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

バリ島におけるヒンドゥー・仏教チャンディ建築の起源と類型に関する形態学的研究

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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 *candis* 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 *Petirthan*, *Gua*, *Ācrama* and *Gapura*. 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*

形態学, 類型、起源, ヒンドゥー仏教, チャンディ建築, バリ島

1. Introduction

The development of the Hindu-Buddhist *candi* architecture in the Indonesian Archipelago is generally constituted 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. Rumphius* in the late 17th century and published in the early 18th century²⁾. Furthermore, in a successive century, *Sir Thomas Stamford Raffles* conducted the first architectural study and published a book 'History of Java' in 1818. 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 who published their research results in the form of articles, books, sketches, drawings and documentation photos, such as *W.O.J. Nieuwenkamp* (1904, 1906)⁴⁾, *H.T. Damste* (1920)⁵⁾, *L.C. Heyting* (1921)⁶⁾, *N.J. Krom* (1926, 1931)⁷⁾, *P.A.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 the East Javanese temples, besides the contents of certain reliefs as well as literary works clearly testify to this¹⁰⁾.

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 *Candi 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

Phot. 1 Pegulingan

Phot. 2 Sumberawan

Phot. 3 Plaosan

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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, reliefs, 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 Islands¹²⁾. 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*¹³⁾ and *Mānasāra* is about the essence of measurement¹⁴⁾. Hence, the *Kuladatta's Kriyasamgraha* is a Sanskrit text which belongs to the category of Buddhist *Kriyā-tantras* of the eighth and ninth centuries AD¹⁵⁾.

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 *Tirthas* 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 place¹⁶⁾. The quadrangular ground which is elevated towards the South and the West which is suitable for the buildings of the gods and the men respectively¹⁷⁾, and the temple should be orientated 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*¹⁸⁾. It can be converted into a triangle, hexagon, octagon and circle of equal area and retain its symbolism¹⁹⁾. 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 (*dewa-dewi*) statues inside its niches.

Moreover, the *stupa* is an excellent edifice of the Buddhist monk²⁰⁾ and some buildings, such as *Vihara*, *Arddhayoga*, *Prasada*, *Harmya* and *Guha* that are built for a religious discourse and dwellings particularly for *Bhikkhu* (the Buddhist priest)²¹⁾. Derived from the ancient Buddhism bible *Kriyasamgraha*²²⁾, 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* (honorific umbrella that is set up on the top of *harmika*) and *usnisa* (coping). Beside that its text has specified four types of the *stupa*, like *Stupa Dhanyakṛti* (like a heap grains of rice), *Stupa Patrakṛti* (a bowl), *Stupa Gandakṛti* (a bulb) and *Stupa Kalasakṛti* (a vase). Although it has various forms, however all forms have some characteristics in common, such as centrality, axiality and orientation²³⁾. Because of the heterogeneity text about the *stupa* construction²⁴⁾, 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 accord 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 Kuno Period' and 'Bali Majapahit Period'

