MORPHOLOGICAL TYPOLOGY AND ORIGINS OF
THE HINDU-BUDDHIST CANDI ARCHITECTURE
IN BALI ISLAND

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This paper attempts to investigate and analyze the morphological typology and origins of the Hindu-Buddhist candis which were built from 8th to 17th centuries in the island of Bali. Mainly, the discussion will be focused on its characteristics analysis and morphology in order to determine the candi typology in its successive historical period, and the origin will be decided by tracing and comparative study to the other candis that are located across over the island and country as well. As a result, 2 groups which consist of 6 types of 'Classical Period' and 1 type as a transition type to 'Later Balinese Period'. Then, the Balinese candi can also be categorized into the 'Main Type Group' which consists of 3 types, such as Stupa, Prasada, Meru and the 'Complementary Type Group' can be divided into 4 types, like Petirhan, Gua, Acrama and Gajura. Each type might be divided into 1, 2 or 3 sub-types within its architectural variations. Finally, it is not only the similarities of their candi characteristics and typology can be found but also there were some influences on the development of candis in the Bali Island that originally came from Central and East Java.

Keywords: Morphology, Typology, Origin, Hindu-Buddhist, Candi Architecture, Bali Island

1. Introduction

The development of the Hindu-Buddhist candi architecture in the Indonesian Archipelago is generally considered in a broad term of the 'Classical Period'. Due to some variations of the architectural style between the Java and Bali Islands, this era can be divided into three different periods, such as 'Early Classical Period' (7th – 9th centuries), 'Middle Classical Period' (10th – mid 13th centuries) and 'Late Classical Period' (mid 13th – 15th centuries). In the Bali Island, the candi architectural development took place from a time spanning the end of 'Early Classical Period' to step over the 'Late Classical Period', and can be classified into two historical development periods, such as 'Bali Kuno Period' and 'Bali Majapahit Period' as the transition era to 'Later Balinese Period' 1). Its expansion reached the summit at the era of 'Bali Kuno Period' which comprised the middle region of the island.

An exploration of the Bali Island through paintings was started by G.E. Ramphius in the late 17th century and published in the early 18th century 2). Furthermore, in a successive century, Sir Thomas Stamford Raffles conducted the first architectural study and published a book 'History of Java' in 1918. He wrote that 'the present state of Bali may be considered as kind of commentary on the condition of the native of Java' 3). After that, it can be noted here, some experts conducted their research. I believe that the late 20th century of the Stupa invention will open a path to find the origin of the Hindu-Buddhist candi architecture in the island of Bali due to the architectural form of the Stupa Pegulingan can be only compared with the candi architecture in the second gallery in 1918. He who published their research results in the form of articles, books, sketches, drawings and documentation photos, such as WO.J. Nieuwenkamp (1904, 1906) 4), H.T. Damste (1920) 5), L.C. Heyting (1921) 6), N.J. Krom (1926, 1931) 7), P.J. Moojen (1920, 1924) 8), W.F. Stutterheim (1924) 9), F.D.K. Bosch (1929, 1931) and J.C. Krijgsman (1949, 1950 - 1957). Many experts said that the Balinese candi has been influenced mainly by the East Javanese candi, particularly from the Majapahit Period candi architecture, which it can be seen by the similarities between the Balinese candi and the layout of certain East Javanese temples, besides the contents of certain reliefs as well as literary works clearly testify to this 10).

I think, above opinion cannot be accepted as a general theory based on some reasons, such as: the rock cut temple of the Bali Island has a distinctive style compare to the other candis architecture, and the Buddhist candi of Stupa Pegulingan 11) (Phot.1) had not yet been discovered when the periods of some experts conducted their research. I believe that the late 20th century of the Stupa invention will open a path to find the origin of the Hindu-Buddhist candi architecture in the island of Bali due to the architectural form of the Stupa Pegulingan can be only compared with the Stupa inside a relief in the second gallery of Cand Bali Borobudur. On another hand, the Stupa Pegulingan cannot be compared to Stupa Sumberawan (Phot.2) that is located at Malang Regency in the East Java and the Stupa Plaosan at the complex of Candi Plaosan (Phot.3) in the Central Java, generally there are some differences between their architectural

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forms. Found on these reasons, I agree that the *Stupa Pegulingan* might have got some influences in the following period after the *Candi Borobudur* was built. It can be said that the *Stupa Pegulingan* is older than the *Stupa Sumberawan* and the *Stupa Plaosan* in the context of historical chronology development. Derived from the tracing study to the other Asian continent countries, the *Stupa Pegulingan* also has a distinctive style, particularly in the form of its *chattra*.

Furthermore, based on the facts, it means that we still have a chance to discuss the morphological typology and its origin, so the *candi* architectural research will be integrated as a comprehensive theory which is supported by some new facts and empirical evidences that are found during field research. This study examines a hypothesis that every period develops and has a unique architectural style. A debate of the morphological typology will be alert to some evaluations of the *candi* characteristics in the context of architectural form, structural technique, material usage and ornamental style. And the tracing study of its origin will be conducted by comparing between the Bali Island *candis* types and the architectural characteristics, beliefs, ornaments, iconography of the *candi* architecture in other countries or islands. This study uses the research literature and fieldwork methods. Some secondary data that are taken from the religious manuscripts, the ancient inscriptions, literatures, journal articles, academic papers, and the primary data, such as architectural drawing and photos that are taken in the field research study will be evaluated and analyzed. Although many *candis* architecture still stand on the original site, some of them were reconstructed from the *candi* ruins. So it is not easy to explain in the context of an authenticity of its architectural form and that problem will be solved by a systematic evaluation of its development from the ‘Early Classical Period’ to the ‘Later Balinese Period’.

