unpar)
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**Citation:** Rahadhan P. Herwindo; 2019, Identification of Spatial Pattern in *Pakungwati* as a Reflection of Architectural Transformation between Hindu-Buddhist and Islamic Palace in Jawa; Journal of Applied Environmental and Biological Sciences, 9(6)9-16, 2019.

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