Table1 The Characteristics of the Balinese *Candi* Architecture

Period	No.	Name of the <i>Candi</i> Architecture	Chronicle	Con.	Rel.	Loc.	Ort.	Base				Body				Roof				Legend
								P.F.	C.T.	Mat.	Orn.	P.F.	C.T.	Mat.	Orn.	P.F.	C.T.	Mat.	Orn.	
Bali Kuno	1	<i>Stupa Pegulingan</i>	± late 8 th c.	Rec.	Bd.	■	AD	Oct.	M	Pr.	A	Cl.	M	Pr.	A,S	Cl.	M	Pr.	A	Con. = Condition Rec.: Reconstruction Ru. : Ruins Rp : Repair Or. : Original Rel. = Religion Bd. : Buddhist Hd. : Hindu Loc. = Location ■ : Plain Area — : River Bank Area ● : Nearby Sea Ort. = Orientation AD : All Directions S : South W : West E : East P.F. = Plan Form Oct. : Octagonal Cl. : Circle Rt. : Rectangle Sq. : Square C.T. = Construction Technique M : Monolith MC : Massive Carving BW : Bearing Wall PL : Post and Lintel CA : Corbel Arch WF : Wood Frame Mat. = Material Pr. : Paras/Volcanic stone St. : Stone Br. : Brick W : Wood Cr. : Coral Orn. = Ornament A : Architectural Ornament St. : Structural Ornament S : Statue Note: The chronicle year of the <i>candi</i> development in the 'Italic' typewrite that is based on the inscription or manuscript, and in the 'Regular' typewrite which is derived from the research result.
	2	<i>Stupa Tebing Tukad Pangkung</i>	± late 8 th c.	Ru.	Bd.	—	—	MC	Pr.	—	—	MC	Pr.	—	—	MC	Pr.	—	—	
	3	<i>Tirtha Empul</i>	962 AD	Rp.	Hd.	—	S	Rt.	BW	St.,Br.	A	—	—	—	—	—	—	—	—	
	4	<i>Prasada Agung Mengening</i>	± 11 th c.	Rec.	Hd.	—	W	Sq.	BW	Pr.	A	Sq.	PL	Pr.	A	Sq.	CA	Pr.	A	
	5	<i>Komplek Candi Tebing Gunung Kawi</i>																		
		• Group I, <i>Candi</i> No. 1 - 5	± 11 th c.	Or.	Hd.	—	W	Sq.	MC	Pr.	A	Sq.	MC	Pr.	A	Sq.	MC	Pr.	A	
		• Group II, <i>Candi</i> No. 6 - 9	± 11 th c.	Or.	Hd.	—	E	Sq.	MC	Pr.	A	Sq.	MC	Pr.	A	Sq.	MC	Pr.	A	
		• Group III, <i>Candi</i> No. 10	± 11 th c.	Or.	Hd.	—	W	Sq.	MC	Pr.	A	Sq.	MC	Pr.	A	Sq.	MC	Pr.	A	
		• <i>Petirthan</i>	± 11 th c.	Or.	Hd.	—	W	Rt.	BW	Pr.	A	—	—	—	—	—	—	—	—	
		• <i>Āgrama</i>	± 11 th c.	Or.	Hd.	—	W	Rt.	MC	Pr.	—	Rt.	MC	Pr.	—	Rt.	MC	Pr.	—	
		• <i>Gua</i>	± 11 th c.	Or.	Hd.	—	AD	Rt.	MC	Pr.	—	Rt.	MC	Pr.	—	Rt.	MC	Pr.	—	
		• <i>Gapura</i>	± 11 th c.	Or.	Hd.	—	W	Rt.	MC	Pr.	A	Rt.	MC	Pr.	A	Rt.	MC	Pr.	A	
	6	<i>Gua Gajah</i>																		
		• <i>Gua</i>	± 11 th c.	Or.	Hd.	—	S	Rt.	MC	Pr.	A	Rt.	MC	Pr.	A	Rt.	MC	Pr.	A	
		• <i>Petirthan</i>	± 11 th c.	Or.	Hd.	—	W	Rt.	BW	Pr.	A	Rt.	BW	Pr.	S	Rt.	BW	Pr.	A	
7	<i>Pura Pengukur-ukuran</i>																			
	• <i>Prasada Agung</i>	1194 AD	Rec.	Hd.	—	W	Sq.	BW	Pr.	A	Sq.	PL	Pr.	A	Sq.	CA	Pr.	A		
	• <i>Gapura</i>	1194 AD	Or.	Hd.	—	E	Rt.	BW	Pr.,Br.	A	Rt.	PL	Pr.	A	Rt.	CA	Pr.	A		
8	<i>Candi Tebing Kerobokan</i>	1200 AD	Or.	Hd.	—	W	Sq.	MC	Pr.	A	Sq.	MC	Pr.	A	Sq.	MC	Pr.	A		
9	<i>Komplek Candi Tebing Tegallingga</i>																			
	• <i>Tegallingga A</i>	± 13 th c.	Or.	Hd.	—	E	Sq.	MC	Pr.	A	Sq.	MC	Pr.	A	Sq.	MC	Pr.	A		
	• <i>Tegallingga B</i>	± 13 th c.	Or.	Hd.	—	W	Sq.	MC	Pr.	A	Sq.	MC	Pr.	A	Sq.	MC	Pr.	A		
	• <i>Gapura</i>	± 13 th c.	Or.	Hd.	—	W	Rt.	MC	Pr.	A	Rt.	MC	Pr.	A	Rt.	MC	Pr.	A		
10	<i>Candi Jukut Paku</i>	± 13 th c.	Or.	Hd.	—	E	Sq.	MC	Pr.	A	Sq.	MC	Pr.	A	Sq.	MC	Pr.	A		
11	<i>Candi Kelebutan</i>	± early 14 th c.	Or.	Hd.	—	—	Sq.	MC	Pr.	A	Sq.	MC	Pr.	A	Sq.	MC	Pr.	A		
12	<i>Telaga Waja</i>	± early 14 th c.	Or.	Hd.	—	W	Rt.	BW	Pr.	A	—	—	—	—	—	—	—	—		
13	<i>Gapura Canggini</i>	± early 14 th c.	Rec.	Hd.	■	W	Rt.	BW	Pr.	A,S	Rt.	PL	Pr.	A	Rt.	CA	Pr.	A		
14	<i>Meru Pura Yeh Gangga</i>	± early 14 th c.	Rec.	Hd.	—	E	Sq.	BW	Pr.	A	Sq.	PL	Pr.	A	Sq.	WF	W	A		
Bali Majapahit	15	<i>Pura Maospahit Grenceng</i>																		
		• <i>Candi Kurung</i>	± 14 th c.	Rp.	Hd.	■	W	Rt.	BW	Br.	A	Rt.	PL	Br.	A	Rt.	CA	Br.	A	
		• <i>Candi Bentar</i>	± 14 th c.	Rp.	Hd.	■	E	Rt.	BW	Br.	A	Rt.	BW	Br.	A	Rt.	BW	Br.	A	
	16	<i>Pura Maospahit Tonja</i>																		
		• <i>Candi Raras A</i>	± 14 th c.	Rp.	Hd.	■	W	Sq.	BW	Br.	A	Sq.	PL	Br.	A	Sq.	CA	Br.	A	
		• <i>Candi Raras B</i>	± 14 th c.	Rp.	Hd.	■	S	Sq.	BW	Br.	A	Sq.	PL	Br.	A	Sq.	CA	Br.	A	
	17	<i>Pura Dalem Sakenan</i>																		
		• <i>Candi Raras</i>	± 14 th c.	Rp.	Hd.	●	W	Sq.	BW	Cr.	A	Sq.	PL	Cr.	A,S	Sq.	CA	Cr.	A	
		• <i>Candi Kurung</i>	± 14 th c.	Rp.	Hd.	●	W	Rt.	BW	Cr.	A	Rt.	PL	Cr.	A,S	Rt.	CA	Cr.	A	
	18	<i>Candi Pura Dalem Cemara</i>	± 14 th c.	Rp.	Hd.	■	W	Sq.	BW	Cr.	A	Sq.	PL	Cr.	A,S	Sq.	CA	Cr.	A	
	19	<i>Purusada Kapal</i>																		
		• <i>Prasada Agung</i>	± 15 th c.	Rec.	Hd.	■	W	Sq.	BW	Br.	A	Sq.	PL	Br.	A,S	Sq.	CA	Br.	A,S	
		• <i>Candi Bentar</i>	± 15 th c.	Or.	Hd.	■	W	Rt.	BW	Br.	A	Rt.	BW	Br.	A,S	Rt.	BW	Br.	A	
	20	<i>Pura Taman Ayun</i>																		
		• <i>Candi Pura Sada</i>	± late 17 th c.	Or.	Hd.	■	W	Rt.	BW	Br.,Pr.	A	Rt.	BW	Br.,Pr.	A	Rt.	BW	Br.,Pr.	A	
	• <i>Candi Saru Gading</i>	± late 17 th c.	Or.	Hd.	■	S	Sq.	BW	Br.,Pr.	A	Sq.	BW	Br.,Pr.	A	Sq.	BW	Br.,Pr.	A		
21	<i>Pura Taman Sari</i>																			
	• <i>Meru A</i>	± late 17 th c.	Rp.	Hd.	■	W	Sq.	BW	Pr.	A,S	Sq.	PL	Pr.	A,S	Sq.	WF	W	A		
	• <i>Meru B</i>	± late 17 th c.	Rp.	Hd.	■	W	Sq.	BW	Pr.	A	Sq.	PL	Pr.	A	Sq.	WF	W	A		