### 2. Study of the Hindu-Buddhist Manuscripts and Literatures

As far as we are concerned, no manuscripts have been found which explained some principles of the Balinese or Javanese *candi* architecture. From previous research, it can be concluded that the *candis* have been built in the ‘Early Classical Period’ at the Northern Central Java was still implemented the Indian temple’s principles, and after that, it was followed by the application of the local genius principles that had been started at the era of ‘Mataram Hindu Period *Candi* at the Kedu and Prambanan Plains’ and varied the *candi* functions at the East Java and the Bali Islands. Besides that, it can be said that the *Nāgarakṛtāgama* manuscript which was written by *Mpu Prapanca* in 14th century or at the era of the Majapahit Kingdom was not an architectural compendium of the ‘Classical Period’, which discussed the design principles and measurement of the *candi* architecture. However, inside the manuscript can be found amount of canto and section that explained about the establishment of the *candi* architecture at the East Java region. The *Nāgarakṛtāgama* manuscript mostly consists of the golden period of the Majapahit Kingdom in controlling the Indonesian Archipelago region. Based on the conclusion above, it will be possible to use the Indian temple principles books, such as *Śilpaśāstra*, *Mānasāra*, *Kuladatta’s Kriyasamgraha* and etc. The term *śilpa* means an art, fine or mechanical, here *Śilpa-śāstra* is used in the sense of *Vastu-śāstra* and *Mānasāra* is about the essence of measurement. Hence, the *Kuladatta’s Kriyasamgraha* is a Sanskrit text which belongs to the category of Buddhist *Kriyā-tantras* of the eighth and ninth centuries AD.

Although both religions came from the same country, there are some differences in their philosophical and architectural concepts. In general, the Hindu temple is not only located in Temples but also on hill-tops and mountain-slopes, in forest, groves and gardens, near the abodes of the blest or hermitages, in villages, towns and cities or in any other lovely place. The quadrangular ground which is elevated towards the South and the West which is suitable for the buildings of the gods and the men respectively, and the temple should be oriented to the East. *Vastu* is primarily the planned site of the building. Its shape is square as a rule and its full name is *Vastupurushamandala*. It can be converted into a triangle, hexagon, octagon and circle of equal area and retain its symbolism. The body part consists of wall, column and sometimes is also completed by niche and porch. The Hindu temple has been built from one kind material or combination of more than one material, such as stone, brick, wood and iron. Some ornaments have been put in some places that should be decorated, like above the door and window and also the temple is using deities (deva-devi) statues inside its niches.

Moreover, the *stupa* is an excellent edifice of the Buddhist monk and some buildings, such as *Vihara*, *Ardhakayoga*, *Prasada*, *Harmya* and *Guhā* that are built for a religious discourse and dwellings particularly for *Bhikkhu* (the Buddhist priest). Derived from the ancient Buddhism bible *Kriyasamgraha*, a prototype of the *stupa* consisted of *vedika* (base), *anda* (spherical form), *kumbha* (a motif resembling a *stupa*), *harmika* (the finial of a *stupa* in the form of a pedestal), *chattra* (honoric umbrella that is set up on the top of *harmika*) and *unsisa* (coping). Beside that its text has specified four types of the *stupa*, like *Stupa Dhanyakrti* (like a heap grains of rice), *Stupa Patrakrti* (a bowl), *Stupa Gandakrti* (a bulb) and *Stupa Kalasakrti* (a vase). Although it has various forms, however all forms have some characteristics in common, such as centrality, axiality and orientation. Because of the heterogeneity text about the *stupa construction*, it is difficult to determine which will become the best standard. Basically, the material and ornament of the Buddhist temples are the same as the Hindu temple, but only the deities should be in mutual accorded with the Buddhist concepts.

It can be noted that the manuscripts and literatures above will be referred particularly on the analysis of the Hindu-Buddhist *candis* architecture in the island of Bali, such as some *candi* type names, the architectural part names and etc.

### 3. Analysis of the Characteristics of the Balinese *Candi* Architecture

According to the geographical position, the island of Bali is located in the Indonesian Archipelago (Fig.1), exactly on the East side of the Java Island and only was separated by the Bali Strait. In this study (Table1), it is about 75% from all the Hindu-Buddhist *candis* architecture that was built from the 8th to 17th centuries in the Bali Island will be used as the research objects. The Balinese *candis* that have been selected as the research objects might be reconstructed, repaired, original or ruin which the buildings could be still in site as well as representing their characteristics, such as: function, location and architectural form.
Fig. 1 Maps of the Formation of the Hindu-Buddhist Candi Architecture at the 'Bali Kano Period' and 'Bali Majapahit Period'

Table 1 The Characteristics of the Balinese Candi Architecture

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Found on the historical study, more than ten centuries ago or exactly at the ‘Bali Kuno Period’, several kingdoms had been established in the Bali Island. It can be said that the kingdoms generally spread out in the middle region stretched to the Northern part of the island and the candis architecture mostly located at the river basin area of the Pakerisan and Petana rivers. Moreover, as far as we know, the kingdoms in the Bali Island began to receive the influences from the East Javanese kingdoms around the 14th century, especially from the Majapahit Kingdom, so why this period can be said as the ‘Bali Majapahit Period’. And in the following several centuries some kingdoms had been also established, such as; Klungkung Kingdom, Mengwi Kingdom and the other kingdoms that were almost spread all over the Bali Island territory. In this period, the Balinese candis architecture generally was spread from the middle territory to the Southern side of the island, and most of the candis architecture was located in the plain area. Recently, some existences of the ‘Bali Majapahit Period’ candis architecture can be found in the surrounding area on the capital cities of Klungkung Regency and Mengwi District (Fig.1).

Furthermore, the research data (Table1) shows how the different periods of the candis architecture have the distinctive characteristics over the course of the ‘Classical Period’ in the Bali Island. According to the data, two different religious candis architecture had been built in the ‘Bali Kuno Period’ which have the interval time from the late 8th century to the early 14th century, and most of them are still in the original condition. From the location analysis, the ‘Bali Kuno Period’ candis (Fig.1) tend to be built near the mountain direction or upland and the candis mostly are placed at the river basin which are spread out from North to South directions, consequently the candis had been carved at the West and East banks of the depth ravine area. In fact, many candis are elevated towards the West and towards the East, only 1 stupa towards to the all directions. On another hand, all candis of the ‘Bali Majapahit Period’ which were developed in the time spanning from 14th to 15th centuries and the transition era to ‘Later Balinese Period’ from 15th to the late 17th centuries are Hindu candis. Mainly the candis had been repaired and reconstructed, and they were erected in the plain area, near the sea, and have front face towards the West or the East.

Derived from the architectural analysis of the ‘Bali Kuno Period’ candi architecture, it can be said that most of the Prasada and Meru have base parts in the shape of the square plans, the Petirthan, Gua, Açrama, and Gapura in the rectangle base plans, and only one Stupa has an octagonal base plan. In these cases, all the Candhi Tebing (the Rock Cut Temple) is assumed that has four elevations. However, in fact there is only a front elevation. In general, the shape of the base part similar with their body and roof parts, it is only the Stupa in the form of cylinder shape. Found on the comparison analysis, it can be stated that each type of the ‘Bali Majapahit Period’ is the same shape as the candis architecture of the ‘Bali Kuno Period’.

Generally the ‘Bali Kuno Period’ candi architecture had been erected by the massive carving technique. This construction was done by cutting and rendering of the river basin. Some candis architecture, particularly base parts used the bearing wall, the body parts with post and lintel structure, roof parts by the corbel arch structure, and just the Stupa in the monolith structural form. It is interesting to note that there was an altering roof part from the corbel arch structural technique of the Prasada to a light of the wood frame structure of the Meru. On another hand, there are combinations more than one technique had been implemented in the development of the candis architecture in the ‘Bali Majapahit Period’. Furthermore, the ‘Bali Kuno Period’ candi architecture gave a priority to using one kind of material, like soft volcanic stone. On another side, the ‘Bali Majapahit Period’ candi used the red brick, sea coral stone or the combination between soft volcanic stone and red brick materials, and also wood as the roof material.

As we know, the large number of ornament has been used in the Balinese candis architecture (Table1), the ornaments had been divided into 2 types, such as: the architectural ornament and the structural ornament. A sculptural object does not included in the both type of the ornaments, it might be become a free sculpture that sometimes presents based on the specific purpose. In general the architectural ornament is added to the candi by using a particular technique and for the aesthetic reason, whereas the structural ornament is likely as an applied ornament which is not only having an architectural expression but also as a part of the certain structural function. Derived from the analysis of the candis ornament in the Bali Island, it might be stated that the architectural ornament was often found in the candi architecture compared to the structural ornament. In general, the architectural ornament has a certain symbolic meaning because of being connected with the religious aspects.

From the architectural characteristics analysis above, it can be concluded that the characteristics of the Balinese candis architecture varied across their periods but they tend to have similarities among the same period members.

4. The Morphological Typology of the Hindu-Buddhist Candis Architecture in the Bali Island

Based on the architectural characteristic data (Table1), the candis architecture in the island of Bali can be classified into 6 types of the ‘Bali Kuno Period’ and ‘Bali Majapahit Period’, such as Stupa, Prasada, Petirthan, Gua, Açrama, Gapura, and also 1 type or Meru as a transition type to ‘Later Balinese Period’. In my opinion, the use of Sanskrit words, like Stupa, Prasada, Petirthan, Gua, Açrama, Asrama, Gapura and Meru as the candis type’s names that are appropriate and right. Due to that words can be found either inside the Indian manuscript of Mānasāsūra, Kuladatta’s Kriyasamgraha or the Majapahit Period manuscript of Nāgardhātugama. And the words can also be found inside some prasasti (inscription) at the Java and Bali islands. For example, the word Stupa in Prasasti Ligor A 25), the word Prasada in Prasasti Sembiran A II 26), the word Tirtha in Prasasti Manukaya 27), the word Açrama in Prasasti Tengkulak E 28), the words Lwa 29) and Gapura 30) inside the Nāgardhātugama manuscript.