Found on the historical study, more than tenth 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 *Petamu* 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*, *Ācrama*, and *Gapura* in the rectangle base plans, and only one *Stupa* has an octagonal base plan. In these cases, all the *Candi 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 *candi* 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 *candi* 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 *candi* architecture varied across their periods but they tend to have similarities among the same period members.

4. The Morphological Typology of the Hindu-Buddhist *Candi* 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*, *Ācrama*, *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*, *Guha*, *Asrama*, *Gopura* and *Meru* as the *candi* type's names that are appropriate and right. Due to that words can be found either inside the Indian manuscript of *Mānasāra*, *Kuladatta's Kriyasamgraha* or the *Majapahit* Period manuscript of *Nāgarakṛtāgama*. 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 *Ācrama* in *Prasasti Tengkulak E* ²⁸⁾, the words *Lwā* ²⁹⁾ and *Gopura* ³⁰⁾ inside the *Nāgarakṛtāgama* 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.

the *Kelompok Candi Tebing* 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 Tebing Gumung Kawi* (Fig.3a), *Kerobokan* (Fig.3b), *Tegalinggah* (Fig.3c), *Jukut Paku* and *Kelebutan* are some examples of sub-type of *Prasada Tebing*.

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 *garbhagrha* (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-ukuran* (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 *garbhagrha*. 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*, *Ācrama* and *Gapura*. All *candis* 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 Tanpa 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 *jaladwara* (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 Tanpa 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*.