Moreover, in order to get a better understanding of the candis typology, all types will be divided into 2 groups. The candis which have functioned as a place of worship will be grouped in the ‘Main Type Group’, and the other candis that have some certain functions which are connected to the worship function, such as: a holy water sources, worship and meditation places, hermitage and religious teaching places, and as a temple gate could be classified into the ‘Complementary Type Group’. All types will be explained below and supported by some figures.
4.1 Main Type Group

The Buddhist Stupa and the Hindu Prasada and also a transition type of Hindu Meru can be included in this group.

a. Stupa Type

Based on the archaeological objects that were discovered in the Bali Island, it might be said that the Stupa is a place for Buddhist worship and start developed in the ‘Bali Kuno Period’. Derived from the architectural form and location point of view, it can be divided into 3 sub-types.

First, sub-type of ‘Stupa Tebing’ or ‘Relief Stupa’ is placed at the river bank area. Its base and body forms cannot be known exactly because it is just ruin on the steep slope of the river. It is only the pinnacle of the Stupa in the form of 13 storeys of the chattra vali (Fig.2b) which has 3 branches (Fig.2a). Its Stupa had been built by a cut of the soft volcanic stone that is called paras. Padma (lotus flower) and angsa (goose) had been used as patra or the ornament motifs (Fig.2c). This type can be found in Tukad (river) Pangkung that is situated near the complex of Pura (a Hindu temple) Gua Gajah.

Second, sub-type of ‘Stupa Dataran’ or ‘Monumental Stupa’ is generally orientated to four directions. From the architectural point of view, this Stupa type has an octagonal plan (Fig.2d), circle form of its anda part and its pinnacle in the form of the chattra vali that has 13 storeys and it looks like an umbrella (Fig.2e). A monolith of its structural form and there are four relung (niches) on the body of the Stupa. Paras stone has been used as a main material. From the fact, the height of the Stupa Dataran sub-type is more than 10 meter. Then, some archaeological ruins have been found in the location of the Stupa Pegulingan, such as Dhyani Buddha statues, Kala relief, Gana relief, padma, etc. It can be stated that the ornaments above have been used in the Stupa Pegulingan. In another location, the sub-type of Stupa Dataran might be also developed, particularly at the complex of Pura Gua Gajah. This opinion that is based on the Stupa ruins have been found on that site, such as chattra and Dhyani Buddha statue.

The last sub-type is ‘Stupa Miniatur’ or ‘Votive Stupa’ which is the same characteristic as the sub-type of ‘Monumental Stupa’. Until now, these sub-type that are found in the island of Bali can be categorized into 3 form variations, such as ‘Single Stupa’ (Fig.2f) and the ‘Big Single Stupa’ that is surrounded by 4 or 8 small stupas. All ‘Votive Stupa’ is made of clay soil and no more than 1 meter high. An example can be seen in the complex of the Pura Pegulingan.

b. Prasada Type

In the island of Bali, the word ‘Prasada’ is usually used as the name of candi that was developed in a plain area and it might be located nearby or far from the tirtha (a holy water sources). According to the morphological study, the Prasada (a tower temple) also has 3 sub-types.

Firstly, the sub-type of ‘Prasada Tebing’ or ‘Relief Prasada’ had been built by cut of the rock (paras) in the river bank area, so it only has a front elevation and the right and left elevations just can be seen half sides and with no a back elevation. The architectural form of Prasada Tebing consists of three parts, such as base, body and roof. In the Bali Island, some Prasada Tebing stands on a pedestal and only has one stair. This type is well-known as Kelompok Candi Tebing (Rock Cut Temple Group). Its pedestal is completed by some ornaments, such as pelipit and sisi genta. Besides that,
the Kelompok Candi Tehing has some jaladwaras (waterspouts), which is functioned as water drainage. Every body parts of the ‘Rock Cut Temple Group’ have an imitation door and a tympanum upper of each door, and its roof in the form of step pyramid that uses the corbel arch structural technique. There is only the architectural ornamentation and it just appears like a combination of geometrical patterns as a whole. The Candi Tehing Gunung Kawi (Fig.3a), Kerobokan (Fig.3b), Tegaljinggah (Fig.3c), Jukut Paks and Kelebutan are some examples of sub-type of Prasada Tehing.

Secondly, sub-type of ‘Prasada Agung’ or ‘Monumental Prasada’ (Table1), this sub-type of the ‘Bali Kuno Period’ generally has West orientation, a square plan and with 1 story (Fig.3e) or 2 storeys (Fig.3d) of the pedestal levels number, and also there is a stair in West side to go up into its doorway that is used for entering the garbhagṛha (the most sacred part of a temple) where the lingga-yoni is placed. The body part of Prasada Agung sub-type uses the post and lintel structural technique, and this part without some niches for the deity statue places. Then, a step-pyramid form is applied for the roof part with a lingga form of the pinnacle. Generally, the architectural ornamentation looks like a combination of geometrical patterns. Some examples of this sub-type can be seen in Prasada Mengening (Fig.3d) and Prasada Agung Pengukur-akuran (Fig.3e). Although the Prasada Agung sub-type of the ‘Bali Majapahit Period’ is the same as the ‘Bali Kuno Period’ but there are some differences, such as material usage, ornamentation and the garbhagṛha. The examples of these types are Prasada Dalem Cemara (Fig.4a), Prasada Pura Sakenan (Fig.4b), Prasada Maospahit Tonja (Fig.4c), Prasada Saru Gading (Fig.4d).

Thirdly, sub-type of ‘Prasada Miniatur’ or ‘Votive Prasada’ has the same characteristic as the sub-type of ‘Monumental Prasada’, such as there is a pedestal, their niches with the deity statues inside and Kala ornament above, and also each corner of its step-pyramid is finished by a flower bud pinnacle. Some models of the ‘Votive Prasada’ sub-type can be found in Pura Pedadapan-Pejeng (Fig.3f) and Pura Puseh Abianbase-Gianyar.

c. Meru Type

In the ‘Classical Period’, most of the Meru types use the post and lintel structure technique and vary of their body part. First variation has some characteristics, such as front side without wall, a high pedestal part, an aling-aling with a Kala head ornament. An example of this type is Meru at Pura Yeh Gangga (Fig.5a). Second variation is erected by four side’s wall and only a door in front, a low pedestal, a wall almost as level as roof border. The second variation can be found in Pura Dalem Alas Kedaton, Pura Besakih, Pura Taman Sari (Fig.5b) and etc. Both variations use a wood for its roof structure and are finished by natural cover materials. In the ‘Later Balinese Period’, the Meru still uses a wooden structure but there is material combination usage in the pedestal. And it will be an example of a transition type of Hindu candi that is marked by changing its structure from a massive stone or brick structures to a light of wood frame structure.

4.2 Complementary Type Group

This group consists of some complementary buildings, such as Petirthan, Gua, Acrama and Gapura. All candi will be explained below.

a. Petirthan Type

Petirthan (a holy water pool) is usually located in the surrounding area of the Prasada or the Stupa. This type can be divided into 2 sub-types, such as Petirthan Pancuran (Fig.6a, 6b) and Petirthan Tampo Pancuran (Fig.6c). The water source of the sub-type Petirthan Pancuran comes from the natural water source or the other water sources, and that water is channeled through one or more jaladvara (waterspout) or the other kinds of waterspout, like Dewi (female deities) statues. Generally the water sources are situated higher than its pool. Sub-type Petirthan Tampo Pancuran is also a holy water pool but it does not have a waterspouts and its water has same sources as the sub-type of Petirthan Pancuran.
b. Gua Type

The Indonesian word `Gua` is originally from a Sanskrit word `Guha`, which means a hiding-place. Inside the Nāgarakṛtīgama manuscript, particularly the section no. 3 of the canto no.14, the word `Gua` was written Lwā for the name of Lwā Gajah. Most of Gua (cave) type were erected in the `Bali Kuno Period`. It can be classified into 2 sub-types, such as sub-type Gua Pemujaan and sub-type Gua Pertapaan. Both Gua sub-types are generally built in the river bank area without a front face wall. In the chamber of Gua Pemujaan, there is altar as a place for the deity statues and an example of this sub-type is Gua Gajah (Fig.7b). Then, Gua Pertapaan has been known as Ceruk Pertapaan. It is only used for a meditation place. There are some variations of their form, such as Ceruk Tunggal (single cave) and Ceruk Berkelompok (group cave). An example of Ceruk Berkelompok is a group cave at the Candi Tebing Tegallinggah (Fig.7a).

c. Ārama Type

Many experts stated the building complex which is located in the Komplek Candi Tebing Gunung Kawi is a monastery or Caitya. I do not agree using the word `Caitya` as the candi type name. I think, it will be appropriate if that complex is called Ārama. This opinion based on the word ‘Amarawatī Ārama’ on the Prasasti Tengkulak E. The epigraphical translation of the word ‘Amarawati’ means Gunung Kawi, and the word ‘Ārama’ in the Sanskrit language that is written ‘Asrama’ means a hermitage. So the Ārama in the Komplek Candi Tebing Gunung Kawi (Fig.7c) is a complex of hermitages that consists of many rooms and entering the complex through the Gapura (gate). This type might be only developed in the ‘Bali Kuno Period’. This Ārama Type was probably functioned as a hermitage and a religious teaching place.

d. Gapura Type

The Sanskrit word ‘Gopura’ means the ornamented gateway of a temple, which is written ‘Gapura’ in the Indonesian language. Generally this type has been functioned as a temple gate in the island of Bali, and can be categorized into two sub-types, such as Gapura Paduraksa and Gapura Bentar. The first sub-type of Gapura Paduraksa is also called Candi Kurung. The sub-type of Gapura Paduraksa of the ‘Bali Kuno Period’ generally does not have a Kala ornament above its door, like Candi Kurung at the complex of Candi Tebing Gunung Kawi (Fig.8a), Gua Garbha (Fig.8b), Canggini (Fig.8c) and Pura Sakenan (Fig.8d). Second sub-type is Gapura Bentar and also has been known as Candi Bentar. It is a split gate that consists of two parts equal in the right and left of the gateway. Most of the Candi Bentar sub-type had been developed in the ‘Bali Majapahit Period’ as a transition period to ‘Later Balinese Period’. The examples of these sub-types are Candi Bentar Maospahit Grenceng (Fig.8e) and Candi Bentar Purbasada (Fig.8f).