Fig. 4 Prasada Type of the 'Bali Majapahit Period'

Fig. 5 Meru Type

Fig. 6 Petirthan Type

b. *Gua* Type

The Indonesian word '*Gua*' is originally from a Sanskrit word '*Guha*', which means a hiding-place. Inside the *Nāgarakṛtāgama* 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 Tegallingsgah* (Fig.7a).

c. *Ācrama* 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 *Ācrama*. This opinion based on the word '*Amarawati Ācrama*' on the *Prasasti Tengkulak E*. The epigraphical translation of the word '*Amarawati*' means *Gunung Kawi*, and the word '*Ācrama*' in the Sanskrit language that is written '*Asrama*' means a hermitage. So the *Ācrama* 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 *Ācrama* 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 Purusada* (Fig.8f).

Fig. 7 *Gua* and *Ācrama* Type

Fig. 8 *Gapura* Type

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 Tegallingsgah* and *Gua Gajah*. In the Bali Island, the *Candi Tebing* that was built by carved of the *padas*

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 ³¹⁾.

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 Basangambu* and also the Central Java of *Kedu* and *Prambanan Plain 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 its *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 *sangkala memet* as mentioned in the archaeological report of *Pura Pegulingan* ³²⁾, because that iconography can be found at the *Prambanan plain candis*, such as the front door of *Candi Sari* and the front door of the main building of *Candi Plaosan Lor* ³³⁾. A *Gana* relief that was used on the base part of the *Stupa Pegulingan* is often discovered in the *candi* architecture of the Central Java. For example the *Gana* relief of the free artifact of the *Dieng Plateau Candi Group* and the *Gana* relief as the architectural ornament in the *Candi Borobudur*, *Candi Mendut*, *Candi Kalasan*, *Candi Sari*, *Candi Sewu*, *Candi Banyunibo* and *Candi Prambanan*. This similarity reinforced the existence of the Central Javanese influence in the development of the *Stupa* in the Bali Island.

Based on tracing of the *candis* origin above, the Buddhist *Stupa* of the Bali Island probably was built in the late of 8th century which got some influences from the Central Java and it might have become the first Buddhist *candi* to be built in the 'Bali Kuno Period'. On another hand, the Hindu *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*.

Furthermore, the *Prasada* type, like sub-type of *Prasada Tebing*, *Prasada Agung* and also *Prasada Miniatur* 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 Mahisasuramardhini*, *Ganesha*, 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 Miniatur* that shows the existence of some niches on the body of the *candi* architecture. Whereas the *candi* 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 Mahisasuramardhini* 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 Mahisasuramardhini* of *Candi Jago* and *Candi Singosari*. The similarities can be seen in the

Fig. 9 Reliefs of the Central and East Javanese *Candis*

position of *Dewi 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 foots were closed and both foots 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), *Busur* (bow), *Perisai* (shield), and the head of the *Asura* demon.

Then, a similar characteristic among some *Ganesha* statues who the soles of their foots against each other can be found in the Bali Island, such as the *Ganesha* statues of *Puncak Penulisan*, *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 Banon*, *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, *Petirthan* 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 *Petirthan* type that is still existed. The *Petirthan* 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 *Petirthan* type of the East Javanese *candis*, such as *Petirthan 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 *Petirthan* 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 Pemujan* in the 'Bali Kuno Period' like *Gua Gajah* has the same characteristics as *Gua Selomangleng* that is located at *Kadiri* and *Tulungagung* 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 Pemujan* 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 Paduraksa* can be found in the Central Java *candis*, such as *Candi Borobudur*, *Mendut*, *Ngawen*, *Plaosan Lor*, *Prambanan*, *Sambisari* and the complex of *Kraton Ratu Boko*, beside it is also carved in the relief of *Candi Prambanan*. In the East Java, *Gapura Paduraksa* 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 Paduraksa* 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 *Purusada* 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 *Suwono*. 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 storeys 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 Candi 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 Pemujaan*, *Gapura Paduraksa*, *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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Sources of Figures and Photographs (edited by I Wayan Kastawan and Kazuyoshi Fumoto)

Fig.1: Maps were taken from <http://www.kit.nl>; 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'; Fig.2(b,c,d,f), 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,g): '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ヒンドゥーおよび仏教のチャンディー建築を取り上げ、他の地域に建築されたチャンディー建築と比較することにより、その起源と類型について、形態学的に考察した。その結果、8～15世紀に成立した *Stupa*, *Prasada*, *Petirthan*, *Gua*, *Ācrama*, *Gapura* の6種類と15～17世紀

に発達した *Meru* の1種類の計7種類を、形態学的分析から主要3種と副次的4種の2つのグループに分類することができ、各種類についてもさらに細分類することができた。そして、バリ島でのチャンディー建築の発展には、東ジャワと中央ジャワの影響があったことを確認した。

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