5. The Origins of the Hindu-Buddhist Candi Architecture in the Bali Island

Derived from the morphological typology of the Hindu-Buddhist candi architecture in the Bali Island above, some theories about its origin and style influences will be explained as follows.

a. Indian Influence and the Indigenous Style of the Balinese Candis Architecture

The theory that a direct influence from India is being an origin of the Balinese candi could not be proved but there is a similarity of their candis that were built in the river bank area. Some Indian rock cut temples like Ajanta and Ellora might be compared to Prasada Tebing sub-types, such as the Candi Tebing Gunung Kawi, Candi Tebing Kerobokan, Candi Tebing Tegallinggah and Gua Gajah. In the Bali Island, the Candi Tebing that was built by carved of the padda
which was easy mildewed. It was different on this matter with the rock cut temple in India that was built in the hard stone valley, so it is able to form space and to carve various decorative elements. Due to the difference of the construction technique system, it is not easy to investigate the existence of the influence from India to the Bali Island in the past. However, in the island of Bali the Candi Tebing has a distinctive structural technique, and it might be as the example of the Indonesian Rock Cut Temple that has been only found in this area.  

b. Central Java Origin

A direct influence from the Central Java on the development of Balinese candi architecture can be verified by a comparison study between the Buddhist Stupa type of the Bali Island, such as the Stupa Tebing of Tukad Pangkung, the Stupa Pegulingan of Basangambo and also the Central Java of Kedu and PrambananPlain candis. For instance, 13 storeys of chattra vali (Fig.2b), 3 branches of chattra vali (Fig.2a), padma and angsa patras had been used as the ornament motifs (Fig.2c) of the Stupa Tebing of Tukad Pangkung show a similarity with the second balustrade of relief gallery of Candi Borobudur which was probably developed in the late 8th century in the Kedu Plain of Central Java region. The Stupa that is carved on that gallery panel has some characteristics like those are pedestal part, anda, harmika and chattra. Its pedestal might be in a hexagonal form, above pedestal stands a circular form of it stupa body (anda) and a square of harmika is placed over the stupa body and finally on the top of stupa is a chattra in the form of 13 storeys of vali (Fig.9a). Its chattra vali looks like curve shaped with a padma form of its pinnacle. Besides that, 3 branches of chattra vali (Fig.9b) in the second balustrade gallery of Candi Borobudur might be compared to 3 branches of chattra vali (Fig.2a) of the Stupa Tebing of Tukad Pangkung. Looking at the Stupa ruin with a half circular shaped that is decorated by a patra and those are angsa and padma ornaments (Fig.2c) under it. The same characteristics of the Buddhist stupa can be found in the niches of Candi Kalasan (Fig.9c).

Moreover, the Monumental Stupa of Pegulingan also shows a similarity with the Stupa relief of Candi Borobudur. It can be proved by some artifacts that are found on site, such as Dhyani Buddha statues, Kala head ornaments, Gana reliefs and etc. It is interesting to note that there is a ‘Votive Stupa’ which has an elephant ornament on both sides of its door (Fig.2f). In my opinion, the elephant ornament is not a direct influence from the Central Java on the development of Balinese candi architecture that are looked at from the architectural point of view show some similarities with the ‘Early Javanese Candis’ characteristics. The relung (niches) of Prasada Miniatur has Kala ornament above and some deity reliefs inside, such as Durga Mahisasamardhini, Ganesh, and etc. That ornaments are comparable with ‘East Javanese Candis’ iconography. From the architectural point of view, the three Prasada types that are found in the island of Bali show the characteristic similarities with the candis architecture that were established in the ‘Early Classical Period’ in the Central Java. The roof in the shape of the step pyramid form and also is completed by the small tower that has the peak of Lingga form on the corner and middle of each roof level and as whole the roof ended with the peak of the Lingga shape. The temple body was finished by the blend decoration of the geometrical line and only the Prasada Miniature that shows the existence of some niches on the body of the candis architecture. Whereas the candis architectural base part varied, there is not only one level pedestal but also two levels pedestal and generally all type has a stair in front.

Based on the comparison study between the Durga Mahisasamardhini statue was found in the Pura Pedarman Durga Kutri in Gianyar Regency at the Bali Island and some places in the island of Java, it can be stated that there are some similar characteristics of their statues, especially with the statues were made in the ‘Singosari Kingdom Period’, such as the Durga Mahisasamardhini of Candi Jago and Candi Singosari. The similarities can be seen in the
position of Devi Durga who was stood on a buffalo, whichever the position of the body was rather dynamic and the foot position was open, one foot concentrated to the body of a buffalo and one foot in the head. The style of the Durga statues above are different compared to the Central Java statue style, especially the statue from Candi Prambanan, whichever the body position, their feet were closed and both feet stood on the buffalo body. Whereas for the attributes that was carried basically the same between the Bali Island, the East Java and the Central Java, like the Cakra (wheel), Pedang (sword), Anak Panah (arrow), the tail of the Mahisa buffalo, Trisula (conch), Basur (bow), Perisai (shield), and the head of the Asura demon.

Then, a similar characteristic among some Ganesha statues who the soles of their feet against each other can be found in the Bali Island, such as the Ganesha statues of Puncak Pemisilan, Gua Gajah, Yeh Pulu, Buruan, Marga and Menasa. These foot positions also are the same as the Ganesha that are found in the Central Java, like the Ganesha statue from the Dieng Plateau Candi Complex, Candi Gedong Songo Complex, Candi Baron, Candi Sambisari, Candi Gebang and Candi Prambanan. On the other hand, the foot position above was different compared to the Ganesha statue that was found in the East Java, like the Ganesha statue of Candi Singosari. It is an interesting to note that the Ganesha Boro has the same foot position with the Central Javanese statue but a difference in the sculptural ornament. Generally, all of Ganesha statue has four armed holds a tusk or radish, a rosary, a bowl and an ax. Whereas his trunk in the bowl. From this comparison, it could be said that there was an influence from the Central Java to the island of Bali several centuries ago.

Besides that, Petirithan type can be seen in the reliefs of Candi Prambanan and Candi Panataran (Fig.9d). Until today Candi Umbul will become one example of the Central Java Petirithan type that is still existed. The Petirithan type of the Bali Island shows some similarities with the East Javanese candis, and it is important to note that Tirtha Empul in the Bali Island might be developed earlier than the Petirithan type of the East Javanese candis, such as Petirithan Belahan and Jolotunda. Because based on the Manukaya inscription date 884 of the Çaka calendar or 962 AD of the Christian era that was written in the reign of the King Sang Ratu Sri Candrabhaya Singhawarmadewa in relation to the renovation of the spring of Tirtha Empul, gave the guidance that the inscription year was older than the inscription year figures that were found in Candi Jolotunda and Candi Belahan, which are located in the East Java that were established by the King Airlangga. The Candi Jolotunda was developed for the King Udayana and the Candi Belahan for himself King Airlangga, whichever we were known that the King Airlangga as a son of the Balinese Kingdom King Udayana, in my opinion, a little possibility of the existence of the influence from the East Java in the Petirithan development at the island of Bali. So it means that there was probably an influence from the Central Java.

c. East Java Origin

The East Java influences on the development of candi architecture in the Bali Island can be proved by comparing all candis types of both islands. The sub-type of Gua Pemimajin in the ‘Bali Kuno Period’ like Gua Gajah has the same characteristics as Gua Selomangleng that is located at Kadiri and Tulasanggung Regencies on the East Java region. Although this sub-type is also found in the Central Java like Gua Sentono, I think that the sub-type of Gua Pemimajin in the Bali Island probably got the influence from the East Java because there is a similarity between the Bali Island and the East Java. The Kala head ornament can be seen on the both caves, and the Kala head ornament almost covered the cave entrance of the Gua Gajah in the Bali Island and the Kala head just was found in the above entrance inside the cave in the Gua Selomangleng.

Hence, the sub-type of Gapura Padraksa can be found in the Central Java candis, such as Candi Borobudur, Mendut, Ngawen, Plissan Lor, Prambanan, Sambisari and the complex of Kraton Ratu Boko, beside it also is carved in the relief of Candi Prambanan. In the East Java, Gapura Padraksa can be seen in the relief of Candi Jalatunda (Fig.9e), Jago, Jawi, Candi Utama at the complex of Panataran, Tigowangi and Sukuh. The Gapura Canggini at the island of Bali shows a similarity with Gapura Padraksa of the East Javanese candis, such as Candi Belahan, Jedong and Plumbangan. On another hand, the sub-type Gapura Bentar had been carved on the relief gallery on the second pedestal of Candi Jago (Fig.9f). The Candi Bentar of Purusa in Badung Regency also shows a similarity with Candi Wringin Lawang and Bajang Ratu at the ancient capital of Majapahit Kingdom, the East Java generally show the similarity in the use of the material, like red bricks.

Finally, it can be said that Meru type is another type of the development of candi architectural form of the ‘Classical Period’. The 9 storeys Meru type can be found on the relief of Candi Jago (Fig.9g), the 7 storeys at Candi Sukuh and the 3 storeys on the reliefs of Candi Jago (Fig.9g), Panataran and Surowono. Based on the relief of Candi Jago, the seven storeys of Meru type can be placed at the same complex with Prasada type, and some candi ruins are located at the complex of Candi Panataran, Tigowangi and Jago probably had the Meru type roof. So, it can be predicted that the Meru type has same ancestor worship function as Prasada type but only its worship purpose is different and the Balinese Meru might have got some influences from the East Java. In fact, in the Bali Island, although the roof stores of some Meru types varied, the Merus can be also located in the same temple complex. In relation to the use of the material, it can be state that there was a change from the body part of the oldest Meru with the use of the material from the soft volcanic stone to the last Meru with the wood structure, whereas at the last time was seen almost utilized completely by the wood material.

6. Concluding Remarks

On this research conclusion, some new point of views can be summerised and listed below:

1) It can be said that the characteristics of the Balinese candis varied across their periods but they tend to have similarities among the same period members.

2) Based on the morphological typology study, the candis architecture in the Bali Island can be classified into 2 groups which consist of 6 types of the ‘Classical Period’ and 1 type as a transition type to ‘Later Balinese Period’. Besides that, the Balinese candis can also be categorized into the ‘Main Type Group’ and the ‘Complementary Type Group’. The ‘Main Type Group’ consists of 3 types, such as Stupa Type, Prasada Type and Meru Type. And the
Complementary Type Group can be divided into 4 types, such as Petirthan Type, Gua Type, Ācrama Type and Gapura Type. Each type consists of 1, 2 or 3 sub-types and sometimes there is a variation of the architectural form of each type.

3) The origin of ‘Balinese Candis Architecture’ can be traced back to the other candis that are located across over the island and country. From the facts, it can be said that the rock cut candis of the Bali Island have the distinctive structural techniques compared to the Indian temples, for example the Komplek Candis Tebing Gunung Kawi and its Ācrama Type. The Stupa Type and the Petirthan Type of the Bali Island candis probably got some influences from the Central Java. The Stupa Type might have become the first candi to be built in the ‘Bali Kuno Period’. The Prasada Type most likely got the Central Javanese style influences from the East Java, so its characteristics look like a combination of the Central and East Javanese candis. And some sub-types of the candis architecture in the Bali Island, such as Gua Pemijuan, Gapura Paderaksa, Gapura Bentar and Meru which probably got the style influences from the East Java.

4) It can be said that Meru Type is another type of the development of candi architectural form of the ‘Classical Period’ that still existed until the ‘Later Balinese Period’.

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Notes and References
3) Kempers, B.A.J., op.cit., p. 96, 1959
4) Nieuwenkamp found an unknown meditation cave at the complex of Candis Tebing Gunung Kawi and was the first western expert who explore the interior of Gua Gajah. In 1925, he revisited the cave for making its drawing and at the time he also made extensive drawing of the largest stone reliefs of Jep Pulus. cf. Carpenter, Bruce W., W.O.J. Nieuwenkamp – First European Artist in Bali, Singapore, p. 101, 1997
5) Damote was the first expert who discover Gunung Kawi temple at Tempi Siring on July 1920, and might be built in 881 of Caka Calendar or 959 AD. The temple had been reported on the Oudheidkundige Verslagen 1921, page 60-61 and completed with Bijdrage by Krom on page 63-64. cf. Moejon, P.A.J., Kunst op Bali – Inleidende Studie Tot De Bouwkunst Door P.A.J. Moejon, Den Haag, p. 104-118, 1926
6) Heyting who made the first photograph of Mahendradatta’s potrait in 1923 and reported to Oudheidkundige and his potrait have been shown to Mej. Minnese. Bosch, Stutterheim, Krom, Van Esp and Rampfer. cf. Heyting, L.C., Rama Sandalen op Bali, Leiden, In: Bijdragen 123, No. 3, p. 373-378, 1967, source: http://www.kitv.org/journals.nl/files/pdf/art_BKI_797.pdf
7) Krom said that the temples of Djatjak at Tempi Siring was come from ‘Kadri Period’ and its was shown by the front face of the temples, particularly their roof parts are similar to the candis architecture on the East Javanese type, cf. Moejon, P.A.J., Kunst op Bali – Inleidende Studie Tot De Bouwkunst Door P.A.J. Moejon, Den Haag, p. 104-118, 1926
8) Moejon is a Dutch expert who took the photograph of architecture and art of the island of Bali and all his photos had been published on a book under a title: Kunst op Bali – Inleidende Studie Tot De Bouwkunst Door P.A.J. Moejon.
9) Stutterheim who stated that there are 3 developmental periods of the Balinese art style in his book Indian Influences in Old – Balinese Art, London, p. 35, 1935
10) Kempers, B.A.J., op.cit., p. 96, 1959
11) The research in 1983 result the finding of a pedagingan (a box of sacred elements) was found buried underneath the soil, on top of the ancient temple base. Inside the box were clay tablets containing Buddhist mantra (aphorisms). Based on its remains the building was suspected as stupa in origin.
12) I Wayan Kastawan, Yasuyuki Nagafuchi, Kazuyoshi Fumoto, op.cit., p. 874, 2008.4
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Sources of Figures and Photographs (edited by I Wayan Kastawan and Kazuyoshi Fumoto)
Fig.1: Maps were taken from http://www.rikv.org, Fig.2e: 3(a,b,c), 7(a,c): The tracing drawings from the ‘Archaeological Office Report’ at Bedulu-Pejeng-Bali; Fig.2a: Editing drawing from the Bernert Kempers Book 1. Fig: 2(b,c,d), 3(d,e,f), 4(a,b,c,d), 5(a,b), 6(a,b,c), 7b, 8(a,b,c,d,e,f). 9(a,b,c,d,e,f): ‘Personal Architectural Drawings’. Phot. 1-3: Research Photos were taken on the Grounded Research in the Java and Bali Islands in March 1997 and September 2006.

和文要約
本論文では、8世紀から17世紀にバリ島に建築された candis および仏教のチャイニーズ建築を取り上げ、した地域に建築されたチャイニーズ建築と比較することにより、その起源と類型を、形態学的に考察した。その結果、8世紀から17世紀に15を経ての candis と、分析に基づき7の分類を、形態学的な分析から、主に3から、特に3つのグループに分類することが、各種の類型、においてさらに細部を、建築の発展には、東ジャワおよび中央ジャワの影響があったことを確認した。

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